



**THE STATE OF PUBLIC HEALTH CARE SERVICE IN ETHIOPIA:
HEALTH SERVICE QUALITY, ACCESSIBILITY and OPERATIONAL
EFFICIENCY IN THE CASE OF ADDIS ABABA PUBLIC HOSPITALS**

Tofik Musema

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Supervisor (Promoter): Filmon Hadaro (Phd)

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DECLARATION

I, the undersigned, declare that the work contained in this dissertation is my own original work and that I have not previously submitted in its entirety or in part at any university for a degree.

Signature _____

Signed by Members of the Examination Board

Advisor (Promoter	Filmon Hadaro(PhD)	Signature_____	Date_____
External examiner	Albert Ahenkan(Assoc.Prof.)	Signature_____	Date_____
Internal examiner	Mitike Molla Sisay(Assoc.Prof.)	Signature_____	Date_____
Chairperson, department	Berhanu Temesgene(PhD)	Signature_____	Date_____

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Table of contents

Contents	pages
ACKNOWLEDGMENTS	i
Table of contents.....	ii
LIST OF FIGURES	vii
LIST OF TABLES.....	viii
LIST OF ABBREVIATIONS	x
ABSTRACT.....	xv
CHAPTER ONE: INTRODUCTION TO THE STUDY	1
1.1 Background of the Study.....	1
1.2 Statement of the problem	5
1.3. Research Questions	14
1.4 Research objectives	15
1.4.1 General Objective of the Study	15
1.4.2 Specific Objectives of the Study	15
1.5. Significance of the study	15
1.6. Scope of the Study.....	16
1.7 Limitations of the Study	17
1.8 Definition of Terms.....	17
1.9 Structure of the Study.....	21
CHAPTER TWO: LITERATURE REVIEW	22
2.1 Introduction	22
2.2 General concepts and theoretical presentation	22
2.2.1 General concepts presentation	22
2.2.2 Theoretical Presentation	25

2.3 NPM Type Health care service reforms	41
2.3.1 Why Health Sector Reform?.....	41
2.3.2. How Health Sector Reform?.....	45
2.3.3 Unique features of health care service.....	49
2.4 Hospital performance assessment	51
2.4.1 Hospital Performance Assessment Frameworks	53
2.4.2 Major Health Care Performance Indicators (Dimensions) Health System.....	55
2.4.3 Health Care Performance Frameworks.....	64
2.4.4 CONCEPTUAL FRAMEWORK OF THE STUDY.....	67
2.5 The overall state of health care service in Ethiopia	67
2.5.1 Health Care Reform of EPRDF ERA	70
2.6 Empirical Literature	80
2.6.1 Global Empirical Literature.....	80
2.6.2 Empirical Evidence on Outcome of Ethiopian Health Care Reforms	88
2.6.3 Empirical Evidence on Hospital Technical (Operational) Efficiency	94
CHAPTER THREE: RESEARCH METHODOLOGY	99
3.1 Introduction	99
3.2 Research Paradigm.....	99
3.3 Research Approach	100
3.4 Research Design.....	101
3.5 Unit of Analysis	103
3.6 Sampling Techniques	105
3.6.1 Selection of Public Hospitals of Addis Ababa City	105
3.6.2 Sample size Determination for Hospital Service Users.....	106
3.7 Research Methods	108
3.7.1 Data Type and Sources	108
3.7.2 Methods of Data Collection.....	109

3.8 Methods of data analysis and interpretation.....	113
3.9 Reliability And Validity: As Quality Standards.....	115
3.9.1 Reliability: As a Standard to Judge Quality of Data Collection.....	116
3.9.2 Validity/legitimation: As a Standard to Judge Study’s Quality	117
3.10 Ethical Considerations.....	119
CHAPTER FOUR: AN OVERVIEW OF HEALTH SECTOR IN ADDIS ABABA	121
4.1 introduction	121
4.2 Brief History of Addis Ababa City	121
4.3. The Governance Structure of Addis Ababa City	125
4.4 Governance and Regulation of Addis Ababa’s Health System.....	127
4.5 Health Service Delivery	130
4.5.1 Health Facility	130
4.5.2 Human Resources for Health.....	136
4.5.3 Pharmaceutical Supplies and Distribution.....	140
4.5.4 Health Care Financing	142
4.6 Conclusion.....	147
CHAPTER FIVE: THE STATE OF PUBLIC HOSPITALS HEALTH CARE SERVICE	
QUALITY PATIENT’S PERSPECTIVE.....	149
5.1 INTRODUCTION.....	149
5.2. Socio –Demographic Profiles of Respondents.....	149
5.2.1 Age of Respondents.....	150
5.2.2 Gender	150
5.2.3 Type of patient.....	150
5.2.4 Referral History of Patients	151
5.2.5 Occupation of Patients.....	157

5.3 The State of Health Care Service Quality in Selected Public Hospitals: Patients' Perspective	158
5.3.1 The State of Health Care Service Effectiveness in Public Hospitals: Patients' Perspective.....	158
5.3.2 The state of Health Care Service Safety in Public Hospitals: Patients' Perspective. .	176
5.3.3 The State of Health Care Service Responsiveness: Patients' Perspective.....	187
CHAPTER SIX:THE STATE OF HEALTH CARE SERVICE ACCESSIBILITY IN PUBLIC HOSPITALS PATIENTS' PERSPECTIVE.....	197
6.1 Introduction	197
6.2 Temporal Sub Dimension of Hospital Service Accessibility.....	198
6.3 Service Availability Sub Dimension of Hospital Service Accessibility	205
6.4 Affordability Sub Dimension of Hospital Service Accessibility	214
6.5 Patients overall Experience of hospital service.....	227
6.6 Operational Efficiency of Public Hospitals.....	233
CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS	244
7.1 Introduction	244
7.2 Conclusion.....	245
7.2.1 Health Care Service Quality	245
7.2.2 Health Care Service Accessibility	247
7.2.3 Operational Efficiency of Health Care Service Provision.....	251
7.3 Knowledge Contribution of the Study	252
7.4 Policy Implications.....	252
7.5 Suggestions for Future Research.....	255
BIBLIOGRAPHY	257
Appendices.....	292
Appendix 1: Questionnaire Distributed to Respondents.....	292

Appendix 2: Interview Guide for Key Informant Interviews	296
Appendix 3: public hospitals observation Checklist.....	299
Appendix 4: statistical figures on effectiveness sub dimension of quality	300
Appendix 5: statistical figures on safety sub dimension of quality	301
Appendix 6: statistical figures on responsiveness sub dimension of quality	302
Appendix 7: statistical figures on temporal sub dimension of access	303
Appendix 8: statistical figures on availability sub dimension of access.....	304
Appendix 9: statistical figures on affordability sub dimension of access.....	305

LIST OF FIGURES

Figure 2. 1 Factors insuring equitable access to health care service	60
Figure 2.2 Conceptual framework of the Study, Source : Researcher’s own compilation.....	67
Figure 2.3 GDP and per capital income , Source: WHO 2016.....	69
Figure 2.4 Ethiopian health care system tiers ,Source: FMOH (2010).....	72
Figure 2.5 Major National strategic plans in the Ethiopian health sector 1993 -2035	73
Figure3.1:Prototypical characteristics Of The major Mixed methods Designs.....	103
Figure 4.1 population of Addis Ababa over time	124
Figure 4.2: The Governance Structure of the Health Sector of Addis Ababa City	128
Figure 5.1 Referral system flow chart , Source:FMoH 2010.....	153
Figure 5.2 Sources of referral , Source: Based on survey data (2019)	155
Figure 6.1: Financing arrangement of the health sector including the EHSP.....	217
Figure 6.2 Ethiopian health expenditure by source	218
Figure 6.3 Ethiopian health expenditure , Source :WHO 2018	223
Figure 6.4 domestic general government expenditure , Source: WHO 2016	224
Figure 6.5 Good experience inpatient vs outpatients, Source :Based on survey data,2019	230
Figure 6.6 Issues requiring improvement ,source: Based on survey data, 2019.....	232
Figure 6.7 Recommendation of hospital service to others.....	233
Figure 6.8 Bed Occupancy Rate (BOR), Source : FMOH 2018.....	239
Figure 6.9 Bed occupancy rate by region,2018	240
Map 1: Administrative Map of Addis Ababa City.....	121

LIST OF TABLES

Table 2.1 Doctrine and rationale of NPM.....	34
Table 2.2 Health care performance assessment indicators	55
Table 2.3 comparisons of international HSPA frameworks	66
Table 2.4 Health Care Facilities Improvement Overtime.....	76
Table 2.5: Health Expenditures of Ethiopia.....	77
Table 2.6 Health Work Force Over Time	79
Table 3.1 Basic Characteristics of Public Hospitals in Addis Ababa	105
Table 3.2 Allocation of the sample size to the hospitals.....	107
Table 3.3 Parties to encompassed in the study	108
Table 3.4 Summary of variables, indicators, Measurement, data type, data source and analytical models.....	112
Table 3.5 summary of reliability tests.....	117
Table 4.1: number of health facilities by region, 2018.....	131
Table 4.2 levels of hospitals in Ethiopia.....	132
Table 4.3 public hospitals in Addis Ababa city	133
Table 4.4: Health Facility to Population Ratio in Addis Ababa City	135
Table 4.5: Health professionals to population Ratio for selected professions by region, 2018.	137
Table 4.6: Share of Health Budget of Addis Ababa City as compared to other Regions	143
Table 4.7 Percentage of men age 15-49 with specific types of health insurance coverage,	145
Table 4.8 Percentage of women age 15-49 with specific types of health insurance coverage ...	145
Table 5.1 summary of the response rate	149
Table 5. 2 Socio demographic characteristics of respondent's.....	151
Table 5.3 cross tabulation of referral and patient type.....	154

Table 5.4 Descriptive statistics on effectiveness of hospitals service provision	161
Table 5.5 Descriptive statistics on the overall effectiveness of hospital service	166
Table 5.6 Bivariate and multivariate statistical tests for significance	173
Table 5.7 Summery of Mann- Whitney and kruskal walis tests	175
Table 5.8 Descriptive statistics on the safety dimension of health care service quality	178
Table 5.9 Summery of statistical tests for safety dimension	185
Table 5.10 Summery of Mann- Whitney and kruskal walis tests for safety dimension	186
Table 5.11 descriptive statistics on responsiveness of hospital services	189
Table 5.12 summery of Logistic regression analysis.....	194
Table 5.13 Summery of Mann- whitney and kruskal walis test	195
Table 6.1 descriptive statistics on temporal sub-dimension of health care service accessibility	200
Table 6.2 summery of infrential statistics on temporal sub dimension of access.....	203
Table 6.3 summery of Mann-Whitney and kruskal walis tests.....	204
Table 6.4 Descriptive Statistics on availability sub dimension of hospitals service accessibility	206
Table 6.5 summery of inferential statstics on availability subdimension of access	212
Table 6.6 Summmery of Mann-Whitney U and kruskal walis tests	213
Table 6.7 Summery of statistical tests on affordability of medical service	216
Table 6.8 summery of Mann- Whitney and Kruskal-Wallis tests	227
Table 6.9 Descriptive statistics on good experience of patients in the hospitals	228
Table 6.10 Descriptive statistics on ranking of hospitals based patient experience	230
Table 6.11 procurement of of drugs and supplies at exaggerated price.....	241

LIST OF ABBREVIATIONS

AAHB	Addis Ababa Health Bureau
ADE	Adverse drug effects
ANC	Antenatal care
BPR	Business Process Engineering
CBHI	Community-based health insurance
CDs	Communicable disease
CHC	Comprehensive health care
CHE	Catastrophic health expenditure
CGS	Center for Global Development
CIHI	Canadian institute for health information,
CKD	Chronic kidney disease
CSRP	Civil Service Reform Program
DEA	Data Envelopment Analysis
EDHS	Ethiopian Demographic Health survey
EHRIG	Ethiopian Hospital Reform Implementation Guideline
EHSP	The essential health services package
EmOC	Comprehensive emergency obstetric care
EPRDF	.Ethiopian People’s Revolutionary Democratic Front
FMOH	Federal ministry of health
GDP	Gross domestic product
GHE	Government health expenditure
HCFP	Health care financing reform plan
HCFR	Health Care financing reform
HCQI	Health Care Quality Indicators
HEW	Health Extension Workers
HMIS	Health Management Information System
HRG	Hospital reform guidelines
HSDP	Health Sector development program
HSPA	Health Sector Performance Assessment
HSR	Health Service Reform
HSTP	Health sector transformation plan
IMF	International monetary fund
MDG	Millennium development goals
MOFED	Ministry of Finance and Economic Development
MOH	Ministry of Health
NCDs	Non communicable disease
NEMLs	National Essential Medicines Lists
NGOs	Non-governmental organizations
NHA	National Health Accounts
NPM	New Public Management
OECD	Organization of Economic cooperation and development

OOP	out of pocket payments
PFSA	Pharmaceuticals Fund and Supply Agency
PHC	primary health care
PHCUs	Primary health care unit
PPE	Personal protection equipment
PPP	Public Private Partnerships
PSR	Public service reform
RHB	Regional health bureaus
SARA	Service Availability and Readiness Assessment
SBA	skilled birth attendance
SFA	Stochastic frontier analysis
SHI	Social Health Insurance
SNNP	Southern nations and nationalities and peoples
SSA	Sub Saharan Africa
THE	Total health expenditure
TPA	Traditional public Administration
UNDP	United nations development program
UNICEF	United nations children's fund
UNISA	United Nations special initiative for Africa
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

ABSTRACT

The study aimed at analyzing the state of health care service provision in Ethiopia in the case of Addis Ababa's Public hospitals. Though empirical evidence on the state of hospitals service provision is important, systematic research results encompassing the core health care service dimensions and views of patients is scant in Ethiopia. The absence of data and research prioritization on hospitals is a self-perpetuating problem and in the absence of substantive data or pressure from external donors, policymakers face few incentives to improve hospital services. Health care reform has frequently been more an act of faith than on the basis of evidence-based policy making; therefore this study provides evidence on the actual health care service provision state of public hospitals in Addis Ababa city. To this end the study considered three specific objectives i.e. Assessing the public hospitals health care service: (1) quality (2) accessibility and (3) operational efficiency. The study has defined these three categories of health care service dimensions and adopted OECD's (2006) analytical framework.

To achieve the objectives the study has employed a pragmatic research paradigm with mixed methods research design. To answer the research questions of the study data was collected from both primary and secondary sources. Primary sources include health care service users, and health care service providers. Observation was also made to hospital facilities, service provision sessions and the situation of service users and providers. Secondary data was collected from policy documents, hospital reform implementation reports and related published and unpublished sources. The individual level units of the study were hospital health care service providers (staffs and leaders) and also hospital service users (patients and other service seekers). The institutional level of unit of analysis were the public hospitals selected, and health care reform and policy documents. To these end seven hospitals, 376 hospital health care service users and 14 hospital health care service professionals, 2 AACHB officials and 2 FMoH officials were selected and interviewed. Qualitative, descriptive and inferential statistics were used in the data analysis. Thematic analysis was used to organize and interpret qualitative data. Cronbach's alpha, descriptive statistics, from Chi-square test, Mann-Whitney U test, and Kruskal-Wallis test were used for descriptive statistical analysis. A principal component and logistic regression analysis were used for inferential statistical analysis.

The overall satisfaction of patients with the effectiveness of the hospitals service provision was (71.28%). The multivariate logistic regression analysis predicts that the availability of thorough treatment and examination of patients ($p < 0.05$, $exp = 3.147$, 95% CI) and good explanation regarding medical tests ($p < 0.05$, $exp = 6.258$, 95% CI) enhances patients satisfaction. With respect to safety only 42 % (158) respondents indicated satisfaction with the facilities safety procedures. The multivariate logistic regression analysis shows that medical staffs capability not to expose patients to unnecessary risk ($p < 0.05$, $exp = 4.916$, 95% CI) and extent of care exercised by medical personnel to patients during treatments ($p < 0.002$, $exp = 7.282$, 95% CI) affects patients satisfaction. Regarding responsiveness of the service only 118 (31%) revealed contentment with responsiveness of service provision. The multivariate logistic regression analysis shows that health care professionals courtesy and respect ($p < 0.05$, $exp = 2.682$, 95% CI), medical personnel's sympathy for patients' problems ($p < 0.05$, $exp = 2.521$, 95% CI), and medical personnels' individual attention to patients ($p < 0.05$, $exp = 7.112$, 95% CI) increases patient satisfaction.

The multivariate logistic regression analysis with the temporal component of accessibility shows that acceptability of waiting time ($p < 0.05$, $exp = 15.766$, 95% CI), and getting medical service on short notice ($p < 0.05$, $exp = 8.444$, 95% CI) positively contributes to patient satisfaction. Similarly with respect to availability sub dimension of access ease of access to medical specialists ($p < 0.05$, $exp = 8.444$, 95% CI) and getting the ordered laboratory tests in the hospitals laboratory ($p < 0.05$, $exp = 9.06$, 95% CI) enhances patient satisfaction. The study also indicated prevalence of catastrophic health expenditure and 265 (70.5%) respondents revealed their worry about having to pay large medical bills. The multivariate logistic regression analysis shows that being never worry about having to pay large medical bills ($p < 0.002$, $exp = 5.927$, 95% CI) and getting medical care service without financial set back ($p < 0.05$, $exp = 4.689$, 95% CI) enhances patient satisfaction.

The findings vividly indicated the existing state of the public hospitals service provision in Addis Ababa City. From the respondents, 55% indicated that they have an overall good experience with the facilities and services while the rest indicated discomfort. The analysis of the available literature and documents also portrays the operational inefficiency of the public hospitals. The study concludes that improvements in quality, accessibility and operational efficiency of health care service provision significantly enhances the satisfaction of service seekers (patient) and service providers (staffs and leaders). Based on the key findings and conclusion, study presents suggestions for FMOH, AACHB and public hospitals administrators, and the federal government on how to address loopholes that hamper positive improvements in health care service provision in public hospitals in Addis Ababa.

Key Words: health care service quality, effectiveness, safety, responsiveness, accessibility, operational efficiency

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1 Background of the Study

The role and the importance of health care systems is well recognized in the quality of life and social welfare in modern society. The linkage between health state , quality of life and social welfare is that improved health state leads to increased productivity, educational performance, life expectancy, savings and investments, and decreased debts and expenditure on health care. Ultimately this would lead to greater equity, economic return, and social and political stability (Boyce & Brown 2019). Emphasizing the criticality of health to human being the World health organization (WHO) articulated health in its 1946 constitution as part of basic human rights and all members' states of United Nations has endorsed this right through their national constitution including Ethiopia (WHO 1946).

In support of the aforementioned right to health the world health organization has put emphasis on three obligations that states should fulfill so that the right to health come to practice. The first is ‘obligation to respect’ which requires States to refrain from interfering directly or indirectly with the right to health, the second is ‘obligation to protect’ requires States to prevent third parties from interfering with the right to health, the last and the third is the ‘obligation to fulfil’ this obligation requires States to adopt appropriate legislative, administrative, budgetary, judicial, promotional and other measures to fully realize the right to health (WHO 2000). This study assessed the state of health care service provision in line with the attainment of the third obligation in public hospitals context of Addis Ababa city.

Considering the importance of health the efforts exerted has resulted in impressive achievements in health worldwide in the twentieth century and especially in the past 40 years mostly in the developed countries. The increase in life expectancy and the decrease in fertility throughout the world have been greater in the past 40 years than during the previous 4000 years. Life expectancy is almost 25 years longer today than at similar income levels in 1900 (Prefontaine et al. 2000). These gains in health and quality of life are mainly the result of achievement and development of medical care industry, producing and delivering in broader parts of population a complex of services that center about physician, private and group practices, hospitals and public

health. To these health gains, other causal factors such as improvements in income and education, nutrition, clothing, shelter and sanitation have also contributed.

However the achievements in maintaining the health of citizens are not alike in all parts of the world. There is a great deal of disparity in health state between the developing and the developed world.

Nowhere are global public health challenges more acute than in sub Saharan Africa. With just 13 percent of the world population, this region carries 24 percent of the global burden of disease (Center for strategic and international studies 2009).Africa is home to twenty –four of the twenty- six countries with the fewest number of doctors per capital and the heavy weight of disease burden (WHO Africa 2016).

Africa's immense disease burden and frail health systems are embedded in a broader context of, poor governance related with traditional model of public administration which is suffering from dysfunctional rigidity with great deal of focus on procedures and rules rather than performance. Moreover the old model of public administration was recognized to be lacking in protecting, and serving the public interest and generally being too corrupt. Furthermore, ill managed health care facilities, unavailability of adequate fund for health care, weak productivity (efficiency) and poor organizational structure of health care facilities serves as a catalyst for the dwindling of the health system of Africa. In addition to these backlogs of problems according to the World Health Organization (WHO), the biggest killer and the greatest cause of ill-health and suffering across the developing world is extreme poverty.

Therefore in the past three decades the aforementioned complex and interrelated challenges has urged governments especially in developing countries to look for better systems and institutional arrangements through reforming the public sector. In addition to governments' own initiative of addressing the challenges, international agencies (such as IMF, WB, donor countries) have also pressured countries for reform.

Hughes (2003) indicated that the initiative of transforming the administration of the public sector since the early 1980s is an effort to primarily reform the traditional administration which dominated for most of the 20th century and introduce a more flexible, efficient and market based form of public administration.

New public management(NPM) as the liberal premarket ideology of the 1980's, originating in United Kingdom and united states of America, clearly influenced the reforms of many developing countries starting 1980s and 1990s (Mills et al. 2001).

This new paradigm strongly argues that the traditional organizational form of the public sector and hierarchical bureaucracy are inherently inefficient and that the introduction of market mechanisms is believed to have meaningfully enhanced the efficiency of public service delivery (Broomerg & Mills 1998). Failure of states to provide effective and efficient services has sparked the need for change in all spectrum of the public sector including health.

Hence New Public Management (a new managerial approach) which urges the move away from traditional bureaucracy to market principles and management techniques drawn from the private sector was introduced. In line with the ethos of NPM measures including decentralization, introduction of autonomous organizations, user fees, contracting out of services; and reengineering the activities of the existing health care facilities were undertaken.

Though many Scholars generally agree on the need for reform, the adoption of pro market stances of NPM in public health care service provision in Africa in general and in Ethiopia in particular is an ongoing debate and issue of research and policy in recent years.

One of the major criticisms of the health care system in Africa was its centralized structure and bureaucracy which is believed to be major source of ineffectiveness and inefficiency. As a result in line with new ideology of NPM African governments have started shifting their focus from hierarchy and control to participation and empowerment. Restructuring the delivery of public services, by decentralizing functions and resources, was expected to bring better efficiency, effectiveness, governance and service delivery. Moreover, achieving good governance through decentralization was expected to bring decision more closely to the citizens and promote participation.

Among many objectives sought while decentralizing health care service improving service delivery represents the major justification. In this perspective, decentralization sought to facilitate the ability of local governments to tailor services to local preferences and needs as well as encouraging competition among local governments to retain residents by providing the most efficient services.

In reality, the ability of decentralization to always achieve the aforementioned goals has been questioned based on both theoretical and empirical grounds. In the African context, much of the impetus for decentralization has been primarily political, and the election of sub-national authorities has been sequenced before other elements of the decentralization process (Resnick 2014).

In addition to the above limitations of the health care system urbanization represents one of the major demographic transformations challenging sub-Saharan Africa today. Many Africans now live in urban areas than at any other point in history. According to United Nations report the African population in 2000 was about 814 million (34% urban), but in 2017 it is over 1.2 billion (42 % urban). On the other hand the World Bank predicts that by 2030 Africa will finally be an urban continent, with more than 50% of its population living in cities. This increase in demographic pressure places a burden on already weak health care service delivery mechanisms of urban centers.

The major burden of rapid urbanization and increase in population number falls on health care facilities of urban centers specially, public hospitals. Hospitals are central to building and maintaining healthy populations around the world. They serve as the first point of care for many, offer access to specialized care, and act as loci for medical education and research, and influence standards for national health systems at large. As in wealthier countries, hospitals in developing countries are the most visible symbol of care for the sick, particularly in rapidly expanding urban areas of like Addis Ababa. They are the first stop for citizens of low- and middle-income countries when seeking resolution to a major illness episode, and the last stop for patients who's diagnostic and treatment needs cannot be met through primary care services alone.

Beyond their role in diagnosis and treatment, hospitals often multitask as teaching institutions, centers of biomedical research, and testing grounds for pharmacological and technological innovations. They are major employers of health care professionals; and in small, low- and middle-income countries, a single hospital may account for a high proportion of the national health workforce.

Yet despite their centrality within health systems, hospitals have been sidelined to the periphery of the global health agenda as scarce financial resources, technical expertise, and political will

instead focus on the expansion of accessible primary care (Center for Global Development 2015). Though basic care (primary care) services are essential, cannot substitute for functional, efficient, and accessible secondary and tertiary care.

Moreover as low- and middle-income countries experience longer life expectancy and an increasing burden of non-communicable disease, the number and proportion of critically ill individuals demanding and requiring more advanced inpatient care surgeries, cancer treatment, dialysis , and hospital care will continue to increase.

As a result, many hospitals especially in developing countries have failed to evolve and modernize, both in operations and infrastructure, while the knowledge base on hospital effectiveness and efficiency remains small and inadequate. In turn, the standard of care and efficiency achieved by these hospitals has stagnated. The gap in treatment capacity and quality between hospitals serving wealthier and poorer populations — is widening, just as developing economies are poised to expand the range and depth of health care through universal health coverage.

Therefore this study is sought to assess the state of health care service provision of selected public hospitals of Addis Ababa City.

1.2 Statement of the problem

Starting from 1990's Ethiopia has initiated health sector reform measures which gives emphasis on essential package of basic health services. The essential package picks up on the idea of selected primary health care (PHC) interventions which address the main burdens of disease in the country and are the most cost-effective. This approach mostly targets specific areas of health which affects primarily the rural population and leaves other health care service mainly to be funded by households with a larger role for the private sector in provision of such services.

In line with this argument 265 patients (70.5%) participated in the survey revealed their worries of paying large medical bills. Corroborating with this finding evidences further suggests that seeking prevention and treatment services for non-communicable disease which are not part of PHC such as cancer, and cardiovascular disease in Addis Ababa poses substantial financial burden on households (Husøy et al. 2018, Gebreslassie 2018, Michael et al. 2019, World Bank 2016).

The liberal premarket ideology of the 1980's, originating in United Kingdom and United States of America, clearly influenced the reforms of many developing countries including Ethiopia's emphasis on selective primary health care service since 1990s (Markos 2013, Chanie 2001).

New Public Management (NPM) ideology of treating government as if it were a business has informed many changes in many developing countries (Pollitt & Bouckaert 2014). Many argued that a major paradigm shift in way of financing and provision of public service in general and health care service in particular comes as a result of endorsing the applicability of underlying ethos of new public management.

Through NPM role of government redefined and move back from being a direct provider to being a policy maker, contractor of services and regulator of performance (Mills et al. 2001). The role of the state was rethought with more emphasis on utilizing decentralized governance and market forces to address existing inefficiencies and improve responsiveness.

Hence in line with the new paradigm of NPM three major changes were introduced in public health care service in Ethiopia namely (1) focus on provision of basic health care services (the package of benefits), (2) health care financing reform and (3) reform on organizational structure and decentralization of health care facilities (Berman 1995; Lubben et al. 2002).

However many disputes that when such market-type mechanisms are applied sectoral and task differences needs to be considered and reformers should be wary of situations where premarket mechanisms are applicable (Pollitt 2012).

Health care service has unique features hence its effective provision and reform measures requires understanding of these unique characteristics and its market which make it different from usual commodity markets.

Among many the unique characteristics of health care service include first medical services afford satisfaction only in the event of illness, second apart from the cost of medical care the services may cause some risk of death or a considerable risk of impairment of full functioning, third health care services have to be produced only at the very instance when a need emerges, otherwise they can be useless, hence the customer cannot test the product and uncertain about the quality of the product before consuming it and there is an element of trust in the relation. Fourth

due to the complexity of medical knowledge those on one side of the transaction (medical service providers) have better information than those on the other (patients). This information asymmetry on the other hand may create supplier-induced demand, where health care providers have and use their superior knowledge to influence demand for self-interests and promotes unusual practices by medical professionals in pricing of their services (Theodoropoulos 2013).

Thus market oriented health care reform measures are attacked due to their failure to consider the aforementioned unique features of health care service, as a result unable to secure equity and citizens often fail to protect themselves adequately against the risks of illness and disability on a voluntary basis (Preke A. et al. 2000).

Moreover the reforms have been heavily influenced by external agencies as conditionality for aid and loan that require a (commitment to) change in governmental behavior before money can be transferred. These external agencies persuaded developing countries including Ethiopia to apply premarket approaches in the health sector and follows the approach of “one size fits all”.

Berman et al. (2000) argues that changes imposed by broad governmental initiatives, often with international donor support, usually do not have the explicit goal of improving the health system. Rather, they seek to achieve non-health goals such as macro economic stability or more democratic political systems. Therefore changes of this type may not produce improvements in health systems or in the health care service provision quality, accessibility and efficiency.

The reform measures implemented under the auspices of NPM were meant to improve health care service (HCS) quality, accessibility and operational efficiency(FMOH 2005). However in many accounts the state run hospitals are in ailing state of service provision and the outcome of the reform measures has always been a topic of deliberation and differs from one source to the other.

Government and international agencies indicated the payoff of reform measures as manifested in improvement in health care service provision in health care facilities including in public hospitals. According to FMOH (2016) the successive health care reform programs has paid-off by improving quality, accessibility and overall efficiency of health care service provision. One of the significant achievements which is highly acclaimed is the reduction of child mortality by two third from 205 in 1991 to 59 in 2013 per 100,000 births ahead of the timeline of MDG 2015,

reduction of maternal mortality rate from 1400 per 100,000 live births to 420, reduction of incidence of HIV, reduction of tuberculosis mortality rate, increasing life expectancy from 43 years in 1980 to 65 in 2015, increasing the number of population using improved drinking water sources, increase in health development index (HDI) from 0.284 in 1984 to 0.470 in 2018. In contrast to the HDI improvement from 0.284 to 0.470 the country's global rank in terms of health declined from 156 in 1985 to 173 in 2018 out of 189 countries and territories.

Similarly UNICEF Report (2014) acclaimed of Ethiopia's health policies that promote decentralized provision of health care service and indicated as it has registered significant improvements in the delivery of health services and achieved many of the MDG goals in the health sector.

Another report by USAID (2012) revealed that health care financing reforms, together with a wide range of reforms, has positively transformed the health sector. Revenue retention and use improved quality that in turn improved citizens' perceptions of health services, improved the performance and satisfaction of health professionals, and enhanced overall functioning and performance of the health system.

On the other hand Save the Children profiles six cities that have made good progress in saving poor children's lives despite significant population growth. The cities are: Addis Ababa (Ethiopia), Cairo (Egypt), Manila (Philippines), Kampala (Uganda), Guatemala City (Guatemala) and Phnom Penh (Cambodia). These cities have achieved success through a variety of strategies to extend access to high impact services, strengthen health systems, lower costs, increase health awareness and make care more accessible to the poorest urban residents (UNICEF 2015).

Apart from the the reports of Ethiopian government and international agencies empirical evidence on the state of public hospitals service provision in Ethiopia in general and Addis Ababa in particular is scant.

Dhaba et al. (2010) evaluated Oromia region Hospitals against several criteria related to BPR and reported improvement in health care service quality, Zewdneh et al. (2009) revealed deficiencies in responsiveness aspect of health care service dimension in Black lion hospital. Problems in safe delivery of health care service is reported (Feleke et al. 2015, Fekadu 2014,

Eshetie et al. 2015).With respect to hospital service efficiency studies revealed the inefficiency of the facilities (Getachew 2002, Balcha 2002, Seid 2006, Sandro et al. 2010, Manyazewal et al.2018).

Though Ethiopia has been widely lauded internationally for introducing health care reforms that have been said to have transformed primary health care in the country, serious problems of health care service provision in urban public hospitals are still glaring specially in Addis Ababa city. Thus the health care reform measures which mainly focuses on provision of basic primary health care service is not adequate and has created gaps in secondary and tertiary tier of health care service provision (in terms of quality, accessibility and efficiency).

In contrast to primary health care service which focus on prevention of communicable diseases and, creation of awareness on breastfeeding, immunization, family planning, female education and food supplementation, currently especially in urban centers, the prevalence of non-communicable chronic diseases is increasing.

Major causes of illnesses are diabetes, cancer, cardio-vascular disease, mental health, respiratory disease, and injuries from car accident. As a result of the rise in this chronic diseases demand for clinical, surgical and emergency services is mounting in public hospitals (FMoH 2016).

Similarly WHO (2008) indicated that urbanization, ageing and globalized lifestyle changes combine to make chronic and non-communicable diseases increasingly important causes of morbidity and mortality. According to the WHO Report (2008) there is a striking shift in distribution of death and disease from younger to older ages and from infectious, perinatal and maternal causes to non-communicable diseases. Even in Africa, where the population remains younger, smoking, elevated blood pressure and cholesterol are among the top 10 risk factors in terms of overall disease burden. As developing countries became wealthier and experience a growing burden of non-communicable diseases, demand for a hospital delivered care increases especially in urban centers. Therefore ensuring access to high-quality and affordable hospital services is a prerequisite for patients' survival, long-term health, and protection against these catastrophic non-communicable diseases (CGD 2015).

Together with the above general limitations of public health care service reform, public hospitals of urban centers are facing a great deal of challenges including overcrowding due to low number

of hospitals. According to World Health Organization (2016) though the total number of health care facilities, particularly primary care centers, has increased nearly ten-fold since 2005, secondary and tertiary level service capacity, however, has not improved significantly. For instance even though the population number of Addis Ababa city is tripled in the last three decades, there is no change in the number of public hospitals in this period (Central statistics agency 2016).

Another constraint which hampers health care service delivery of hospitals is shortage of qualified medical professionals. A statistical analysis published on world atlas shows that Ethiopia ranks 5th among the 25 countries with a very limited access to health care. According to this report Ethiopia has only 2.8 skilled health professionals (physicians, nurses, dentists and pharmacists) per 10,000 population. On the other hand, 22 medical doctors per million people this puts the country just ahead of Liberia (14), Malawi (19) and Niger (19). Sadly, anywhere from 25% to up to 50% of Ethiopian doctors are working overseas, whose expensive training is often paid for by public finance (FMOH 2016).

In addition to the above constraints of the facilities poor infrastructure, lack of performance incentives and financing affects the delivery of health care's service of public hospitals (FMOH 2012).

The situation in many state run hospitals of Ethiopia is grim due to the aforementioned reasons, but the burden is huge when it comes to Addis Ababa for a number of reasons. First as a capital city of the country Addis Ababa has more than twenty percent of the overall urban population implying a relatively higher health care service demand. The government has built no new hospitals for the past 22 years and struggling with its few outdated and under supplied state run hospitals. Currently, Addis Ababa has 12 state run and more than 40 private hospitals. Many of the latter were built in the past 21 years. In sharp contrast however, all of the state run hospitals were built more than 30 years ago. Due to the unaffordability of private health care service for the majority low income group of the society, state run hospitals are the best medical care alternative centers .

Second, Addis Ababa remains the most attractive destinations for rural and small-town's migrants. The migration is mainly due to push and pull factors. In this regard, the challenge to provide essential urban amenities to the residents of the city will be overwhelming.

Third, the burden of health care service provision is severe when it comes to the nation's capital Addis Abeba, where the majority of Ethiopians from all over the country get referred for cases including emergency and serious illness that cannot be treated at health centers in regional capitals, cities, towns and woredas.

Fourth, the Ethiopian public health care service delivery comprises three service delivery points with a defined referral system namely primary level (health posts, health centers and primary hospitals), secondary level (general hospitals) and tertiary level (specialized hospitals). Despite this referral system in place, people routinely accessed hospitals without a formal referral from a health center or health post and without seeking any prior source of care. Low quality of public primary health care can result in patients forgoing (bypassing) care at the nearest facility and seeking care at a higher level public facility or in the private sector (McPake B. et al. 1999, Akin J. & Hutchinson P. 1999).

Only a minority of people seeking care at hospitals had been referred from a more primary source of care, with the majority accessing the hospital at their first source of care. Suggesting that the intended connections between health posts, health centers, and hospitals is not practiced properly yet Hence Failure of implementing the referral system designed is creating burden on the hospitals as patient head towards hospitals for medical services that would have been received at health post, and health centers (Abrham et al. 2015). Failure of practicing the referral system while negatively affecting the effectiveness of the public hospitals, undeniably undermines the efficiency of the primary health care facilities .

In July 25, 2017, Addis Standard Newspaper published a story on the alarming state of government hospitals in Addis Ababa, where "basic" medical equipment such as glucometer strip, disposable gloves, mask, and alcohol are always in short supply even in the emergency section. Though improvements have been made now and then in terms of infrastructure and administration of the public hospitals, the continuous overflow of patients seeking treatment offsets it (Addis standard 2017).

Following the health care financing reform, public health institutions charge fees for their services. The bulk of the available evidence appears to confirm that while user charges in health care generate income, they also deter those patients at greatest risk who cannot afford the charges. According to FMOH (2014) fee waivers shall be granted to reduce financial barriers for the poor, and exemptions shall be given to encourage consumption of particular kinds of preventive or public health services, but the implementation of the guideline is in debate and there are reported divergences between policy and practice. In this respect, about 17 percent of health centers and 77 percent of hospitals has the practice of charging mothers for the exempted services of normal deliveries (Netsanet et al. 2013).

For low income citizens to get health care service using the fee waiver system certificates should be issued by local social justice systems testifying their entitlement. This resulted in cumbersome procedures that caused delays in the poor's ability to access care. This was not the case for individuals in higher income categories, and the system therefore created health care inequities.

Seeking prevention and treatment services for cardiovascular disease in Addis Ababa poses substantial financial burden on households, affecting the poorest and those who reside outside Addis Ababa more (Tola et al. 2017). There are studies indicating the existence of significant statistical association between affordability, accessibility and the use of health services or health service seeking behavior of patients (Stellenberg, 2015). Nowadays the streets of Addis Ababa are quite familiar with patients who are left with no means but to beg for money to cover their medical expenses either in private hospitals or abroad the treatment they need are simply unavailable in the relatively cheaper state run hospitals where they can afford to pay.

Privately owned hospitals in the country are known to provide better services, but also known for their unaffordable costs, making their services literally unavailable to the majority of poor citizens. Hence the higher income group generally patronizes private health care providers while those in the low income group have to rely on government facilities, which are generally oversubscribed and face shortages of doctors, medical equipment and drugs. Despite improvements in the level of medical services being provided by existing private hospitals and clinics, there is still a considerable un-catered for demand for specialized health services as

shown by the travels the affluent make to countries such as Kenya, South Africa, Thailand and India for specialized treatment.

Studies in many countries indicated that Countries that overly rely on out-of-pocket payments to finance their health system pose a huge financial burden on households, forcing them to receive health care at the expense of other essential needs such as food and education or may force households to delay or abandon the needed services of medication (Husøy et al. 2018, WHO 2016).

Cognizant of this fact in 2001, heads of African Union countries met in Abuja and pledged to set a target of allocating 15% of their government budget to the health sector. Since then the proportion of total government expenditures of Ethiopia allocated to health increased and in 2014 it reached 15.75 percent of total government expenditure (WHO 2018).

Although Ethiopia provides strong political support for health progress, according to FMOH, (2014), the share of health spending to their own-revenue is declining over the last 10 years, constituting only 16% of the total health expenditure (THE). The country relies heavily on external donors (50%) and out-of-pocket spending (34%) to finance services for its population (World Bank 2014a). Total funding still falls short of ambitious health sector plans to provide an array of cost-exempt services and meet the health-specific targets of national plans.

The resulting resource gaps inhibit health care service delivery (Berman et al. 2015) as a result the Ethiopia's per capita spending on health is far too low compared to other countries in Sub-Saharan Africa. Hence Ethiopia's out of pocket health care service expenditure is about 41 percent of total health care service expenditure which is far higher than the recommended maximum amount of 10 percent (WHO 2014).

Therefore to boost health outcomes increasing expenditure on health and efficient utilization of resources is important. An econometric analysis of health expenditure data encompassing 47 African countries between 1999 and 2004 revealed that, health expenditures have a statistically significant effect on infant mortality and under-five mortality (Anyanwu & Erhijakpor 2006).

Therefore an estimated annual increase in public health expenditure between 9-13.5% is needed in order to address resource constraints and provide effective clinical care at all levels of the

health system (USAID 2016). In general the available literature reveals that the recurring problems in the health service provisions in Ethiopia are related to its problems in designing and implementing reform measures.

Research gap

Sound and reliable information is the foundation of decision making across all health system building blocks, and is essential for health system policy development and implementation, governance and regulation (WHO 2008).

Though empirical evidence on the state of hospitals service provision is important, systematic hospital research is scant in Ethiopia in general and Addis Ababa in particular. What does exist is often purpose-built and proprietary data collection and analysis, has been similarly ad hoc and often responding to the immediate requirements of project preparation or for the purpose of periodic reporting. The absence of data and research prioritization on hospitals is a self-perpetuating problem and in the absence of relevant data or pressure from external donors, policymakers face few incentives to improve hospital quality or efficiency. The end result is that hospital policy making lacks needed evidence.

Moreover the available studies on the state of public hospitals health care service provision failed to encompass the core health care service dimensions (quality, accessibility and operational efficiency), are fragmented, and their investigation was not with the theoretical lenses of NPM.

Therefore this study provides evidence on the actual health care service provision state of public hospitals in Addis Ababa City.

1.3. Research Questions

The purpose of this research was to address the following specific research questions:

- I. How is the state of health care service quality in Addis Ababa Public Hospitals?
 - A. What is the extent of the effectiveness of public hospitals health care service?
 - B. How safe is the public hospitals health care service provision?
 - C. How responsive is the health care service provision of public hospitals?
- II. What is the state of the accessibility of the health care service provision of the hospitals?

III. Are the public hospitals operationally (technically) efficient?

1.4 Research objectives

1.4.1 General Objective of the Study

The general objective of any reform measure whether implemented by a developed or developing country is to enable the provision of effective, accessible and efficient public service. Hence this study investigated the state of the public hospitals health care service provision in terms of their health care service quality and accessibility mainly based on the perspective of the service recipients.

1.4.2 Specific Objectives of the Study

Based on the general objective this study was envisaged to achieve the following specific objectives:

- I. To investigate the state of public hospitals health care service quality
 - a. To investigate the effectiveness of public hospital health care services.
 - b. To investigate the safety of public hospitals health care service provision.
 - c. To investigate the responsiveness of public hospitals health care Service provision.
- II. To assess the accessibility of public hospitals health care services.
- III. To Investigate whether the public hospitals are operationally (technically) efficient.

1.5. Significance of the study

The findings of this study could contribute to the understanding of policy makers and administrators of the health care facilities encompassed in this study on the state of the quality (effectiveness, responsiveness and safety), and accessibility dimensions of their services. The researcher notices that internationally there are a great deal of studies investigating the state of hospitals service provision based on the actual experience of patients, however there are scant studies addressing this very critical aspect of public service in Ethiopia.

Hence the findings of this study will inform the Ethiopian government on the health care service provision state of public hospitals and the resultant effects of the reform measures undertaken

for decades. The result would help the government evaluate the extent to which the reform is having the desired output.

The objective of any public health care service facility is to enable those who are ill to gain their health back by providing high quality, accessible and affordable service and hence the findings of this study constitute critical information to health care administrators and providers on the attainment of those objectives. The findings of this study is also expected to pave the road for other researchers by offering background information to trigger further study on a larger target population and innovative methodology.

1.6. Scope of the Study

As Creswell (2009) indicated delimiting a research project using specific time frame, location, population or issue to be investigated helps the researcher to focus the center of attention and address the research problem in a resource and time efficient manner. Accordingly, the scope of this dissertation is framed as follows:

- A. The study is confined only to the public hospitals of Addis Ababa. Addis Ababa is selected for the study due to the relatively high number of patients and the cost effectiveness of the location to the researcher.
- B. Health care service has many dimensions and this study has addressed only the quality (effectiveness, safety and responsiveness), accessibility and efficiency aspects.
- C. This study has encompassed public hospitals which provide health care service for civil citizens and administered by Addis Ababa health bureau and federal Ministry of health. Hence the hospitals administered by police and military are not included in this study.
- D. The study primarily provides the perspectives of patients and supports the information secured through them by interviewing key informant physicians, hospital administrators and officials of AACHB and FMOH.

1.7 Limitations of the Study

This study had certain limitations that include the following. First, the researcher aimed at addressing the technical (operational) efficiency of the hospitals encompassed in the study on the basis of longitudinal quantitative data. Due to the unavailability of relevant quantitative data, this objective was addressed using triangulation of information from diverse sources.

Second, as this study is confined within the health sector of Addis Ababa as a particular reference, the uniqueness of this research within specific city context makes it difficult to replicate exactly in other contexts (Creswell 2009) in the country. However, the hospitals in Addis Ababa are specialized and many of the hospitals outside Addis Ababa make referrals to these selected hospitals. Therefore, the results of this study in terms of informing policy, in the case of hospitals across the country, can not be underestimated.

1.8 Definition of Terms

The core terms of this study are health care reform, health care quality, effectiveness, safety, responsiveness, accessibility, and efficiency. These core terms are defined and explained in the context of this study as follows:

Health care reform: Health care reform is a sustained, purposeful change to improve the efficiency, equity, and effectiveness of the health sector (Senkubuge et al. 2014). It is a gradual process that resulted in significant changes in the formation and delivery of health care services and health care financing (Ghosh 2014). Health care reform in this study implies reengineering health care policies, systems, or strategies with the objective of enhancing health care service quality, accessibility and operational efficiency.

Health care quality:

According to Gronroos (1984) there are two distinct constituents of service quality. These are technical and functional service qualities. Technical quality refers to the basis of technical accuracy and procedures. In health care perspective, it is explained on the basis of the technical accuracy of the medical diagnoses and procedures or the compliance of professional specifications. It can be considered as the competence of the staff as they go about performing

their schedules. This consists of the clinical and operating skills of the doctors, and the nurses' knowledge and familiarity with the administration of drugs. Functional quality on the other hand alludes to the process by which the health care service is delivered.

Similarly Asubonteng et al. (1996) asserts that the distinction between these two aspects of service quality is widely accepted although different terminology is occasionally used. It has been argued by different researchers that functional service quality may be seen by the customer as the most important factor in a service is easier said than done for patients' to evaluate technical quality of a service since they have no technical expertise, whereas functional quality (the manner in which the service is delivered) can, and will, be evaluated by the consumers.

Parasurman et al. (1988) explained that because it may be difficult for the consumer to assess technical quality, they tend to rely on the "how" of service delivery, and in addition also focus on the service dimensions like empathy, reliability, responsiveness associated with the service encounter. Soliman (1992) concluded in his study that non-technical interventions influenced patients' ratings of the overall quality of health care and that these aspects of the medical encounter were perhaps more important than the technical aspects.

Similarly Papa Nicolas & Smith (2010) indicated that health quality refers to three aspects of health care service. First a quality health care service should provide effective health care service which is as needed for treatment, prevention or palliation using appropriate technology. The second component of quality health care is safe delivery of the service in a manner that achieves high reliability in care processes and minimizes medical errors. The third and the last manifestation of quality health care is patient-centered (responsiveness) and provided in a timely way with compassion and professional friendly human relation with the patient.

In the context of this study quality in health care service indicates provision of effective, safe and responsive health care service.

Effectiveness: Effectiveness is an element of technical quality which measure how well the outputs of a program or service achieve the stated objectives (desired outcomes) of that program or service (Productivity Commission 2013). It is the impact of the activities or services of

interest on outcome which is consistent with desired effect (Bowling 2009). According Canadian institute for health information (2013) it refers to the accuracy of the medical diagnoses and procedures or the compliance of professional specifications and the adequacy of physical infrastructure of the hospitals. Effectiveness in this study implies the capability of the public hospitals to produce the desired medication results to patients.

Safety: Health care safety is one of the technical sub dimensions of health care service quality. And it refers to the degree to which health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care itself (National Patient Safety Foundation 2000). Similarly CIHI (2013) describes Safety as an essential component of health care quality and is the dimension of performance, wherein a hospital has the appropriate structure and uses care delivery processes that measurably prevent or reduce harm or risk to patients, health care providers and the environment, and which also promote the notion. On the other hand Sammer et al.(2010) indicated that to Err (to show too much of care) on the side of safety is better to avoid medical errors..

Hence in the context of this study safety refers to the degree to which hospital health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care itself.

Responsiveness: Responsiveness is a functional element of health care service quality which refers to how a system treats people to meet their legitimate non-health expectations (WHO 2000; WHO 2000b). Another term that is often used synonymously with responsiveness is patient-centeredness. Patient centeredness is the degree to which a system actually functions by placing the patient/user at the center of its delivery of health care and is often assessed in terms of patient's experience of their health care.

According to CIHI (2013) responsiveness is ensured when a hospital places patients at the center of care and service delivery by paying particular attention to patients' and their families' needs, expectations, autonomy, access to hospital support networks, communication, confidentiality, dignity, choice of provider and desire for prompt, and timely care .

Hence this study adopted the definition of CIHI(2013) which defines responsiveness to placing patients at the center of care and service delivery by paying particular attention to patients' and their families' needs, expectations, autonomy, access to hospital support networks, communication, confidentiality, dignity, choice of provider and desire for prompt, and timely care.

Access: Access is the opportunity to reach and obtain appropriate health care services in situations of perceived need for care (Levesque et al. 2013). It refers to the presence of physical (availability & accommodation), economic (affordability), temporal (appropriateness), (Fortney et al. 2011, Polluste et al.2011, Levesque et al. 2013).

Physical dimensions represent access to general health care supplies and the ease of travelling to health care provider locations, while economic dimensions are those related to the cost of seeking and obtaining health care in relation to a patient's or household's income (Fortney et al. 2011, Knowles et al. 1997). Temporal dimension of access is the time required to receive services, such as an appointment wait-time, time spent while waiting in reception, receiving treatment, and waiting for the next appointment (Meiesaar & Lember 2012).

In the context of this study access refers to the presence of physical (availability & accommodation), economic (affordability), temporal (appropriateness) and cultural dimension.

Efficiency: Efficiency refers to the best use of resources (Sinimole 2012). Efficiency describes the technical, economic and allocative dimensions related to how and which services are produced (Yu 2011). Technical efficiency measures how well an input is converted into an output, whereas economic efficiency measures the increase in net benefits, and allocative efficiency measures how well the available resources are allocated to production that meets the preferences of the population (Productivity Commission 2012).

According to Smith (2012) health system efficiency can be enhanced through reduced wastage and enhanced cost-effective interventions.

In this study Efficiency (technical efficiency) will refer to a hospital's optimal use of inputs to yield maximal outputs given its available resources.

1.9 Structure of the Study

This dissertation constitutes seven chapters. The first chapter deals with introductory issues. The research background, the problem statement, research questions and objectives, significance of the study, scope of the research limitations and definitions of terms are discussed in chapter one. In the second chapter, relevant literature related to the theoretical and empirical issues of public service provision in general and health care service provision in particular is addressed. The third chapter deals with research methodology and procedure. The philosophical underpinnings of this dissertation, the research approach and methods of data collection, analysis and interpretation are discussed with scientific justifications of the methods employed in this research. Data presentation, discussions, analyses and interpretations are included in chapter four to chapter six. The author chooses to devote full-fledged chapter to each research objective for the purpose of technical convenience for readers.

Accordingly, answers to the research objectives stated under sub-section 1.4. Of chapter one are addressed separately between chapters four to chapter six. The fourth chapter gives specific attention to the state Addis Ababa's health care service sector. The fifth chapter presents the findings and analysis of the health care service quality dimensions dedicating separate parts for sub dimensions of health care service quality namely effectiveness, safety and responsiveness. The sixth chapter focuses on the analysis of the accessibility dimensions of health care service of the hospitals providing separate discussion for the sub dimensions of timeliness, availability and affordability. Finally, in chapter seven summary, conclusion, recommendation and directions for future research and policy recommendations which are informed by the analysis and interpretations made in the preceding chapters are presented.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this part of the study review of conceptual ,theoretical and empirical literature is presented.The theoretical literatures includes review of public service delivery approaches including traditional public management and new public management health care service reforms, hospital performance assessment frameworks, and health care reform measures of Ethiopia. On the other hand the empirical literature presented review of relevant local and international research works pertinent to the research objectives.

2.2 General concepts and theoretical presentation

In the following part discussion regarding major cocncepts and theories which are pertinent with the objectives of the study are presented.

2.2.1 General concepts presentation

Public service

Public Services in the view of Aldridge & Stoker (2002) were generated to improve the quality of people's life. According to them, public service can be defined as one that depends upon element of taxpayer's money to establish or sustain the service through part or whole subsidy in order to contribute to community well-being.

On the other hand lane (1993) describes the term public service as it has a wider scope than the civil service. He argues further that public service can be defined as the machinery of government, that is, the entirety of services that are organized under public (that is, government) authority. Thus public service is the totality of the administrative structures within which the work of government is carried out.

Often distinction is often made between civil service and public service, public service refers to the entire permeant government personnel on the other hand civil service refers to public utilities of general benefit to the population controlled by the states(Olaopa 2008).

Basically Public services are major determinant of quality of life that is not measured in per capita income and are also an important plank of essential service delivery. Public services then

refer to services provided by a government to its citizens either directly through the public sector or by financing and regulating private provision of services (Aldridge & Stoker 2002).

Public service delivery

Public service delivery is the result of the intentions, decision of government and government institutions, and the actions undertaken and decision made by people employed in government institutions. It has an impact on human development directly if it is delivered to people in the form of basic services such as education, health, water and sanitation which contribute to promoting human development (Rakate 2006). Similarly Mitel (2007) observes that public service delivery has been one of the key functions of the public sector. Citizens and businesses alike expect convenient access to government services and information through multiple channels; such as health and education.

Public Administration

Administration is a part and parcel of our daily lives. The food we eat, the clothes we wear, the goods we buy, the streets and highways on which we travel, the automobiles in which we ride, and the many services we enjoy—education, medical care, housing facility, entertainment, protection of our lives and property, and many others—are made possible by administration. High standards of living, progress in the field of agriculture and industry, communication, travel, medicine, education, and others have been possible due to the administrative efforts (Corsen & Harris 1967). Thus, administration is everywhere with us from ‘womb to tomb’.

According to Dimock and Dimock (1969) Public administration is a sub-division of the broader concept of administration. Administration means ‘to serve’, ‘to look after people’, or ‘to manage affairs’. In this sense, administration means management of the affairs of an organization. When we add public to administration, it means governmental administration; it is the management of governmental affairs and activities. Dimock and Dimock define public administration as ‘the accomplishment of politically determined objectives’. However, according to them: More than the techniques or even the orderly execution of programs, public administration is also concerned with policy.

Woodrow Wilson, an authority in the field, defines public administration as ‘detailed and systematic execution of public law. Every particular application of general law is an act of administration’ (Woodrow 1953). By public administration what is meant, in common usage, are the activities of the executive branches of national, state, and local governments (Simon et al. 1950).

Similarly according to L.D. White ‘a system of public administration is the composite of all the laws, regulations, practices, relationships, codes, and customs that prevails at any time in any jurisdiction for the fulfilment or execution of public policy’ (White 1955). Public administration is decision-making, planning the work to be done, formulating objectives and goals, working with the legislature and citizen organizations to gain public support and funds for government programs. To Corson and Harris, ‘it is the action part of the government, the means by which the purposes and goals of government are realized’ (Corson & Harris 1967).

Despite the pervasiveness of public administration in our daily lives, there is hardly any mutually agreed definition of it. In fact, the discipline is still in search of an agreeable definition. For example, even in the latest meeting at Minnowbrook (2008) or what is popularly known as the Third Minnowbrook Conference, attempts have been made by scholars to define public administration in the context of the twenty-first century. The definition that emerged out of the Minnowbrook Conference III (2008), warrants special mention here, as it reflects the evolving nature of the discipline especially the elements, which have so long been avoided by the scholars in the discipline. Public administration was defined as: ‘A socially embedded process of collective relationships, dialogue, and action to promote human flourishing for all’. Implicit in the definition was the recognition of an emerging globalized and multicultural order, within which public administration was supposed to work (O’Leary et al. 2011).

On the basis of the above definitions, it can be concluded that public administration is an instrument of translating political decision into reality, it is the action part of government, the means by which the purposes and goals of the government are realized. The process of public administration consists of the actions involved in affecting the intent or desire of a government. It is, thus, the continuously active, ‘business’ part of the government, concerned with carrying

out the law, as made by legislative bodies and interpreted by courts, through the processes of organization and management.

Significance of Public Administration

Public administration plays an important role in the modern society. First of all, it is an instrument for providing services. It protects the life and property of people by maintaining law and order. It provides a number of services for the people like public health, education, housing, social security, amongst others. The various services provided by public administration affects the life of every citizen from birth to death. In fact, it will not be possible for us to enjoy various governmental services if there were no public administration.

Public administration is also responsible for implementing the laws and policies of the government. It is the public administration which translates the decisions of the government into reality. By implementing public policies and programmes, it delivers the promised goods and services to the intended beneficiaries. By delivering goods and services to the people, public administration maintains harmony and cohesion in society. In this way, it maintains stability in society. Public administration is also an instrument of socioeconomic change.

To sum up, public administration plays an important role in modern society. It is an instrument to formulate and implement public policies. It maintains law and order. It is an instrument of social change and economic development. It provides various goods and services to the people. It also promotes national integration. In the era of liberalization and privatization, there is a change in the role and scope of public administration. Now it has to promote, encourage as well as regulate the private sector in order to protect public interest.

2.2.2 Theoretical Presentation

As public administration is a generalized human activity concerned with the ordering of men and materials required to achieve collective social ends, it has drawn widely from the various social sciences. Since its birth, the study of public administration has been growing in different directions and today it involves complex concerns and functions. There have been numerous attempts by different scholars to explain the different aspects of public administration specifically with respect to its orientation with service delivery.

These different approaches point out alternatives available for the delivery of services to citizens.

In the following part two such approaches are discussed namely Philosophy of Welfare State which is embedded implicitly in the traditional public administration and new public management which has market orientation.

2.2.2.1 Traditional Model of Public Administration

The traditional model of public administration has been viewed as the most fruitful theory of public sector management albeit it does not have a single coherent intellectual basis and is now being challenged by the new paradigm. According to Uwizeyimana & Maphunye (2014) public administration, as the oldest theory, was started to be challenged by NPM in 1970s-1990s. Its theoretical basis was derived from Wilson and Taylor in the United States, the Northcote-Trevelyan report in the United Kingdom and Weber in Germany (Hughes 2003, Katsamunsk, 2012). As expressed by Pfiffner and Boardman (2008), Weber emphasized autocratic hierarchy. Likewise Wilson (2004) argue that the bureaucratic model was characterized by red tape, formalism and rigid rules. Its bureaucratic nature and top down decision-making approach causes it to become far distant from citizens 'expectations. Correspondingly, AL Habll (2011) stated that many scholars are arguing public administration as a field of control, control of people, control of inputs and outputs.

Also, the bureaucratic model focuses on procedural issues more than on what the process delivers. In other words, the model concentrates on doing things right 'rather than doing the right things'(Awortwi 2003). As a result, Weber's ideal type of bureaucracy which has been considered as the most important TPA model has faced criticisms for being ill-suited to contend with the tasks, purposes, and circumstances of the modern-day democracies(Olsen 2008). The bureaucratic model focuses on procedural is TPA was also considered as rule-bound, and indifferent to results, wasteful, inflexible, and unaccountable and unable to get along with economic efficiency and individual freedom. Consequently, it started to change in the mid-1980s into a market-based and flexible public management (Katsamunsk, 2012). Thus, due to the perceived weaknesses and combination of criticisms, TPA gave birth to the new model and a new paradigm which is known as NPM becomes reality.

Public Service Delivery: Philosophy of Welfare State

Actually, the concept is not very often defined, but a long definition provided by historian Asa Briggs would seem to grasp the spirit quite amply:

“A welfare state is a state in which organized power is deliberately used (through politics and administration) in an effort to modify the play of the market forces in at least three directions - first, by guaranteeing individuals and families a minimum income irrespective of the market value of their work or their property; second, by narrowing the extent of insecurity by enabling individuals and families to meet certain “social contingencies” (for example, sickness, old age and unemployment) which lead otherwise to individual and family crisis; and third, by ensuring that all citizens without distinction of state or class are offered the best standards available in relation to a certain agreed range of social services.” (Briggs 1961).

In short, the welfare plays an immense role to modify the impact of the market, by providing some sort of minimum guarantee (mitigating poverty); covering a range of social risks (security), and providing certain services (health care, child and elder care, etc.) At the best standards available.

Welfare states differ as regards the level of ambition and the mix between these aspects: Coverage may include a broad or a narrow range of risks and services, and at least it may alleviate poverty or aim at providing equality.

This philosophical tent of the welfare state benefits to understand how public services are planned, financed and delivered (Batley & Larbi 2004). According to Lane (2000), the redistributive state essentially gives prominence to the promotion of equality in income and wealth by addressing the recognized needs of the relatively needy members of the society. The redistributive state that mainly uses different policy instruments focuses on ensuring relative equity in both social and economic aspects. However, as Hughes (2003) argue, welfare states, at least in principle, work towards promoting service affordability and opportunities for those who may not have access and capability. From the perspective of public service delivery, as McLaughlin et al. (2002) argue, the public sector plays a dominant role throughout the process of planning, provision and evaluation of public services.

Giving the public sector relatively broader role, the welfare state philosophy argues that the state should vigorously allocate resources adopting policies that promote effective resource utilization (Lynn 2006). The historical foundation of the welfare state, which was based on the objective of improving the well-being of the poor and those with low income by providing them with specific goods and services, gave the state and its institutions a dominant role in public policy making, implementation and resource allocation.

The operational boundary of the welfare state was not exclusively limited to the poor and underprivileged segment of the society. Through time, the activities and interventions of the state expanded to those who were external to the scope of its coverage. Today, the welfare states and their footprints are available all over the world including

The developed countries. For instance, as Goodman (2007) argues social services such as health and education are provided through government subsidies in relatively affluent west Europe. Welfare philosophies are also guiding the process of policy making and implementation in many ways (Lane 2000). In its contemporary sense, as Walle and Hammerschmid (2011) argue, the intervention areas of the welfare state include health, education, housing, income generation and other social services.

In both developing and developed countries that pursue state functions based on welfare philosophies, the above services are provided to citizens either free of charge or at a nominal price. Though the specific financing mechanisms may vary among different states, the government plays a key role in the provision of social services such as health. According to Flynn (2007), the service charges that are collected from service users are used to subsidize the services for relatively poor citizens. This approach, which is referred to as cross subsidization is common in public service delivery including health services in which relatively capable segments of the society are charged higher prices and in order to subsidize services for the poor. This implies that profit generation, at least in principle, is not the objective of a welfare state. Under the strict application of the welfare state concept, market forces in general and profit maximizing private sector in particular play secondary role regarding public service delivery.

Criticisms of the welfare state

Scholars as well as policy makers are coming up with the recommendations of fundamental policy changes that question the feasibility of the welfare concept. Many scholars argue against the delivery of public service within welfare state framework has its own problems. According to Ehsan & Naz (2003), the administration of welfare services is not technically and bureaucratically easy. Among other things, financing public services through revenues collected by the government and attaining citizen satisfaction; ensuring the operational efficiency of the state machinery in terms of utilizing scarce public resources; and the equitable and adequate provision of public services with limited involvement of the users and non-state actors is an evident challenge for governments.

Similarly Lane (2000) affirms that governments in welfare oriented states shoulder the responsibility to provide basic economic and social services to the citizens which makes them bureaucratically and functionally complex.

The current social and political theory is skeptical of the future of welfare states in the face of global markets. Their moral claims to have been challenged by the neo-liberal association of market capitalism and individual freedom and by implicit acceptance of welfare state as bureaucratic.

One of the tenets of the Reagan-Thatcher revolution was questioning the welfare state. Some worried that the financial burdens of the welfare state would drag down growth. Some worried about the effect of the welfare state on the sense of individual responsibility, others that the welfare state provides the opportunity of the lazy and profligate to take advantage of hard working citizens.

Current social and political theory is skeptical of the future of welfare states in the future of the welfare states in the face of global markets. Their moral claims, too, have been challenged by the neo-liberal association of market capitalism and individual freedom (Holmwood 2000).

According to Quaye (2010), the welfare state primarily focuses on ensuring equity in public service delivery by financing them through its own means including taxes and other methods such as insurance and revenues from public enterprises. The common challenges of the welfare

state and its approach to service delivery can be resolved by looking for other approaches. On the one hand, policy makers are triggered to find alternative policy provisions, institutional arrangements and legal frameworks to overcome the challenges and simultaneously promote the welfare objectives.

Hence the policy agenda is how to lessen the burden of government while effectively discharging its welfare responsibilities. For Ramani et al. (2008), the size of the public sector and the magnitude of its responsibilities for providing the ever expanding public services is questioned with recommendations to introduce further reform measures. The idea of introducing market concepts through reform in public service delivery, as discussed in the next section, is attracting the attention of governments.

2.2.2.2 New Public Management (NPM): Philosophy of Market and Competition

As stated by Persson & Goldkuhl (2010), NPM is an approach adopted by governments to restructure their bureaucracies in order to provide effective and efficient services to citizens. For Hughes (2003), NPM encompasses a wide range of techniques and perspectives that are intended to overcome the inadequacy and inefficiencies inherent in the traditional model of public administration.

Androniceanu A. (2007) defined NPM as a vision, an ideology or a bundle of a particular management approaches and techniques where many of them are borrowed from the private sector. The starting point is that traditional bureaucratic structures of the 20th century and its rigid and bureaucratic nature became too cumbersome for the new era of instant communication (Chipkin & Lipietz 2012).

NPM favors decentralized administration, discretionary authority, contracting for goods and services, and bringing into play market mechanisms of competition and customer service to improve performance (Hood 1995) As stated by Persson and Goldkuhl (2010), NPM is aimed at achieving accountability through the measurement of outcomes in preference to inputs and processes. In a similar manner, Pfiffner (2004) stated that provision of discretionary authority to managers to manage and use their judgment is necessary if they are to be held accountable for their performance.

Origin of New Public Management

As indicated by Homburg et al. (2007), the NPM movement began in the late 1970s and early 1980s. It emerged out of Thatcherism in Britain and Reaganism in United States of America (Philip & Daganda, 2013). Likewise, its first practitioners came into sight in the United Kingdom under the then Prime Minister Margaret Thatcher, and in USA. Subsequently, Governments of New Zealand, Australia and the OECD countries began to follow (Gruening 2001). As stated by Hood (1991), the subsequent adoption of NPM by an increasing number of countries across the globe has been described as one of the most striking international trends in public administration. Hughes (2003) also noted that at the outset a variety of names was given to the new line of thought including managerialism, new public management, market based public administration, the post bureaucratic paradigm or entrepreneurial government. However, the literature has essentially chosen NPM, a term coined by Christopher Hood.

In elucidating the origin of NPM, Hood (1991) uses the metaphor of it being a —marriage of opposites or the product of two different streams of ideas. To be precise, it is the combination of the new institutional economics and business type managerialism (Kalimullah et al. 2012). This implies that the use of market mechanisms in public service delivery and the use of management techniques are the core of NPM idea.

As stated by Lane (2000), NPM is part of the managerial revolution that has been undertaken around the world, affecting almost all countries including developed and developing to a different scale of influence. It is a wide-ranging event that breaks away from the autocratic and traditional paradigm of public administration to market oriented approach to management (Hood 2000, O'Flynn 2007). According to Hood (2000), rigid hierarchy, more emphasis to process and input rather than result, professionalism rather than managerial orientation, an insulation of public from private management, absence of business values and techniques are considered as some of the attributes of TPA. Nonetheless, out of the several research works related to public management, no more than TPA and NPM are succeeded in imposing paradigms by influencing public administration in numerous countries (Petrescu et al. 2010).

NPM is the theory of most recent paradigm change in how the public sector is run and managed (Lane 2000). As stated by Bouckaert (2011), it is a premeditated change to the structures and

processes of public sector organizations with the intention of getting them better than TPA style of doing things by the book. The rise of NPM is one of the most notable international developments in public administration (Hood 1991). Similarly, Meiri (2008) argues that these days, NPM represents an approach in public administration with the objective of acquiring and integrating knowledge and experiences in business management and other disciplines for betterment of public agencies' performances.

Also, economic and fiscal pressures on governments, public attitudes and mounting criticisms on the ineffectiveness and inefficiencies of public services, the revival of new right politics in the late 1970's and 1980's, the propagation of management ideas, donor assistance and lending conditions particularly in developing and transitional countries mainly by IMF and World Bank and the spread of global market are the important factors that trouble public administration to make reforms in the past (Larbi 2003).

As noted above, one of the most important factors for the emergence of NPM has been the historical shift in state ideology since the late 1970s in advanced capitalist nations toward a neoliberal line of thinking. This neoliberal line of thinking also contradicts with the welfare state. It advocates small government, doubts the capability of governments in the provision of public goods and services effectively and efficiently, blames public bureaucracy, believes in private sector superiority and market mechanisms and competitions Hughes (2003) expressed that NPM sought to replace the rigid, hierarchical, bureaucratic form of public administration that predominated for most of the twentieth century to a flexible, market-based form of public management. According to Hughes, NPM tried to oust the TPA and widely accepted as —a new paradigm by many OECD countries and countries such as Australia, Canada, the United Kingdom and New Zealand.

Also, Liou (2001) argues that before NPM, demand driven public agencies defined success by how much money was budgeted, how many people were employed, and how many programs or activities were funded but now a result driven government defines success by what effects or consequences the budget has. As a result, the change has brought differing standards such as result oriented management, performance management, total quality management, entrepreneurial management, and even reinvention of government.

NPM is still working and will continue to be a major force in the future though some are declaring it as dead. According to the latter's view, the intellectually and practically dominant set of managerial and governance ideas regarding NPM for the last few decades have basically died (Dunleavy 2005). Contrary to this, the major argument is that NPM has proven successful and has spread all across the world and it would be difficult to turn around many of the NPM reform measures. Moreover, further spread of NPM is predictable either within countries that have preferred and implemented NPM passageway or from these countries to others, who were reluctant to accept it (Laegreid 2011). Therefore, it is reasonable to argue that NPM is still functioning in many countries, and NPM led reforms have normally not been replaced by new paradigm but revised and supplemented by post NPM reforms.

Major Elements of New Public Management

NPM and TPA are not alike in many ways. Despite its fabulous appeal, TPA has failed to take some indispensable environmental forces into consideration (Kalimullah e al. 2012). As a result, NPM steps forward in response to these environmental forces that many governments have encountered in the past (Naz 2003). NPM is understood as an approach or method for correcting the perceived weaknesses of bureaucratic public administrations (Hood 2000).

As stated by Larbi (2003) and Ohiole and Ojo (2015), various ideas and themes of NPM can be categorized broadly into two groups. On the one hand, there are ideas that are derived from managerialism which emphasize management in government including management decentralization, disaggregation and downsizing of government, creating flexible organizational structures and systems, and giving managers more freedom to manage. On the other hand, there are ideas emanating from new institutional economics that accentuate markets and competition as a way of giving choice and voice to users and promoting efficiency in service provision.

Doctrinal Components and Rationale of New Public Management

Important highlight is given about the major reasons for the emergence of NPM in the preceding sections. Nevertheless, the very rationale of NPM and its doctrinal components are explicated in detail in subsequent paragraphs.

Many authors agree that NPM is come about because TPA does not work under present-day conditions. As stated by Kalimullah et al. (2012), fiscal crises, poor performance of the bureaucracy, lack of accountability in public organizations, and wider spread of corruption have given the emergence of NPM. According to these scholars, NPM emphasizes small and better government, decentralization and empowerment, customers ‘satisfaction, promote better mechanisms of accountability and the development of institutions. Nevertheless, TPA gives more importance to Max Weber’s bureaucracy (Awortwi 2003, Lane 1995, Pfiffner 2004).

Similarly, Hughes (2003) stated that TPA lacks flexibility and fails to provide effective and efficient public services. The difference between the two forms of organization is between choice and compulsion. NPM is allowing the market to find an agreed result while TPA does not. Generally, NPM have been declared as both necessary and successful (Pollitt & Bouckaert 2002).

Rationales for the emergence of NPM and its doctrinal components as stated by Hood (1991) are elucidated at greater length below table 2.1.

Table 2.1 Doctrine and rationale of NPM

No.	Doctrine	Rationale
1	Hands- on professional management‘ in the public sector	Accountability requires clear assignment of responsibility, not diffusion of power
2	Explicit standards and measures of performance	Accountability requires clear statements of goals; efficiency requires hard look at objectives
3	Greater emphasis on output controls	Need to stress results rather than procedures
4	Shift disaggregation of units in the public sector	Need to create manageable units, separate provision and production interests, gain efficiency advantages of use of contract or franchise arrangements inside as well outside the public sector
5	Shift to greater competition in public sector	Competition as the key to lower costs and better standard
6	Stress on private-sector styles of management practice	Need to use proven private sector management tools in the public sector
7	Stress on greater discipline and parsimony in resource use	Need to check resource demands on public sector and do more with less

Source: Hood (1991).

As it is acknowledged above, the original specification for NPM model was distinguished by Christopher Hood's 1991 article —A Public Management for all Seasons, who considers NPM as comprising seven core inter-related components (Hood 1991). Hood's seven principles of NPM are explicated in the upcoming paragraphs.

The first element of NPM is the introduction of professional management. This means —active, visible discretionary control of organizations from named persons at the top, free to manage because accountability needs clear assignment of responsibilities and duties for action (Hood 1991). In accordance with this principle, people who are implicated with Public service delivery should be prudent and proactive managers rather than knee-jerk administrators, who are waiting and receiving instructions from others. Hence, modern public managers should have discretionary authority in decision-making within their boundary of responsibility. Unlike TPA, which functioned in conformity with established rules and regulations, and implemented the policies of government with little or no discretion and with no direct responsibility, management under NPM lies at the core of public sector functions, and professional managers are conceived as the key to improve public sector performance. It emphasized that those who hold positions should be given substantive responsibility for management. The typical justification is that accountability requires clear assignment of responsibility for action, not diffusion of power.

The second aspect of the reform is explicit standards of performance. NPM brings rigorous measures of performance to public sector organizations. Subjecting public managers to performance evaluation and introducing disciplinary mechanisms which oblige public sector bodies to focus on their specific responsibilities and carrying out those tasks efficiently and effectively are elements of NPM. This requires goals to be defined and performance target to be set and it is justified by proponents as accountability requires a clear statement of goals; efficiency requires a hard look at objective.

Third, the adoption of an output controls was greatly emphasized under NPM. In the past, public sector organizations often failed to worry about their outputs and their main focus was on input and process. However, in NPM, the focus is shifted to results. As stated by Pollitt (2003), this shows a shift in the focus of management from inputs and process orientation towards outputs

and outcomes. Likewise, Hood (1991) affirmed that resource allocation and rewards are linked to measured performance.

Fourth, NPM gives emphasis to the disaggregation of public sector units. This involves the breaking up of large entities into corporatized units around products, funded separately and dealing with one another on an arm's-length basis. This is justified by the need to create manageable units and to gain the advantages of achieving efficiency.

Fifth, greater competition in public service provision is also one among the important elements of NPM. The justification for the adoption of NPM was the argument that the Bureaucracies were inefficient and self-interest focused. Hence, markets were promoted as an approach that would eliminate these flaws through competition (Newman 2005). Two central arguments within the public choice approach are, the market, not government is the best allocator of resources; individuals are the best judges of their own welfare. As such, market disciplines are brought into the public sector believing that threat of competition and rivalry among providers fosters efficiency in service provision and choice for the customer. The implication is that service providers will improve the quality of service and lowering price with better standards (Hood 1991).

In addition to NPM elements stated above, private sector styles of management have also been taken as the six-main focus of NPM. An important theme within public management is that the public sector should seek to behave in a more business-like approach. The underlying principle behind this argument is that efficiency of public service provision is enhanced when a public-sector agency conducts its affairs in accordance with business principles. Finally, greater discipline and economy in resource use is taken as the seventh important element of NPM. Public service agencies must pay much greater attention to the use of financial and human resources at their disposal. The emphasis in NPM is much on lowering cost and better quality.

Criticisms of New Public Management

In spite of its expansion across the globe, a number of criticisms have been made on NPM. Paradox of **centralization through decentralization** was one of the criticisms of NPM. As Mongkol (2011) has expressed, giving public managers more authority to manage programs may result in concentration of decision making power within them. As a result, this may lead to

centralized decision-making power by people who are entrusted with Public managerial positions instead of reinforcing decentralizations.

The application of **private management techniques in the public sector is the second criticism**. The body of knowledge which was imported from the private sector was contested. TPA stream argue that NPM is simply the superficial adoption of some features of private sector management though advocators view NPM as a new way of Looking at and carrying out management functions within the public sector.

The private business model has been criticized on the ground that public sector is different from the private sector (Yamamoto 2003).As noted by Atreya and Armstrong (2002), public and private sectors are different; therefore, theories of the private sector are not relevant to the public sector. As these authors contend, the important difference is their objective. The private sector is profit oriented; whereas, the public sectors are service oriented with the objective of ensuring social equity. Likewise, Mongkol (2007) argues that areas of public services and administration have distinct political, constitutional, and social dimensions. According to these scholars, these dimensions make public sector dissimilar from the private sector.

Private sector practices are rarely adopted in government operations. These researchers further maintain that NPM is unfitting to the public sector as it has more complex objectives, multifaceted accountabilities, and unsettled political environment. Hence, these make NPM defective.

The third criticism of NPM involves ethical issues. For Bovaird and Löffler (2003), discretionary authority or freedom of management within public sector organizations provides more opportunities for unethical behaviors. Correspondingly, Hughes (2003) accentuates that contracts with governments are kept secret for reasons such as commercial research. Consequently, transparency is lacking in terms of practice.

The preceding section briefly discusses TPA, NPM and the basic differences that exist between them. The consecutive sections, however, focused on reviewing literature on accountability and ethics. It also explicates the analytical framework used in the study.

Specific criticisms of NPM in developing countries

Eight specific criticisms of NPM in developing countries can be identified in the literature. *Firstly*, Polidano (1999) argued that the NPM does not suit developing countries since governments in these countries may lack the necessary expertise and have unreliable information systems. Caiden & Sundaram (2004) noted along the same line that developing countries have lacked the resources and managerial capacity to adopt rather sophisticated NPM reforms. Thus, it can be said that a state's capacity is a precondition for successful implementation of NPM in developing countries (McCourt 2001, Monteiro 2002, Bale & Dale 1998).

Secondly, while the NPM principle of decentralization has diffused from rich countries into developing countries, governments in developing countries often retain centralized decision making. Leading public managers still have authority to make all decision within their organization. This centralized decision making can generate its own pressure for arbitrary action and corruption (World Bank 1997). A supporting view is provided by Polidano and Hulme (2001) who claims that public management in developing countries is afflicted by corruption and nepotism and that such practices may hinder NPM implementation. NPM may not be useful for public sectors in developing countries that have been greatly affected by corruption (Bale and Dale 1998).

Thirdly, it is claimed by various scholars such as Batley and Larbi (2004) that NPM is based on applying market principles into public policy and management. However, Hughes (2003) argued that developing country governments often have only little experience in the operation of markets. Basic infrastructure of management in developing countries is also not developed enough to support market-oriented reforms (Barker, 2006). Moreover, there are various factors which are required before the market can be effective. Hughes (2003) pointed out that markets are ineffective without the rule of law, for example, to ensure compliance with contracts. Yet it could be argued that many people in the developing world are natural traders with a history of commerce lasting for many centuries and that these instincts were stifled during the period of command economies. But, until capital markets develop or domestic entrepreneurs arise, a market economy may mean greater domination by foreigners and foreign corporations.

Fourthly, Hughes (2003) argued that it is difficult for the government in developing countries to move to contractual arrangements for the delivery of service because the necessary laws and the enforcement of contract are not well established. If informal norms have long deviated significantly from formal ones (with regard to personnel practices, for example), simply introducing new formal rules will not change much. Where specialized skills are in short supply, performance contracts and other output based contracts for complex services may absorb a large share of scarce bureaucratic capacity to specify and enforce them (World Bank 1997). It seems difficult for developing countries to move away from the bureaucratic system. Hughes (2003) pointed out that this old model of organization allows favoritism and patronage.

Fifthly, as mentioned earlier, an aspect of NPM that useful for one developing country might not be useful for other developing countries. Turner and Hulme (1997) have explained this when writing about efforts to impose standardized reform package in the 1990s. They pointed out that whatever the reasons-naivety, historical and environmental blindness, or ideology a powerful international lobby is promoting a 'one size fits all' approach to public sector reform in spite of the evidence accumulated from organizational and management theory and from empirical study that the outcomes of planned changes in organizations are conditioned by many contingent factors, especially those in the organization's environment. In some contexts, the NPM may yield its promised benefits, but in others the possibility of it contributing to reduced performance and even political instability must be recognized. Therefore, Bowornwathana (1995) claimed that when developing countries borrow an NPM technique from rich countries, they must understand the details of the borrowing, consider if it is appropriate to circumstances in their countries and make decision accordingly.

Sixthly, another explanation for the inappropriateness of NPM involves public expectations of government in developing countries. Manning (2001) indicated that public expectations of government in those countries are different from those found in OECD countries. He contends that 'public expectations of service quality from government in many developing countries are justifiably low, with the consequences that citizens are unlikely to feel that complaints are worth the effort' (Manning, 2001). It is difficult for developing countries to succeed in implementing NPM unless citizens in developing countries are motivated to complain about their local service.

Seventhly, Schick (1998) criticized the introduction of performance-based mechanisms of accountability by pointing to the existence of a sharp dichotomy between the formal and informal rules of the game in developing countries and the predominance of the informal realm which is non-bureaucratic. He argues that the rules which actually guide people's behavior may be different from those which are written down.

Therefore, contractual mechanisms of accountability may have little impact since they are in the formal realm. A classic example of informality subverting contractual Mechanisms in Ghana is provided by Christensen and Laegreid (1998).The country attempted to improve the performance of its state-owned enterprises through contracts which proved ineffectual, owing, among other things, to the political connections of managers.

Finally, the NPM commitment to privatization may be difficult to manage in developing countries because those countries may not have the administrative capacity to undertake this complex task successfully (Haque 2005, World Bank 1995). Moreover, there are circumstances in which privatization will inevitably mean foreign ownership or ownership by one particular ethnic group which may cause a risk of societal cohesion (Hughes 2003). An example of failures in privatization is provided by the World Bank (1995). Guinea privatized 158 public enterprises between 1985 and 1992, but this change proceeded without a clear programme or legal framework; procedures for competitive bidding and accounting were not made clear; assets were often sold for much less than their value; and successful bidders were offered terms which sometimes included monopoly licenses and the like.

In developing countries, Manning (2001) noted that rather than a single option, NPM provides a menu of choices. NPM is compared to a menu of techniques and developing countries are experimenting with some items on the NPM menu (Andrews 2003, Batley & Larbi 2004, Caiden & Sundaram 2004; Turner 2002, Polidano 1999, Manning 2001, Schacter 2000).However,NPM has not yet become the only public management paradigm in developing countries since the organizing principles of bureaucracy have not been substantially replaced by the market based principles of NPM. Manning (2001) emphasized that most government functions in developing countries are still executed by vertically integrated bureaucracies.

2.3 NPM Type Health care service reforms

Senkubuge et al. (2014) defined health sector reform as ‘sustained, purposeful changes to improve the efficiency, equity, and effectiveness of the health sector. However, health sector reform is not a concept that demands a single global definition. Based on the definition above, by ‘fundamental’ change, the reform should be ‘purposeful’; therefore elements and components of the reform need to have been developed in a rational manner. Third, the reform should be ‘sustainable’. Most fundamental changes will be sustained because they involve significant transformation of systems and the creation of actors who will defend their new interests in the political process. The objective is to ‘increase the efficiency and effectiveness with which health systems reach the poor and disadvantaged. Given the complexity of health system reforms, there is a need for a more coherent approach to change that includes a deeper understanding of the contexts of reforms.

Similarly Olson (2012) indicated that health sector reform is more than just any improvement in health or health care. Health care reform is principled on purposeful change in the sense of improving a nation’s wellness. On the other hand Feldman et al. (2012) emphasized that health care reform requires a thorough thinking of the best processes to achieve speedy and effective health related services and goods, identifying delays and unnecessary steps for potential errors, and redesigning the process to remove the gaps and dramatically improve the quality of care.

To put it differently Ghosh (2014) described health service reform as a gradual process that resulted in significant changes in the formation and delivery of health care services and health care financing. Health care reform in this study implies coordinated measures undertaken in health care policies, systems, or strategies to improve public health care provision quality and efficiency.

Public hospitals are among the major health care facilities in which the health care reform measures are taken place. The following part presents a brief account of the why and how health care reform in general and hospital reform in particular was undertaken.

2.3.1 Why Health Sector Reform?

Since the late 1980s, many developing countries including Ethiopia have initiated efforts to improve their health systems. A number of factors prompted these efforts: the movement from

state-controlled economies to market-oriented economies; insufficient funding for health in times of financial crisis; the lack of basic health services for many citizens; and the poor quality, low accountability, and inefficiency of existing health services. To address these issues, many governments launched health sector reforms, which are intensive long-term efforts to strengthen and improve health systems and, ultimately, improve the nations' health.

But all reforms have been driven by a combination of external and internal agencies. Multilateral aid and bilateral aid often entail conditionality's that require a (commitment to) change in governmental behavior before money can be transferred. In turn, national planning commissions and ministries of finance require line agencies to adopt reforms that may include a combination of these generations.

Public service reform in developing countries can be ascribed to many factors. Governments in developing countries recognize that only efficient and effective public administrative systems provide valuable support for economic development:

An established public administration has been vital to economic development. The enormous economic success of the East Asian New Industrial Countries is not simply the triumph of the market but is also the result of strong state institutions considered the main instruments of effective governance (UNDP 2005c).

Similarly Caiden (1991) stated that the implementation of reform measures is basically about inducing changes in power relations between state and society, between politicians and bureaucrats, and between government organizations. Thus, the mechanisms through which public sectors are reformed to go to the heart of who governs.

On the other hand many argued that developing countries are pushed by various forces to take reform measures. According to Batley (1999) implementation of reforms are pushed by both internal and external forces. The balance between them varies among countries, but generally donor influences are pronounced. Due to the inherently political nature of reforms, they typically result in conflicts and often lead to intended and unintended consequences and the gap between stated objectives and reality is substantial.

Most compelling evidence which supports the argument of Batley is the work of Pakinaz (2010). He stated that international development agencies including IMF, World Bank, and African Development Bank placed conditions for forwarding credit, in the form of restructuring the public service and decentralization.

Accelerated development in sub Saharan Africa was the major economic conditionality of the 1980's reform measures. Similarly World Bank/IMF sponsored SAP (structural adjustment program) was heralded in early 1990's as a political conditionality. Moreover multinational and bilateral institutions like UNISA (United Nations special initiative for Africa) and SAPRI (structural adjustment program review initiatives) placed undertaking reforms to ensure good governance as a precondition for aid provision for African countries.

However the manner in which health reform was imposed by donors, as conditionality's for aid release, gave little room for domestic sovereignty in health issues. Health reform was a clear example of coercive policy transfer, where lessons and strategies were transferred involuntarily from one institution or country to another (Dolowitz & Marsh 1996). With increased globalization policy transfer is becoming an even more important phenomenon and calls into question who actually drives health sector policy in Africa.

As Frenk et al (1997: 1404) note:

“Nations no longer represent truly independent sovereign countries. New global forces have eroded national borders, facilitating the transfer of goods, services, people, values and lifestyles from one country to another”.

The substance of the above discussion is that public service reform measures including health service are being taken by developing countries for two major reasons. First the existing model of public administration does not seem to work hence reform is a must in all public service provider entities including public hospitals (as internal requirement). The reform measures are expected to deliver positive outcomes in the form of providing valuable support for economic development, sustainable human development, in mitigating and eradicating weakness of the existing systems. Second international financial institutions and development assistance agencies placed reforming the public sector as a precondition for financial support and development aid (as external requirement).

In tandem with the above argument Berer (2002) indicated that many developing countries undertook three wave of reforms. These generations of reforms, of course, are overlapping rather than strictly sequential.

The first wave of reforms encompass adoption of structural adjustment packages (SAP) mainly imposed by World Bank and the International Monetary Fund (IMF) in an effort to improve their macroeconomic stability. Many governments struggled with this imposed restructuring of their economies and their shrinking resource base. Measures included downsize the public sector as it was believed to be bloated and therefore in need of surgery, followed by a strictly enforced diet. Austerity conditions reduce the availability of social services. One of the most common criticisms of SAP supported programs is that, in the drive to cut budget deficits, education and health spending suffer, thus hurting the poor (World bank 1997).

It soon became evident that the transformation of government would require a long period of time and that the savings from reduced bureaucratic costs would be insufficient to provide even basic levels of public services. Therefore this prompted countries to consider new mechanisms of organizing, financing and providing health care services (Gilson & Mills 1995, Hotchkiss et al. 1998, Collins et al. 1999).

A second generation of public sector reforms then sought to improve the efficiency and effectiveness of government. While the first generation reforms stressed downsizing, contracting out and improved control over budgeting and public expenditures, the second generation reforms advocated decentralization to sub-national levels, the creation of semi-autonomous agencies in the central government, and reforms of human resources management (including recruitment, selection, training and performance).

At the same time, it was clear that health system change was overdue. Many health systems were diagnosed as being highly centralized, inefficient, and unresponsive to the needs of clients, biased towards hospital care and primarily benefiting the better off (Mills et al. 2000). Health care service reform supporters viewed it as being primarily concerned with improving health sector performance (Maynard & Hutton 1992, Berman 1995) in that it aimed to achieve “sustained purposeful change to improve the efficiency, equity and effectiveness of the health sector (Murray 1995) and this initiates the third generation of reforms.

Yet, it is not at all clear that the medicine proposed was the most appropriate to the problems of the health sector in Africa. The underlying ethos of the health sector reform approach was that of “new public management”: that governments move back from being a direct provider to being a policy maker, contractor of services and regulator of performance (Mills et al. 2001). The role of the state was rethought (Berer 2002) with more emphasis on utilizing decentralized governance and market forces to address existing inefficiencies and improve responsive.

2.3.2. How Health Sector Reform?

Health sector reform may involve a number of strategies, policies, and interventions designed to strengthen the health system so that it can better achieve public health goals. Countries’ approaches to health sector reform vary widely: Some governments implement sweeping reforms, while others enact narrower changes. Most reform measures can be grouped into three broad categories i.e. financing changes, organizational and policy changes. These three typical reform measures are briefly presented below.

I. Reforms in Financing

Health sector reforms generally address questions about how funds are to be raised and allocated to pay for health care for the population. Many health systems are plagued by overall resource constraints as well as poor allocation of funds; some relatively well-off households consume more than their share of scarce public resources. Increasingly, policymakers in developing countries are basing decisions about financing and resource allocation on evidence about how much is spent on health, who pays, and who benefits from health spending.

The scope of financing reform covers both the raising of revenue and its subsequent allocation (Leighton 1995). Issues around the generation of resources deal with the adoption, amendment or removal of taxation-based financing, out-of-pocket payments; private health insurance, social health insurance and community prepayment schemes (Thomas 2003). In particular, the HSR movement has emphasized out-of-pocket payments and community prepayment schemes as important sources of funding. The effect of this has been to transfer health costs away from government to households.

Increasing the reach of the market in HSR also means transforming the role of patients. For example, user fees were heralded as a means to promote consumer empowerment in the health sector. Given that households are now paying directly for health at the point of contact, they are assumed to have more power to insist on appropriate and effective treatment. However, this approach ignores that there are substantial information and knowledge gaps for patients seeking health care (McGuire et al 1994). “Empowered” but uninformed consumers can undermine effective treatment through requesting unnecessary treatment.

Out-of-pocket payments include both user fees for public sector services and payments to private providers at the point of contact. Proponents of public sector user fees argue that they can both improve financial sustainability and referral patterns and dissuade consumers from unnecessary use of services (Akin et al. 1987, Shepard & Benjamin 1993, Kutzin 1995). Such arguments have been challenged by others who maintain that, in practice, the cost recovery potential of user fees is limited without associated administrative reform. Further, equity often suffers, especially through the failure of adequate exemption policies.

Community Prepayment Schemes encompass provision of community members with the opportunity to give a flat payment in advance, in return for free or reduced cost health care if they fall ill. It can be useful in protecting communities against catastrophic costs of care and cash constraints due to seasonal income (Smith B. 1994). Nevertheless, it often requires high local motivation of communities and there are precious few examples of schemes which have been replicated country-wide.

The other component of health financing reform relates to the allocation of resources to, and across, health sector activities (Leighton 1995). Indeed, a popular reform in recent years has been decentralization of spending and, less frequently, of revenue-raising powers to sub-national levels of government (Brijlal et al. 1998). Proponents argue that this may make the allocation of resources more efficient as sub-national levels of governments are likely to be more responsive to local needs (Tiebout 1961). Nevertheless, decentralization may threaten the equity of resource allocation across geographical populations.

According to the principle of Pareto optimality the maximization of social welfare requires increasing efficiency of health expenditures, avoiding resource wasting, and aiming to achieve

welfare maximization situation (Preker A. et al. 2000). In line with this argument health care reforms are expected to contribute to the achievement.

Economic realities affect not only the types of policies that are implemented, but also the reaction to them by the users, beneficiaries and citizens. The stage of raising revenue through the introduction of user fees in order to supplement government budgetary resources was critical for many governments because of the endemic economic crisis. But the success of the policy, no matter how logical in theory, was constrained by the dwindling capacity of the poor to pay for health care. And the transaction costs of administering the fee system often exceed the revenue collected.

II. Reorganizing the health sector

In reorganizing the health sector, emphasis has been placed on changing the role (and power) of central government through decentralization of services to lower levels of government and through contracting out services to the private sector. Decentralization of governance to lower levels of the health system was encouraged to promote local ownership, responsiveness and efficiency of resource use, (Brijlal et al. 1998).

However, there is little evidence to support that this has actually occurred, Contracting out of services has been done to improve efficiency through increasing competition and market forces in key areas, typically in relation to support services, such as laundry and catering. Evidence for the realization of efficiency gains is hard to find. However, there has also been interest in using private sector companies to conduct social marketing in relation to family planning.

Organizational changes try to overcome weak management structures and a lack of performance incentives in the public sector which was mainly embedded in TPM. Typical reform measures undertaken to overcome loopholes of TPM includes decentralizing authority, promoting public-private partnerships, and integrating services.

A. Decentralization

Perhaps the most common organizational change under health sector reform has been decentralization the transfer of decision making authority and management from higher levels of government typically from central agencies—to agencies at the regional, provincial, or local

levels. Any number of responsibilities may be transferred, including planning, finance, human resources, service delivery, operations maintenance, and information management. Decentralization is not an all-or-nothing proposition: For example, the central government could retain the responsibility for purchasing commodities such as contraceptives, while local entities manage personnel and services. In many countries, governments have decentralized all development sectors, not just health. The basic argument for decentralization is that local organizations are in the best position to respond to service users' needs, as client-centered care demands.

B. Public-Private Partnerships

Health sector reform recognizes that the public and private sectors have separate but complementary roles and tries to make the best use of their comparative advantages. There are many possible sources of health care funds, both public and private: general taxation, payroll taxes for social health insurance, and contributions to private or community-based insurance, and direct out-of-pocket payments from clients to providers. Most countries rely on a combination of public and private sources that are then used to pay for health services from a variety of public and private providers, such as the ministry of health, non-governmental organizations (NGOs), private doctors, and traditional practitioners.

C. Integration of Service Delivery

In the pre-reform years, public health services such as family planning, immunization, and tuberculosis prevention and treatment were typically provided through stand-alone, “vertical” programs that rarely coordinated their efforts or pooled resources with other services. Combining separate health services into a single restructured system has been a key initiative in health sector reform. In principle, such a combination can improve services and reduce costs by putting the same infrastructure, equipment, supplies, and personnel to multiple uses. In addition, patients are likely to seek several services at each visit. Integration can improve overall efficiency, but it can also lead to a loss of focus on certain services—such as reproductive health—because providers must spread their time and resources over a wider range of health services.

II. Policy Change

At the policy level, reform measures include setting priorities and providing oversight, as well as changing laws and regulations. The government's role in health sector reform is to set the vision and direction for the health system, outline priorities, and create policies to achieve its vision. Whether or not the government provides services directly, it plays a critical role in regulating the health sector. The legal and regulatory reforms that often accompany organizational reforms involve making rules to govern behavior and ensuring compliance from all actors in the health system.

Hence many developing countries exercised a policy change that emphasis on the delivery of primary helath care service or package of benefits. In terms of the package of benefits, the HSR movement emphasized an essential package of basic health services. The essential package picks up on the idea of selected primary health care (PHC) interventions as the only route affordable within developing country contexts. This stands in opposition to the comprehensive CHC approach as set forth in the Alma Ata declaration (Werner & Saunders 1997).

The interventions chosen to be part of the package are those which address the main burdens of disease in a country and are the most cost-effective. These alone, it is proposed, should be funded by government. By implication, this leaves other health care to be funded by households with a larger role for the private sector in provision of such services.

2.3.3 Unique features of health care service

The effectiveness of the provision of health care requires understanding of some unique characteristics of the services and its market which make it different from usual commodity markets. Among many the unique characteristics of health care service include the **first** and most distinguishing characteristic of the demand for medical services, is that by nature, it is not steady in origin, but irregular and unpredictable. Apart from preventive services, medical services afford satisfaction only in the event of illness. **Second** Medical services demand, is associated, with a considerable probability with an assault on personal integrity, some risk of death or a considerable risk of impairment of full functioning. Illness is not only risky but a costly risk, apart from the cost of medical care. Health care services have to be produced only at the very instance when a need emerges, otherwise they can be useless. **Third** The expected behavior of

the Physician as a seller of medical care, is different than of businessmen in general, because medical care belongs to the category of commodities for which the product and the activity of production are identical. The customer, cannot test the product before consuming it and there is an element of trust in the relation. **Fourth** Advertising and over price competition, is virtually eliminated among physicians. Advice given by physicians, is supposed to be completely diverged from self-interest, dictated also by the objective needs of the case and not limited by financial considerations. **Fifth** Uncertainty as to the quality of the product, is more intense here than in any other important commodity, because the recovery from the disease is as unpredictable as is its incidence. Due to the complexity of medical knowledge, health care market tends to be characterized by both imperfect information and asymmetric information. In such a situation, those on one side of the transaction have better information than those on the other.

As a possible consequence of the aforementioned points a market will not exist and even if it exists, it will function inefficiently. Related to the above, is the phenomenon of supplier-induced demand, where health care providers have and use their superior knowledge to influence demand for self-interests. Supply conditions differ also compared to other sectors, due to the entry barriers such as the licensing restricting the entry to the profession, aiming to guarantee the quality, as also the high cost and time consuming of medical education, facing on the other side monopoly power conditions. There are also limitations in the subsidized education aiming to reduce the cost. Such factors increase the cost of health care services. Unusual practices by medical professionals in pricing of their services is also common, because they have traditionally held some monopoly power over their clients.

Therefore market forces alone fail to secure equity, since individuals and families often fail to protect themselves adequately against the risks of illness and disability on a voluntary basis, due to short-sightedness (free-riding) (Preker A. et al. 2000).

Ethiopian context

Ethiopia in general and Addis Ababa city in particular has reformed its health care service for the past two decades and all of the aforementioned components of reform are reflected. The health care reform basically focus on primary health care service which is in the package of benefits,

the health care financing reform of Ethiopia is also one of the components discussed, decentralizing the health care service and an attempt of enhancing consumer demanding behavior through introduction of user fees is another component of reform.

2.4 Hospital performance assessment

Hospital roles and functions vary considerably across countries according to history, governance model, and ownership—but existing definitions or classifications systems fail to account for this diversity. A 10-bed building without running water in a Siberian village, an Ethiopian district hospital near the outskirts of Addis Ababa , and a major united kingdom tertiary facility in London all qualify as hospitals yet provide a vastly different range of services.

Though no consensus exists on the definition of a hospital, this study uses the standard promulgated by American hospital association (2014). The association defines hospital as a health care facility that provides inpatient health services with at least 10 beds and operates with continuous supervision of patients and delivery of medical care, 24 hours a day, and 7 days a week.

According to CGS (2015) hospitals are central to building and maintaining healthy populations around the world. They serve as the first point of care for many, offer access to specialized care, and act as loci for medical education and research, and influence standards for national health systems at large. Yet despite their centrality within health systems, hospitals have been sidelined to the periphery of the global health agenda as scarce financial resources, technical expertise, and political will instead focus on the expansion of accessible primary care.

Public hospitals are a significant component of health systems in many developing countries. Generally responsible for 50 to 80 percent of recurrent government health sector expenditure (Barnum and Kutzin 1993), public hospitals utilize nearly half of the total national health expenditure (Mills 1990). In many African countries the bulk of hospital spending is tied up in one or two major urban hospital facilities. These hospitals consume a large amount of scarce resources. Health care reform is an ongoing reality in developing countries including Ethiopia. The health care reform measures in general and hospital reforms in particular are undertaken with the objective of improving the quality of health care provision, accessibility and maintaining efficiency while providing health care services. Therefore measurement is central to

assess whether the reform has brought improvement in terms of both health quality and efficiency.

Papa Nicolas & Smith (2010) indicated that performance information is essential in assuring the health system's ability to provide improved health to its population. It serves many different purposes, including the promotion of transparency and accountability, determining appropriate treatment for patients, facilitating patient choice, managerial control and policy making. Performance information also takes into account health facilities performance measurement which is defined as a mechanism for measuring performance by clinicians, hospitals, health plans and others who deliver care to patients, weighing quality of care and in some cases, both quality and cost of care (ACP 2011).

Hospital performance is also referred as the achievement of desired goals. High hospital performance should be based on professional competences in application of present knowledge, available technologies and resources; efficiency in the use of resources; minimal risk to the patient (safety); satisfaction of the patient; health outcomes. Within the health care environment, high hospital performance should further address the responsiveness to community needs and demands, the integration of services in the overall delivery system, and commitment to health promotion. High hospital performance should be assessed in relation to the availability of hospitals' services to all patients irrespective of physical, cultural, social, demographic and economic barriers (CIHI 2013).

According to Leatherman (2001) hospital performance indicators that are used to measure, assess and observe reform effects are employed for four basic functions: facilitating accountability; monitoring health care systems and services as a regulatory responsibility; modifying the behavior of professionals and organizations at both a macro (population) and micro (patient) level; and forming policy initiatives for improvement in the provision of services.

Similarly Smith et al. (2008) indicated that performance measurement offers policy-makers a major opportunity to secure health system improvement and accountability. Its role is to improve the quality of decisions made by all actors within the health system, including patients, practitioners, managers, governments at all levels, insurers, politicians, and citizens as financial supporters in the health services provided.

Putting it differently, according to Tandon et al. (2000) performance of health systems has been a major concern of policy makers for many years. Many countries have introduced reforms in the health sector with the explicit aim of improving performance on the basis of the expectations in regard to results (outcomes).

2.4.1 Hospital Performance Assessment Frameworks

Performance information is essential in assuring the health system's ability to provide improved health to its population. It serves many different purposes, including the promotion of transparency and accountability, determining appropriate treatment for patients, facilitating patient choice and for managerial control. Whatever the ultimate aim of collecting performance information, in order to reach the desired endpoint, users of this information need to be able to understand what data is being collected and how this data relates to health system architecture, and its performance (Papanicolas & Smith 2010).

It has understandably become commonplace for countries to formally assess and 'incentivize' the performance of their health care systems (Arah et al. 2003). Umbrella organizations such as WHO and the Organization for Economic Cooperation and Development (OECD) have taken an international lead in encouraging health system performance measurement (WHO 2000 2007). The reasons for the increased interests include rising costs, aging populations, market failures, poor quality, medical errors, lack of accountability, and inequalities. In all these, there are widespread perceptions of poor value for the money and as well reluctance on the measurement of efforts spent on health care.

According to Hurst & Hughes (2001) performance of health care systems in various theoretical frameworks has been classified by certain performance attributes, among them the quality of care, access to care and the cost of care. They have emphasized that how well a system performs depends on how well it achieves the goals for which it should be held accountable. There is an agreement on some concepts of performance such as health outcomes or effectiveness and various aspects of responsiveness (patient satisfaction or experience).

To evaluate health care systems performance there is no agreement on what concepts and dimensions of performance should be measured. Therefore a clear conceptual framework can help to clarify the way in which stakeholders understand how health facilities are performing. To

achieve this end, over the last decade, several different conceptual health system frameworks have been proposed (Murray & Frenk 2000, Hurst & Jee-Hughes 2001, Aday et al. 2004, Commonwealth Fund 2006, Kelley & Hurst 2006, Atun & Menabde 2008, IHP 2008, Okma et al. 2009). While the ultimate goal of the different frameworks may vary, each attempts to provide a different insight of how to measure health system performance in general and health care facilities performance in particular.

The existing conceptual frameworks differ in two respects: some of the frameworks are designed to assess the performance of the overall health system rather than health care provider facilities and other gives room for understanding the performance of health care provider entities. The other disparity of the frameworks is on the health dimensions which constitute the frameworks. For instance framework developed by WHO (2000) focuses on the overall performance of the health system. On the other hand the framework of OECD HCQI (2006) is designed in such a way to assess both the performance of health system in general and the standalone components of a health system such as hospitals.

To help performance assessment and compare performance of health care facilities toolkits of health care dimensions are developed. Toolkits facilitate the efforts of health care researchers to find access and use of health care data that allows comparison. The existing literature proposes many dimensions (aspects) of hospital performance indicators. Concepts relating to health service provider's performance indicators are found in different countries health performance/quality indicators documents.

The following table indicates the most commonly used health care dimensions. These are: effectiveness (part of all of the 8 frameworks compared), safety and accessibility encompassed in 6 out of 8 frameworks, patient centeredness (responsiveness) and efficiency are part of 5 frameworks out of 8 compared. The OECD's HCQI of 2006 encompasses all of the most commonly used dimensions of health system and care facilities.

Table 2.2 Health care performance assessment indicators

Dimensions	UK	Canada	OECD, HCQI	Australia	US	EHCI	Common wealth	WHO	Inclusion count
Acceptability		#	#				#		3
Accessibility	#	#	#	#	#		#		6
Appropriateness		#	#	#			#		4
Capacity	#								1
Competence	#	#		#					3
Continuity		#		#			#		3
Effectiveness	#	#	#	#	#	#	#	#	8
Efficiency		#	#	#	#			#	5
Equity			#						
Patient centeredness		#	#	#	#			#	5
Safety -+	#	#	#	#	#			#	6
Timeliness	#			#					2

Source: Author's own compilations of health care dimensions (2018)

2.4.2 Major Health Care Performance Indicators (Dimensions) Health System

The resources, actors and institutions related to the financing, regulation and provision of health actions, where health actions are any set of activities whose primary intention is to improve or maintain health (Murray & Frenk 2000,WHO 2000).

The way in which health care services are financed, organized and delivered to meet societal goals for health. It includes the people, institutions and organizations that interact to meet the goals, as well as the processes and structures that guide these interactions (Commonwealth Fund 2006).

A health system includes all activities and structures whose primary purpose is to influence health in its broadest sense (in keeping with whose definition). Health care refers to the combined functioning of public health and personal health care services (Arah et al. 2006).

A health system is made up of elements that interact together to form a complex system, the sum of which is greater than its parts. The interactions of these elements affect the achievement of health system goals. Although these goals may vary in different countries, essentially many are similar (Atun & Menabde, 2008).In the following part a brief account of the major health care service dimensions encompassed in this study is presented.

1. Health quality

According to Gronroos (1984), there are two distinct constituents of service quality. These are technical and functional service qualities. Technical quality refers to the basis of technical accuracy and procedures. In health care perspective, it is explained on the basis of the technical accuracy of the medical diagnoses and procedures or the compliance of professional specifications. It can be considered as the competence of the staff as they go about performing their schedules. This consists of the clinical and operating skills of the doctors, and the nurses' knowledge and familiarity with the administration of drugs. Functional quality on the other hand alludes to the process by which the health care service is delivered.

Asubonteng et al. (1996) asserts that the distinction between these two aspects of service quality is widely accepted although different terminology is occasionally used. It has been argued by different researchers that functional service quality may be seen by the customer as the most important factor in a service is easier said than done for patients' to evaluate technical quality of a service since they have no technical expertise, whereas functional quality (the manner in which the service is delivered) can, and will, be evaluated by the consumers.

Parasuraman et al. (1988) explained that because it may be difficult for the consumer to assess technical quality, they tend to rely on the "how" of service delivery, and in addition also focus on the service dimensions like empathy, reliability, responsiveness associated with the service encounter. Soliman (1992) concluded in his study that non-technical interventions influenced patients' ratings of the overall quality of health care and that these aspects of the medical encounter were perhaps more important than the technical aspects.

According to Papanicolas & Smith (2010) health quality refers to three aspects of health care service. First a quality health care service should provide effective health care service which is as needed for treatment, prevention or palliation using appropriate technology. The second component of quality health care is safe delivery of the service in a manner that achieves high reliability in care processes and minimizes medical errors. The third and the last manifestation of quality health care is patient-centered (responsive) and provided in a timely way with compassion and professional friendly human relation with the patient.

In the context of this study quality in health care service provision refers to delivery of health care service effectively, safely and responsively and each of this elements of quality are discussed briefly as follows.

A. Effectiveness

A key performance dimension is effectiveness which is the degree of achieving desirable outcomes, given the correct provision of evidence-based health care services to all who could benefit, but not to those who would not benefit (Arah et al. 2003). On the other hand according to Productivity Commission (2013) effectiveness is a measure of how well the outputs of a program or service achieved the stated objectives (desired outcomes) of that program or service. It is the impact of the activities or services of interest on outcomes which is consistent with desired effects.

To put it differently Canadian Institute of Health Indicators (CIHI) refers it to the process by which a hospital, in line with the current state of knowledge, appropriately and competently delivers clinical care or services to, and achieve desired outcomes for, all patients likely to benefit most (CIHI 2013). Effectiveness in this study implies the capability of health care reform to produce the desired results.

B. Safety

The dimension of safety means the degree to which health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care itself (National Patient Safety Foundation 2000). Safety is a dimension that is closely related to effectiveness, although distinct from it in its emphasis on the prevention of unintentional adverse events for patients.

Similarly CIHI (2013) describes Patient's Safety as an essential component of health care quality and is the dimension of performance, wherein a hospital has the appropriate structure and uses care delivery processes that measurably prevent or reduce harm or risk to patients, health care providers and the environment, and which also promote the notion.

Sammer et al. (2010) indicated that to Err (to show too much of care) on the side of safety is better to avoid medical errors. In United States hospitals alone kills between 44,000 and 98,000

each year. They further revealed that more people die from medical errors in a year than from highway accidents, breast cancer, or AIDS.

Therefore health care organizations create an environment in which culture of safety is an explicit organizational goal, becomes a top priority, and is driven by leadership (Kohn et al, 2000). The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management.

One of the manifestations of failures to exercise due safety care is reported to be prescribing errors. Morgan T. et al. (2009) indicated prescribing errors were defined as medication incidents initiated during the prescribing process. These include the inappropriate selection of a medication, dose, dosage form, or route of administration, and inappropriate or inadequate instructions for use of a medication. In some studies, a prescribing error also included a medication order that does not comply with accepted practice or legal requirements. Supply errors are also referred to as dispensing errors, and were defined as medication incidents initiated during the process of supplying medications to the patient. Supply errors include the failure to prepare or supply a medication, dose, dosage form, amount or instructions for medication use as it is ordered or to comply with accepted standards.

C. Responsiveness

Responsiveness refers to how a system treats people to meet their legitimate non-health expectations (WHO 2000, WHO 2000b). Another term that is often used synonymously with responsiveness is patient-centeredness. Patient centeredness is the degree to which a system actually functions by placing the patient/user at the center of its delivery of health care and is often assessed in terms of patient's experience of their health care. This experience of care refers to the caring, communication and understanding that should characterize the clinician-patient relationship. The emphasis here is on the patient's report of her or his experience with specific aspects of care and goes beyond her or his general satisfaction or opinion regarding the adequacy of care.

The greater the responsiveness of the health system, the higher will be the level of people's comfort, irrespective of its impact on health. Improvements in responsiveness may come before

changes in performance on the other goals. As it does not require a major investment, responsiveness can be improved much faster than health. Furthermore an important improvement in responsiveness does not necessarily entail a great investment in technology or staff as required for health promotion. Measuring responsiveness indicates which domain is more important from the individuals' viewpoint and needs more solemn attention, in addition, information received from inequality distribution of responsiveness level can be used for guiding health systems' resources to areas with inadequate services (Gostin et al.2003).

According to CIHI (2013) responsiveness is ensured when a hospital places patients at the center of care and service delivery by paying particular attention to patients' and their families'needs,expectations, autonomy, access to hospital support networks, communication, confidentiality, dignity, choice of provider and desire for prompt, and timely care .

In the context of this study responsiveness refers to placing patients at the center of care and service delivery by paying particular attention to patients' and their families' needs, expectations, autonomy, access to hospital support networks, communication, confidentiality, dignity, choice of provider and desire for prompt, and timely care.

2. Accessibility

Accessibility is the ease with which health services are reached. Access can be physical, financial or psychological, and requires that health services availability. According to (CIHI 2013) access to comprehensive hospital services corresponds to the range of hospital services available and the hospital's ability to meet the needs of the population or a particular patient without financial, organizational or geographical obstacles standing in the way of seeking or obtaining these services.

Access is the opportunity to reach and obtain appropriate health care services in situations of perceived need for care (Levesque et al. 2013). It refers to the presence of physical (availability and accommodation), economic (affordability), temporal (appropriateness), cultural (acceptability), and approachability dimensions in using health services (Burgess et al. 2011, Brunson 2011, Levesque et al. 2013). As per the above discussion health care service accessibility has many sub-dimensions and this study addressed three of them and their account is briefly presented as follows.



Figure 2. 1 Factors insuring equitable access to health care service

Source: Authors own compilation based on review of literature

A. Temporal sub-dimension of access

Temporal dimension of access is the time required to receive services, such as an appointment wait-time, time spent while waiting in reception, receiving treatment, and waiting for the next appointment.

A patient’s access to health care is usually a difficult issue that concerns most health care systems. The objective of a health care system is basically to keep healthy patients healthy and to enable sick patients to become healthy. The second goal is usually taken care of by health care professionals who see patients in health care facilities including clinics, hospitals, homes or rehabilitation facilities. In each of these facilities, there can be a considerable gap between planned goal and actual experience. This goal-performance gap usually arises from problems with patient timely access of health care service.

According to (FMOH, 2019) timeliness of care is at the heart of everything in Ethiopia’s health care settings. It is important to be truth full with patients about why we are late, how long they are going to have to wait, and to give options.

Timely care is saving lives of the diseased: Being on time is not final outcome, but more specifically a key to running and maintaining a thriving medical practice. Timely care reduces waits and harm full delays for those receiving care. Delay in care increase risks and discomfort

for patients with serious illnesses or injuries with potential complications that is negatively affect health outcomes due to delays in diagnosis and treatment.

According to Berman et al. (2011) a health care facility considering a plan of action to reduce patient waiting times possible actions may include: (1) Retraining the registration and medical records clerks, (2) relocating the cashiers, (3) hiring an additional general practitioner, and (4) establishing a clinician for triaging the most severe cases to the emergency area and retaining the less severe cases in the outpatient department.

Hence to investigate the temporal sub dimension of hospitals service accessibility six questions were forwarded to the respondents and the analysis is presented in chapter six of the study.

B. Availability sub-dimension of access

Availability aspect of health care service in general refers to the exitance of well equipped facilities with easy reach, staffs with right skills in the right place and availability of quality medicines and devices at fair price(European commission 2016).

C. Affordability sub-dimension of acces

The economic dimensions of access refers to those related to the cost of seeking and obtaining health care in relation to a patient's or household's income (Fortney et al. 2011, Knowles et al. 1997). A priority of health care reform is expanding access to cost-effective health services that maximize impact on health outcomes. Improving access may imply providing services free of charge or even paying consumers an incentive, or bringing services to the consumers, thus reducing time and travel costs to zero.

3. Hospital operational efficiency

Efficiency is the system's optimal use of available resources to yield maximum benefits or results (JCAHO 1997, WHO 2000). The pioneer of Stochastic fronttier analysis(SFA) Farrell (1957) indicated that a hospital is judged to be technically efficient if it is operating on the best practice production frontier in its hospital industry. A hospital is said to be functionally and operationally efficient if an increase in an output requires a decrease in at least one other output, or an increase in at least one input. Or in other words it can be stated that a reduction in any input must require an increase in at least one other input or a decrease in at least one output. Measuring

efficiency allows us to compare hospitals in terms of their real use of inputs and outputs rather than costs or profits.

Health care costs in many countries have grown dramatically over the last few decades and it is widely believed that the inefficiency of health care institutions, at least in part, has contributed. Health care organizations are required to achieve efficiency and effectiveness: they have to reduce costs and to offer quality health services in timely manner. For this reasons, in many countries, the hospital sector has been involved in a massive reform process marked by financial restructuring of existing hospitals, mergers and closures of several small hospitals (Kjekshus et al. 2014).

According to Andrew (2004) economists have developed three main measures of efficiency to meet the needs of researchers, health care managers and policy makers.

Firstly, *technical efficiency* refers to the use of productive resources in the most technologically efficient manner. Put differently, technical efficiency implies the maximum possible output from a given set of inputs. Within the context of health care services, technical efficiency may then refer to the physical relationship between the resources used (say, capital, labor and equipment) and some health outcomes. These health outcomes may either be defined in terms of intermediate outputs (number of patients treated, patient-days, waiting time, etc.) or a final health outcome (lower mortality rates, longer life expectancy, etc.) (Palmer & Torgersen 1999).

Secondly, *allocative efficiency* reflects the ability of an organization to use these inputs in optimal proportions, given their respective prices and the available production technology. In other words, allocative efficiency is concerned with choosing between the different technically efficient combinations of inputs used to produce the maximum possible outputs.

Finally, when taken together allocative efficiency and technical efficiency determine the degree of productive efficiency (also known as total economic efficiency). Thus, if a health care organization uses its resources completely allocative and technically efficiently, then it can be said to have achieved total economic efficiency. Alternatively, to the extent that either allocative or technical inefficiency is present, then the organization will be operating at less than total economic efficiency. This study is only concerned with technical (operational) efficiency selected public hospitals.

It is often argued that health care institutions are not expected to be efficient, as they do not adhere to neo-classical firm optimization behavior. However, given the vast amount of resources that go towards funding such institutions, there is a great and growing interest in examining efficiency in hospitals with the driving force for such concern being value for money.

One of the objectives of this study was to measure the technical efficiency of public hospitals using different input–output combinations, and to identify the factors that influence their efficiency. However due to the unavailability of relevant input and output data the analysis is confined to the review of the available literature on the area.

4. Equity

Equity is a dimension closely related to access, although it is also used as a metric to assess health-system financing and outcomes/health state . Equity (or equitability) defines the extent to which a system deals fairly with all concerned. Equity, in this context, deals with the distribution of health care and its benefits among a people.

Equity (in health system outputs) refers to the capacity of the health system to deliver comprehensive, high-quality outputs (services) to individuals and populations in an equitable way, without the imposition of financial or other barriers to receiving care that is person-centered, safe, appropriate and effective, and efficiently delivered (CIHI 2013).

According to Murray and Frenk (2000) to be fair, financing of the health system should address two key challenges. First, households should not become impoverished, or pay an excessive share of their income in obtaining needed health care. In other words, fairness in financial contribution requires an important degree of financial risk pooling. Second, poor households should pay less towards the health system than rich households. Not only do poor households have lower incomes but a larger share of their income goes to basic needs such as food or shelter. Contribution to the health system should reflect this difference in disposable income between rich and poor. These considerations translate into the normative proposition that every household should pay a fair share towards the costs of the health system. (In the case of very poor households, “fair share” might mean no payment at all).

Payment for health services should be based on income and for the most part should not reflect use of services or risk. Therefore Acceptable fair share for the poor depend on the role assigned to the health system in general income redistribution. In some political settings, it may be easier to redistribute income by providing free health services to the poor than through direct redistributive mechanisms. From the perspective of the health system, however, it should perhaps be assumed that society is redistributing general income through other mechanisms, such as direct transfers, when evaluating fairness in financial contribution. The broad social acceptance of a financing mechanism requiring that everyone contribute some fair share may also lead to more sustainable health financing.

2.4.3 Health Care Performance Frameworks

Although there is robust evidence relating to the need to measure health care systems performance, conclusive agreement is yet to be reached on what concepts and dimensions of performance should be measured. In recent years, an increasing amount of work and attention have been devoted to measuring performance with in health systems with the ultimate objective of improving the efficiency and effectiveness of the health services and control of the inputs channeled and the outputs obtained.

Over the last decade, several different conceptual health system frameworks have been proposed (Commonwealth Fund 2006). While the ultimate goal of the different frameworks may vary each attempt to provide a common starting point. A clear and simple conceptualization of the health system, practicality of the recommendations for further progress by practitioners and organizational learning for further improvement in sets of reforms and measurements.

In order to address the differences between frameworks in matters of understanding, focus and principles, Papanicolas & Smith (2010) have identified five key issues, of course which are subject to debate. By considering how these issues relate to the aims of the health service performance assessment, they have created a set of criteria that needs to be seen in line with the existing frameworks. Finally, using the understanding, focus and principles proposed by Papanicolas & Smith (2010), this study adopted OECD's HCQI framework as the basis for assessment of the state of public hospital performance in Ethiopia. In order to assess the

soundness and fitness of the available health care performance assessment frameworks the following questions were postulated:

1. Is the framework a good conceptual health system performance assessment tool?
2. Are the boundaries narrow enough that they exclude determinants outside the domain that policy makers can influence, but wide enough to include public health and health promotion?
3. Does the framework conceptualize the goals of the health system in a clear way with a focus on efficiency, quality, acceptability, effectiveness and health outcomes?
4. Does the framework conceptualize the architecture of health system in a way that includes the five key elements: service provision, financing, resource generation, leadership, government and risk factors?
5. Has the framework been used in previous HSPA projects and had it been exposed to and incorporated comments from external review?

Based on the above criteria questions the authors have classified the international health system assessment frameworks. If the conceptual framework being considered meets each of the above criteria, it is indicated with an X. Of the ten frameworks considered only the OECD HCQI meets all five criteria sets.

Table 2.3 comparisons of international HSPA frameworks

Frameworks from Reviews	Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5
Behavioral Health care Assessment Framework (1998)	X	X	X	X	-
EGIPSS Assessment Model (1998)	X	-	-	X	-
WHO Performance Assessment Framework(2000)	X	X	X	-	X
OECD Performance Assessment Framework (2001)	X	-	X	X	-
Control Knobs Assessment Framework(2003)	X	X	X	-	X
Commonwealth Fund Assessment Framework (2006)	X	-	X	-	X
OECD HCQI Assessment Framework (2006)	X	X	X	X	X
WHO Building Blocks Assessment Framework (2007)	X	X	X	-	-
Systems Assessment Framework (2008)	-	-	X	X	
IHP Common Evaluation Assessment Framework (2008)	-	-	-	-	X

Source: Adopted from Papanicolas & Smith (2010)

The framework of this study

Based on the performance of the different international frameworks of assessment on the health sector performance with regards to the criteria identified above, the OCED Health Care Quality Indicators (HCQI) analytical assessment framework is selected for this study. Of the above ten frameworks presented it is the only one that matches all the criteria. Taking into account the aforementioned discussion of health care dimensions and conceptual framework approaches the following conceptual framework is adopted for this study.

2.4.4 CONCEPTUAL FRAMEWORK OF THE STUDY

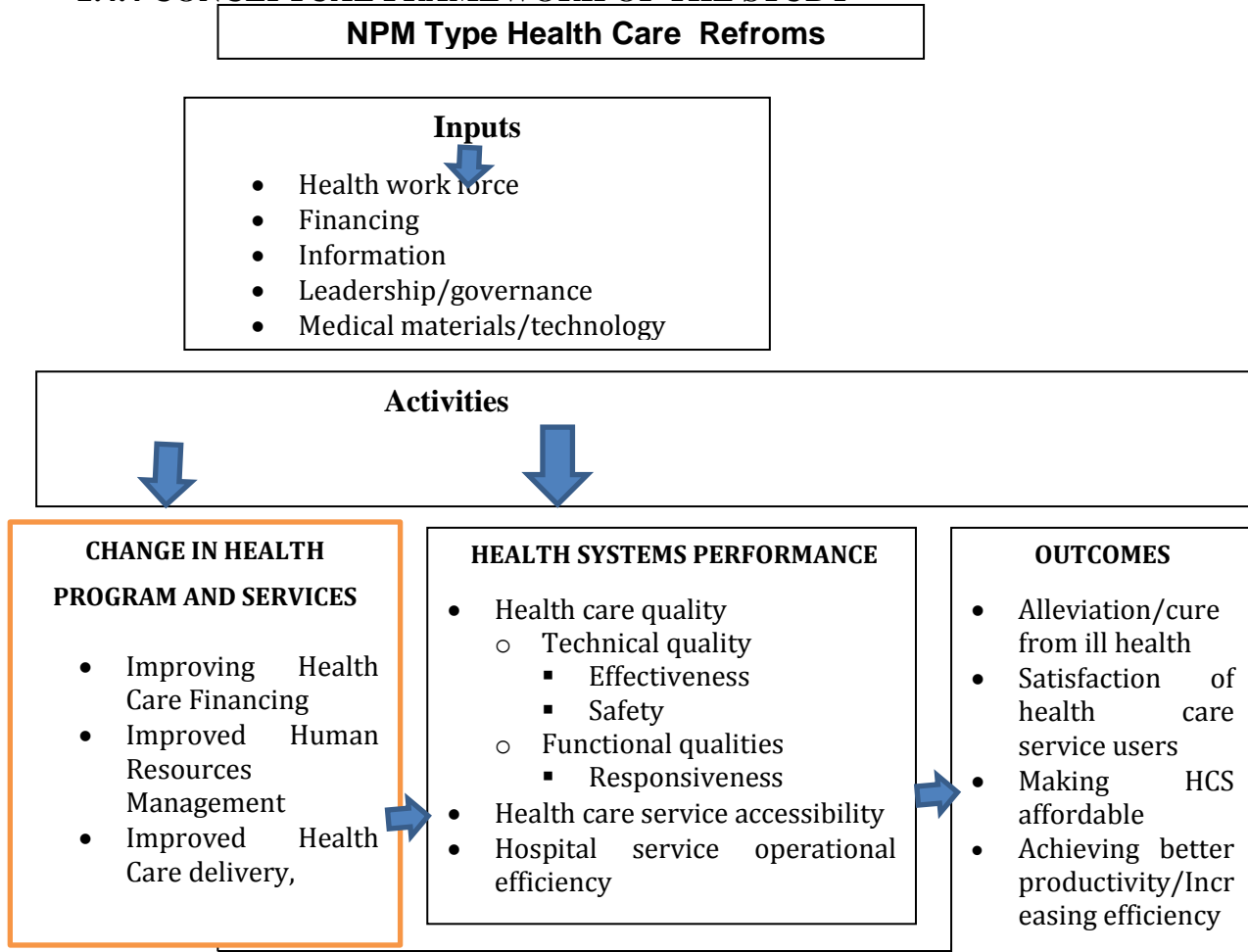


Figure 2.2 Conceptual framework of the Study, Source : Researcher’s own compilation

2.5 The overall state of health care service in Ethiopia

Ethiopia is a land locked country in East Africa with the population of 99.39 million (WHO 2017). The government is organized as a federal structure with the central government and nine regional states and two city administrations. The nine regional states that have autonomous administration and parallel administrative structure are Afar, Amhara, Benishangul-Gumuz Gambella, Harari, Oromia, Somali, Southern Nations Nationalities and People’s Region and Tigray. The two city administrations that report to the federal government are Addis Ababa and Dire Dawa. In this form of constitutionally established federal arrangement (FDRE 1995) the health sector is also governed by powers, duties and responsibilities shared between the federal government and the regional states.

The land area of the country, which is estimated at about 1.1 million square kilometers, has all varieties of climates which imply different living styles and disease prevalence (Keller 2009).

According to Getahun & Balcha (2012) Ethiopia had for centuries its own traditional medicine for curing diseases and protecting and promoting human physical, spiritual, social, mental and material wellbeing. The art of herbal therapy was the oldest medical tradition in Ethiopia and the cultural affinities that existed for centuries with different peoples precluded Ethiopia from developing neither fully indigenous nor wholly exotic therapeutic methods. Succeeding this era, Ethiopia has witnessed various health care reforms that are aimed at improving the health and well-being of its citizens. The different regimes that ruled the country have introduced reforms in the health sector during their rules.

It is believed that the frequent contact of the country with the west has positively contributed for the introduction of modern health care system (Kitaw et al. 2012). In 1963 Ethiopia has introduced its first health policy and launched Five-year Development Plan for the year 1963 - 1967, and the plan was inclusive of national health policies and strategies. This health plan had an ultimate goal of establishing at least one health center for every 50,000 people and one health station (clinic) for every 5,000 people. The plan gave emphasis to preventive medicine with an assumption that Ethiopian public health problems cannot be solved by establishing hospitals only (Kitaw et al. 2012). In 1976, the Provisional Military Government of Socialist Ethiopia that came in to power in 1974 revised the country's health policy and revealed its own. This health policy gave more attention to primary health care, rural health services, prevention and control of common diseases, self-reliance, and community participation in health activity. The socialist government's efforts to eliminate forms of healing that were based on religious/traditional beliefs put traditional medicine practitioners in a state of confusion and disrupted the emergence of new healers (Mehari et al.).

Ethiopia is a growing but a poor country in sub-Saharan Africa. Its gross domestic product (GDP) in 2016 was estimated at US\$ 71 billion and per capita income at US\$ 693. The government report over the last couple of years indicates a fast growing Economy with a double digit GDP growth.

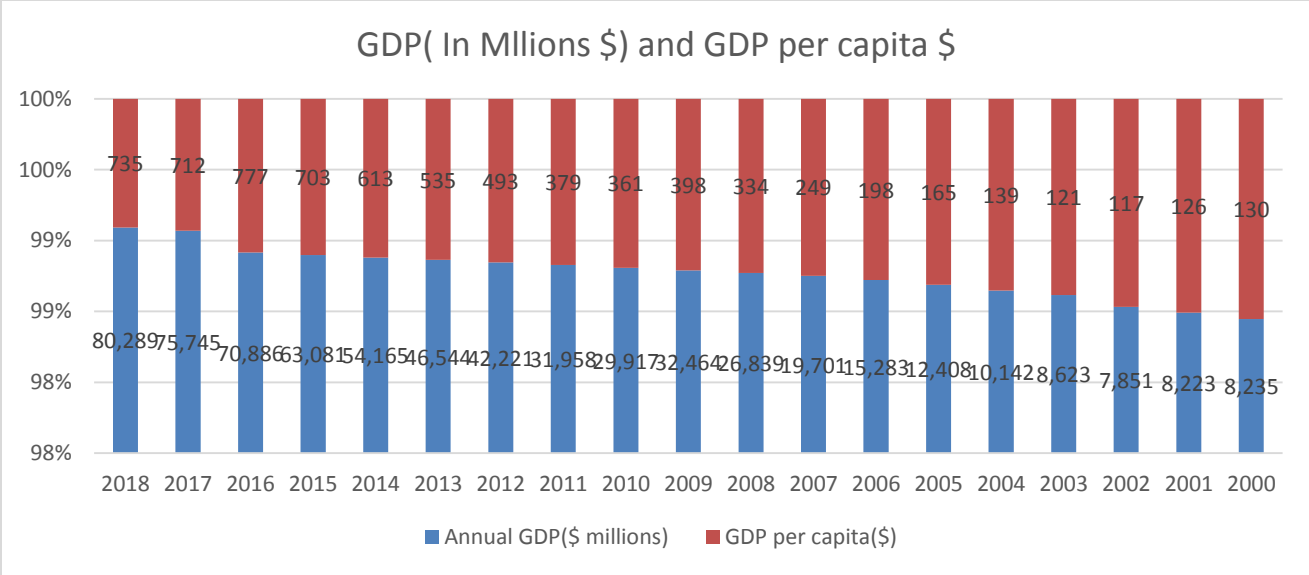


Figure 2.3 GDP and per capital income , Source: WHO 2016

As indicated in the above figure 2.1 the economy is growing over time and its manifestation is the growth of gross domestic product and per capita income of citizens. This growth in the economy which is argued by the government as an outcome of the poverty reduction strategies has a great deal of spillover effect on citizens of the country in general and on the health sector performance in particular.

In tandem with the above point WHO (2003) indicated that ensuring the poor access to affordable and quality health services is not sufficient in itself to improve the health of the poor. The major determinants of their health depend on actions that lie outside the health sector. To start with, implementing effective pro-poor growth policies is crucial: without higher incomes, poor people will not be able to afford food or health services. And without growth in revenues, governments will not increase their financing of health services. Other sectoral policies, too, are critically important, especially those for education, food security, safe water, sanitation and energy.

As poverty is closely related to the health state of a society, poverty reduction efforts will have an impact in improving the health state of citizens by improving their living conditions, enhancing their health seeking behavior and improving their affordability to better health services. Of all, as health is generally a cross-sectoral issue, the development and change in other

sectors such as agriculture, industry and other social services like education and utilities will affect how health services should be delivered and governed.

Economic development is often followed by life style changes of the society encompassing the type of diet consumed, shelter and recreational activities of the society. The growth in the industry sector for instance implies fast industrialization which will eventually lead to rapid urbanization and consequential life style changes. Both the disease burdens and governance strategies for health services will be influenced by these developments and life style changes. For instance there is a shift of disease burden from communicable to non -communicable in the urban centers of the country including Addis Ababa mainly due to change in life style of urban center dwellers.

2.5.1 Health Care Reform of EPRDF ERA

After many years of civil war, the Ethiopian People's Revolutionary Democratic Front (EPRDF) over-threw the Dergue regime in 1991. The victorious EPRDF formed a Transitional Government of Ethiopia (1991–1994) and in December 1995 a Federal Democratic Government consisting of a broadly based appointed Council of Representatives and Council of Ministers (Alemayehu 2000, Taube & Patz 2008). Since then, economic development and reforming Ethiopia's public administration including the health sector have been given a high priority and the country has begun to undertake multi-dimensional political and economic reforms (Admasu 2014).

In 1993, the transitional government of Ethiopia that succeeded the military regime produced a national health policy. The primary objective of the policy was to harmonize the rate of population growth with socio-economic development, with a long-term objective of closing the gap between high population growth rates and low economic productivity. The policy included decentralization of the health care system, development of the preventive, promotive and curative components of health care, accessibility of health care for all, and the promotion of private sector and NGOs participation in the health sector (FMoH 2010, Admasu 2014).

The policy is also intended to reduce morbidity and mortality, particularly infant and child mortality (CSA 2012). Since then, developments have taken place nationally and internationally that have a direct bearing on the country's population. The 1993 health policy had strategies to deliver maternal and child health services free of charge, and train and deploy new Health

Extension Workers [HEWs] to institutionalize community health care services (Mehari et al. 2012).

The Ethiopian health policy, which declares the government's commitment to develop the preventive and curative components of the health care, indicates that the government will work towards ensuring accessibility of health care for all segments of the population. As the derivatives of the national health policy, four Health Sector Development Plans (HSDPs) of 5 years each were developed and implemented since the coming of EPRDF to power (FMoH 2014a). The Health Sector Development Plan (HSDP IV) which is implemented between 2010/11 and 2014/15, is a comprehensive health sector plan that constitutes ten main strategic objectives namely:

- Improving access to health services
- improving community ownership of the health system and services
- Maximizing resource mobilization and utilization
- Improving quality of health services
- Improving public health emergency preparedness and responses
- Improving pharmaceuticals supply and services
- Improving regulatory system of the health sector
- Improving evidence-based decision making by harmonization and alignment
- Improving health infrastructure and,
- Improving human capital and leadership in the health sector

Responsibility for health service delivery and regulation is structured in line with the new public management paradigm mainly focusing on decentralization, ensuring the autonomy of health care facilities and financial arrangement. For this reason, development of health policies, standards and operational protocols was the responsibility of the FMoH, while implementation of developed policies, standards and protocols, and owning, financing and delivering and supervising health care services at regional levels was mandated to regional health bureaus (FMoH 2014).

As indicated in the diagram below the Ethiopian health service is organized into three tier system. The first level is primary level care which is composed of one primary hospital, four Health

Centre and twenty satellite Health posts. The primary level provides preventive, promotive and basic curative services. The second level is general hospital which provides service for about 1 to 1.5 million populations. The second level care includes curative service and training of frontline health workers. The third tier is a specialized hospital which serves an average of 3.5 to 5 million people. The tertiary level focuses on in complex curative service, specialized trainings and research. The health care facilities are linked with referral system. The focus of this study is on public hospitals which are part of all of the three tiers. This study will focus on the secondary level and tertiary level public hospital.

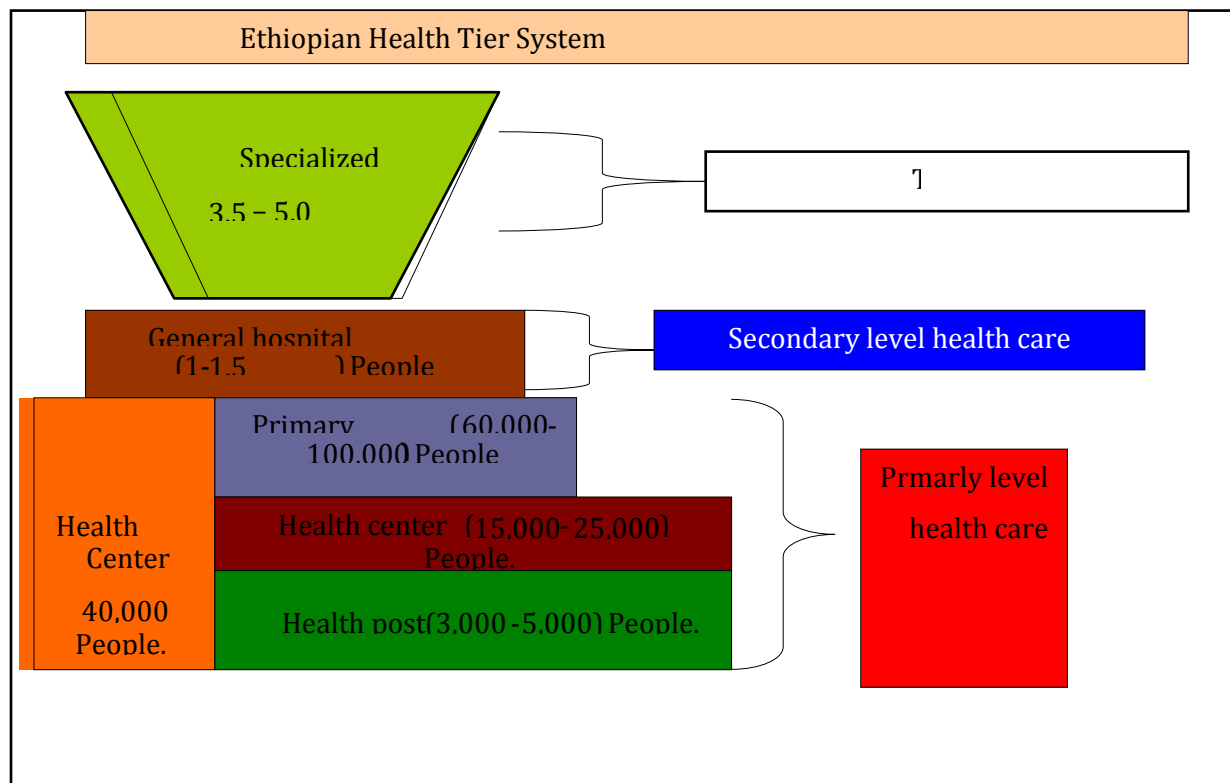


Figure 2.4 Ethiopian health care system tiers ,Source: FMOH (2010)

To facilitate the implementation of the policy the government of Ethiopia has undertaken a number of reform measures. The reform measures were expected to act as a positive catalyst for the attainment of quality of health (effectiveness, safety and responsiveness), access to health (both physical access to health facilities and financial affordability), efficiency (value for money) and controlling the health expenditures.

There were a great deal of reform measures and strategic plans implemented after the ratification of the new health policy in 1993. The major reform measures include: The introduction of health care financing reform plan (HCFR) of 1998, health sector development plan (HSDP) of 1998 to 2015, health sector transformation plan (HSTP) 2016 to 2020, preparation and implementation of standard Treatment Guidelines for General Hospitals 2004 to date, preparation and implementation of Health Management Information System (HMIS) 2008 to date, Ethiopian Hospital Reform Implementation Guideline (EHRIG) 2010 to date , to facilitate the implementation of the strategic plans introduction of BPR and BSC since 2010 to date, and the launching of health development army campaign were among the major reform initiatives.

In 1997, the government of Ethiopia developed a 20- year health sector development plan (HSDP) to implement the 1993 health policy. Several platforms have been organized to coordinate the implementation of the HSDP. The coordination of the health sector involves two levels. The first is steering committees to coordinate with the regions and woredas. Accordingly, the Joint Steering Committee (JSC) coordinates the Ministry of Health and the regional health bureaus (RHBs) at the central level; the regional joint steering committee (RJSC) at the regional level; the woreda joint steering committee (WJSC) at the woreda level; and the Health and HIV/AIDS Committee at the kebele (village-level administration) level. At the second level are the joint coordination structures between the Ministry of Health and the development partners (DPs).

The following figure depicts the time line of the new health policy, health sector development plan and the recent health sector transformation plan from 1993 to 2015.

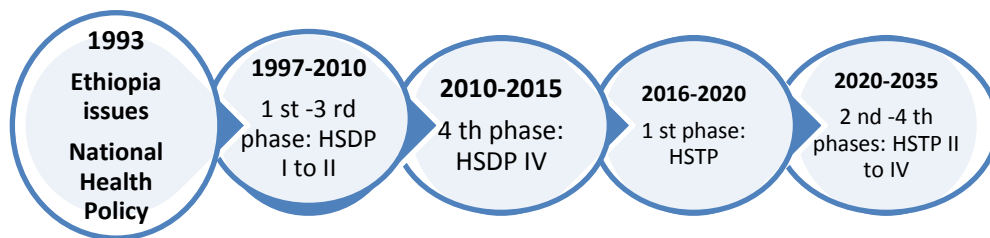


Figure 2.5 Major National strategic plans in the Ethiopian health sector 1993 -2035, Source: FMOH (2016)

Health care financing reform (HCFR)

According to FMOH (2014) prior to the reform, financing rules required that all revenues collected by health facilities be transferred to the Regional Finance Bureau/Ministry of Finance (RFB/MOF). This meant that health facilities, Regional Health Bureaus (RHBs), and the Federal Ministry of Health (FMOH) received no direct benefit from any of the fees collected. Additionally, health centers and hospitals suffered from shortages of essential drugs and supplies. It was frustrating to health providers to have no recourse to discretionary resources to improve quality of care, nor incentives to introduce innovative management practices. All of these deficiencies necessitated the introduction of new health care financing reffrom (HCF).

In June 1998, after noting these challenges, the Council of Ministers of the Government of the Federal Democratic Republic of Ethiopia approved the Ministry of Health's proposed Health Care and Financing Reform Strategy, which established a new policy on HCF. The goals were: (1) identify and obtain resources, (2) increase efficiency in the use of available resources, (3) promote sustainability, and (4) improve the quality and coverage of health services.

To achieve this end a system of offering services on the basis of cost sharing between the receiver of services (patient) and provider of services (government) was designed. Moreover the new system allows health service provider facilities including hospitals to retain and use the resources collected from their service users to improve the quality and quantity of services. In addition, any fee waivers shall be granted to reduce financial barriers for the poor, and exemptions shall be given to encourage consumption of particular kinds of preventive or public health services. The cost of fee waivers shall be covered by an appropriate third parties mostly foreign development partners.

Having in mind the substance of the above discussion regarding health care financing reform this study assessed the resultant effects of the reform measures in public hospitals encompassing financial affordability of public hospital services, and technical/operational efficiency of the hospitals.

Health sector development program (HSDP) 1998 to 2020

The Ethiopian Government-developed a 20-year rolling Health Sector Development Program (HSDP) in 1997/98 (1990 EFY), which proposes long-term goals for the health sector, and the means to attain them through a series of phases. The program aims to develop a health system,

which provides comprehensive and integrated primary care services, primarily based at community level health facilities. It focuses on communicable and non-communicable disease prevention and control, common nutritional disorders, environmental health and hygiene, reproductive health care, maternal and child health, immunization and the treatment and control of basic infectious diseases like upper respiratory tract infections. It was also designed with the objective of improving the quality of primary health care service provision; to ensure a regular and safe supply of effective, safe, affordable and high-quality drugs while improving prescribing behavior by health providers; Improve awareness about personal and environmental hygiene and basic knowledge of common diseases and their causes.

Within each HSDP plethora of new management tools were introduced in the health sector including Business process reengineering (BPR), balanced score card system (BSC), Kaizen, Citizens charter, Health development army and etc. So far four phase of HSDP are implemented and for the years ahead 2016-2020 the plan is prepared and renamed to be health Sector transformation plan(HSTP) in line with the second phase of growth and transformation plan of the country (FMOH 2014).

Achievements of Health sector Development Programs

According to FMOH report there is a tremendous improvement in terms of quantity (physical access) through development of health facilities FMOH (2015). The number of all types of health facilities have significantly increased and this in turn is playing a pivotal role for easing access to health services. For instance at the start of HSDP I the number of public hospitals was only 87 and at the end of the HSDP IV (2015) their number has increased to 234. In addition additional 147 public hospitals are under construction in different parts of the country FMOH (2015). The following tables indicates the change in terms of health facilities including public hospitals from HSDP I (1998) to HSDP IV (2015).

Table 2.4 Health Care Facilities Improvement Overtime

facility	HSDPI (1996/7)	HSDP II (003/2004)	HSDP III (2010)	GDP IV(2015)	HSTP (2018)	under construction
Health posts	76	2,899	14,416	16,447	17,162	425
Health centers	412	519	2,689	3586	3678	86
HOSPITALS	87	126	195	234	314	108

Source: FMOH (2016), FMOH (2018)

In addition the HSDP program is reported as it has improved quality of health care service provision (effectiveness, safety and responsiveness). One of the significant achievements which is highly acclaimed is the reduction of child mortality by two third from 205 (1991) to 59 per 100,000 births ahead of the timeline of MDG 2015, reduction of maternal mortality rate from 1400 per 100,000 live births to 420, reduction of incidence of HIV ,reduction of tuberculosis mortality rate , increasing life expectancy 43 years of 1980 to 65 in 2015, increasing the number of population using improved drinking water sources, increase in health development index(HDI) from 0.284(1984) to 0.442 (2015).in contrast to the HDI improvement from 0.284 to 0.442 the country's global rank in terms of health declined from 156 (1985) to 174 (2018) the likely justification is the better performance of other nations relative to Ethiopia. The other MDGs have not fulfilled including measles immunization coverage among 1-year-olds, Births attended par skilled health personnel, Antenatal care coverage at least one visit, and reduction of unmet need for family planning.

Though the above figures seem to indicate that Ethiopia's health sector has registered remarkable achievements, the aforementioned statistical figures clearly indicate as health services are still lagging far behind WHO standards and the planned HSDP targets of the government. The investment in the health sector and health expenditure in Ethiopia has remarkably grown over the last two decades.

Attesting this health expenditure from all sources increased and per capita health expenditure increased from US\$5 in 2000 to US\$28 in 2016(WHO,2019). It can be safely argued that the growth in health expenditure per se cannot guarantee effectiveness and accessibility of health care service provision of the country.

Table 2.5: Health Expenditures of Ethiopia

year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
General gov. exp.	2,091	1,819	1,947	2,307	2,343	2,835	3,366	3,966	4,887	4,905	4,951	5,556	7,027	8,264	9,470	10,929	12,926
Current Health Expenditure as% (GDP)	4	5	5	5	4	4	4	5	4	4	5	4	5	4	4	4	4
CHE per Capita in US\$	5	6	5	6	6	7	8	11	13	15	17	15	21	20	22	25	28
OOPS per Capita in US\$	2	2	2	2	2	2	3	4	5	6	7	7	9	8	9	10	10
OOPS as % of CHE	36	34	37	34	35	31	35	34	38	38	42	47	42	42	38	38	37
GDP) per Capita in US\$	123	118	111	119	136	161	193	239	313	336	305	338	457	490	556	632	693

Source: World health expenditure review (2016)

The above data testifies that Ethiopia's health sector remains underfinanced when compared with the World Health Organization (WHO)-recommended minimum spending of US\$60 per person per year to provide basic health care services in developing countries (WHO 2009), which later was updated to US\$80 and more recently to \$86 per capita (Mcintyre 2014). Health sector reforms and the introduction of new approaches to health service delivery aim at not only increasing per capita health expenditure but also ensure that citizens are getting access to better quality services at affordable prices.

Achievements and challenges of reforms in the area of human resources for health in Ethiopia

Development of frontline and middle-level health professionals has been one of the eight priorities of Ethiopia's health policy since 1993 and a key component of successive health sector development programs. The main objectives of the HSDP IV are increasing staffing at all levels of the health service pyramid and the establishment of effective human resource management systems (FMOH 2015). A strategic plan for human resources for health was developed in 2008. The plan details human resource planning, management, education, training and skill development, legal frameworks, and financing mechanisms. At the end of HSDP II, prior to the major human resource reforms, Ethiopia ranked in the lowest quintile among African nations in terms of density of health care personnel, with 0.3 physicians and 2 nurses per 10 000 population . There was also a problem of uneven distribution of the limited health workforce among and within districts and an inappropriate use of available skills. The reforms implemented since then resulted in a major increase in human resources for health. With the inclusion of health extension workers, Ethiopia had 11 health workers per 10 000 population by 2011.

The human resource reforms were implemented in a policy environment of changing health needs and evolving priorities.

1. With the aim of addressing poor performance in the delivery of essential services and of meeting the targets of the millennium development goals, the Government of Ethiopia made the expansion of access to primary health care its topmost priority. This was operationalized through the last three health sector development programs (HSDP II-IV), the accelerated expansion of primary health care facilities, the health extension package programme, and the essential services package.
2. Expanding access to primary health care required an equitable distribution of new facilities and of the workforce among regions. In Ethiopia, a federally structured country, providing primary health care services is a regional and district (woreda) function. The expansion of facilities, capital investment and recurrent costs (including the costs of human resources), had to be financed to a significant degree by the regional and woreda levels of government.

3. Financial support to the health sector by development partners increased significantly, both through budget/sector support and through project financing. The human resource reforms benefited from this injection of additional funds.

Overall, the accelerated expansion of primary health care units served as the major driving force for human resource reforms. At the start of the reforms, the health workforce was inadequate to satisfy the demand for services from existing health facilities, let alone the additional demand fueled by the accelerated expansion. The reforms therefore mainly focused on supply-side interventions through increasing the production of key staff categories. The scale-up targeted both existing and new cadres with the aim of enhancing the availability, distribution and performance of health workers to achieve universal access to primary health care, and included:

These reforms and initiatives can be categorized into three major areas that were implemented in a stepwise fashion to align with the expansion of health services. They started with the staffing of community-level services; expanded to health centers and primary/district hospitals; and continued to medical schools to meet the requirements of higher-level health facilities. These reforms were introduced in a stepwise manner starting from the end of HSDP I. The achievement in terms of enhancing the availability of health workers before and after the reform is summarized in Table 2. 7 below.

Table 2.6 Health Work Force Over Time

	End of HSDP I:2002		End of HSDP II:2005		End of HSDP III:2010		Mid HSDP IV:2011/12		2018	
	#	Density	#	Density	#	Density	#	Density	#	Density
Medical doctors	1888	1: 35,604	1996	1:35,604	2152	1:36,158	2923	1: 28,847	9182	1:10,734
Health officers	484	1: 138,884	683	1:104,050	1606	1:48,451	4923	1:17.128	10,953	1:8,998
Nurses	11,976	1: 5613	14,270	1: 4,980	20109	1:3,870	36672	1: 2299	59,469	1:1657

Source : FMOH 2019

The human resources were tailored to address the different health needs of rural, pastoral, and – more recently – urban communities. The contextualized focus on prevailing health problems in the design of the training programme enabled the health extension workers to gain the required knowledge and skills to deliver high-impact and cost-effective interventions, including childhood

immunization, family planning services, prevention and treatment of malaria, and the treatment of diarrhea and pneumonia in children under five years of age.

The costs of pre-service training and remunerating specialized mid-level health professionals are significantly lower than similar costs for medical doctors. Therefore, this approach generates efficiency gains in terms of overall training costs and the wage bill. Even under the hypothetical assumption that sufficient medical specialists such as obstetricians, surgeons, anesthetists, and general practitioners were available to staff the increasing number of primary and district hospitals, they would present a serious budgetary challenge. Furthermore, the limited international marketability of the skills of mid-level professionals helps address inefficiencies created by the international brain-drain due to the emigration of health professionals

2.6 Empirical Literature

In this section review of research works on the outcome of health care reform in different parts of the world is presented. The review work is presented in two parts global health care reform outcomes and the Ethiopian health care service reforms implementation outcomes.

2.6.1 Global Empirical Literature

Extensive body of public administration literatures argues that to alleviate health care service problems reform is a must (Pollitt 2010, Katsamunskaja 2012). Hence many countries including Ethiopia has took reform measures with the overall objective of improving the quality of health service provision (effectiveness, safety and responsiveness), accessibility of health care service provision (both physical access and financial affordability), and maintaining the efficiency of the health care service provision.

The research works that witness the outcome of the reform measures reported both the success and failure story; hence the result is mixed and inconclusive.

Many countries in Europe have been implementing health care reforms to review their health care systems and health care services financing and delivering approaches. The European debt crisis (often also referred to as the Eurozone crisis or the European sovereign debt crisis) is a multi-year debt crisis that has been taking place in the European Union since the end of 2009, triggered a massive reform measures in all spheres of public service including health. According to Clemens

set al. (2014), during the financial crisis in many EU members states hospitals have become a focal point for health care reform strategies. The reform in hospitals consists of reducing cost as a short-term strategy and improving performance in the long run. However, it was claimed that the hospital reforms in the European countries put emphasis on cost containment measures rather than embarking on structural redesign of the hospital sector (Clemens et al. 2014).

Beck et al. (2013) in his study indicated that starting from the mid-1990s several countries including Belgium, Germany, Israel, the Netherlands and Switzerland have introduced elements of regulated competition in their health care system with the objective of stimulating improving efficiency in health care production and to respond to consumers preferences. The theory behind the model of regulated (managed) competition was developed with the following preconditions: effective quality supervision, guaranteed access to basic care, free consumer choice of insurer, consumer information and market transparency, risk bearing buyers and sellers, contestable markets, freedom to contract and integrate, effective competition regulation, cross-subsidies without incentives for risk selection, and cross subsidies without opportunities for free riding. After more than a decade of health care reforms in none of these countries all preconditions are completely fulfilled. The following preconditions are least fulfilled: consumer information and transparency, contestable markets, freedom to contract and integrate, and competition regulation. The extent to which the preconditions are fulfilled differs substantially across the five countries. Despite substantial progress in the last years in improving the risk equalization systems, insurers are still confronted with substantial incentives for risk selection, in particular in Israel and Switzerland. Imperfect risk adjustment implies that governments are faced with a complex tradeoff between efficiency, affordability and selection.

Similarly Okma et al. (2008) revealed that in the 1980s and 1990s, six countries undertook health care reform (Chile, Israel, Singapore, Switzerland, Taiwan and The Netherlands) after systematic reviews of their health care. Both endogenous and exogenous factors added to the pressure to change/reform. The oil crises of the mid-1970s, the end of the post-war baby boom and changing ideological views of the role of state and citizens combined to trigger extensive debate about the future of the welfare state. The goals of the reforms in all six countries were similar: improved access to health services (through expanding public or private health insurance), improved quality and efficiency of services (through a mix of market-oriented and regulatory measures)

and greater consumer and patient choice (freedom to switch to another insurer, or to a different plan with different financial conditions, but also, freedom of choice of provider).

At the two extremes of the range of options considered are full privatization of health insurance and provision (considered by Chile, Singapore, Switzerland and The Netherlands) and nationalization (considered by Chile). In the end, no country has fully privatized or fully nationalized its entire health care system. A diagnosis of the health reform experience indicated that all of the countries except Chile realized universal or near-universal health insurance coverage, but their success with other goals, in particular consumer choice, has been more modest.

China has recently been compelled to undertake health sector reforms in response to inequitably distributed health services in the country (McCollum et al. 2014, p.107). However, the implementation of the new health care reform aimed at tackling high medical costs was not fruitful (Jiang et al. 2013). Because of low availability of essential medicines in public hospitals some patients had to purchase their medicines from retail pharmacies. Similarly Xiong et al. (2013) indicated that though the Chinese government was able to increase health service coverage and equity through increasing primary health institutions, sustaining the gains has been difficult.

Health care reform in South America countries was also implemented. According to Esteves (2012), Brazil and Colombia have implemented extensive health care reforms for decades with the major goal of improving access, increase efficiency and reduce health inequities. However, neither reform seems to have had a decisive positive impact on the health outcomes, instead, the countries health improvement decelerates in the years following the reforms.

Similarly Mosquera et al. (2014) studied the contribution of the reform measures of Colombia using qualitative multiple case study methodology. Seven Bogota's localities were included. Eighteen semi-structured interviews with key informants (decision-makers at each locality and members of the District Health Secretariat) and fourteen FGDs (one focus group with staff members and one with community members) were carried out. The study indicated that the reform failed to be successful in achieving the goal intended due to a number of barriers including the lack of a stable funding source, the confusing and rigid guidelines, the high turnover of human resources, the lack of competencies among health workers regarding family

focus and community orientation, and the limited involvement of institutions outside the health sector in generating inter-sectoral responses and promoting community participation.

In contrast to the above gloomy reports of reform outcomes there are many success stories too. Svaljek (2014) verifies that the health care reform of Croatia implemented in 2008 to enhance financial stability met many of its goals. With the reform, it was possible to diversify the sources of health care financing, generate enough resources, and restore the overall financial stability of the Croatian health care system.

Similarly Jadoo et al (2014) indicated Turkey's major health care reforms of developing easily accessible, high-quality, efficient, and effective health care services for the population Since 2003 was successful . A cross sectional survey research encompassing the health service users indicated that among the respondents, more than two third of the population believes that the reform have had positive effects on the health system. A vast majority of respondents (82.0%) believed that there was an increase in accessibility, 73.7% thought more availability of health resources, 72.6% alleged improved quality of care. Indeed, the majority of respondents (77.6%) prefer the current health care system than the past. Therefore the overall health system reforms were successful. The study further Turkish government' sstrong commitment and leadership, accompanied by strong economic growth have contributed to the achievements.

Khayeri et al (2014) a study in Iran showed that health care reform have improved indexes of the cost paid by hospitalized patients, promotion of natural birth, promotion of inpatient services, residency of doctors, and encouraging doctors to remain in deprived areas. Among the objectives of the reform program, promotion of natural birth has been more successful than other indexes of health care system reform programs.

On the other hand in United States of America, Prologo &Meltze r(2014) asserted that Patient Protection and Affordable Care Act of the United States government signed into law outlines 10 year strategies to improve access to health care, quality of patient care and provider's responsible behavior .In the reform, of the 60 million uninsured adults,30 million are expected to get insurance coverage by 2021 (Galarraga & Pines 2013).The analysis made by Carman & Eibner(2014) shows that between September 2013 to March 2014,the United States health care reform is able to increase health care coverage with 9.3 million more people; low erring the

uninsured rate from 20.5% to 15.8%. However this success story of insuring the uninsured for health care seems at risk, as president elect Donald Trump is threatening to reverse the health care financing reform acts.

Similar study by K. Long et al. (2013) also reported positive impact of the 2006 affordable care act initiative in state of Massachusetts' which resulted in gains in insurance coverage, access to and use of care, and health care affordability . Under reform, un-insurance in Massachusetts dropped by more than 50%, due, in part, to an increase in employer-sponsored coverage. Gains in health care access and affordability were widespread, including a 28% decline in unmet need for doctor care and a 38% decline in high out-of-pocket costs.

Similar to other continents, African countries such as Ethiopia, Kenya, Uganda, Tanzania, South Africa and Lesotho embarked on reforming their public health sector. Africa has been struggling for decades to reform its health care and achieve the vision of the African Health Strategy to an integrated and prosperous Africa free of the heavy burden of disease, disability and premature death (Ssenyonjo 2012). However it was claimed that unlike the European countries which focus on cost containment measures, African countries health sector reforms put emphasis on entire structural redesign of the health sector.

A comparative study regarding the health sector reform of Ghana and Zambia indicated that in both countries, utilization rates for public sector services are extremely low and health state remains poor and inefficient. The author's emphasized that the challenge in Ghana and Zambia was to define realistic objectives in relation to these issues and to develop the means to demonstrate whether or not they are being achieved (Cassels & Janovsky 1996).

Wamai (2008) indicated that Kenya has implemented reform measures in line with the on- going 1994 Health Policy Framework to provide "quality health care that is acceptable, affordable and accessible to all". It is argued that providing a quality health care package to all will require a holistic systems development approach that gives priority to improving access and coverage by improving facilities, providing affordable and accessible health care services, increasing health care professionals and further decentralization in financial management and decision-making. Since the aforementioned preconditions failed to be fulfilled, the reform initiatives are unable to contribute to the achievement of the goal.

Donnel (2007) revealed that the poor segments of Kenyan society tend to be the least healthy and most probably have the most to benefit from health care. The greatest health gains could be realized through concentrating marginal resources on treatment of the poor. The fact that those most in need make least use of health care is widely considered inequitable. Such concerns motivate the prioritization of programs that target the health care needs of the poor – primary care and child and maternal health interventions. Unfortunately, the evidence shows that there is pro-rich bias in the distribution of benefits even from these programs e is pro-rich bias in the distribution of benefits even from these programs

Chuma and Okungu (2011) also indicated that though Kenya undertook health care reforms to secure a fundamental change in the functioning and performance of its health care services, the health system in Kenya is still inequitable and the health financing is fragmented.

Similarly Okech (2014) reviewed the outcome of the various reform initiatives and concluded as the reform resulted in multiple sources of revenue with government revenue showing an upward trend over the years in absolute terms though still lagging behind the Abuja Declaration of 2001, and existence of high levels of out-of-pocket spending which has continued to contribute towards catastrophic health expenditures. Other findings include existence of significant contribution by the development partners which is however, off-budget and skewed in favor of some regions notwithstanding its sustainability given the global trends.

Bonfrer (2015) provided another compelling evidence regarding Kenya's health care reform by investigating the outcome of health care financing component of the reform encompassing 1226 randomly selected households in Western part of the country. The study revealed that formal mechanisms protecting households against the financial consequences of shocks are largely absent in SSA, especially among households with employment in the informal sector. This is a sizeable problem given that majority of employment in SSA is informal. One of the potential routes towards better financial protection for these households is the introduction of pre-payment mechanisms limiting the financial consequences of health shocks. This helps to identify the most important risk(s) in these households' portfolios, requiring attention from policy makers.

The other East African country, Uganda also implanted health care reform for decades. According to Okuonzi (2007) Uganda embarked on market based health reforms in 1994. Uganda introduced health sector reforms, defined by the World Bank as market reforms, in 1994. The reforms were based on four cardinal market principles: Individuals, charities, and private organizations should be made responsible for health care, Public funding of health care should be restricted to health promotion and prevention of disease, central government's role should be restricted to policy formulation and technical guidance, with delivery of services left to the private sector and local authorities. The reforms were concentrated on supporting the private sector and non-governmental organizations to become the key providers of health and social services. The study revealed that the reforms have not only failed to improve health services and the health of the population but have arguably been the key factor behind their deterioration. The study further highlights that official reports developed by donor funded expatriate staff on Ugandan health sector reform have tended to show a positive picture, despite the reality which is totally the reverse.

Similarly Orem & Zikusooka (2010) indicated that despite Uganda implemented health care reform measures it fails to achieve the goal as it has faced with the challenge of under-funding for a very long time.

Tanzania also reforms its public health care system. Tanzania's decentralization by Devolution health reform approach aimed to improve the delivery of public health services and gained successes and challenges. Frumence et al. (2013) state that the reform was failed from constraints, unnecessary political interference, lack of sufficient and technically qualified personnel, and weak supportive supervision activities.

Regarding the health care financing aspects of African countries Leive & Ke Xu (2008) explored factors associated with household coping behaviors in the face of health expenditures in 15 African countries and provide evidence for policy-makers in designing financial health protection mechanisms. The study asserts that Coping through borrowing and selling assets ranged from 23% of households in Zambia to 68% in Burkina Faso. In general, the highest income groups were less likely to borrow and sell assets, but coping mechanisms did not differ strongly among lower income quintiles. Households with higher inpatient expenses were

significantly more likely to borrow and deplete assets compared to those financing outpatient care or routine medical expenses, except in Burkina Faso, Namibia and Swaziland. The study concluded that in most African countries, the health financing system is too weak to protect households from health shocks. Borrowing and selling assets to finance health care are common. Formal prepayment schemes could benefit many households, and an overall social protection network could help to mitigate the long-term effects of ill health on household well-being and support poverty reduction

O. Chiemi (2015) indicated that effective health system guarantees access to health as fundamental to improved health, and decreased morbidity and mortality. Health care deliveries in many African countries have been poor due to the failure of governments and their agencies to address the underlying challenges with strategic plans.

While many countries such as China, Cuba, Chile, and Costa Rica, the US, Canada, and Great Britain just few to mention have improved their health care services to fit the populations needs, access to primary health care in many African countries continues to be highly limited thereby leading to increased death and diseases from preventable causes. Majority of the health systems in Africa are characterized by bad leadership and management, poor funding, shortage of drugs, inadequate labor capacity, and absence of health promoting amenities are among many other problems. Therefore, African countries need to adopt a well-established health delivery framework that is responsive to local and emerging health needs.

Similarly Schneider et al. (2010) revealed that public health policy to be credible and acceptable it has to satisfy the criteria of equity, quality and efficiency. However, studies indicate that many Sub-Saharan African (SSA) countries are unlikely to internally generate the required funding to provide efficient and quality health services. Though the reform measures, according to Mbacke (2013) the countries are not acting according to their statement, and some are defaulting on their commitment to take the lead by increasing their investments in health mainly due to improper health care financing flow and lack of commitments.

2.6.2 Empirical Evidence on Outcome of Ethiopian Health Care Reforms

Health quality (effectiveness, responsiveness and safety)

According to FMOH (2005) hospital reform is a priority in the context of the national health sector strategic plan of Ethiopia. Two of the main goals of the hospital reform are to improve the accessibility and quality of health services and to increase the efficiency in health care delivery. At each level of the hospital system the reform measures were expected to positively contribute towards the provision of quality health service and utilization of the hospital capacity and the mix of patients and available services to the greatest number of patients at least cost.

In the following part a brief review of research works regarding the achievement of reform measures with respect to health quality (health quality has three sub-dimensions i.e. effectiveness, responsiveness and safety) a dimension of health care performance is presented.

The health quality sub dimension of effectiveness is expressed in terms of satisfaction of health care service users. Dhaba et al. (2010) evaluated Oromia region Hospitals against several criteria related to Business Process Re-engineering, Health Care Financing reform, Infection Control and Environmental Hygiene. According to the above mentioned criteria the hospitals are evaluated and the result indicated improvement in revenue generation and utilization, control of hospital-acquired infections, in volume and quality of services, in staffing and implementation of outreach services. Though this study managed to encompass many hospitals it fails to consider using internationally highly acclaimed models of health care performance assessment. Moreover the study fails to indicate whether the improvement reported comes as a result of hospital reform measures or other factors.

Similarly Molla et al. (2014) in their study on inpatient satisfaction in black lion hospital revealed that the overall satisfaction of inpatients is found to be 90.1 percent and the number of nights in the ward is found to be a significant factor. The study reported as the hospital could be taken as model for other hospitals. The study only considers one dimension of health performance indicators and hence its scope is limited.

In like manner Aman (2016) investigated overall satisfaction level of mothers with urban health extension program service and reveals that 74.6% of the mothers approached were satisfied with

the overall service provision. Similarly A total of 278 postnatal mothers from two referral hospitals and eight health centers were participated in a the study and 55.8% of the respondents were satisfied with care received during postnatal period and 44.2% of them were not satisfied with care given (Ejara 2014).

One of the objectives of health care reform measures of Ethiopia was achieving equity in terms of health care service access and financial contribution to receive the service. A study based on meta-analysis of quantitative and qualitative information on policy documents and Ethiopian Demographic Health survey (EDHS) shows the objective of achieving equity is not yet achieved. The study revealed that the equity gap in coverage between poorest and richest population groups was larger in Ethiopia. The variability is more pronounced for few interventions like SBA (skilled birth attendance), contraceptive use and access to safe water. For instance the coverage for skilled delivery care among the wealthiest quintile was about 25 times higher than the poorest (45.6% vs 1.7). Policy makers and program managers should use the disaggregated information in prioritizing resources and planning health services to reach the poorest and most affected population sub groups. The study suggests that positive discrimination in favor of the poor to provide outreach and other innovative schemes of health care service is vital (Mekonnen et al. 2017).

To smoothly implement the health care reform in public hospitals hospital reform implementation guideline was introduced .Regarding the implementation of this guideline Abrehet (2013) reported that after implementing the guideline the percentage of patient flow standards showed an improvement from 23% to 85%. Patients triage(the process of deciding how seriously sick /injured the patient is) within five minute also increased from 40% to 90% as the result of this improvement emergency mortality rate decreased from 0.3% to 0.1 % in Adigrat Hospital.

Similar study on hospital reform implementation guideline by Gulelat (2013) in Addis Ababa with reference to Pharmacy service revealed that Fifty percent of participating hospitals have quality offices for monitoring and evaluation. The awareness of pharmacy professionals about hospital reform guidelines (HRG) was around 61% and the implementation of the 12 operational standards included in pharmacy chapter of guideline was found to be in range 33% – 83%.

Regarding challenge, all hospitals face problems associated with motivation, and commitment of pharmacy professionals towards their job.

Regarding Improvement in Adherence to Ethiopian Hospitals Reform Implementation Guideline nursing standards in Asella Referral Teaching Hospital indicated that patient satisfaction score (pooled estimate) improved significantly from 0.147 to 0.615 pre and post intervention respectively. Significant association between overall patient satisfaction level and improved adherence to nursing standards was reported. The study revealed that implementation of nursing standards of the reform guideline has contributed for nursing service and in turn to patient satisfaction (Tadesse 2015).

The other important sub dimension of health quality is safety. The dimension of safety means the degree to which health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care itself (National Patient Safety Foundation 2000). Safety is a dimension that is closely related to effectiveness, although distinct from it in its emphasis on the prevention of unintentional adverse events for patients. Hence the health care service reform measures of Ethiopia also were expected to alleviate incidences of medical errors in public hospitals.

Fekadu (2014) a study with an objective of assessing the type and frequency of prescribing and medication administration errors (MAEs) in the pediatric wards of Black Lion Specialized Hospital and Zewditu Memorial Hospital in Addis Ababa, Ethiopia was conducted. The study encompassed retrospective data from 2008-2010 G.C of 2401 medical records to assess prescribing error and prospective observation on 27 nurses administering drug to pediatric inpatients was done. Five thousand eleven prescribing errors were documented in the indicated period. The prescription writing error were the most frequent 2386 (99.4%), followed by wrong dose 1673 (69.67%), drug-drug interaction 767 (31.9 %) and wrong frequency 185 (7.7%).

Similar study on safety by Feleke et al. (2015, p.1) indicated in their study the prevalence of high discrepancies at hospital discharge with discrepant dosing of medication being identified as the most frequent type of medication discrepancy. Attention to the medication therapy and increased involvement of clinical pharmacists in the provision of pharmaceutical care are important measures.

On the other hand Eshetie et al. (2015) reported that Adverse drug events (ADEs) are common in hospitalized children due to failure to exercise proper care. In their study in Jemma teaching hospital revealed that Fifty eight ADEs were identified with an incidence of 9.2 per 100 admissions, 1.7 per 1000 medication doses and 9.4 per 1000 patient-days. One-third of ADEs were preventable; 47 % of these were due to errors in the administration stage of medication use process. Regarding the severity of ADEs, 91 % caused temporary harms and 9 % resulted in permanent harm/death. Anti-infective drugs were the most common medications associated with ADEs. The occurrence of ADEs increased with age, length of hospital stay, and use of CNS, endocrine and antihistamine medicines. A strategy to prevent the occurrence and consequences of ADEs including education of nurses/physicians is of paramount importance.

The most frequently occurring drugs involved in wrong dose and frequency was ceftriaxone (586 times). The most frequent drug-drug interaction was the concurrent prescribing of ampicillin and gentamicin (610 times). More than two diagnoses (AOR = 1.66 95% CI= 1.32- 2.13) was significantly associated with wrong dose. Two (AOR=1.87 95%CI=1.39- 2.52) and more than two diagnoses (AOR=6.00, 95% CI 4.64- 7.77) were significantly associated with drug-drug interaction.

International development agencies also report on the outcome of Ethiopia's health care reform measures. (World Bank 2016) stated as Ethiopia is one of the few countries in SSA that achieved a significant reduction in under- five mortality with limited increase in expenditure per capita. Using allocative efficiency approach, improvements in health outcomes relative to increase in public health expenditure shows that in the case of Ethiopia, for the same level of increase in expenditure, reduction in under-five mortality can range between 20-110 deaths per 1,000 live births. The analysis shows that Ethiopia reduced under-five mortality by about 80 deaths per 1,000 live births with an increase of US\$5 in health expenditure per capita. No other country has achieved a larger reduction for the same level of increase in expenditure. In absolute values, only six countries achieved a larger reduction than Ethiopia, but they also had large increases in public expenditure on health. Kenya for instance, reduced under-five mortality by about 35 deaths per 1,000 live births through an increase of US\$10 in health expenditure per person.

Some of the positive outcomes are reported to be attributed to increased allocative efficiency, but there is scope to increase technical efficiency. Nowadays, more than half of health spending is on primary care, the most cost-effective level of health care. For instance, reproductive health accounts for 21 percent and HIV/AIDS 16 percent of total government expenditure. Nevertheless, there appears to be room for improving technical efficiency as the average number of outpatient visits per health worker per day is between two and nine and the average inpatient case per health worker per day is only one. It is imperative to identify woredas and/ or facilities that operate less efficiently through further study, and develop customized work plan for improvement.

A major element of the decentralization reform of Ethiopia has been the establishment of hospital governing boards which reflect hospital and community leadership and are charged with strategic planning, budget approval, and performance management responsibilities.

McNatt et al. (2014) hypothesized that hospitals with higher functioning governing boards would have better performance, as measured by better adherence to the Ethiopian Hospital Reform Implementation Guidelines (EHRIG) and more positive patient experience. To test the hypothesis they investigated the implementation of hospital governing boards in the context of national health care reform in a large, low-income country, Ethiopia. The study indicated that hospitals with greater hospital management standards met had governing boards that paid members, reviewed performance in several domains quarterly or more frequently, developed new revenue sources, determined services to be outsourced, reviewed patient complaints, and had members with knowledge in business and financial management. Hospitals with more positive patient experience had governing boards that developed new revenue sources, determined services to be outsourced and reviewed patient complaints. The study suggests that strengthening governing boards to perform essential Responsibilities may result in improved hospital performance.

A similar study about the practice of administering hospitals with boards reported both positive contributions and weaknesses. Seid et al. (2016) assessed good governance index of public hospitals both quantitative and qualitative data were collected using a semi-structured questionnaire. Quantitative data collections included collection of key performance indicators (KPI) and data collected from patients using a structured questionnaire. Qualitatively, focus

group discussions with Health professionals and administrative workers separately based on structured topics and sensitizing concepts, visual inspection of infrastructure, documents, Minutes, guidelines and service areas, views of leaders, health professionals, admin staffs and patients were included.

The study reported Strengths of hospitals in the areas of service expansion, the starting of new and valuable services which such as kidney transplantation (St. Paul), neuro- surgery and artificial dental implantation (Zewuditu), neonatal intensive care unit (NICU), legal services for cases of (Ghandi), higher eye care and treatment (Minilik), skill assessment of nurses every six months to improve quality of services (Tirunesh Bejing). The other common strengths of the studied hospitals were a continuous increase of service utilization by the community, increase in bed occupancy rate, better implementation of hospital reform, coordinated emergency services with the central command post in Addis Ababa, emergency rooms were open for 24 hours, improvement in the ethical practices of practitioners, good involvement and capacity building for catchment health centers, liaison rooms to provide information.

The study also approached hospital service users and assessed satisfaction level of hospital service users using 5-point LIKERT scale. According to the response given by customers on in-patient services, the satisfaction rate was 77% for duration of surgical appointment, 82% for preparation in advance of discharge, 79% for level of follow up by Doctors, 78% for level of follow up by nurses and 81% for counseling given for discharged patients whereas from 18%-23% were dissatisfied for the above inpatient services. On the hand the overall good governance index ranges between score of 73.6 - 59.6%.

Responsiveness refers to how a system treats people to meet their legitimate non-health expectations (WHO 2000, WHO 2000b). Another term that is often used synonymously with responsiveness is patient-centeredness. Patient centeredness is the degree to which a system actually functions by placing the patient/user at the center of its delivery of health care and is often assessed in terms of patient's experience of their health care.

Proper inter- personal communication and provider-patient interaction are among the measures and manifestations of health care quality. A study in Tikur Anbessa hospital suggests that though the hospital reform guideline and other reform measures clearly stipulate hospital service

responsiveness (respect for patients , maintaining the dignity of patients) physician-patient interaction has deficiencies (Zewdneh et al. 2009).

2.6.3 Empirical Evidence on Hospital Technical (Operational) Efficiency

The first study examining hospitals' efficiency took places in USA in 1980s conducted by Nunamaker (1983) and Sherman (1984) DEA was employed as main technique of analysis. Since then, examining hospitals' efficiency and its determinants has been in spotlight of the health care studies around the world.

Raphael (2015) examined the technical efficiency of private teaching hospitals in Tanzania. The study employed a widely used non-parametric approach (Data Envelopment Analysis) in a sample of 18 teaching hospitals. The study revealed that out of 18 teaching hospitals, only 4 (22.3%) of them are operating close to technical efficiency with average level of technical efficiency ranging between 92% and 98%. The remaining 14 hospitals are operating far from efficiency frontier. Overall mean scale efficiency was found to be 82.4%. With support of DEA this study has revealed inefficiency in the use of scarce health care resources in teaching hospitals in Tanzania.

Similarly Kirigia et al. (2013) investigated Eritrean hospital efficiency using non-parametric approach of data envelopment analysis (DEA) with 4 inputs (Number of doctors , number of nurses, midwives & nurse associates , number of laboratory technicians, and number of beds) and two out puts (Outpatient patient department visits, Inpatient department discharge). The findings from the first-stage analysis was reported to as 68% of hospitals were variable returns to scale technically efficient; and only 42% hospitals achieved scale efficiency. On average, inefficient hospitals could have increased their outpatient visits by 5.05% and hospital discharges by 3.42% using the same resources. This study shows that routinely collected hospital data in Eritrea can be used to identify relatively inefficient hospitals as well as the sources of their inefficiencies.

On the other hand Bertrand (2012) assesses the determinants of hospital inefficiency in Cameroon using DEA using outputs of the number of maternal and child care, number of medical tests, number of consultations, admission number, the number of cumulated hospitalization days and inputs of the number of beds, number of medical and non-medical staff

.The result indicated that fall in production of public hospitals in Cameroon is better explained by a lack of efficiency than lack of resources. Furthermore the inefficiency of the hospitals is particularly explained by the occupation rate of hospitals beds, corruption, the cost of health care and the degree of specialization.

Another study by Mbonigaba & Oumar (2014) measured the relative efficiency of South African municipalities in primary health care and hospital care with the objective of investigating whether south African municipalities can learn with each other. The study Used non-parametric approach data envelopment analysis (DEA). The study encompasses proportion of district health expenditure on primary health care, proportion of district health expenditure on management, primary health expenditure per capita as inputs. On the other hand immunization rate, antenatal service usage rate, primary health care usage rate were used as inputs. The study reports that Municipalities in South Africa are generally in efficient. Similar study in South Africa by o Zere (2000) evaluates the technical efficiency of 86 public hospitals using the non-parametric technique data envelopment analysis (DEA). The study has used recurrent expenditure and bed size as inputs on the other hand inpatient days and outpatients visits were used as outputs. The study indicated that a marked difference of performance among hospitals and average technical efficiency was found to be 0.74, if inefficient hospitals were to operate as their peers on the frontier, efficient gains in terms of reduction in current expenditure would amount to about \$ 47 million and this may have offset the need to raise user charges, and would potentially more equitable.

A similar study in Saudi Arabia hospitals efficiency was carried out (El-Seoud, 2011). The study aims at investigating the efficiency of public hospitals that have been reformed to operate under private sector management of through the full operating system. The study applied Data Envelopment Analysis (DEA) on the sample of reformed hospitals based on the ministry of health data for 2011. The study adopted the two models for measuring the efficiency of health services provided by the reformed hospitals in various regions of the Kingdom. Accordingly, number of specialists, number of nurses, number of allied health and number of beds are used as input variables; while the number of patients visit outpatient, number of patients admissions to hospital, number of laboratory tests, and number of beneficiaries of radiological imaging are used as output variables. The study found that although the Saudi government achieved many

positives results such as: attracting the excellence in human resources, rising of the level of government health services, attracting national capital to the health sector, and reducing the administrative burden of the government sector, there are (60%) of the study sample had not achieved relative efficiency due to different reasons. The study concludes that health reform is complex, and requires policy consistency, stability, and government institutions with strong implementation capacity and government credibility.

In like manner study in Chinese hospitals by Chung (2011) on productive efficiency of Chinese public hospitals after implementation of reform measures was undertaken using non-parametric approaches including labor indicators as inputs (number of doctors, nurses, pharmacists and other medical and administrative staff) and outputs of the number of outpatient and inpatient cases. The hospitals studied were found to be efficient and the underlying reason for the inefficiency was reported to be unnecessary care, over-prescription of drugs, and adoption of high tech treatments are commonly found.

Another equally important study on Hospital efficiency study in Finnish hospitals (1988-1994) adopted Data Envelopment Analysis (DEA). The study uses inputs of health staff, number of beds and materials. The outputs included were acute inpatient days, undesirable outputs such as prevalence of infections during treatment. The majority of the hospitals encompassed in the study were reported to be inefficient.

In the Ethiopian case there are scanty of empirical evidence regarding hospital efficiency in particular and health care service facility in general.

Getachew (2002) employed Stochastic Frontier Analysis to measure the technical efficiency of 8 selected public hospitals in Ethiopia. He used two outputs and five inputs to estimate the contribution of each input in the production process of health output. The outputs were outpatient visit and inpatient visit, while labor time spent by different professionals and administrative staffs, budget allocated to drugs, number of beds and depreciation of capital (building). He disentangled the labor time into labor time of technicians and labor time of administrative staff and finally formulated the inefficiency model using salary of technical and non-technical staffs as its determinants. The estimation conducted using outpatient visits as an output, showed three hospitals exhibited some degree of technical inefficiency, while the estimation conducted using

inpatient visit as an output indicated as one hospital exhibited inefficiency. During the same period, Balcha (2002) examined the technical efficiency of 40 health centers in Ethiopia. The study employed DEA model for a one year data set to obtain the efficiency scores and regressed the efficiency scores against health center operating characteristics using both OLS and Logit models. For inputs he used: Doctors/ health officers, Nurses, Health assistants, other technical staffs and Administrative staff while for outputs he used: Outpatient visits, maternal & child care visits & delivery services The DEA results indicated that, 62.5% of the health centers were technically inefficient and 60% were scale inefficient while the OLS and Logit results showed that location and availability of hospitals in the area significantly affected level of efficiency.

The main weakness of the aforementioned studies lies on their data set Although the efficiency scores were continuous numbers, the second study employed Logit model in the second stage. Thus, measuring technical efficiency using a single time period data (due to extreme observations) and employing Logit model might lead to bias on results. Therefore to mitigate the drawback of single time period, this study will be carried out using at least five year panel data and determinants of efficiency will be examined using regression model.

Likewise another study Seid (2006) measured the efficiency of seventeen hospitals in Addis Ababa using a five year panel data (2000/01-2004/05) employing both parametric and non-parametric models. The study used DEA and DEA-Malmquist models (non-parametric approach) to identify the level of efficiency of hospitals, while determinants of technical efficiency were examined using a censored-Tobit regression model (parametric approach). Results of the CRS DEA model showed that 5(29.4%) hospitals were found technically efficient, while 12(70.6%) were inefficient. The VRS DEA model indicated 9(52.9%) hospitals were technically efficient and 8(47.1%) hospitals were technically inefficient. Out of the sampled hospitals, 5(29.4%) hospitals were found scale efficient, while 12 (70.6%) were scale inefficient. The results of the censored-Tobit model indicated that age, size, teaching state, average bed occupancy rate and number of medical doctors to total staff were found significantly associated with technical efficiency scores.

A study by Sandro et al. (2010) measured hospital efficiency encompassing 47 hospitals (both governmental and non-governmental) located in 5 regions (Tigray, Amhara, Oromia, SNNP, and

Addis Ababa) indicated that high level of performance was found in facilities in both public and private sectors in terms of efficiency. Factors affecting performance of the hospitals were found to be the hospital governance autonomy, the incentives, and the management framework which governs a facility, regardless of ownership state .

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the philosophical assumption and the research design adopted in this study. Different and common philosophical assumptions were highlighted and presented in this chapter. Cognizant of the purpose of the research, pragmatist paradigm was chosen for the framework of the study. This chapter also describes the methodological procedures followed to realize the objectives of the study. Besides, the research approach and design employed to carry out this study have been discussed in order to achieve the objectives of the research. It also explains the research population, sample size, and sampling techniques and procedures. Moreover, this chapter presents the type of instruments utilized to collect data, and how such data were analyzed. Finally, it explicates ethical issues which were considered and adhered throughout the research process.

3.2 Research Paradigm

It is well understood that each type of research is conducted based on the respective underlying philosophical assumption relevant to what constitutes valid 'research and which research method(s) is/are appropriate for the development of knowledge in a given study (Antwi & Hamza 2015). Hence, in order to conduct any research, it is imperative to know what each assumptions are referring to.

Similar terminologies are often used by different authors to explain the philosophical foundations including world view, assumptions and paradigms (Cameron, 2011). Consequently, any research process is regarded to have three important elements which include ontology, epistemology, and methodology (Ma 2015). Paradigms are defined as research philosophies that guide the overall direction of the research process along with the above three important dimensions. Likewise, Morgan (2007) tries to state paradigms as the shared belief systems which influence the kind of knowledge that researchers seek and how they interpret the evidence they collect.

There are different philosophical worldviews that influence research undertaking. To mention a few, such as positivist, post-positivist, interpretive, critical, and constructivist paradigms. Pragmatism, feminism, and participatory perspectives are also emerged later as additional classifications by other authors (Creswell 2009). However, explaining each of these paradigms is

not the purpose of this section. This study gives more emphasis on the two predominant ontological positions which are assumed to shape the work of contemporary researchers: Objectivism and constructivism.

As stated by Alan (2006), objectivism implies that the social entity in question adheres to an external objective reality which is independent of the researcher's awareness. It also suggests that objectivists need to advocate value free research. However, constructivist epistemological discourses emphasize on socially constructed nature of reality. Likewise, Scotland (2012) argues that in this kind of research environment, there is close relationship between the researcher and the study subject so that it provides the researcher an opportunity to observe, investigate and understand experiences (leading to knowledge) through different strategies.

Given the fact that the study used mixed method design, the researcher adopted pragmatism philosophy as a guide to investigate the state of health care service provision of public hospitals of Addis Ababa city. As per pragmatists' view, the subjectivist and the objectivist perspectives are compatible (Johnson & Onwuegbuzie 2004). Correspondingly, Tashakkori and Teddlie (1998) have considered the pragmatists' view as the best philosophical foundation for mixed method research.

Pragmatist paradigm employs what works using various approaches, give values to both subjective and objective knowledge (Creswell & Plano Clark 2011). Therefore, the combination of ontology and epistemology is acceptable to understand the research phenomena. Thus, mixed methodological approach has provided an opportunity to get potential benefit from multitude of methods employed in this study.

3.3 Research Approach

There are three research approaches namely quantitative, qualitative and mixed. Taking in to account the above discussion this study has followed mixed research approach .

Mixed methods research has been established as a third methodological movement over the past twenty years, complementing the existing traditions of quantitative and qualitative movements (Tashakkori & Teddlie 2003, Teddlie & Tashakkori 2009). The term 'mixed methods' has come to be used to refer to the use of two or more methods in a research project yielding both

qualitative and quantitative data (e.g. Creswell & Plano Clark 2007, Teddlie & Tashakkori 2009).

Similarly Creswell (2014) indicated that mixed methods approach is one in which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). The approach employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problem. The data collection also involves gathering both numeric information (e.g., on survey instruments) as well as text information (e.g., on interview guides) so that the final database represents both quantitative and qualitative information.

To investigate the public hospitals health care service quality, accessibility and operational efficiency the views of different stakeholders i.e. users of health care service of the hospitals and officials from the facilities and policy makers selected was encompassed. Hence to analyze the data from the aforementioned diverse sources and achieve the objectives of the study both quantitative and qualitative data was secured, so mixed research approach was applied.

3.4 Research Design

DeVaus (2001) concisely describes research design as logical structure of an inquiry. For Kotari (2004), research design is the conceptual structure within which the research is conducted. Most recently, Creswell (2014) describes a research design as a type of inquiry with in the selected research approach that provides specific direction for the procedures in the research. An apt research design gives a hand to the researcher to smoothly accomplish the diverse research maneuvers (Kottari, 2004). Thus, prior to the commencement of data collection or analysis, the inquirer needs to decide on a specific research design (De Vaus 2001).

In real world research practice, it is not uncommon to see research design being considered as means of data collection rather than as a "central component" of scientific inquiry (Heppner et al. 2008) and "logical structure" (DeVaus,2001). In this study, the research design is considered as a logical structure of the inquiry and mapping strategy that articulates what data is required, what methods are going to be used to collect and analyze this data, and how all these are coordinated to answer the research questions.

Under the pragmatic philosophical orientation proposed, the research objectives of this research calls for a mixed methods approach . Following Creswell and Clark (2011), the next step is to decide on the specific mixed methods design that best fits the problem and the research questions. Before the selection of an appropriate research design for the proposed study, it is imperative first to be acquainted with the major taxonomies of mixed method designs and the key decisions behind these designs to adequately consider available options (Creswell & Clark, 2011).

Hasse-Biber (2010) notes that mixed methods research designs are moving across the disciplines with a great deal of accelerating influence in the social sciences. This has given rise for the proliferation of range of design types that are used to describe mixed methods research. The most frequently quoted and contemporarily applicable mixed methods research designs are grouped in to six major categories. These include the convergent parallel, the explanatory sequential, the exploratory sequential, the embedded, the transformative, and the multiphase designs (Creswell 2009, 2014). To select the specific research design that would serve as a logical structure of the inquiry and mapping strategy, four factors: interaction level, relative priority, timing and mixing procedures are taken into consideration (Creswell & Clark, 2011). Besides, following Creswell (2009, 2014), the research problem, researcher's personal experiences, and the audience are also other relevant factors considered in the choice of the research design. For the sake of simplicity and to easily select the design for the proposed study with broad understanding, the prototypical characteristics of the major mixed methods research design are depicted in figure 3.1. Based on the aforementioned factors and the prototypical characteristics indicated in figure 3.1, the research design selected used in this study is the convergent parallel design, with concurrent timing, equal prioritization, QUAN+QUAL procedure and independent interaction in which the data will be merged during interpretation.

The selection of the convergent parallel design is based on recommendations and consensus among quite a lot of mixed method scholars (Creswell 2009, 2014) on its unique applicability in social science research. For instance, Creswell and Clark (2011) note that convergent design is "the most well-known and common approach to mixing methods across disciplines as early as the 1970s". Creswell (2009, 2012) relates usefulness of convergent design to its ability to use "separate quantitative and qualitative methods as a means to offset the weaknesses in herent

with in one method with the strengths of the other". Creswell, et al. (2003) put forward that the major strength of this design is its familiarity with researchers; a shorter data collection time than sequential designs and that results can be easily validated and substantial in the proces

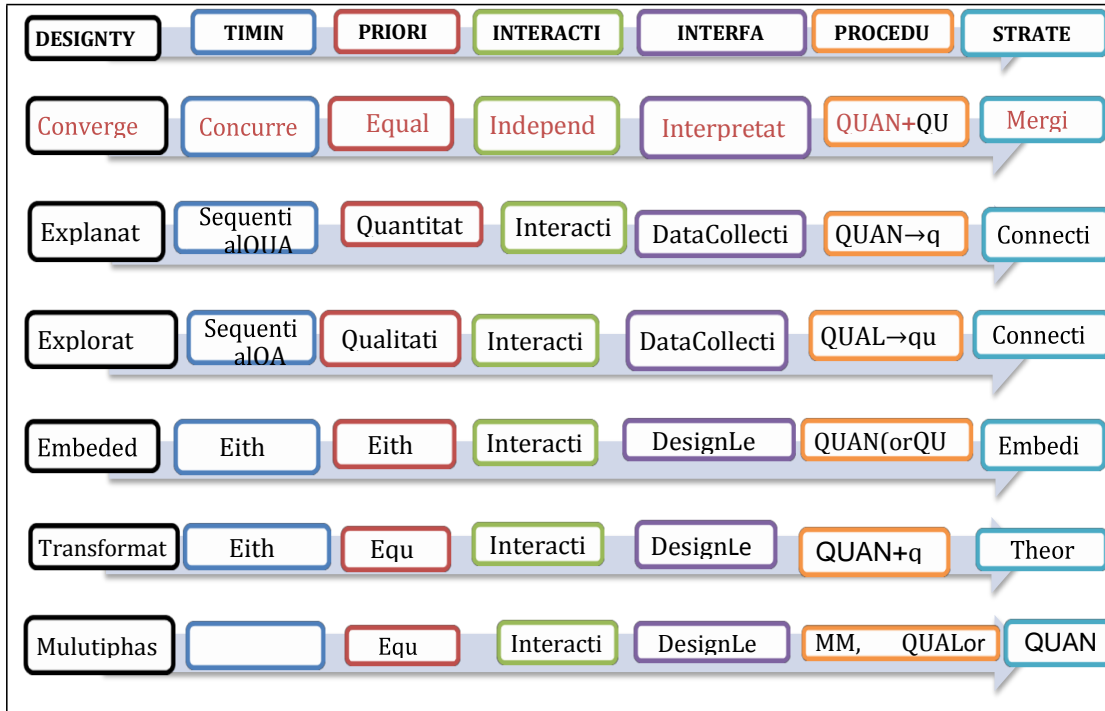


Figure3.1:Prototypical characteristics Of The major Mixed methods Designs

Source: Developed based on Creswell(2014, pp. 215-238); Creswell & Clark (2011, pp. 53-103)

To sum up,in line with all the arguments and rationales discussed,convergent parallel design was used to collect and analyze both quantitative and qualitative data during the same phase of the research process that was merged during the interpretation phase.

3.5 Unit of Analysis

One of the preliminary steps and central concept in research is to decide on the unit of analysis of the study(Long 2004,Blessing& Chakrabarti 2009).In empirical research,the unit of analysis is the social object about which the researcher wants to obtain information,wishes to draw conclusions and make generalizations (Blessing & Chakrabarti 2009).It reveals whether the analysis focuses on individuals, groups, organizations, products and bureaucracy (Blessing & Chakrabarti 2009,Creswell 2012).

In empirical investigation, one has to differentiate the unit of measurement/observation from the unit of analysis. The former relates to data collection, while the latter relates to data analysis (Long 2004, Blessing & Chakrabarti 2009).

Though there are no limits to what can be the unit of analysis (Babbie 2011), it should be chosen cautiously as it determines the data-collection methods, the nature of the study, external validity, and conclusions drawn (Blessing & Chakrabarti 2009). Characterization of the unit of analysis requires careful prior description of the subject to be analyzed (Sadoulet & Janvry 1995). In social science research, the most typical units of analysis are individual people (Babbie 2011) or household (Barrett & Swallow 2005). Nevertheless, based on the questions or hypotheses that a researcher seeks to answer or test, it is possible to gather data from multiple units of analysis (Blessing & Chakrabarti 2009, Babbie 2011, Creswell 2012).

In line with this, understanding the state of health care service provision of the facilities (public hospitals) requires a multifaceted data collected from diverse sources. Thus, the units of analysis used in this study are manifold and include hospital service users (inpatient and outpatients), the hospitals as an entity, health care reform and policy documents.

Hospital service users

Hospital service users including inpatients and outpatients were approached to collect data to meet the research objectives of assessing the state hospitals service provision encompassing dimensions of health quality (safety, responsiveness, and effectiveness), accessibility and efficiency.

The Hospitals as an entity/organization

The hospital as an entity is expected to furnish hospital performance documents including the inputs used (resources, staff number etc.) and outputs (number of inpatients and outpatients treated) can be used to measure the operational efficiency of the hospital.

Health care reform and policy documents.

The health care reform policy documents at health sector level in general and public hospitals in particular were used as a critical sources of data and provided a great help to the attainment of the overall objective of the study.

3.6 Sampling Techniques

The suitability of the sampling strategy is one aspect that determines research quality since it enables the researcher to select as representative sample as possible ((Cohen et al.2005,Walliman,2006).Selection of sampling strategy depends on several factors. Forinstance et al.(2005) identified four key factors (sample size, representativeness, access and sampling strategy) that need ultimate judgments before selection of the actual sample.Particularly,selection of sampling strategy requires a great deal of care in the in this study as its units of analysis are diverse.Thus,different sampling strategies were used to select representative samples from each unit of analysis.

3.6.1 Selection of Public Hospitals of Addis Ababa City

To investigate the specified dimensions of health care service provision seven representative public hospitals were selected from thirteen Addis Ababa city public hospitals.The military and police hospitals are intentionally excluded as the study aims at understanding the state of public hospitals offering health service for ordinary cistizens. Moreover seven hospitals purposively selected including both under addis Ababa health bureau and ministry of health.

Table 3.1 Basic Characteristics of Public Hospitals in Addis Ababa

No	Hospitals	No. of beds	Hospital type	Establishment year	Ownership	Selected
1	Alert hospital	240	Specialized	1934	MOH	
2	St. Amanuel Hospital	261	Specialized	1938	MOH	
3	Armed Forces Hospital	612	General	1956	Defense	
4	Black Lion Hospital	800	General	1973	AAHB	✓
5	Gandi Memorial Hospital	103	General	1962	AAHB	✓
6	Menilik II Hospital	263	General	1916	AAHB	✓
7	Police Hospital	252	General	1963	Police	
8	Ras Desta Hospital	103	General	1932	AAHB	✓
9	St. Paul's Hospital	392	General	1969	MOH	✓
10	St. Peter Hospital	200	Specialized	1963	MOH	
11	Yekatit 12 Hospital	199	General	1923	AAHB	✓
12	Zewditu Memorial Hospital	168	General	1970	AAHB	✓
13	Tirunesh Beijing General Hospital	100	General	2011	AAHB	

Source: Various reports of hospitals and own computation

3.6.2 Sample size Determination for Hospital Service Users

Sample size determination for hospital service users

Those who use the services of the hospital are the main parties of the study and hence they were approached. Though these units of analysis are very critical for the study understanding their exact number is very difficult. Therefore the sample size determination method for infinite population was used.

According to Krejcie & Morgan (1970, p.610) for an infinite population (where the population number is greater than 50,000) the following formula was used to determine the sample size. Accordingly the number of hospital service users to be approached for data collection purpose was determined as follows:

$$\text{Sample size} = \frac{Z^2 \times p \times (1-p)}{C^2}$$

SS =SampleSize

Z = Z-value.....1.96 = 95 percent confidence level

P=Percentage of population picking a choice.....50%

C =Confidence interval, expressed as decimal5%

$$\begin{aligned} \text{Sample size} &= \frac{(1.96)^2 (0.5) (1-0.5)}{(0.05)^2} = 384 \\ &= 384 \text{ hospital service users} \end{aligned}$$

As the data was collected through questionnaire and taking in to account the probability of non-response the formula proposed by Bartlett et al. (2001) was used as a mechanism to overcome the problem. The formula can be stated as:

Formula 2 $n_2 = n_1 / AAR$

Where: n_2 = the sample size adjusted for response rate;

n_1 = the new value for the sample size adjusted using Cochran's population correction formula

AAR= Anticipated Return Rate; estimated at 90%.

$$\text{Sample size adjusted for non-response rate} = 384 / .9 = 427$$

Therefore a total of 427 hospital service users were approached for data collection purpose and this sample size was distributed for each hospital in proportion to their average number of annual inpatient and outpatients.

Table 3.2 Allocation of the sample size to the hospitals

Hospital	Total sample	percentage
Black Lion Hospital	130	30%
Gandi Memorial Hospital	45	11%
Menilik II Hospital	60	14%
Ras Desta Hospital	45	11%
St. Paul's Hospital	60	14%
Yekatit 12 Hospital	45	11%
Zewditu Memorial Hospital	42	10%
Total	427	100%

Source : Researcher's own computation

Inclusion criteria

Patients

Patients of the respective hospitals who have received the hospital service for at least three days and who are mentally stable and capable to verbal communication were approached with consent form. They were also assured for confidentiality of information collected.

Officials of public hospitals, Ministry of health and Addis Ababa Health Bureau

Key informant interview

To triangulate the quantitative data gathered from patients of the respective hospitals the study used a descriptive, qualitative methodology with key informant interviews as the data collection tool. The sampling frame for the study include current and former ministry of health officials, official of Addis Ababa health bureau, managers of the selected public hospitals and medical personnel.

Table 3.3 Parties to encompassed in the study

Organizations	Positions of the officials to be approached	Number of key informants
Ministry of health	Senior officials (2)	2
Addis Ababa Health Bureau	Senior officials (2)	2
Public Hospitals	Managers (7), Doctors (7)	14
Total		18

Source: Researcher's own computation

In addition to the key informant interview to have a clear picture of the state of health care service provision of the respective hospitals non-participant observation was conducted.

3.7 Research Methods

3.7.1 Data Type and Sources

The nature of the study demands use of multiple data types and sources to understand the real contributions of health care reform to betterment of health care service quality, health care service accessibility, and health care service operational efficiency. Since the convergent parallel research design is already selected to be used in the study under mixed methods approach that requires the use of multiple data sources, the study collected data from both primary and secondary data sources. Primary data mainly generated through a combination of diverse methods including structured and semistructured questionnaires of open and close ended type, and observation. The sources of primary data are two namely, hospital service users and health care service providers. Moreover the primary data sources were substantiated by the secondary data.

Data are records of observations, actions or patterns of symbols that stands for observed values or actions (Lowrance 2012). Collection of data is an essential component in the production of useful data for analysis. It involves selecting or designing specific techniques to be used to collect the necessary data (Connaway & Powell 2010). In this study, the researcher designed data collection methods and procedures in such a way it safeguards the data quality, cost of the study, non-response rate, reliability, and overall coverage. The detailed data collection procedures are presented in the following part.

3.7.2 Methods of Data Collection

This section presents the type of instruments used to collect data. The empirical data was generated via diverse data collection techniques. As Colton & Covert (2007) note "...no instrument is perfect, as there are many ways to question it, nevertheless, the investigator can create an instrument that effectively meets information needs, standards and guidelines". Thus, the decision to use data collection instruments and item formats discussed below is typically dictated by the scope and purpose of the study, the research design, and object of measurement, resource availability and researcher's expertise. The next section provides a detailed explanation on the rationale and importance of data collection techniques planned to be used in this study.

I-Questionnaire

Compared to all other strategies of data collection, questionnaire is a widely used instrument that can be administered in the absence of the researcher to collect structured and often numerical data straight forward to analyze (Cohen et al. 2005). The decision on the type of questionnaire to be used in the proposed study has been made in line with the simple rule of thumb common in the social sciences. They note that larger the size of the sample, the more structured, closed and numerical the questionnaire may have to be, and vice-versa for the smaller sample". In line with this assertion, the sample size determined to be used in the study from health care service users and providers is about 450. Thus, even if the researcher tends to use a combination of open-ended and closed-ended questions, more emphasis was given to structured, closed and numerical questions to generate frequencies of response amenable to statistical treatment and analysis. Selected open-ended questions were included in the last part of the questionnaire to collect data that requires respondents' in-depth opinion.

Scholars like Cohen et al. (2005) suggest that "if a closed and structured questionnaire is anticipated to be used with observable patterns and comparisons, then the questionnaire will need to be piloted and refined so that the final version contains as full a range of possible responses as can be reasonably fore-seen". In consultation with the dissertation supervisor, a pilot testing was conducted with randomly selected hospital service users and providers.

The necessary adjustments were made on the questionnaire based on the field pretest of the instruments. After the final correction, the questionnaire was administered via face-to-face interviews to gather data from hospital service users.

Before the data collection, enumerators and their supervisors were trained for three days (using a detailed manual prepared for the purpose on two topics: objective of the study and content of the questionnaire. In addition to assigned supervisors, the researcher was also supervising the data collection process by going to each of the study sites).

II personal observation

No matter which method to use; unquestionably, observation is the fundamental base of all research methods to gather more evidence to understand the research context (Daymon & Holloway 2002, Cohen et al. 2005) note that observation enables researchers to understand the context of a program, look at what is taking place, to be open ended, to see things that might otherwise be unconsciously missed, to discover things that participants might not freely talk about in interview situations, to move beyond perception-based data, and to access personal knowledge. Consequently, in order to triangulate the accuracy of information that is gathered using the preceding instruments, the researcher employed direct observation to all of the hospitals studied. Direct observation was practiced in this study since it is more acceptable to informants with less disruption and less uncertainty over the data to be collected.

III-Key informant interviews

To triangulate the quantitative data gathered from patients of the respective hospitals the study used a descriptive, qualitative methodology with key informant interviews as the data collection tool. The sampling frame for the study includes current and former ministry of health officials, official of Addis Ababa health bureau, managers of the selected public hospitals and medical personnel who have participation in reform process.

In addition to the key informant interview to have a clear picture of the health care service provision practice of the respective hospitals non-participant observation was conducted.

IV-Documentary analysis

Primary and secondary data were employed in this study as the researcher was seeking an understanding of the state of health care service provision of public hospitals. Although primary data are very critical in answering the principal research questions in this study, secondary sources were also utilized as they broaden understandings of theories, key concepts, and empirical results. On top of the primary data generated through quantitative methods, documents were considered as important sources of Information that have enormously supplemented the data obtained through questionnaire, interview and observation.

Document analysis is often used in combination with other methods as a means of triangulation in the study of the same phenomenon or corroborate evidences from other sources (Bowen 2009). The secondary data used in this study include governments publications, periodic reports of FMOH , WHO reports , proclamations, regulations and directives, newspapers, magazines and other health documents related with the objectives of the study.

The analysis of information obtained from the sources mentioned above has helped the researcher obtain the information necessary to analyze the state of health care service of Ethiopia in general and Addis Ababa public hospitals in particular. The evidences from sources mentioned above is also used to confirm and support some of the information obtained via survey questionnaire, interviews and observations.

Despite the importance of data collection and analysis, data quality is also a pervasive and thorny problem. The presence of incorrect or inconsistent data can significantly distort the result of the analysis. Therefore, in order to maintain the quality of data, the researcher has conducted reliability, and validity tests as follows. Secondary source of information in the form of documents indicating the state of health sector in Ethiopia in general and public hospitals in particular was used intensively in the study.

Table 3.4 Summary of variables, indicators, Measurement, data type, data source and analytical models

	Variables	Sub variables		Indicators	Measurement	Data type	Data collection Instrument	Data source	Analytical Models
1	Health care quality	Technical quality	Effectiveness	Competence of staff, Infrastructure adequacy, operation success, change in health state	Nominal & ordinal	Crossectional	Questionnaire, interview, observation, documents	Hospital service users Officials of AAHB& MOH Physicians Documents	Multiple Logistic regression
			Safety	Avoidance of injury, avoidance of adverse effect	Nominal & ordinal	Crossectional	Questionnaire, interview/ observation, documents		
		Functional quality	Responsiveness	Respect & dignity, communication & confidentiality	Nominal & ordinal	Crossectional	Questionnaire, interview observation, documents		
2	Accessibility	Temporal	--	Physical, economic , temporal and cultural	Nominal & ordinal	Cross sectional	Questionnaire, interview, observation, documents		
		Availability							
		Affordability							
3	Operational efficiency		Outputs	Higher output/input				Review of literature	

3.8 Methods of data analysis and interpretation

Several interrelated steps were used in the process of analyzing the data collected using the preceding methods. First the researcher prepared the data for analysis. At this stage, the data was cleaned to identify any missing value and to take corrective measures by cross checking the corresponding questionnaires and check lists. Numeric scores were assigned to the data so as to systematically re-organize raw data into a format that is easy to analyze using computer assisted software. To make the analysis straight forward, response gathered from close and open-ended questions were edited and coded. The coded responses were fed into computer and thoroughly analyzed with the help of a combination of SPSS software.

Second, the data that has been prepared for analysis followed by the actual data analysis. Analysis of data was conducted to investigate the state of hospitals service provision based on patient's perspective including dimensions of hospital health care service quality, and health care service accessibility of the studied public hospitals.

Third, the data that has been analyzed was reported in a meaningful way using appropriate data presentation tools like tables, figures, charts and graphs. The result from the data analysis was adequately interpreted. This involves summarizing the results, comparing the actual results with the literature, theoretical and empirical frameworks. Finally, after advancing the limitations of the study, the researcher ends up by forwarding suggestions for future research.

Factor analysis

Factor analysis is a multivariate statistical method for reducing large numbers of variables to fewer underlying dimensions. It can also be viewed as process in which the values of observed data are expressed as functions of a number of possible causes in order to find which are the most important. To this end the study has employed factor analysis.

Kaiser-Meyer-Olkin (KMO) test is a measure of how suited the data is for Factor Analysis. The test measures sampling adequacy for each variable in the model and for the complete model. According to Cerny and Kaiser (1977) the statistic is a measure of the proportion of variance among variables that might be common variance. The lower the proportion, the more suited the data is to Factor Analysis. KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for

factor analysis. On the other hand Bartlett's test of sphericity small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data.

This study has used Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity to ensure the suitability of data for factor analysis.

Logistic regression analysis

A sound health care service provided by hospital is expected to boost the satisfaction level of hospital service users. Understanding the attainment of these targets through mere descriptive statistics is difficult and impossible to make generalization. Therefore statistical models which can enable to create relationship between dependent and independent variables was required.

Hence the study investigated the significance of public hospital service dimensions for the patient by using logistic regression analysis. Regression analysis is a statistical tool for the investigation of relationships. Like the linear regression analysis, most of the usual statistical methods assume that the residuals, or errors, must follow a normal distribution. If they are not the methods should not be used. Therefore there are a number of non-parametric models used to estimate relationships for categorical data including linear probability model (LPM), logistic regression, and probit. Since the linear probability model assumes linear relationship between the dependent and explanatory variables it is not suitable for study which is based on categorical data with two outcome (occurrence and nonoccurrence of required outcome) (Bagley et al. 2001, Al-Ghamdi, 2002).

Though the logit and probit models are almost identical and the choice of the models is arbitrary, Logit model has certain advantages (simplicity and ease of interpretation) therefore this study has applied the logit model.

Therefore the study used binary multiple logistic regression technique to investigate the significance of hospital service sub dimensions of health care service quality (effectiveness, safety, and responsiveness) and accessibility (timeliness, availability and affordability) towards the satisfaction of health care service users. To achieve this end among the 5 point Likert scale response of hospital service users " overall satisfaction of hospital service users" was converted into binary response i.e. satisfied and not satisfied. Therefore satisfaction is used as dependent

variable. On the other hand from the 5 point Likert Type Scale response for effectiveness, safety, responsiveness and accessibility indicators were selected and changed to binary form to be regressed as independent variables.

Since the categorical predictor variables cannot be entered directly in to regression model and be meaningfully interpreted, some other method of dealing with information of this type must be developed. Therefore the 5 point Likert scale response was converted to binary response i.e. strongly disagree, disagree and neutral ratesis considered negative response (as disagreement), on the other hand agree and strongly disagree was assumed as positive response (agreement).

Logitic regression model specification

Public hospitals health care service quality

$$\text{Log [p/ (1-p)]} = a + b_1 E_1 + b_2 E_2 + b_3 E_3 \dots\dots\dots +b_{13} E_{13} \dots\dots\dots (1)$$

$$\text{Log [p/ (1-p)]} = a + b_1 S_1 + b_2 S_2 + b_{32} S_3 \dots\dots\dots + b_{10} S_{10} \dots\dots\dots (2)$$

$$\text{Log [p/ (1-p)]} = a + b_1 R_1 + b_2 R_2 + b_3 R_3 \dots\dots\dots + b_{18} R_{18} \dots\dots\dots (3)$$

Where:

E....Effectiveness of hospital service (13 variables)

S...Safety of hospital service (10variables)

R..... Responsiveness of hospital service (18variables)

Public hospitals health care service acesability

$$\text{Log [p/ (1-p)]} = a + b_1 T_1 + b_2 T_2 + b_2 T_3 \dots\dots\dots +b_4 T_7 \dots\dots\dots (1)$$

$$\text{Log [p/ (1-p)]} = a + b_1 AV_1 + b_2 AV_2 + b_3 AV_3 \dots\dots\dots +.b_8 AV_8 \dots\dots\dots (2)$$

$$\text{Log [p/ (1-p)]} = a + b_1 AF_1 + b_2 AF_2 + b_3 AF_3 \dots\dots\dots +b_7 AF_7 \dots\dots\dots (3)$$

Where:

T.....Timely accessibility of hospital service (7variables)

AV.....Availability of hospital service (8variables)

AF..... Affordability of hospital service (7variables).

3.9 Reliability And Validity: As Quality Standards

In scientific investigation, reliability and validity are applied to ensure instruments provide credible and accurate information (Howitt & Cramer 2011). Ayodele (2012) notes that attention to validity and reliability in all research phases can reduce threats to research. But, ensuring reliability and validity in mixed research is neither simple nor straight forward as different

researchers suggest independent strategies that fit to either positivist or constructivist philosophical orientation. Despite such hurdle, a mixed researcher should be concerned about quality at some point in the design, data collection, and analysis to judge validity and reliability of the inquiry. In line with this the researchers need to convey the steps they will take to check for the accuracy and credibility of findings.

Since mixes of qualitative and quantitative approaches were used in this study, measures taken to ensure the reliability and validity of instruments are discussed below.

3.9.1 Reliability: As a Standard to Judge Quality of Data Collection

Reliability refers to the extent to which an instrument produces consistent results across different points in time, groups of people, and diverse circumstances (Howitt & Cramer). Likewise, Ridenour & Newman (2008) note that "reliability estimates tell whether the outcomes will remain stable over time, repeatable, and consistent among independent observers. Thus, to determine the reliability of instruments this study used different types of reliability tests like test–retest reliability, alternative forms reliability, inter-rater reliability, intra-rater reliability and internal consistency reliability (Creswell 2012). Of all reliability tests, the most commonly accepted measure for a single instrument administration on the intended respondent is the internal consistency reliability test (Martens 2010). It tests for the homogeneity of items when an instrument has been designed to measure a particular attribute that is expected to manifest a high degree of internal consistency (Ayodele 2012). Several statistical procedures: split-half, item-total correlations, Kuder- Richardson-20 & 21, and Cronbach alpha can be used to measure internal consistency (Vanderstoep & Johnston 2009). However, the most frequently used statistical method is Cronbach's alpha (Martens 2010, Ayodele 2012). It provides the researcher with information about the degree of the homogeneity or internal consistency among a set of items (Heppner & Kivlighan 2008). Comparatively, it provides a more accurate measure of reliability (Colton & Covert 2007). Thus, following Vanderstoep and Johnston (2009), in this study, Cronbach's alpha was used to estimate the internal consistency among set of items.

In the absence of a commonly agreed upon cut-off point as a critical value for the acceptable magnitude of a coefficient alpha, often 0.70 or higher is desired in the social sciences (Heppner et al. 2008). To enhance the quality of the instrument, reliability analysis was conducted on each

variable of the instrument with items that are scored on a range of values excluding dichotomous responses and demographic data of respondents. In this study, it is assumed that an alpha coefficient of 0.70 reveals that the items in the instrument are understood by most of the respondents (70% of variance reliable). On the other hand, if the findings are below the expected value of 0.70, the respondents have different perceptions toward each item of the domain.

Hence to test the reliability, the questionnaire was analyzed using Cronbach’s α values for each dimension using data on effectiveness of hospital service, safety of hospital service, responsiveness of hospital service, timely accessibility of hospital service, availability of hospital service and affordability of hospital service .The value of the Cronbach’s α was above 0.7 and the result shown that these measures were reliable. According to Gandhi (2012), Cronbach’s alpha result which falls within the range of 0.7-0.8is acceptable.

Table 3.5 summery of reliability tests

Measuring Instrument	Number of Items	Cronbach’s Alpha
Effectiveness of hospital service	13	.814
Safety of hospital service	10	.862
Responsiveness of hospital service	18	.761
Timely accessibility of hospital service	7	.819
Availability of hospital service	8	.790
Affordability of hospital service Accessibility	7	.690

Source: Field survey, 2018

3.9.2 Validity/legitimation: As a Standard to Judge Study’s Quality

Validity is concerned with whether our research is believable and true and whether it is evaluating what it is supposed or purports to evaluate. In this regard, Burns (1999) stresses that “validity is an essential criterion for evaluating the quality and acceptability of research.” Generally, researchers use different instruments to collect data. Therefore, the quality of these instruments is very critical because “the conclusions researchers draw are based on the information they obtain using these instruments” (Fraenkel & Wallen 2003). Thus, it is imperative that the data and the instruments to be validated. In this study the following miscellaneous procedures were used to validate the instruments and the data.

A. Content Validity

Content validity is related to a type of validity in which different elements, skills and behaviors are adequately and effectively measured. To achieve this end, this study's research instruments were reviewed by experts in the field of research. Based on the reviewer's comments the unclear and obscure questions were revised and the complex items reworded.

B. Internal Validity

Mainly, internal validity is concerned with the congruence of the research findings with the reality. Also, it deals with the degree to which the researcher observes and measures what is supposed to be measured. In this study to boost the internal validity of the research data and instruments, the researcher has used the following methods recommended by Merriam (1998): triangulation (collecting data using different methods and sources), long-term observation at research site, peer examination (The research data and findings were reviewed and commented on by several nonparticipants in the field who are familiar with the subject under study and possess enough background information in it), and avoiding researcher's bias (therefore in this study to avoid bias the researcher tried to be explicit, critical and faithful at different phases of the inquiry process). Therefore, the researcher has tried to remain nonjudgmental and clear as possible throughout the research process.

C. Utility Criterion

Lynch (1996) asserts that "Utility refers to the degree of usefulness the evaluation findings have for administrators, managers and other stakeholders." This criterion intends to inquire whether or not the research works. That is, utility criterion asks whether the evaluation endeavor generates enough information for the decision-makers with regard to the effectiveness and appropriateness of the program. Clearly, when the evaluation process provides the different stakeholders with proper and ample information, it can be surmised that the utility criterion has been met and consequently achieved validity requirement. As it is indicated in the introduction part this study will furnish a great of relevant information for hospital managers and other pertinent parties regarding the state of the health care service provision of public hospitals.

D. External Validity

One more issue to be considered is the external validity. External validity is concerned with the applicability of the findings in other settings or with other subjects. As Burns (1999) notes “How generalizable to the other contexts or subjects is our research.” In fact, it might depend on the underlying similarities between our context and other contexts. Nunan (1999) puts emphasis on the research design and states that research design should enable to generalize beyond the subjects under investigation to a wider population. To enhance the external validity of this study representative samples were drawn, and sample bias was avoided.

3.10 Ethical Considerations

Research ethics are concerned with moral behavior in research contexts (Coffey et al. 2012). Stanley & Wise (2010) argues that in all research involving the collection of data from human beings, there is a fundamental moral requirement to treat those people in accord with the standards and values which affirm their essential humanity. This study respected the protection of human subjects by treating the responses as confidential in accordance with the Addis Ababa University and the Ethiopian ethical principles to the collection, maintenance, use and dissemination of data. The researcher has employed the following ethical considerations during the course of the study:

I. Informed consent

As indicated by Coffey et al. (2012), informed consent is the agreement by adults to participate in research after they understand the procedures and the risks. Hammersley & Traianou (2012b) express that researchers need to gain informed consent through a consent form which lays out what will be involved in the research, and the rights and responsibilities each side has. In this study, the researcher allowed the respondents of the study practice their free will to participate in the study voluntarily, and with self-determination. For this to happen, the researcher has developed written informed consents for each respondent to read and sign before moving on to filling the questionnaires. Hence, the researcher respects the right at any time of respondents to withdraw from participation or choose not to answer any question. The researcher’s contact information was included in the consent forms for use by respondents in the event they have a concern or need further clarification on an item.

II. Subject confidentiality and anonymity

The researcher was committed to safeguard and genuinely protect the dignity, privacy, freedom and well-being of the study respondents. The researcher keeps data and the findings of the study anonymous, so that the respondents' information was not be shared with anyone. All through the study, the researcher ensured confidentiality by using respondent's identification numbers rather than their actual names, and by protecting collected data from disclosure to unauthorized person. Besides, the researcher has affirmed that the gathered information not to be used for different purposes than what was intended.

III. Potential risk and benefit

The researcher deeply assessed the nature, extent, and likelihood of risks and benefits of the study on respondents and the study populations. In the study there were no expected risks, harm or adverse events posed by the study which may endanger the safety of respondents. The researcher undertook this study for academic purpose and hence there was no compensation or reimbursement from the researcher to the respondents and the researcher informed this to respondents beforehand.

IV. Ethical issues related to study design and methods

According to Johnson & Christensen (2012) a researcher misconduct is characterized as "fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results", as completely unethical and the most serious professional crime. Thus, the researcher has applied research ethics at each stage of the study and foster high ethical standards and strictly complied with the overall principles of professional scientific conducts while proposing, performing, interpreting, and reporting the study.

CHAPTER FOUR: AN OVERVIEW OF HEALTH SECTOR IN ADDIS ABABA

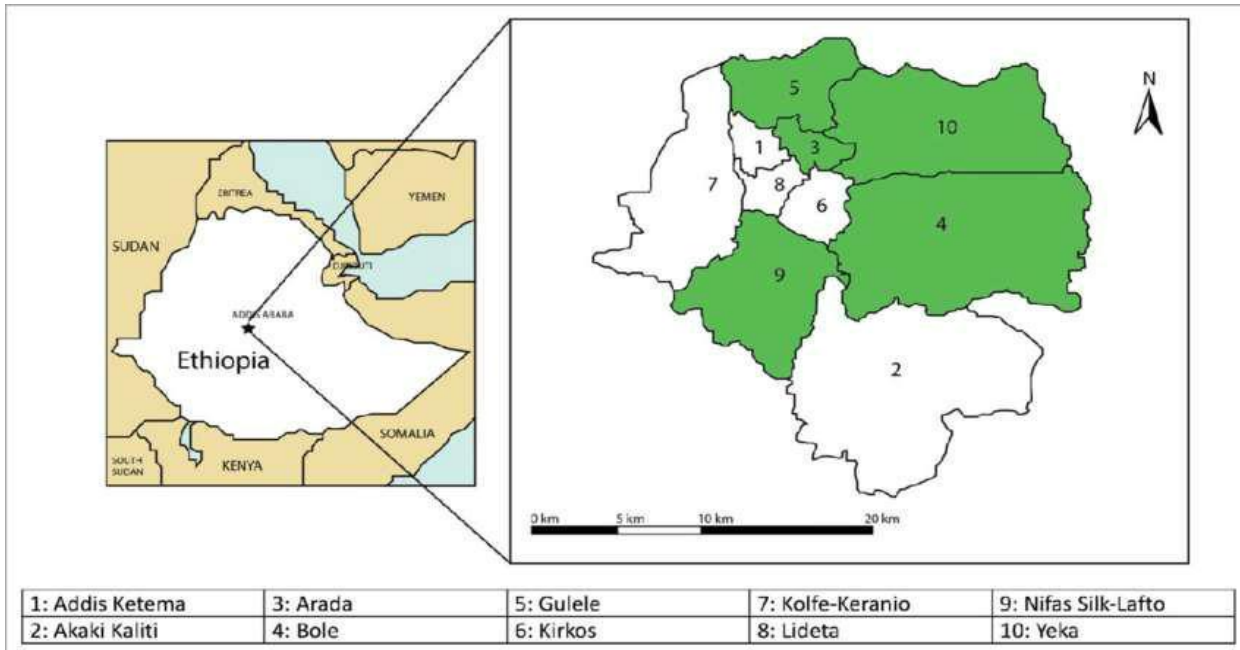
4.1 introduction

The objective of this chapter is to briefly discuss the state of the health sector of Addis Ababa and identify the major challenges that are cited as justifications for reform in general and the resultant effects of those reform measures are evaluated through patient satisfaction with respect to different health care dimensions in the following chapters.

This chapter in short presents country and city background, the state of the health services, the governance and stewardship in the health system, health service delivery, health infrastructure, resources, financing and the different challenges that are calling the attention of policy makers and researchers to look for reform. Data for this chapter was collected from relevant secondary sources. Performance reports and published documents from the Federal Ministry of Health and Addis Ababa City Government and information from different journal articles and working papers.

4.2 Brief History of Addis Ababa City

Addis Ababa was established in the late 19th century and in comparison to other capital cities it is relatively young. Addis Ababa has evolved from a small rural settlement up to the 1950s into a vibrant modern metropolis today. Much of this urban transformation began during the period of Imperial Rule but accelerated in the post-1991 era. This section discusses and reviews the various variables under successive regimes that collectively shaped today's socio-economic characteristics of the city.



Map 1: Administrative Map of Addis Ababa City, *Source: Atlas of Addis Ababa City (Boulton, 2010)*

The evolution of Addis Ababa city

In late 19th century, Emperor MenelikII and his wife Emperess Taitu founded the City of Addis Ababa (Addis Ababa means ‘New Flower’ in English). The emperor selected the Finfinne area for its fertile land, mild climate, geographically strategic and defensive position, and ancestral history. It is alleged that the royal couple was attracted to the Filowa hot springs which were believed to possess curative powers (Tufa 2008). Addis Ababa evolved organically without formal planning practices. However, historians believe that there existed an informal master plan led by Emperess Taitu, often referred as ‘Taitu’s era master plan’, that guided city development until the Italian occupation of Ethiopia in 1935 (Mahiteme 2007). A multicenter settlement spawled around three main political, economic and cultural nodes: the imperial palace (the Gebbi), the market (Arada) and the church (St. Georgis). The socio-spatial organization of the city initially reflected the traditional layout of a military camp surrounded by rural villages clustered in close proximity to each other, rather than a strong central core and capital city (Mahiteme 2007, Tufa 2008).

In 1909, a modern urban administration was established, responsible for the day-to-day management of the affairs of the city (Giorghis & Gérard 2007). However, the city's limited financial capacity and restricted political mandate could not effectively address the emerging urban challenges (Mahiteme 2007). It was, therefore, not surprising that few physical improvements were realized in urban infrastructure and service delivery during the reign of Emperor Menelik. Addis Ababa's rural characteristics lasted well into the 1960s.

The quest to modernize the City of Addis Ababa continued in the post-Italian occupation era - the period of Imperial Rule. During 1956-1966, three foreign urban planners proposed different master plans for Addis Ababa following the British town planning model. The first master plan, prepared by the famous British town planner Sir Patrick Abercrombie, proposed decentralized city development through planned neighborhood units, land zones and six satellite towns in the city's periphery (Wubnehn 2013). While Abercrombie's plan was based on a low estimation of population growth, the second master plan prepared by the British consultancy firm Bolton Hennes & Partners proposed a similar plan but based on a higher population growth projection (Yitbarek, 2008). The third master plan, prepared in 1965 by Luis de Marien, a French consulting team, was based upon the visions of its two predecessors (Mahiteme 2007). However, none of these three plans were implemented due to the lack of financial and technical capacity. The dilapidated condition of Addis Ababa until very recently is, therefore, the result of the combination of lack of appropriate spatial development plans and shortfalls in resources and personnel required for their plans' effective implementation.

The failure of the successive regimes to timely implement a master plan contributed to uncontrolled sprawl of the city (Tufa 2008). In response, the EPRDF government undertook remedial measures, such as the upgrading of deteriorated housing and road networks, as well as construction of new housing units in the city outskirts (Mahiteme 2007), setting a new health policy and indicating its commitment to boost the primary health care coverage. Hence huge public investments have been made to improve water supply, sanitation and waste collection systems, drainage and road networks, as well as condominium housing to improve the quality of life of urban residents (Yitbarek 2008).

Population and demographic characteristics

Urban population demographics According to the CSA July 2015 estimate, Ethiopia's total population is about 90 million people. Of the total population 19.5% (17.5 million people) live in urban areas. This number is rising fast due to an annual urban population growth of 4.89%. Ethiopia's urban population is expected to triple by 2037 (World Bank group 2015). Addis Ababa hosts an estimated 3.238 million people, which is a 17% share of Ethiopia's total urban population. Currently, Addis Ababa is experiencing an annual growth rate of 3.8% and is estimated to reach 4.7 million inhabitants by 2030. There is no reliable comprehensive statistical data to show Addis Ababa's population trends since its establishment. The first census data was obtained only in 1961. However, several researchers have provided estimated population numbers for the city since 1889 (See figure 4.1).

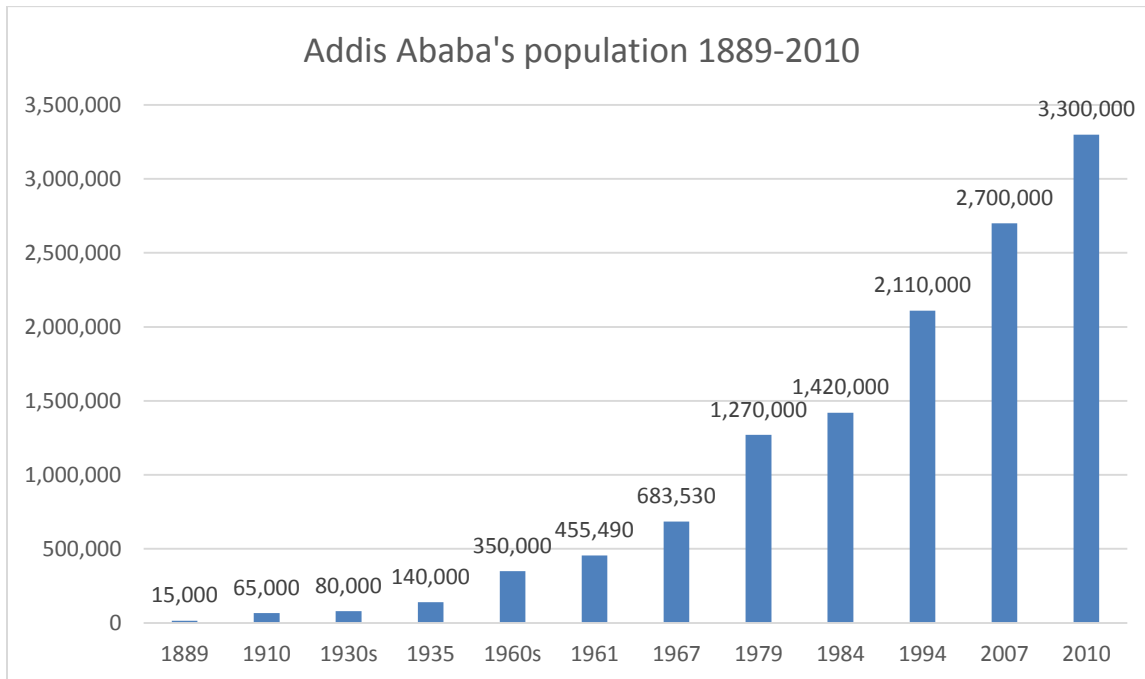


Figure 4.1 population of Addis Ababa over time

Source:CSA (2013), Mahiteme (2007)

As indicated in the above figure the city's population is growing at an alarming rate and its population growth rate is estimated at 3.0% by the CSA and 3.8% by the World Bank group (2015). Since fertility rates have steadily declined in Addis Ababa due to family planning

campaigns natural increase only contributes modestly to current city's population growth. Rather, rural-to-urban migration is now significantly contributing factor to the city's population growth. Between 1995 and 2000, 58% of the average growth of the city was attributed to migration (World Bank 2015). Since this fast urban population growth is not supported by equal socio economic growth, the urban poverty incidence is on the rise. This population growth will put further and continued challenges and pressure on the city administration to provide efficient and affordable basic services such as health, housing, water, electricity and transportation in sufficient quantities.

To provide the basic urban amenities in adequate quantity and quality for the dwellers requires boosting the city's capacity in urban planning, management and effective implementation, supported by strong political leadership from the top. It would also require prioritization of key investment decisions to enhance the competitiveness of the city and attract investment that generates more job opportunities for its growing population. Failure to plan ahead may have catastrophic impacts; both on the economy and on the welfare of its citizens.

Hence the priority for the city administration of Addis Ababa would be to invest heavily in infrastructure and other key growth drivers and to continue strengthening the effectiveness and responsiveness of key municipal institutions that deliver essential services to the population.

4.3. The Governance Structure of Addis Ababa City

Ethiopia has increasingly been improving in ensuring good governance, as reflected in various policy and strategy documents. Although the term 'governance' is a broad concept and subject to interpretation, in the Ethiopian context it refers to "the efficiency, effectiveness and accountability of public institutions in service provision, transparency and participatory interaction between the public sector and diverse stakeholders in decision-making".

The 2005 Urban Development Policy is the first official document to integrate all principles of good governance in its strategy. In subsequent years, the government implemented several initiatives demonstrating its commitment to effective and sustainable decentralization and to creating the conditions for improving urban governance so that cities can become more competitive and productive. The most significant reform initiatives undertaken by the government to date include:

- The 2006 Urban Good Governance Package;
- The Urban Local Government Development Program (ULGDP) developed in 2008;
- The Ethiopian Cities Prosperity Initiative (ECPI) (2013/14–2025); and
- The Urban Developmental Good Governance Strategy 2014 (WBG, 2015).

These strategy documents jointly stress on the need to increase effectiveness and efficiency of urban centers in providing basic facilities to urban dwellers and to engage citizens in decision making.

Ethiopia has a three-tier government structure: federal, regional and local. The 1995 Federal Constitution officially promulgated and assigned autonomy and functions to federal authorities and the nine autonomous states in the country (WBG 2015).

An exception, however, applies to the cities of Addis Ababa and Dire Dawa, who are both granted the same autonomy level as state governments. Each regional state government is sub-divided into zones which, in turn, are sub-divided into *Woredas* - semi-independent localities with their own legal state and leadership structure (councils). *Woreda* council members are independently elected to represent each of the *Kebele* sub units (wards). However, the cities of Addis Ababa and Dire Dawa are allowed to establish local structures (sub-cities) and then *Kebeles* as the smallest administration unit. Recently, *Kebeles* are being replaced by *Woredas* in Addis Ababa and other major cities, and the structural arrangement is thereby formed by the city administration, sub-city, and *Woreda*. Based on the Ethiopian constitutional framework that offers regional states the autonomy to establish urban local governments at the lowest administrative structures, Addis Ababa has developed an urban local government structure that reflects its dual mandate as a federal capital as well as its autonomous municipal functions.

Accordingly, state responsibilities include social service delivery including education and health. Municipal responsibilities include most infrastructure service delivery such as physical infrastructures, transportation, roads and solid waste management (World Bank, 2014).

Having a state of a city and a state, present Addis Ababa is the capital of the federal government and a chartered city. It is also the seat of several international organizations and diplomatic

institutions. For instance, the African Union and its predecessor the OAU, the United Nations Economic Commission for Africa (UNECA) and numerous other regional and international organizations have their headquarters in Addis Ababa.

4.4 Governance and Regulation of Addis Ababa's Health System

The governance and stewardship issues of the health sector of Addis Ababa are fundamentally based on the 1995 FDRE constitution, the health policy of the Transitional Government of Ethiopia and the governance structure of the City. Accordingly, the decentralized governance and the sharing of power and duties between the federal and the regional governments is the primary basis of the health sector governance of Addis Ababa (FDRE 1995). Responsibility of health policy, regulation, and service delivery is shared among the Federal Ministry of Health (FMOH), Health Bureau of the City Government, and Woreda health offices (WorHOs). Policy development as well as development of standards and operational protocols is the responsibility of the FMOH (FMoH 2014). The implementation of policies, standards, and protocols as well as the responsibility for service delivery at the city level is mandated to Addis Ababa Health Bureau (AAHB). Structurally, AAHB is also responsible for owning, financing, and supervising the service delivery of the hospitals owned by the city government. Woreda health offices manage and coordinate the operation of the primary health care units (PHCUs) such as health centers and clinics. They are responsible for planning and budgeting of health programs and health care services as well as negotiating budgets with finance offices and cabinets/councils at the woreda level.

As clearly stipulated in the 1995 FDRE constitution, the relationship between the federal government and regional state institutions including the City Government of Addis Ababa does not reflect direct accountability to one another. This decentralized structure and parallel governance is also reflected in the health sector of the City. Accordingly, in the decentralized context of the City Government, while both Addis Ababa Health Bureau and the Woreda Health Offices, as parts of the health system, are not directly accountable to the FMOH. Addis Ababa Health Bureau is accountable to the city government, while the 116 Woreda Health Offices directly report to their respective local governments called Woreda Administrations. However, functionally, the lower-level health entities are technically accountable to their higher

counterparts and they are supposed to submit regular reports. The governance structure of the health sector of the City Government is depicted in the diagram below:

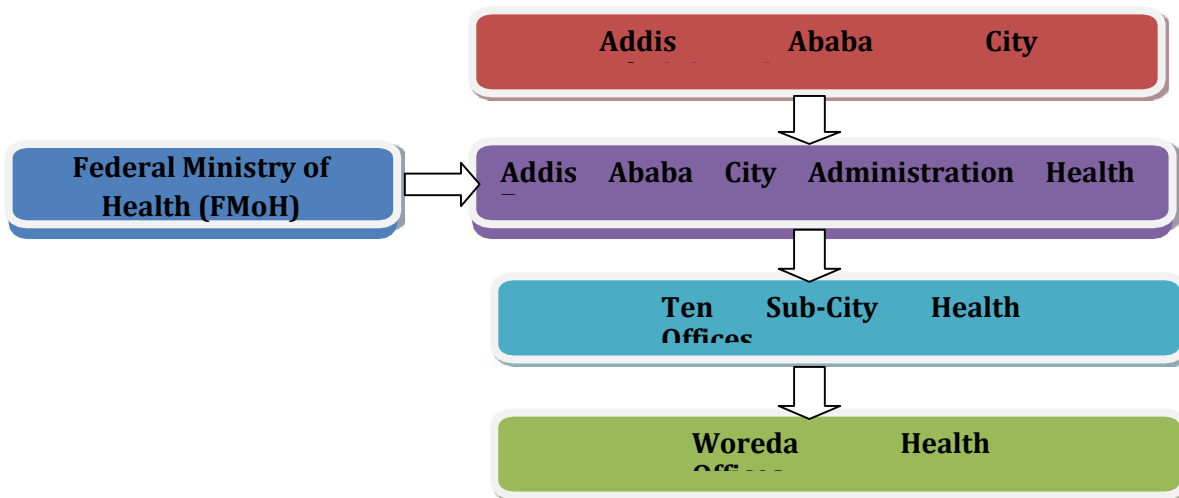


Figure 4.2: The Governance Structure of the Health Sector of Addis Ababa City

Source: Addis Ababa Health Bureau (2015)

The administrative structure of the public health sector in Addis Ababa reveals that administratively the City Government is autonomous to govern its health system. While policies, standards and operational protocols are developed by FMoH, the health bureau of the city government handles health service delivery and regulation within its own jurisdiction (FMoH 2010). The decentralization of the health system indicates not only the sharing of administrative responsibilities within the different levels of the government but also the responsibilities of partnering with and regulating the private health sector at their respective levels.

Though the relationship between the FMoH and the health system of the city government do not structurally reflect strict accountability relationships, collaboration and mutual support between FMoH and AAHB are common practices. In this regard, FMoH (2014a) reveals that the FMO supports regional health bureaus in system development/revision, design of health sector programs, and setting of targets in line with the national plans and targets, resource mobilization, and allocation and harmonization of efforts with partners as well as in creating platforms for reviewing progress against HSDP targets and for sharing of experiences. To strengthen information flow and effective resource mobilization and use the FMOH and RHBs including

AAHB introduced a woreda-based national planning system in 2007/08 (FMoH 2014b). The main purpose of this planning system is to ensure that health plans at the grassroots level are evidence-based, result-oriented, and contributing toward country-level health sector targets, while at the same time helping higher-level plans (of the FMOH and RHBs) to be more realistic, gap filling, and supportive of the lower-level plans. The FMOH and RHBs use the Woreda-based plans to identify financial and nonfinancial resource requirements and gaps at local levels.

According to FMoH (2013), this evidence-based planning process is improving value for money (efficiency) and health authorities at different levels are negotiating with their counterparts in finance. As discussed earlier in this section, the decentralized approach to the health system governance is operationalized by making public health facilities accountable to the local authorities that are closer to the community. More importantly, FMoH (2013a) reveal that health institutions in Addis Ababa are legally autonomous and allowed to retain and use the revenue they are generating. They are also allowed to establish their own governing bodies in which the community and local administrations are represented. This is an important component of the health care financing reform of the Ethiopian health sector which Addis Ababa Health Bureau is also actively implementing. It can be argued that the health sector reform program in general and the health care financing reform in particular, which are the derivatives of the health policy of the government, promote democratization and decentralization of the health system. At least in principle, the decision making autonomy at the local level implies the opportunity for local authorities to identify their priority areas and take appropriate measures.

Different authors has revealed that public service reform in general and the health sector reform in particular is in line with New Public Management approach which was started in early 1990's and continues to present (Chanie 2001). They argued that the reform measures embraced elements of the New Public Management. One of the major manifestations of New Public management style reforms in public health sector was health care financing reform (introduction of user fees), decentralization of health care service provision, and implementation of different management tools like Business Process Re-engineering, Business Score Card to improve the health care service provision and efficiency. All these Features of NPM are manifested vividly in the health care reform measures of Ethiopia in general and in Addis Ababa in particular.

4.5 Health Service Delivery

Over the last two decades, the health sector of Addis Ababa has been in a continuous reform processes. Aligned with the public sector reform programs that aimed at improving the efficiency and effectiveness of public service delivery in Ethiopia, various reform tools have been designed and implemented in the public health sector of the city. It can be argued from the elements and ultimate objectives of the reform programs in the health sector that some essential values and principles of new public management are reflected in the reform initiatives. As a public sector reform component, Addis Ababa Health Bureau has been implementing various activities, including the Business Process Re-engineering (BPR), to improve health service delivery in the city. Moreover, the health sector reforms in general and the health care financing reform in particular aim at making health services accessible, of better quality, sustainable, affordable to citizens (FMoH 2014, AAHB, 2015).

4.5.1 Health Facility

Effective delivery of health services generally depends on the adequacy and quality of the health facilities. This section presents the evidences related to the state and challenges regarding the health facilities in the health sector of Addis Ababa and analyzes the implications for further measures for improvement. The table below indicates growth in the number of hospitals and health centers in all the regional governments.

Table 4.1: number of health facilities by region, 2018

Regions Number of health facilities by region ,2018	Number of health facilities by region ,2018					
	Health posts		Health centers		Hospitals	
	Functional	Under construction	Functional	Under construction	Functional	Under construction
Tigray	742	0	224	3	39	4
Afar	325	6	91	1	7	1
Amhara	3,531	0	854	5	79	20
Oromia	6,962	0	1396	10	84	39
Somali	1,124	96	202	18	9	6
Benishangul Gumuz	403	5	47	14	5	2
SNNP	3,874	308	715	34	69	34
Gambella	137	10	29	0	5	0
Harari	28	0	8	1	2	0
Dire Dawa	36	0	15	0	2	1
Addis Ababa	0	0	97	0	13	1
National	17,162	425	3678	86	314	108

Source: FMoH, 2018

Development in health facility in Addis Ababa is relatively lower as compared to the bigger and relatively developed regions. For instance, between 2010 and 2018 the number of hospitals increased from 18 to 74 (311%) in Amhara, from 23 to 97 (321%) in Oromia, from 22 to 79 (259%) in SNNPR while it increased from 10 to 13 in Addis Ababa City. Given the fact that 3 of the 13 hospitals in the city are owned and operated by military and police institutions, the remaining hospitals appear to be overburdened. However, the growth in the number of health centers is relatively higher as compared to other regions. Between 2010 and 2018, the number of health centers grew from 37 to 97 (162%). However, it was found out that the expansion and rehabilitation of health centers in Addis Ababa is conducted with no support from the Federal Ministry of Health while other regions obtain financial support from the Ministry. Health facility construction, rehabilitation and expansion efforts of the Ethiopian public sector are more skewed towards the regional governments with very minimal attention to Addis Ababa City Government.

Table 4.2 levels of hospitals in Ethiopia

Levels of hospitals	Services available	Alternative names
Primary hospitals	few specialties—mainly internal medicine, obstetrics and gynecology, pediatrics, and general surgery, or just general practice; limited laboratory services available for general but not specialized pathological analysis	District hospital ,Rural hospital ,Community hospital General hospital
Secondary hospitals	highly differentiated by function with 5 to 1 clinical specialties; size ranges from 200 t 800 beds; often referred to as a regional hospital	Regional hospital, Provincial hospital (or equivalent administrative area such as county) General hospital
Tertiary hospitals	highly specialized staff and technical equipment—for example, cardiology, intensive care unit, and specialized imaging units; clinical services highly differentiated by function; could have teaching activities; size ranges from 300 to 1,500 beds	National hospital , Central specialized hospital, Academic or teaching or university hospital

Source: FMOH 2010

Public hospitals of urban centers are facing a great deal of challenges including overcrowding due to low number of hospitals. According to WHO (2016) though the total number of health care facilities, particularly primary care centers, has increased nearly ten-fold since 2005, secondary and tertiary level service capacity, however, has not improved significantly.

Another constraint which hampers health care service delivery of hospitals is shortage of qualified medical professionals. A statistical analysis published on world atlas shows that Ethiopia ranks 5th among the 25 countries with a very limited access to health care. According to this report Ethiopia has only 2.8 skilled health professionals (physicians, Nursing, dentistry and pharmaceutical) per10, 000 population. On the other hand 22 medical doctors per Million people this puts the country just ahead of Liberia (14), Malawi (19) and Niger (19). Sadly, anywhere from 25% to up to 50% of Ethiopian doctors are working overseas, whose expensive training is often paid for by public finance (FMOH 2012, WAMAI 2009). In addition to the above constraints of the facilities poor infrastructure, lack of performance incentives and financing affects the delivery of health care’s service of public hospitals (FMOH 2012).

The situation in many state run hospitals of Ethiopia is grim due to the aforementioned reasons, but the burden is huge when it comes to Addis Ababa for a number of reasons. First as a capital city of the country Addis Ababa has a more than twenty percent of Ethiopia's urban population hence the demand for health care service is higher than any other urban centers of the country.

Table 4.3 public hospitals in Addis Ababa city

S.No	Hospitals	No. of beds	Type of hospital	Year of establishment	Ownership	Selected
1	Alert hospital	240	Specialized	1934	MOH	
2	St. Amanuel Hospital	261	Specialized	1938	MOH	
3	Armed Forces Hospital	612	General	1956	Defense	
4	Black Lion Hospital	800	General	1973	AAHB	✓
5	Gandi Memorial Hospital	103	General	1962	AAHB	✓
6	Menilik II Hospital	263	General	1916	AAHB	✓
7	Police Hospital	252	General	1963	Police	
8	Ras Desta Hospital	103	General	1932	AAHB	✓
9	St. Paul's Hospital	392	General	1969	MOH	✓
10	St. Peter Hospital	200	Specialized	1963	MOH	
11	Yekatit 12 Hospital	199	General	1923	AAHB	✓
12	Zewditu Memorial Hospital	168	General	1970	AAHB	✓
13	Tirunesh Beijing General Hospital	100	General	2011	AAHB	

Sources: FMOH

As indicated in the above table 4.3 the hospitals in the city were built decades ago and there was no construction of new hospitals to cater the needs of the population which is growing at an alarming rate. This loop hole plays as a positive catalyst to exacerbate the health care service provision problem of the city.

Since the city is struggling with its few outdated and under supplied state run hospitals. Currently, Addis Ababa has 13 state run and more than 40 private hospitals. Many of the later were built in the past 21 years. In sharp contrast however, all of the state run hospitals were built more than 30 years ago. For a city with more than 3.3 million population, state run hospitals are the best medical care alternative centers used mostly by the middle-to-low income inhabitants of the city.

Second Addis Ababa remains the most attractive destinations for rural and small-town's migrants. The migration is mainly due to push and pull factors. In this regard, the challenge to provide essential urban amenities to the residents of the city will be overwhelming (Melese & Nachimuthu 2017).

Third the burden of health care service provision is severe when it comes to the nation's capital Addis Ababa, where the majority of Ethiopians from all over the country get referred for cases including emergency and serious illness that cannot be treated at health centers in regional capitals, cities, towns and Woredas.

Fourth the Ethiopian public health care service delivery comprises three service delivery points with a defined referral system namely primary level (health posts, health centers and primary hospitals), secondary level (general hospitals) and tertiary level (specialized hospitals). Despite this referral system in place, people routinely accessed hospitals without a formal referral from a health center or health post and without seeking any prior source of care.

Only a minority of people seeking care at hospitals had been referred from a more primary source of care, with the majority accessing the hospital at their first source of care. Suggesting that the intended connections between health posts, health centers, and hospitals is not practiced properly yet Hence Failure of implementing the referral system designed is creating burden on the hospitals as patient head towards hospitals for medical services that would have been received at health post, and health centers (Abraham et al. 2015). Failure of practicing the referral system while negatively affecting the effectiveness of the hospitals it will also undermine the efficiency of the primary health care facilities as they are not properly used.

In July 25, 2017, Addis Standard published a story on the alarming state of government hospitals in Addis Ababa, where “simple medical equipment such as glucometer strip, disposable gloves, mask, and alcohol are always in short supply even in the emergency section. Though improvements have been made now and then in terms of infrastructure and administration of the public hospitals, the continuous overflow of patients seeking treatment offsets it.

Following the health care financing reform public health institutions charge fees for their services. The bulk of the available evidence appears to confirm that while user charges in health care generate income, they also deter those patients at greatest risk who cannot afford the

charges. According to FMOH (2014) fee waivers shall be granted to reduce financial barriers for the poor, and exemptions shall be given to encourage consumption of particular kinds of preventive or public health services, but the implementation of the guideline is in debate and there are reported divergences between policy and practice. 17 percent of health centers and 77 percent of hospitals has the practice of charging mothers for the exempted services of normal deliveries (Netsanet et al. 2013).

Table 4.4: Health Facility to Population Ratio in Addis Ababa City

Year	Population	Hospital		Health Center		Health Post		PHC
		Number	Ratio	Number	Ratio	Number	Ratio	Coverage
2010/11	2,975,608	10	1:297561	37	1:80422	0	0	0
2011/12	3,041,002	11	1:276455	50	1:60820	0	0	0
2012/13	3,041,002	11	1:276455	50	1:60820	0	0	0
2013/14	3,212,327	11	1:292029	80	1:40154	0	0	0
2014/15	3,273,001	11	1:297,546	88	1:37193	0	0	0
2018		13		97		0	0	0

Source: *FMOH 2015, FMOH 2018*

As can be seen in the above table, in the year 2010/11, Addis Ababa had a hospital to population ratio of 1:297,561 which did not show any meaningful improvement until 2014/15. For instance the hospital to population ratio of 1:297, 546 in the year 2014/15 is not significantly different from the ratio in the year 2010/11. Moreover, even this ratio does not reflect the actual coverage of hospitals in the city due to the following facts. Firstly, Addis Ababa as a melting pot of the country is argued to be the ultimate destination for most rural-urban migrations and this distorts the actual relevance of the ratio. Secondly, the public hospitals in Addis Ababa provide services not only to the city dwellers and the hinterlands but also to other neighboring regions and towns.

Therefore the hospital to population ratio with all its limitations in reflecting the true state of the health infrastructure is still low. Health center to population ratio in the year 2010/11 was 1:80,422 which gradually improved over the five years and reached 1:37,193 in the year 2014/15. As compared to the hospital toPopulation ratio, health center to population ratio significantly improved in the last five years. As table 4.11 clearly shows, this improvement is attributed to the steady growth of health centers from 37 in 2010/11 to 88 in 2014/15. However, it can be argued that, regardless of significant improvement in the health center coverage in the

city, the fact that health posts are not available in the city clearly reflects the high burden of the public health facilities in Addis Ababa. It can, therefore, be argued that regardless of the limitation of using health facility to population ratio as an indicator of coverage and accessibility, public health facilities are not sufficient in terms of addressing the health needs of the people in general.

It can also be argued that the head counting of health facilities per se is not a good indicator of efficiency, effectiveness, quality and affordability of public health services. As Samuel et al. (2007) and FMOH (2007b) point out, public health facilities are generally known to suffer from acute shortage of medical supplies and important equipment. Attesting this argument, evidences indicated that highly outdated equipment that are not properly and regularly maintained are constraining the efforts of delivering health services with the requirements of efficiency, effectiveness and quality (FMOH 2013).

4.5.2 Human Resources for Health

Acute scarcity of qualified health professionals is a key challenge in the health sector of the country as well as the city (FMOH 2007b, Samuel et al. 2007, FMOH 2014b). The achievement of health sector goals in Addis Ababa is seriously challenged by the shortage of relevant professionals. The distribution of health professionals in the public sector of the four major regions is depicted in the table below for the purpose of comparison.

Table 4.5: Health professionals to population Ratio for selected professions by region, 2018

Region	Nurses		Pharmacy professional		Medical Lab		Midwives		Health Officers			
	No.	physician: population ratio	No.	Nurse: population ratio	No.	Pharmacy prof:population ratio	No.	med lab: population ratio	No.	Mid- wife: population ratio	No.	HO: population ratio
Tigray	440	12,316	5,014	1,081	858	6,316	635	8,534	1,210	4,478	768	7,056
Afar	40	47,541	512	3,714	49	38,809	127	14,974	143	13,298	113	16,829
Amhara	1,374	15,898	11,651	1,875	2,717	8,040	1,890	11,557	3,925	5,565	2,309	9,460
Oromia	1,961	19,034	16,193	2,305	2,732	13,662	2,589	14,417	4,535	8,230	3,590	10,397
Somali	397	15,242	3,200	1,891	292	20,722	311	19,456	1,691	3,578	276	21,924
B.Gumuz	65	17,070	1,228	904	214	5,185	167	6,644	338	3,283	222	4,998
SNNPR	1,110	18,096	10,810	1,858	1,472	13,646	1,869	10,747	2,248	8,935	1,802	11,147
Gambella	32	14,626	752	622	51	9,177	129	3,628	100	4,680	82	5,708
Harari	63	4,084	540	476	89	2,891	137	1,878	95	2,709	65	3,959
Dire Dewa	133	3,704	320	1,539	83	5,935	105	4,692	94	5,241	46	10,709
Addis Ababa	3,567	1,010	9,249	389	2,069	1,741	1,509	2,387	1,708	2,109	1,680	2,144
National	9,182	10,734	59,469	1,657	10,626	9,275	9,468	10,409	16,087	6,126	10,953	8,998

Source: *FMoH, 2018*

Based on the reported data of human resource for health and population projection, health professional to population ratios were computed to understand the distribution of health workforce in the country in table 4.5 above.

The data above clearly indicates that health professional coverage in Addis Ababa is relatively better than the other regions of the country. In almost all professions, the health professional to population ratio is significantly better in Addis Ababa as compared to the regions. It can also be argued that health professional distribution is more skewed towards the major urban areas due to socio-economic factors that serve as push and pull factors instigating rural-urban and urban-urban migration.

(WHO 2009b). It can be argued that the relatively better coverage of health professionals in the city does not necessarily indicate better quality of health service delivery due to several reasons. Firstly, the public health sector both at national level and in Addis Ababa is known to suffer from high attrition rate of health professionals. In this regard, Kiros et al. (2013) reveal that the high attrition rate of professionals with low replacement rate leads to further shortages in the public health institutions which ultimately aggravate service quality and coverage in the public sector.

Secondly, the existing professionals' level of motivation and commitment to provide quality services with the expected professional standards can be questioned.

This leads not only to the low quality of health services but also serves as a push factor for health professionals to resign from public health institutions and join either the private health sector within the country or migrate abroad for search of better jobs.

The high turnover of health professionals from public health institutions is partly attributed to the lack of competent leadership and failure to motivate and retain the professionals. Most health professionals in Addis Ababa provide services in both the public and private health facilities. FMOH (2013a) points out that majority of health professionals in Addis Ababa for instance switch between public and private health facilities as either regular or part-time service providers. It can, therefore, be argued that the health professional to population ratio discussed above does not necessarily reflect the extent to which the professionals' time and skills are utilized within the public health system (Getachew & Vita 2014).

The high turnover, low motivation and commitment of the existing professionals has a negative spillover effect on the provision of effective, safe, responsive and accessible health services.

The success of the health care system as a whole and the SDGs for health in the context of Ethiopia require a continuous and coordinated effort to further reduce the observed inequalities in health care access. This study highlighted not only the magnitude and trend of the inequalities in the distributions of the health care resources, but also an overall shortage of the health care resources. The relatively higher GHE share of the health care infrastructure also shows the regional and central governments' greater emphasis on the expansion of health care facilities, rather than meeting the health care workforce standards of the facilities. This situation calls for a more coordinated effort to meet the health care needs of all people across all regions, especially those living in the pastoral and semi-pastoral areas. The health care resource gaps identified in this study imply the need for:

To improve the health care service in Ethiopia, the Ministry of health started to introduce private wing practice in public hospitals. This scheme was intended to improve service provision to patients and also enhance the motivation of health professionals through financial incentives. Physicians who work in the private sector while also holding a salaried job in a public hospital, known as “dual practice,” is one of the main retention strategies adopted by the government of Ethiopia.

In the current hospital health care service provision private wings are believed to be avenues to raise additional funds to improve the quality of services, and increase the take home package for health workers in public facilities. A number of hospitals are providing a private wings, however the benefits of the scheme is arguable and the empirical evidences report a mixed result.

According to (kaba et al.2016) Comparative analysis of patient satisfaction in private and regular wings of Nekemte Referral Hospital reveals that the overall client satisfaction was 58.16 and 68.84% at regular and private wing, respectively. This indicates that financial incentives motivates health care professionals to provide better health care service.

Another study encompassing six public hospitals of the Tigray region indicated the positive effects of dual practice Income supplementation was the primary reason for engaging in dual practice, as reported by 100% of the physicians. Ninety-one patients (20.3%) had been referred from a private clinic immediately prior to their current admission-a circular diversion pattern. Eighteen (19.8%) of the diverted patients reported that health workers in the public hospitals

diverted them. Circular diversion pattern of referral system is the key negative consequence of dual practice Gigar et al. (2017).

On the contrast to the above reports a study conducted in Menilik II hospital with the objective of understanding impact of private wing practice on the quality of health care service showed that the financial benefit from the private wing service has not contributed significantly in the medical staffs' decision not to resign, the facilities of the hospital still show very small improvement, and the patients believe they are not getting reliable and equitable service (Endale, 2014), though the income supplementation was the primary reason for engaging in dual practice, as reported by 100% of the physicians.

Metaferia (2018) also indicated on her study in private wing service of Addis Ababa public hospitals participating in private wing set up was found to be negatively affecting the regular time activities of the health workers and among those who are not engaged currently in private wing 60% has no intention of getting engaged in the service. Moreover the study reported that monthly income, occupation and par time working were the major determinant factors for willingness (interest) to participate at private wing.

4.5.3 Pharmaceutical Supplies and Distribution

The procurement and distribution of safe and sufficient pharmaceutical supplies and medical equipment are key requirements in achieving health sector goals. The health sector reform in general and business process reengineering (BPR) implemented by the FMOH and AAHB in particular aim at improving the supply of pharmaceuticals on a sustainable basis. FMOH (2014a) points out that the government of Ethiopia recently reorganized the procurement of pharmaceuticals, medical equipment, and supplies as part of the reform initiatives cascaded to other regions including Addis Ababa City Government. The previous practice of conducting procurement of pharmaceuticals in a fragmented and disorganized manner by various FMOH units and independent agencies was not only inefficient but also led to lack of sustainable supply FMOH (2014a) and FMOH (2014b) also reveal that duplication of effort at every level of the supply chain, mismanagement and frequent stock-outs of pharmaceuticals, and lack of affordability and irrational use of drugs were some of the problems that existed in the public health sector in particular.

Government, in line with the theoretically recommended purchaser-provider-regulator dichotomy, established a Pharmaceuticals Fund and Supply Agency (PFSA), which is accountable to the FMOH and responsible for timely procurement and distribution of pharmaceuticals to health facilities. The public health facilities of Addis Ababa get pharmaceutical supplies from PFSA which is autonomous Para-public enterprise mandated with the procurement and distribution of pharmaceutical supplies to public health institutions throughout Ethiopia.

PFSA applies need based procurement system in coordination with its regional branch offices (FMOH 2014a). The regional branch offices check and transfer the requests of health centers and hospitals to the head office for procurement. Receiving the requests of the public health institutions, PFSA conducts the procurement of pharmaceuticals from local manufacturers and foreign suppliers and distributes them to the health institutions using its own regional branches which serve health institutions within 160 kilometers radius (FMOH 2010, FMOH 2014a). PFSA is not strictly profit-making public agency. According to FMOH (2010) and FMOH (2014a) PFSA conducts the procurement and distribution of pharmaceuticals using the support from different donors. Primarily, the agency uses a Revolving Drug Fund to strengthen its working capital through the financial support from the GAVI Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria, and the Protection of Basic Services (PBS). It can be argued from the above facts that the delivery of health services using the public sector facilities heavily relies on PFSA for the procurement and distribution of pharmaceuticals. Given the theoretically argued inherent weaknesses of the public sector, the efficiency, effectiveness, quality and accessibility of the procurement and distribution of pharmaceuticals through this agency can be questioned from several perspectives. As a result, the pharmaceuticals supply in the Ethiopian as well as Addis Ababa's public health sector suffers from the following challenges as identified by FMOH (2014):

- Weak coordination with stakeholders in forecasting, financing and purchasing;
- Weak internal audit system and delay of audit reports, which questions the transparency in decision making and fund utilization;
- Poor infrastructure for supply chain management such as trucks, cold chain, warehouses and connectivity

- Gap in inventory management and quantification skill along the supply chain;
- High turnover rate of qualified staff ;
- Inadequate handling of pharmaceuticals at airport warehouses;
- Delay in procurement and distribution of pharmaceuticals and medical supplies;
- Delay in procurement and assembly of medical equipment;
- Delay in construction, hand over and use of new warehouses and offices; and
- Robbery of pharmaceuticals and medical equipment along the supply chain and forged procurement requests from health facilities.

As indicated above, heavy reliance on the public bureaucracy which is characterized by strict adherence to rules, regulations and procedures has led to delay in decision making and associated adverse consequences in pharmaceutical procurement and distribution in the public health sector of Addis Ababa.

4.5.4 Health Care Financing

The Ethiopian health sector in general and that of Addis Ababa in particular is financed from different sources including the government treasury (federal, regional, and woreda/district levels), bilateral and multilateral donors, household out ofpocket expenditures, international and local non-governmental organizations (NGOs), private and public enterprise employers, and insurance companies. The public health sector is highly underfinanced even by sub-Saharan standard (Eskender 2014,FMoH 2014a). The poor quality and inaccessibility of health services is generally attributed to the underfinancing of the sector.

Table 4.6: Share of Health Budget of Addis Ababa City as compared to other Regions

Region	Population	Allocated Budget (ETB)	Allocated Budget Percapita	Share from Total Budget
Tigray	5,055,000	631,797,333	125	7.20%
Amhara	20,399,000	2,956,474,467	145	11.90%
Oromia	33,692,000	4,253,924,571	126	12.00%
Somali	5,452,000	572,629,000	105	8.10%
Benishangul-Gumuz	1,005,000	286,341,386	285	13.10%
SNNPR	18,276,000	3,178,591,512	174	15.70%
Gambella	409,000	215,166,318	526	13.40%
Harrari	232,000	56,641,000	244	5.10%
Addis Ababa	3,273,001	1,384,600,000	423	5.30%
Dire Dawa	440,000	177,317,000	403	11.10%
National	90,140,000*	11,067,474,968	123	11.10%

Source: *FMoH, 2015*

The budget allocated from the government treasury to the health sector of Addis Ababa reflects the under-financing of the sector. The health budget per-capita of Birr 423 (USD equivalent of 20), is among the lowest compared to even most sub-Saharan countries (World Bank 2014). Though significantly higher than the national health budget per-capita of Birr 123 (USD equivalent of 6.15), Addis Ababa's health budget per-capita is about three times lower than the USD 64 recently recommended by World Health Organization. Moreover, share of the total budget from the total budget of the city (5.3%) is also the lowest as compared to all other regional governments except Harari (5.1%). Therefore, it can be argued that the health sector of Addis Ababa is severely underfinanced. In response to this challenge, the government approved a health care financing strategy in 1998 which aimed at increasing availability of health care resources in a way that would improve equity and sustainability and lead to improved quality of care (Eskender 2014, FMoH 2014a).

The Ethiopian health care financing reform, which is also being implemented by Addis Ababa City Government, has important strategies including user fee revision, revenue retention and utilization to improve quality, rules for rationalizing and systematizing fee waivers, health facilities governance, establishment of private wings in public hospitals, and outsourcing of nonclinical health services. The strategy also identifies health insurance as a mechanism to

generate additional sources of revenue, and a way to increase the country's low level of health service utilization.

Since 2011, Ethiopia has implemented the community-based health insurance (CBHI) scheme, aimed at reaching and covering the very large rural agricultural sector and small and informal sectors in urban settings. The overall objective of insurance coverage is to promote equitable access to sustainable quality health care, increase financial protection, and enhance social inclusion for the majority of Ethiopian families via the health sector. The CBHI benefit package covers all outpatient and inpatient services at the health center and hospital levels other than services related to dentures, eyeglasses, and cosmetic procedures (USAID 2014).

The Ethiopian health insurance program as an integral part of the health care financing reform has two components: Social Health Insurance (SHI) for the formal sector and Community Based Health Insurance (CBHI) for the informal sector (Eskinder 2014). According to FMOH (2014a), CBHI, which is envisaged to cover more than 83 percent of the population, has completed its pilot implementation and is due for full-scale implementation including Addis Ababa. However, both SHI and CBHI are not progressing as per the expectation of the government and the key stakeholders (Eskinder 2014).

Health insurance coverage: Men

Table 4.7 Percentage of men age 15-49 with specific types of health insurance coverage,

	Social security	Other employer Based insurance	Mutual Health Organization/ community based insurance	Privately purchased commercial insurance	None
Urban	0.8	3.1	1.5	0.1	94.5
Rural	0.7	0.2	5.3	0.0	93.8
Region					
Tigray	2.6	1.7	7.9	0.1	88.
Affar	0.3	0.3	0.6	0.0	98.8
Amhara	1.9	0.6	13.2	0.0	84.3
Oromia	0.1	0.1	1.7	0.0	98.2
Somali	0.0	0.0	0.0	0.10	0.0
Benishangul-Gumuz	0.0	0.5	0.0	0.3	99.
SNNPR	0.1	0.2	0.4	0.1	99.3
Gambela	0.5	1.3	1.1	0.6	96.4
Harari	0.0	0.3	0.3	0.1	99.
Addis Ababa	0.7	8.8	0.6	0.2	89.0
Dire Dawa	0.4	2.5	0.2	0.1	96.8

Source: Ethiopia DHS 2016

Table 4.8 Percentage of women age 15-49 with specific types of health insurance coverage

	Social security	Other employer Based insurance	Mutual Health Organization/ community based insurance	None
Urban	1.0	1.8	2.5	94.7
Rural	0.7	0.1	4.4	94.7
Region				
Tigray	1.9	0.9	8.9	88.1
Affar	0.6	0.0	0.6	98.8
Amhara	1.2	0.3	12.3	86.2
Oromiya	0.4	0.1	0.6	98.8
Somali	0.0	0.1	0.0	99.9
Benishangul-Gumuz	0.1	0.3	0.0	99.7
SNNPR	0.9	0.0	0.6	98.4
Gambela	0.1	0.1	0.1	99.6
Harari	0.0	0.0	0.2	99.8
Addis Ababa	0.1	4.8	1.3	93.8
Dire Dawa	0.0	0.5	0.6	98.7

Source: Ethiopia DHS 2016

Tables 4.7 And 4.8 show that, overall, 89% of men and 94% of women of Addis Ababa city with the age of 15-49 are not covered by any type of health insurance. Less than 1% each of women

and men are covered by social security insurance, and less than 1% of women and men have employer-based insurance coverage.

The above facts generally reveal that health care financing in the Ethiopian public sector is constrained by several challenges. Firstly, the health budget allocated from the government treasury is significantly low to effectively address the health needs of the City. Secondly, the health care financing reform in general and the two insurance schemes in particular faced technical and leadership problems at their implementation phases, falling short of achieving the desired outcomes within the planned schedule. Thirdly, the health sector of the city government is not institutionally capable of effectively utilizing the already low and arguably less sustainable financial support from development partners. Fourthly, out of pocket health expenditure is still significantly high implying that patients are vulnerable to unexpected expenditures. For instance, in 2013/14, out of pocket health expenditure was 37% of the total health expenditure of Addis Ababa City Government. Between 2004/05 and 2013/14, out of pocket health expenditure increased by 116% (FMoH 2014a, AAHB 2015).

Key informant interview was held with AACHB head Dr. Yohanes Chala regarding the health care services of the city. The head revealed that to address backlog of health care service problems of the city is engaged in massive work to upgrade the existing public hospitals through construction of additional buildings and fulfilling the resource requirements.

In line with the second edition of the Growth & Transformation Plan (GTP II), currently three new hospitals are under construction with a cost 3.6 billion Br. The new hospitals are designed with high standards to accomplish quality service and to make sure they are comfortable to the patients. Each of the hospitals is expected to serve 400,000 people. The hospitals will be equipped with the latest technology of diagnostic and therapeutic equipment.

“Primarily, the hospitals will improve the health coverage of the city and enhance service provision,” Dr. Yohanes said. “It also increases the catchment area of hospitals to health centers, which enables hospitals to scale up services of health centers and share their experiences.”

Besides the hospitals, the construction of six health centers near condominiums is already commenced. The plan of the Bureau is to have at least one health center in a Woreda, but

depending on the size of the area, the number of health centers may increase. Currently, there are 96 health centers for 117 Weredas in Addis Abeba.

The head emphasized that to address loopholes in health care service quality, accessibility and efficiency the bureau is arranging continuous training to hospital administrators and health care service professionals. Taking in to account the spillover effects of health care staff demotivation and high turnover private wing service is arranged and this is expected to augment the professionals financially.

Though social health insurance scheme is commenced with the objective of mitigating catastrophic health care expenditure, it is not yet successful. The system faces plethora of challenges including lack of interest to join the scheme, abusing the scheme through unnecessary and frequent visits of health care facilities and unavailability of proper treatment and drugs in the health care facilities.

4.6 Conclusion

The facts and discussions in this chapter reveal that the health sector of Addis Ababa though undergoes several changes for the past two decades there are still a great deal of challenges yet to be addressed.

Following the rapid urbanization and associated life style changes, prevalence and impact of non-communicable diseases should also be recognized as the focus area of the health sector of the city. The current health policy has been in existence since 1993 which emphasizes the importance of achieving access to a basic package of quality primary health care services by all segments of the population, using the decentralized state of governance. The health policy stipulates that the health services should include preventive, promotive, and curative components.

The health care financing of Addis Ababa's public hospitals constrained availability of drugs, reagents and other needed supplies. Though there were efforts in increasing hospital revenues, financial mobilization and budget consumption of the hospitals were weak. Besides, corruptions were shown to exist due to poor health care monitoring systems.

Health care financing appears to be heavily dependent on foreign assistance from bilateral and multilateral sources and out of pocket payments due to the under-financing from the government treasury. While the former is clearly unpredictable and less sustainable in terms of achieving the long-term goals of the health sector, the latter is generally unaffordable for people who live under multidimensional poverty. Therefore government is expected to allocate more budget for the health sector of the country in general and Addis Ababa city in particular at least to ameliorate the burden of financial catastrophe that emanates due to seeking health service.

CHAPTER FIVE: THE STATE OF PUBLIC HOSPITALS HEALTH CARE SERVICE QUALITY PATIENT'S PERSPECTIVE

5.1 INTRODUCTION

In this chapter, findings on the state of health care service quality in selected public hospitals are presented and discussed. The purpose of this part of the study is to assess the state of health care service quality in Addis Ababa's public hospitals. The specific objectives related to this chapter of the study were:

- I. To investigate the effectiveness of health services of Addis Ababa's Public hospitals.
- II. To investigate the safety of the health care service provision of Addis Ababa's Public hospitals.
- III. To investigate the responsiveness of health services of Addis Ababa's Public hospitals.

As per the sample size indicated in chapter three of this study a total of 424 questionnaires were duplicated and distributed and 376 of questionnaires were retrieved and presented for analysis. The aggregate response rate was 88.1%. This high response rate suggests that response biases are minimal. The non-respondents were fairly distributed among the various hospital patients, and their non-response did not influence the characteristics of the study population. Table 5.1 summarizes the distribution of response rates by study sites.

Table 5.1 summary of the response rate

Hospital	Total sample	Response	Response %
Black Lion Hospital	130	113	86.9%
Gandi Memorial Hospital	45	39	86.7%
Menilik II Hospital	60	53	88.3%
Ras Desta Hospital	45	39	86.7%
St. Paul's Hospital	60	53	88.3%
Yekatit 12 Hospital	45	42	93.3%
Zewditu Memorial Hospital	42	37	88.1%
Total	427	376	88.1%

Source: Based on survey data (2019)

5.2. Socio –Demographic Profiles of Respondents

The researcher captured socio-demographic data of the 376 respondents who participated in the current research through a dedicated column in the standardized questionnaire. Data was compiled and analyzed to provide relevant information for the study. Regarding Socio

demographic characteristics of patient respondent's five significant items were included in the questionnaires' first part namely, Gender, age, type of patient (inpatient /outpatient), occupation and level of education of patients. The demographic profiles are described in detail in Table 5.2 below.

5.2.1 Age of Respondents

Knowing the age of the respondents is important to determine how the different age groups perceive the different aspects of the health care service of the hospitals and how significant the differences among different age groups are. How young or old the respondents would determine their experiences with the health care service they have received, and its role on treatment satisfaction. Comparing the five age groups in the study, the age group of most respondents 96(25.5%) were between the ages of 26 and 35 followed by 81(21.5%) in the age group of 36-45, 79(21%) between age of 18-25, 68(18%) in the age group of 46-55 and 52(13.8%) above 55.

5.2.2 Gender

Gender is used to augment results of the study bearing in mind that men and women could have diverse perceptions, thinking, and feelings towards the health care service's different dimensions and its association with treatment satisfaction. In this study, 195 (51.9%) and 181 (48.1%) of respondents were female and male, respectively, which indicated that majority of the respondents were female.

5.2.3 Type of patient

As shown in the table 5.2 below of the 376 respondents of the study 145(38.6%) were inpatients and the remaining 231(61.4%) patients were out patients. The purpose of encompassing data on the patient type was to understand the existence of significant differences between in patients and outpatients in their actual experience of the hospitals different health care service dimensions.

Table 5. 2 Socio demographic characteristics of respondent's

	Frequency	Percentage	Cumulative percentage
Gender			
Male	181	48.1	48.1
Female	195	51.9	100.00%
Age(years)			
18-25	28	7.4	7.4
26-35	61	16.2	23.6
36-45	138	36.7	60.3
46-55	110	29.3	89.6
Above 55	38	10.1	100
Type of patient			
Inpatient	145	38.6	38.6
Outpatient	231	61.4	100
Occupation of patients			
Government. Employee	48	12.8	12.8
Private employee	138	36.7	49.5
House wife	76	20.2	69.7
Merchant	49	13.	82.7
Unemployed	65	17.3	100
Level of education			
12 grade and under	114	30.3	30.3
Certificate	138	36.7	67
Diploma	67	17.8	84.8
BA Degree	44	11.7	96.5
Above BA degree	13	3.5	100
Total	376	100	100

Source: Based on survey data (2019)

5.2.4 Referral History of Patients

Referral is a process of transferring the patients from one health facility to the other for better health care service. It is a support system that assists in making health services more effective, efficient, and equitable. Patient referral system is practiced in developed and developing countries with differing levels of quality and care. Implementation of a functional and well managed referral system leads to good quality of health care service.

The process encompasses a health worker transferring the responsibility of care temporarily or permanently to another health professional or social worker or to the community in response to

its inability or limitation to provide the necessary care. It is a two way process and ensures that a continuum of care is maintained to patients or clients. It is done from the community to the primary care health service and to hospitals and within hospitals and vice versa (FMOH 2010). Referral can be vertical as in the hierarchical arrangement of the health services from the lower end of the health tier system to the higher ones. It also can be horizontal between similar levels of facilities in the interest of patients for cost, location and other reasons.

The rationale for referrals is the promotion of continuity of services. A good referral system increases the efficiency of the health system by maximizing the appropriate use of health care facilities. It strengthens the peripheral health facilities and improves the decision making capacity of professionals at the lower level of the referral network. It also creates opportunities for balanced distribution of funds, services and professionals while at the same time improving the effectiveness of the health system. In addition, a good referral system helps to promote cooperation among primary, secondary and tertiary levels of care.

As indicated in the following figure 5.1 the Ethiopian public health care service delivery comprises three service delivery points with a defined referral system namely primary level (health posts, health centers and primary hospitals), secondary level (general hospitals) and tertiary level (specialized hospitals). Patients who can not be treated by lower levels health care facilities are supposed to be referred to the next level.

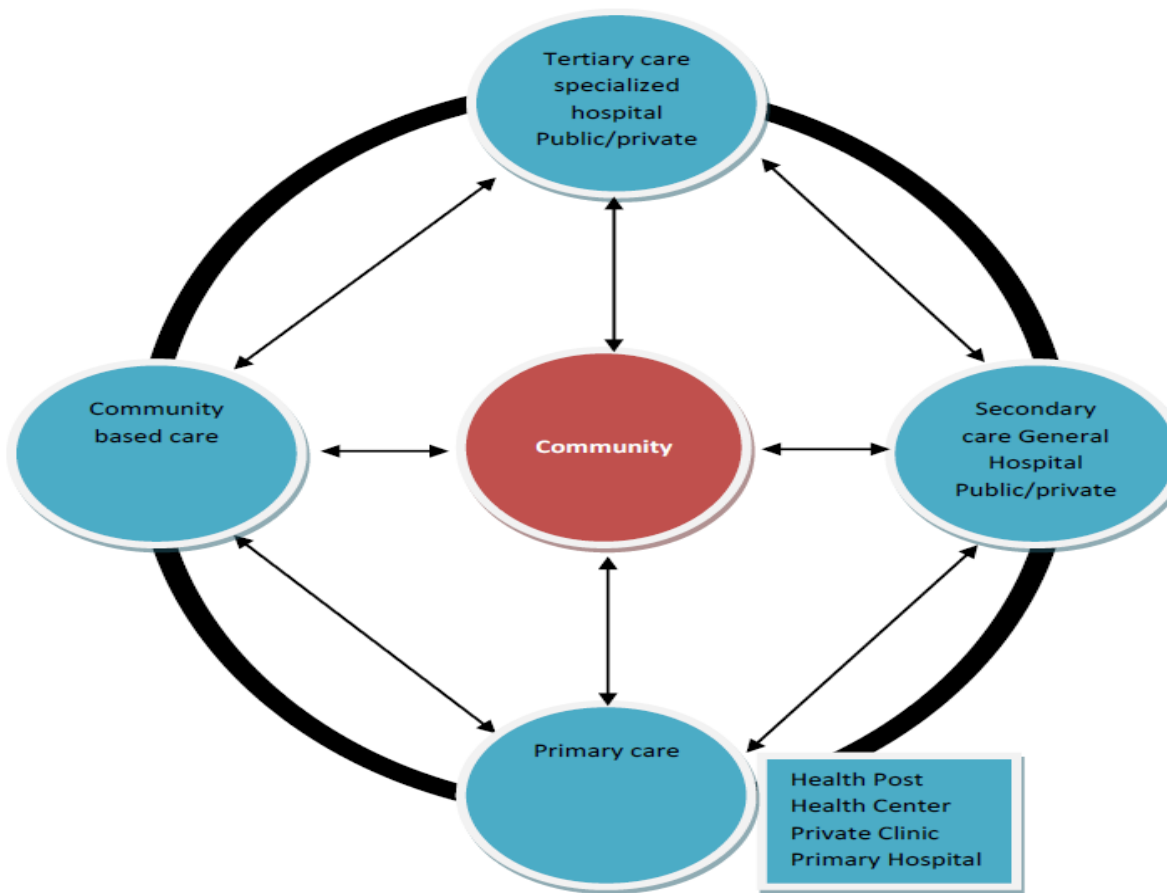


Figure 5.1 Referral system flow chart , Source:FMoH 2010

As indicated in the following table 5.3 of 376 patients 232(62%) of the respondents were referred by another health facility to the hospitals under study and the remaining 144(38%) enjoyed the service without referral. Similarly only 146(63%) of the 231 outpatients are referred by another medical institution and the rest 85(37%) has directly accessed the service without referral. On the other hand of the total 145 inpatients 86(59%) are referred by another medical institution the respective hospitals and the remaining 59(41%) has directly obtain the service from the hospitals. The study reveals that despite the aforementioned referral system in place, patients routinely accessed hospitals without a formal referral from a health center or other hospital seeking any prior source of care.

This Suggests that the intended connections between health posts, health centers, and hospitals is not practiced properly yet . Hence Failure of implementing the referral system designed is creating burden on the hospitals as patient head towards hospitals for medical services that would

have been received at health centers. Failure of practicing the referral system while negatively affecting the effectiveness of the hospitals it will also undermine the efficiency of the primary health care facilities as they are not properly used

Table 5.3 cross tabulation of referral and patient type

patient type	Referred		Not referred		Total
	Frequency	Percentage	Frequency	Percentage	
Inpatient	86	59%	59	41%	145
Out patient	146	63%	85	37%	231
Total	232	62%	144	38%	376

Source: Based on survey data (2019)

The respondents who have visited public hospitals without referral from another primary health facility also justify the reason as poor quality of the facilities service provision due to lack of skilled medical staffs and poor infrastructure.

The available empirical evidence also supports the aforementioned point .According to (McPake B. et al. 1999, Akin J. & Hutchinson P. 1999) Perceived deficiencies in quality have direct implications for access to care. Further, one expects that demand for health care facilities at the lower layer will diminish in response to the poor quality of the care offered.Low quality of public primary health care can result in patients forgoing (bypassing) care at the nearest facility and seeking care at a higher level public facility or in the private sector.

Akin & Hutchinson (1999) asserts that health policy-makers in developing countries are often disturbed and to a degree surprised by the phenomenon of the ill travelling past a free or subsidized local public clinic (or other public facility) to get to an alternative source of care at which they often pay a considerable amount for health care. That a person bypasses a facility is almost certainly indicative of either of significant problems with the quality of care at the bypassed facility or of significantly better care at the alternative source of care chosen. When it is a poor person choosing to bypass a free public facility and pay for care further away, such action is especially bothersome to public policy-makers.

There is similar evidence from Pakistan, Indonesia, and El Salvador Linked surveys of both health care utilization and facilities and find very low use of public health care, despite the fact that there are no *formal* charges. This is in response to its very low quality. The studies indicate

staff absentee rates at the facilities, closure of the health centers during regular hours of the time and following no predictable pattern of opening hours contribute to bypassing of their services.

As indicated in the following figure 5.2 of the 232 of patients who were referred to the hospitals 102(44%) were from public hospitals followed by 62(26.7%) from private clinics, and 32 each (13.8%) from public clinic/health station and private hospital.

Reason for referral to Hospital was, to get better treatment and diagnosis and to have feedback to their referring health facility for follow-ups at the end of their treatment at the referred hospital to nearest health facility at the end of care.

The study hence reveals a good number of people seeking care at hospitals had been referred from a more primary source of care, with the majority accessing the hospital at their first source of care. Suggesting that the intended connections between health posts, health centers, and hospitals is not practiced properly yet. Hence Failure of implementing the referral system designed is creating burden on the hospitals as patient head towards hospitals for medical services that would have been received at health centers. Failure of practicing the referral system while negatively affecting the effectiveness of the hospitals it will also undermine the efficiency of the primary health care facilities as they are not properly used.

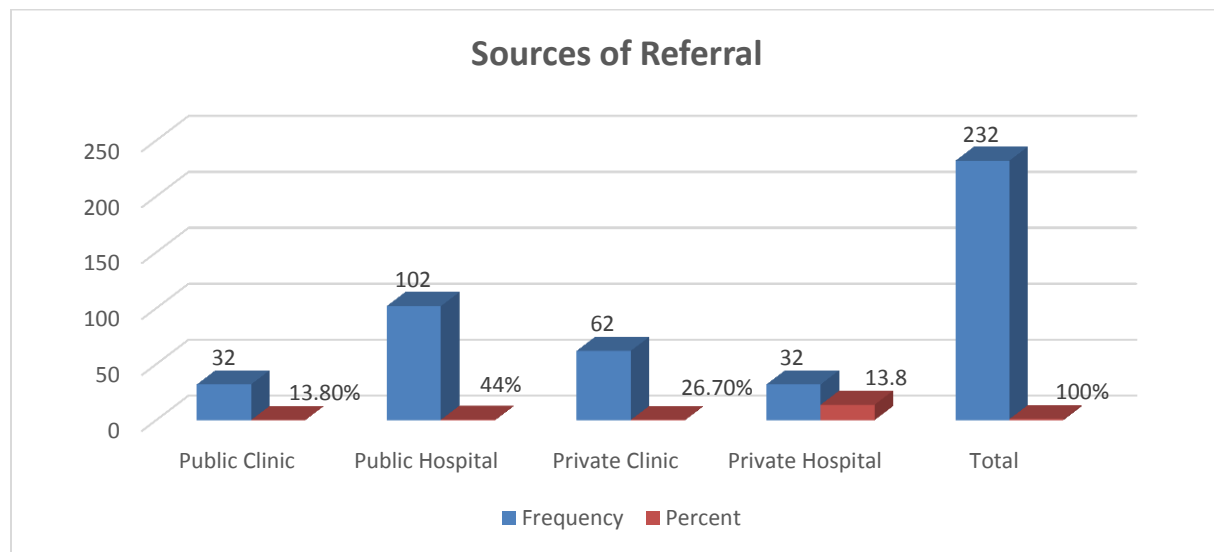


Figure 5.2 Sources of referral , Source: Based on survey data (2019)

Moreover analysis of secondary data also reveals the existence of deficiencies in the referral documents and this may lead to ineffectiveness and inefficiency of hospital's service provision. Analysis of the available literature also indicates prevalence of problems in the documents used to refer patients. According to Mulunesh (2014) of the total 1,011 referral letters examined from Tikur Anbessa Specialized Hospital Emergency Department about 12.2% referral letters were not entirely legible and 30% of the letters do not indicate the history of current illness. Similarly Ahmed and Dawud (2019) revealed that the standard referral letter was used only in 28.2% of the cases. More than two-third (70%) of the referrals were directly from primary health care units to tertiary hospital. Time of referral was included in only 5.2%, priority of the referral in 33.09%, vital signs in 38.7%, basic investigations in 43.2%, and the pre-referral managements in 47.7%.

Similarly Tola et al. (2017) indicated that the incompleteness of medical records is a significant problem that affects the quality of health care services in many hospitals of Ethiopia. Hence improving the completeness of patient's records is an important step towards improving the quality of health care. Training for Inpatient Health care worker (Physician and Nurse) was offered in Menelik II Referral Hospital regarding maintaining medical record of inpatients as part of hospital key performance indicator for quality of care. After the training the Pre- and post-intervention study indicated the improvement of inpatient medical record completeness in Menelik II Referral Hospital from September 2015 to April 2016. The overall inpatient medical record completeness was found to be 84% after intervention.

The finding of this study suggests that a simple set of interventions comprising inpatient medical record format and training health care provider showed a significant improvement in inpatient medical record completeness.

Similarly (Eyerusalem 2011, Mulusew 2015) indicated lack of proper information technology utilization for the referral system. The studies further indicated that majority of the health care service providers in the facilities had no access and skill for the information technology and the referral information system was mainly paper based. In addition, there were no database, local network, and internet service. Even though ICTs play a central role to deliver timely and evidence based quality health care services, the majority of health professionals of public hospitals accessed and used ICTs inadequately to manage their patients.

Thus the analysis based on survey data and review of related literature asserts high rate of noncompliance; disparity in the components of referral letter and high rate of missing of the vital components of the referral letters. Improving the weak referral system as identified in the referral system guideline can have strong impact to strengthen the existing hierarchical health care delivery system. This can strongly contribute to advance the delivery of appropriate health care service in public hospitals.

To ameliorate the aforementioned pitfalls related to referral and patient record maintenance the following remedial actions needs to be taken.

- Improving the infrastructures, management, computer access and literacy, internet connection and training/ICTs awareness is important to improve ICTs utilization among the health professionals in the study area.
- The Quality Officer and Chief Executive Officer of the public hospitals should design and launch intervention programs to improve medical record completeness including offering of training on ICT and record keeping.
- The referral system is also supposed to be revisited in terms of the health information system requirements and avail the infrastructure and system to all levels.

5.2.5 Occupation of Patients

The patients who were approached for the survey encompass all types of occupation and with different level of education as indicated in table 5.2. above. The highest number of respondents were certificate holders 138(36.7%), followed by 12 grade and under 114(30.3%), diploma holders 67(17.8%), BA degree holders 44(11.7%) and above degree level of education 13(3.5%).

Identifying the level of education of respondents will have a contribution to understand the existence of difference in responding tendencies of the patients due to their level of education.

With respect to occupation of the respondents private employees comprise 138(36.7%) followed by house wives 76(20.2%), unemployed 65 (17.2%), Merchants 49(13%) and government employees 48(12.7%) of them.

5.3 The State of Health Care Service Quality in Selected Public Hospitals: Patients' Perspective

Examining the quality of care from the patient's perspective can help reveal important information about the quality of care offered to patients. Their experience often contributes towards making the health service more responsive to clients - an area which currently being emphasized by WHO.

Hence in the following part the perspectives of patients regarding the three sub dimensions of hospitals service quality (effectiveness, responsiveness and safety) is analyzed.

According to FMOH (2005) hospital reform is a priority in the context of the national health sector strategic plan of Ethiopia. One of the main goals of the hospital reform are to improve the quality of health care delivery. At each level of the hospital system the reform measures were expected to positively contribute towards the provision of quality health service.

Therefore the following part covered the state of the quality health care service provision of the selected public hospitals based on the actual experience of patients/respondents is presented in the following order.

5.3.1 Effectiveness of health services of Addis Ababa's Public hospitals patients perspective

5.3.2 Safety of the health care service provision of Addis Ababa's Public hospitals patients perspective

5.3.3 Responsiveness of health services of Addis Ababa's Public hospitals patients perspective

5.3.1 The State of Health Care Service Effectiveness in Public Hospitals: Patients' Perspective

A key performance sub- dimension of health care service quality is effectiveness which is the degree of achieving desirable outcomes, given the correct provision of evidence-based health care services to all who could benefit, but not to those who would not benefit (Arah et al. 2003). On the other hand according to Productivity Commission (2013) effectiveness is a measure of how well the outputs of a program or service achieved the stated objectives (desired outcomes) of that program or service. It is the impact of the activities or services of interest on outcomes which is consistent with desired effects.

To put it differently Canadian Institute of Health Indicators (CIHI) refers it to the process by which a hospital, in line with the current state of knowledge, appropriately and competently delivers clinical care or services to, and achieve desired outcomes for, all patients likely to benefit most (CIHI 2013).

5.3.1.1 Descriptive analysis on effectiveness of hospitals service

As depicted in Table 5.4 below a series of questions were posed to respondents in order to elicit out their views on the effectiveness of the health care service provided by the hospitals. Of these thirteen items seven statements are related with medical staff's contribution to effective health care service provision, three items to physical infrastructure, one question item to patient's medical record keeping, one item regarding whether the medication is performed as promised and the last one pertains to the overall satisfaction of patients with the effectiveness of hospitals health care service.

With respect to thorough treatment of patients by doctors in the hospitals studied 41/10.90%, 167/44.41%, and 168/44.68% of the patients respectively indicated their disagreement, neutral and agreement. It can be understood the fact that more than half of the respondents (208/55.3%) failed to agree on this component of effective health service provision and this arises questions on the hospitals performance and demands a great deal of commitment to meet the expectations of the patients.

Patients scheduled for diagnostic tests are expected to receive information about their procedure using either the standard institutional verbal and written information. Offering explanation regarding the reasons for medical tests is one of the very crucial aspects of effective health care service. Before any medical treatment begins, it is the doctor's responsibility to ensure that the patient (or a person legally allowed to make decisions on their behalf) understands what it's for and that they agree to receive it. This is called informed consent. In practice, this means that the person giving consent must receive clear, understandable and relevant information about what the treatment involves, including expected benefits and risks, any alternatives, and what may happen if the patient chooses not to go ahead with treatment.

The respondent's perspective regarding the existence of doctor's explanation about the reason for medical tests reveals as (184/48.94%) agreed followed by 145(38.56%) neutral and 47/12.5%

disagree as indicated in table 5.4. This implies that 49% of patients approached are feeling contentment with medical staff's explanation and the remaining fail to agree 51% which is again very questionable as it has a negative spillover effect on the effectiveness of the expected outcome on the overall satisfaction of patients and change in their health.

With respect to careful checking of patients by medical professionals the patient's response indicated that 51/13.56%, 109/28.99% and 216/57.45% respectively disagree, neutral and agree with such treatment. One of the key challenges of public health service provision is limited willingness of medical professionals to listen to burning issues that are to be raised by patients. The survey's respondents views about the tendency of medical professional to listen to their perspectives shows as the the majority of the respondents (192/ 51.%) who filled in the structured questionnaire (table 5.4) fail to agree with respect to accommodating/listening their views. On the other hand, 184/49% of the respondents indicated their agreement.

The key informant health care professional approached in the study indicated an acute shortage of human resource and hospital infrastructure which couldn't keep up with both the catchment population as well as the services provided by the hospitals. As a result there are a great deal of demands for improvement to address the aforementioned patient discontentment problems.

Three items were (I⁵, I⁶ and I⁷) posed to understand patient's confidence on medical professionals and the response as indicated in table 5.9 reveals only 6.12%, 5.05% and 3.99% of respondents respectively for question number five, six and seven revealed as they have doubt on their ability. Of course as indicated in the introduction part of this chapter patients are less capable of understanding such technical aspect of health care quality and rather they are good at functional aspect of the health care service.

The next three questions were aimed at understanding the adequacy of hospital's physical infrastructure, and soundness of sanitation facilities. With respect to physical infrastructure the overall response of the respondents was negative (56% fail to agree). Corroborating to what is stated above the observation in the public hospitals vividly shows the resource gap. Although infrastructure expansion was phenomenal in Ethiopia in the last decade, In general, the hospitals covered in the study lacks specialized medical equipments. Health facilities can only provide quality services if their physical infrastructure is matched with adequate and functional materials

and supplies, if they sufficient number of trained human resources that are performing up to standards, and if their target population is satisfied with the services and continue utilizing the services. As a result of equipment gaps, the effectiveness of their service provision is greatly affected. For instance in the facilities, ECGs and MRI devices were quite rare suggesting that the city's public hospitals are inadequately positioned to address its rising rates of non-communicable diseases (NCDs.).

Table 5.4 Descriptive statistics on effectiveness of hospitals service provision

Sub dimensions of effectiveness of hospitals health care service	Disagree F/%	Neutral F/%	AGREE F/%
1 doctors are more thorough in treating and examining me	41/10.90%	167/44.41%	168/44.68%
2 Doctors are good about explaining the reason for medical tests	47/12.50%	145/38.56%	184/48.94%
3 When I go for medical care , they are careful to check everything when treating and examining me	51/13.56%	109/28.99%	216/57.45%
4 During my medical visits , I am always allowed to say everything that I think is important	51/13.56%	128/34.04%	197/52.39%
5 I have some doubts about the ability of the doctors who treated me	195/51.86%	158/42.02%	23/6.12%
6 Sometimes I feel Some of the doctors I have seen lack experience with my medical problems	223/59.31%	134/35.64%	19/5.05%
7 Sometimes the doctors make me wonder if their diagnosis is correct	223/59.31%	138/36.70%	15/3.99%
8 I think the hospital has everything needed to provide complete medical care	54/14.36%	157/41.76%	165/43.88%
9 The hospital is clean and has a pleasant appearance and interior	54/14.36%	165/43.88%	157/41.76%
10 The hospital has clean and good-looking personnel	1/0.27%	54/14.36%	321/85.37%
11 The hospital Keeps my records properly	49/ 13.03%	78/20.74%	249/66.22%
12 The hospital performs the medication as promised	41/ 10.90%	177/47.07%	158/42.02%
13 satisfied with overall effectiveness of the hospital's service	109/28.9%	—	268/71.28%

Source: Based on survey data (2019)

The above survey's result is also in line with previous findings in the literature. Austin et al. (2015) in their study on Barriers of providing quality emergency obstetric care in Addis Ababa reported lackof relevant infrastructure in the facilities resulting overcrowding. Moreover the

study reported insufficient pre-service and in-service training, and absence of supportive supervision were found to be key barriers to provision of quality emergency obstetric care.

Similarly Manyazewal et al. (2016) indicated though the Ethiopian health care reform was able to restructure hospital departments into case teams, with the goal of adopting a ‘one-stop shopping’ approach, there is a great deal of loopholes including shortages of critical infrastructure, furniture and supplies. This inadequacy of infrastructure resulted in job dissatisfaction which hampers the provision of health care service.

In addition to the above corroborating research works the 2018 Service Availability and Readiness Assessment (SARA) for Ethiopia provides key information on the state of the public hospitals service availability and readiness (EPHI 2018). According to WHO (2013) general Service readiness refers to the capacity of the health facility to provide general health services. It measures the availability of equipment and supplies necessary to provide services within the following five domains: basic amenities, basic equipment, standard precautions, diagnostic testing, and essential medicines.

Service readiness for basic amenities was assessed based on the following tracer items; sanitation facilities, communication equipment, consultation room, improved water source, power source, emergency transportation, and computer with internet access. The survey indicated that at least three in ten of facilities (34 percent) have an improved water source in the facility (i.e., water is piped into the facility or onto facility grounds, or else water is from a public tap or standpipe, a tube well or borehole, a protected dug well, or protected spring, or rain water, or bottle water), and water is available from this source on facility premises. Nearly more than one in ten of facilities (15 percent) had a power source. Two third of facilities had access to emergency transport and consultation room (67 percent and 66 percent respectively).

The least available tracer indicator of basic amenities is computer with internet (2 percent). Only 1 percent of facilities had all 7 basic amenities tracer items. Referral hospitals were found to be better equipped than other facility types in terms of power source, improved water source, communication equipment, computer with internet, emergency transport and computer with internet, except sanitation facilities. Among the regions, Addis Ababa was the region with the highest mean availability of basic amenities items, on average health facility in Addis Ababa had

six basic amenities tracer items out of seven. Addis Ababa was the region with the highest basic amenities items of improved water source (100 percent), communication equipment (89 percent), and computer with internet (33 percent). Health facilities in Addis Ababa that had all of the 7 basic amenities items were 15 percent.

Equipment

Delivery of quality health services requires availability of functioning basic equipment. The World Health Organization (WHO) has proposed a list of basic pieces of equipment that should be available at a health facility to guarantee its readiness to deliver basic health services. Service readiness for basic equipment was assessed based on the availability of adult weighing scale, child weighing scale, thermometer, stethoscope, blood pressure apparatus and light source according to the survey the most commonly available tracer items of basic amenities were thermometer (93 percent) and stethoscope (79 percent). From the total, only 8 percent of facilities were fully equipped with all six basic equipment items.

On average health facilities in Addis Ababa had 5 basic equipment out of six, followed by facilities in Harari and Dire Dawa which had 4 basic equipment out of six. Half of health facilities in Addis Ababa (49 percent) had all seven basic equipment compared with facilities in Benishangul Gumuz Region (2 percent) (EPHI 2018).

Good hygiene or cleanliness is a basic requirement for good health. The importance becomes much more in a hospital setting, where sick people come to restore their health. Hospitals provide cure for all types of sickness of the people. But, they also become a potential source of spread of infection if people concerned are not vigilant enough. A person may be hospitalized for some other problem say cardiac failure and may become sicker after acquiring some infection in the hospital.

One should be vigilant enough to see that cobwebs and dust do not settle over the doors and windows and even on the furniture, because these harbor germs. Hygiene needs to be observed even for the hospital linen and clothes, as these also tend to gather germs. These should be always clean and changed regularly. This linen includes the bed sheets and other bedding used by the patient as well as the uniforms and coats used by doctors and other health personnel.

With respect to cleanliness of the hospitals and availability of pleasant appearance and interior those who responded felt 54/14.36%, 165/43.88%, 157(41.7%) respectively disagree, neutral and agree. Implying over half of survey participants indicate lack of proper sanitation in the facilities.

The survey's result *is in* good agreement with studies of similar theme for instance Berehe et al. (2018) reported one of the major and most frequently identified problems at Yekatit 12 Hospital Medical College was lack of clean toilet in nearby as revealed by 85% of respondents approached.

The ministry of health also emphasizes on the need of providing clean water and sanitation on hospital premises (FMOH 2019,P6).

‘Cleanliness is everybody’s responsibility, a clean hospital include clean, comfortable and safe environment for patients, attendants, visitors, staff and members of the general public; increased patient confidence in local health care settings in relation to environmental hygiene and the organizations commitment to reduce the incidence of hospital acquired infections’.

The 2018 SARA report indicates 99% of health care facilities in Addis Ababa has clean water and sanitation facilities, however the researcher's personal observation to the premises of the hospitals is in complete contradiction. For instance there is disruption of running water in Gandhi memorial hospital, the sanitation of Black lion, yekatit 12, and Zewditu hospitals is extremely poor and are stinky especially in the old buildings. The hospitals newly constructed buildings are relatively in a good shape with respect to availability of water and sanitation.

Of course this weak performance with respect to availability of water and sanitation was not unexpected as it is very common in the health facilities of the third world. For instance a study of 430 hospitals in the developing world found that more than one-third lacked running water, a deficiency that can lead to unsanitary conditions for patients and health care service professionals and highlights the need to focus on basic infrastructure in order to prevent the spread of disease and improve health outcomes (Sagar et al. 2016).

Medical records are the document that explains all detail about the patient's history, clinical findings, diagnostic test results, pre and postoperative care, patient's progress and medication. If written correctly, notes will support the doctor about the correctness of treatment. Good medical records – whether electronic or handwritten – are essential for the continuity of care of patients.

For health professionals, good medical records are vital for defending a complaint or clinical negligence claim; they provide a window on the clinical judgment being exercised at the time. The presence of a complete, up-to-date and accurate medical record can make all the difference to the outcome.

Patient record keeping in health care facility is one of the very critical aspects of quality service as failure to maintain records has a great deal of negative spillover effects on the patient and the service provider including resource wastage, undue time wastage and most importantly on the health of the patient.

The hospitals patients who participated in the survey were also asked to share their views regarding the facilities proper medical record keeping practice and the analysis indicated 49/13.03%, 78/20.74% and 249/66.22% respectively disagree, neutral and agree. It is vivid that the majority 249/67% feels comfort on the way the facility keeps their medical records. On the other hand 49/13.3% disclose their disagreement and the remaining 78/21% not sure.

In spite of knowing the importance of proper record keeping in medical facilities a great deal of discrepancies are noticed. Tilahun & Fritz (2015) in their study on the use of Evaluation of Electronic Medical Record system encompassing staffs of public hospitals reported that health professionals' use of the Electronic Medical Record is low and they are generally dissatisfied with the service of the implemented system. The results of this study show that this dissatisfaction is caused mainly and strongly by the unavailability of basic ingredients of electronic medical record keeping system including power infrastructure, user support trainings, and computers in the wards. Due to the aforementioned problems the health facilities are forced to use double documentation (EMR and paper-based), and partial departmental use of the system in the hospitals.

The patients were also asked on whether the hospitals has performed the medication service as promised and only 42.02% of respondents revealed their agreement and the majority 47.07% are undecided and 41/10.9% disclosed their disagreement.

As shown in the following table 5.5 the overall satisfaction of patients with the effectiveness of the hospitals service provision was sought and the majority 268 respondents (71.28%) indicated their consent and the remaining disagree 109(28.9%). Patients in St. Paul's Hospital are most

satisfied (93%), followed by black lion hospital (79%)& at the bottom are zewditu Memorial hospital (56%), Ras desta (59%).

Table 5.5 Descriptive statistics on the overall effectiveness of hospital service

satisfied with overall effectiveness of hospital's service			
Name of hospital	NO	Yes	Total
Black Lion Hospital	23(21%)	88(79%)	111
Gandi Memorial Hospital	15(37%)	26(63%)	41
Menilik II Hospital	18(34%)	35(66%)	53
Ras Desta Hospital	16(41%)	23(59%)	39
St. Paul's Hospital	4(7%)	50(93%)	54
Yekatit 12 Hospital	17(40%)	25 (60%)	42
Zewditu Memorial Hospital	16(44%)	20(56%)	36
Total	109(2	267(71%)	376

Source: Based on survey data (2019)

This studies result on overall satisfaction of patinets on hospitals service effectiveness is consistent with the effectiveness similar studies on patient's satisfaction on effectiveness hospitals service effectiveness are briefly reviewed and presented as follows.

Tesfu et al. (2016) reported 47% overall mean satisfaction, Retta *et al.* (2015) revealed (61.9%), Kaba et al. (2016) indicated overall patient satisfaction 58.16 and 68.84% at regular and private wing respectively, Mulugeta et al. (2019) about one in two patients were not satisfied , Ejigu et al. (2013) and Ejara 2014 also revealed 53 % overall satisfaction of patients, Berehe et al. (2018) the overall clients' satisfaction level towards out-patient health service at Yekatit 12 Hospital Medical College was 47%, Seid et al. (2016) approached hospital service users and assessed satisfaction level of hospital service users was 77% , Abdosh (2009) indicated about 46% of the interviewees were not satisfied with the health services provided, Demle et el. (2019) revealed overall adult inpatient satisfaction with nursing care was 66%.

The most frequently identified problems which lessens the patients satisfaction were lack of clean toilet in nearby, lengthy waiting time,lack of proper waiting area ,inadequate furniture like chair, lack of adequate drugs and supplies, lack of privacy at the examination room, lack of direction signs, and poor communication between clients and health service providers, the payment state of the respondent, provider's behavior towards the patient,and health care

professional dissatisfaction with their job due to a number of factors including the magnitude of payment and work overload as the number of patients in the facilities high, Poor communication skill of health care professionals and health care professionals lack of acquaintance with technology.

Health professionals need updated health information from credible sources to improve their knowledge and provide evidence based health care services. Various types of medical errors have occurred in resource-limited countries because of poor knowledge and experience sharing practices among health professionals (Andualem 2014, Mohammed et al. 2013). These studies in public hospitals of Addis Ababa revealed that though most health professionals knew the importance of knowledge and experience sharing practices, only a limited number of them practiced it there Computer knowledge and utilization is very low. This will deter their capability to provide effective health care service to their patients.

Many also argued that inadequate number of medical professionals plays a negative role in patient's satisfaction and overall quality of health care service. This shortage of physicians forced government to massive production to ensure the physician workforce demand and this puts the Ethiopian health care system in a variety of challenges. According to Assefa et al. (2017) Massive physician workforce production which is not closely aligned with the training capacity of the medical schools and the absorption of graduates in to the health system is resulting in an unanticipated adverse consequences.

As a result of perceived poor quality of health care service of the public hospitals those who afford by pass them and get medication in private facilities.

Akin and Hutchinson's preliminary work of the late 1990s indicated health policy-makers in developing countries are often disturbed and to a degree surprised by the phenomenon of the ill travelling past a free or subsidized local public clinic (or other public facility) to get to an alternative source of care at which they often pay a considerable amount for health care. That a person bypasses a facility is almost certainly indicative either of significant problems with the quality of care at the bypassed facility or of significantly better care at the alternative source of care chosen. When it is a poor person choosing to bypass a free public facility and pay for care further away, such action is especially bothersome to public policy-makers.

Reflection on NPM

The above analysis reveals that several aspects of an effective health care service are missing in the hospitals encompassed in the study. However the researchers observation and interaction with patients reveals that patients do not feel as they have the right to get quality service and demand for improvement. Unquestionably when patients understand their rights and demand for it, it will serve as a positive catalyst to force parties involved in service provision to enhance service quality.

One of the justifications for inappropriateness of NPM in health care setting of developing country involves poor public expectations. Manning (2001) indicated that public expectations of government in those countries are different from those found in developed countries. He contends that 'public expectations of service quality from government in many developing countries are justifiably low, with the consequences that citizens are unlikely to feel that complaints are worth the effort' (Manning 2001). It is difficult for developing countries to succeed in implementing NPM unless citizens in developing countries are motivated to complain about their local service.

Physicians perspectives

with respect to thorough treatment of patients by doctors in the hospitals studied more than 50 percent of them failed to disclose their consent and this is worrying since this technical aspect of health care service delivery is badly needed to heal patients from their pain.

The physicians involved in the key informant interview complain on the appalling condition of public hospitals in Ethiopia in general and in their respective facilities in particular which plays its own role in deterioration of health care service quality and accessibility. They cite the poor infrastructure and even often unavailability of basic supplies including gloves, masks and wound dressing materials to treat their sheer number of patients flooding from Addis and other parts of the country to their facility.

The physicians are staggered that people often focus only on the shortcomings, poor service provision of the hospitals, but failed to recognize the daunting problems medical practitioners suffer from. Following long hours of work and the stress from dealing with patients that are in

extreme suffering, practitioners are often exhausted, distressed and fatigued, leading them to make poor clinical decisions that adversely affect patient satisfaction.

They disclosed that as a result of the work overload medical professionals do not have enough time to disconnect from work, which would allow them to be more rested and return to work with more energy, concentration and productivity and the consequence of these is severe and far-reaching, causing suboptimal patient care practices.

Medical service is hellish in Ethiopia, and it has always been doctors that suffered the brunt of the criticism, according to a physician . “We see patients sleeping on the floor and dying as there are no rooms available,” says an intern at Black Lion Hospital. “We feel terrible, but we learned the hard way to walk away, as we couldn’t do anything, and the society ended up perceiving us as the bad guys”.

Another a resident physician at St. Peter Hospital opines that the myriad of problems in the health sector are the result of neglect by the government “The government only allocates three percent of GDP to the health sector”.

In line with the above arguments the vice president of the Ethiopian Medical Association pointed that while other sectors have been changing, the health sector has remained stagnant and under funding the health sector significantly affects the facilities capability to acquire latest medication equipments. As a result the professionals are forced to deliver service with very old operating rooms with non-functional and outdated equipment, poor sterilizing materials, on-and-off working autoclave machines, unsanitary recovery rooms, and overwhelming infection rates to patients and the health care workers have been serious challenges.

Medical practitioners are not immune from the bitter taste of low incomes and a high cost of living, which is especially the case for new graduates and interns. This is despite compensation to influence physician’s effectiveness being important. Those in the industry confirm that financial incentives influence their performance.

As a result of the poor remuneration and dissatisfaction with their working environment many have left the country. The professionals further argued that the health care system of the country

is one push factor that force physicians to migrate to the western nations in search of better payment and education.

Ethiopia has sent more medical doctors to western nations than those staying put in the country, as noted by its one-time Ethiopian Minister of Health and now at the helm of the WHO, Tedros Adhanom (PhD).

Much strides have been made to accommodate the challenges of accommodating a fast-growing population of almost 110 million people, with a doctor per patient ratio has gone down from 100,000 to a doctor to 15,000. The country has opened up dozens of universities, even those with specialized teachings such as medicine, with little regards to quality of education and creating job opportunities at the end.

One key factor for patient dissatisfaction for hospitals health care service is unquestionably the inadequacy of medical professionals relative to the magnitude of patients visiting the facilities.

To ameliorate the human resource problem in 2012 the federal ministry of health introduced the “*Flood and retain*” strategy in hopes of increasing the number of physicians in the country. The program led to the opening of thirteen new medical schools; ten of which were university-based while the remaining three were Hospital based. In addition to this, existing medical schools were asked to increase their intake dramatically. This strategy was questioned by many scholars at the time on issues, among others, the quality of graduates it will entail, the intake capability of the institutions enrolling these students and the uptake ability of the slowly growing health sector for graduates.

As part of the same strategy, a new rule was designed disabling the graduates to access their degree or license following graduation. The rule states that medical graduates have to serve for years based on a tier system which was designed according to the location of the hospital's in question.

The fallacy of flood and retain strategy

In contrary, the ministry adopted production as a strategy and hardly any effort was invested towards retention. Recently a group of unemployed graduate physicians have come forward and expressed their frustrations to various media that although the ministry of health assigned them

to regional health bureaus, the answers they get from respective regional health bureaus were “we don’t have the budget to hire you.” Nor were they only denied of employment but also of their rights to get licenses and their degrees, a practice introduced in Ethiopia and was implemented for more than ten years as part of the physician retention strategy of the country.

Unemployment of fresh university graduates is not unheard of in the Ethiopia, but this has not been the case for medical graduates. In fact, the WHO report for the density of physicians per population shows Ethiopia has way low number of physicians to meet the desired ratio.

5.3.1.2 Predictors of patient satisfaction with effectiveness of hospital service

Factor analysis

Factor analysis is a multivariate statistical method for reducing large numbers of variables to fewer underlying dimensions. It can also be viewed as process in which the values of observed data are expressed as functions of a number of possible causes in order to find which are the most important.

To this end factor analysis was conducted after testing the data’s suitability for the analysis using Kaiser-Meyer-Olkin (KMO) test (see appendix 4).The test measures sampling adequacy for each variable in the model and for the complete model. According to Cerny and Kaiser (1977) the statistic is a measure of the proportion of variance among variables that might be common variance. The lower the proportion, the more suited your data is to Factor Analysis. KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for factor analysis. Since the KMO value is found to be .770 the data is suitable for factor analysis

Of the 12 dimensions which are included in the instrument to understand the effective provision of health care service in the hospitals under study only four component has an Eigenvalues value above one(see appendix 4) .Therefore these four variables explain 81 percent of overall variability of the effectiveness of hospitals health care service. Hence only the following four dimensions were encompassed.

In standard regression, the co-efficient of determination (R^2) value gives an indication of how much variation in y is explained by the model. This cannot be calculated for logistic regression

but the 'Model Summary' table gives the values for two pseudo R^2 values which try to measure something similar. The model summary revealed that between 46% and 65.7% of the variation in patient satisfaction with hospital service effectiveness can be explained by the model (see appendix 4).

Results of logistic regression analysis

Logistic regression analysis was carried out to comprehend the relative effects of different health care effectiveness attributes of hospital service on patient satisfaction.

As shown on table 5.6 the variables, such as thorough treatment and examination, good explanation regarding medical tests, Careful checking of everything while treating and examining, and being allowed to say important things during medication showed statistical significance in the bivariate analysis (Chi-square test) at a 5% level of significance. Consequently, the multivariate logistic regression analysis which controls the undesirable effects of confounding variables was used by taking all the four predictor variables into account. The backward stepwise regression which controls the problem of multicollinearity was employed and doctors thorough treatment and examination, good explanation regarding medical tests, and Careful checking of everything while treating and examining remained to be significantly and independently associated with patient's satisfaction with hospitals service effectiveness.

The bivariate analysis (Chi-square test) also showed a significant association between thorough treatment and examination and patients satisfaction with hospitals service effectiveness ($p < 0.05$). Good explanation regarding medical tests and satisfaction with hospitals service effectiveness ($p < 0.05$), Careful checking of everything while treating and examining and satisfaction with hospitals service effectiveness ($p < 0.05$), and always allowed to say important things during medication and satisfaction with hospitals service effectiveness ($p < 0.05$).

The multivariate logistic regression analysis shows that thorough treatment and examination of patients significantly affects the satisfaction of patients regarding the effectiveness dimension of hospital service ($p < 0.05$, $exp = 3.147$, 95% CI). The model predicts that the availability of thorough treatment and examination of patients by medical staffs of the hospitals enhances the odds of being satisfied with service effectiveness dimension by 3.147 times as compared to unavailability of such treatment of patients.

Similarly the multivariate logistic regression analysis indicated strong association between medical staffs provision of good explanation regarding medical tests and patients satisfaction with hospital service effectiveness dimension ($p < 0.05$, $\exp = 6.258$, 95%CI). The model estimated that provision of sound explanation of medical tests by physicians boosts the odds of patients satisfaction on hospitals service effectiveness by 6.258 times as compared to not providing such explanation concerning medical tests.

In the same way the multivariate logistic regression analysis indicated the presence of relationship between Careful checking and examining of patients during treatment and patients satisfaction with effectiveness dimension of hospitals service ($p < 0.05$, $\exp = 3.042$, 95%CI). The model revealed that careful checking and examination of patients is more likely to enhance the odds of patient's satisfaction regarding effectiveness dimension of the hospitals service by 3.042 times as compared to unavailability of such examination.

Though the fourth predictor variable namely, being always allowed to say important things during medication showed association with patient's satisfaction with service effectiveness on the bivariate analysis (Chi-square test, $p < 0.05$), the multivariate logistic regression indicated as there is no association with satisfaction of patients with the effectiveness of hospitals service ($p < 0.312$, $\exp = .723$, 95%CI).

Table 5.6 Bivariate and multivariate statistical tests for significance

Sub Dimensions of health care service effectiveness		Satisfaction with overall effectiveness of Hospital's service		Bivariate Chi-Square Tests of association		Multivariate logistic regression	
		Not satisfied	satisfied	Df	Sig.	Odds ratio Exp(B)	Sig.
Thorough in treating and examination	Disagree	104	104	1	0.001	3.147	.014
	Agree	5	163				
Good explanation regarding medical tests	Disagree	104	87	1	0.002	6.258	.001
	Agree	5	180				
Careful checking of everything while treating and examining	Disagree	90	70	1	0.002	3.042	.002
	Agree	19	197				
Always allowed to say important things during medication	Disagree	88	91	1	0.001	.723	.312
	Agree	21	176				

Source : Based on survey data ,2019

The above table provides the regression coefficient (**B**), the Wald statistic (to test the statistical significance) and the all-important Odds Ratio (**Exp (B)**) for each variable category.

$$\text{Log (p/1-p)} = \mathbf{b_0} + \mathbf{b_1*x_1} + \mathbf{b_2*x_2} + \dots + \mathbf{b_3*x_3}$$

$$\text{Log (p/1-p)} = Y = -11.231 + 1.147E1 + 1.834E2 + 1.113E3$$

Where: **Log (p/1-p)** = Y...the odds of overall effectiveness of the hospital's medical service provision

Bo.....The constant term

E1..... Doctors are more thorough in treating and examining me

E2..... Doctors are good about explaining the reason for medical tests

E3... During my medical visits, I am always allowed to say everything that I think is important

5.3.1.3 Mann-Whitney and Kruskal-Wallis analysis of variance

The Mann-Whitney and Kruskal-Wallis tests were run to statistically test if there was a significant difference between the answering tendencies of different groups encompassed in the survey and the result is summarized in table 5.7 below.

Mann-Whitney tests

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females regarding the overall effectiveness of the hospitals service and the test result shows that males and females have the same scoring tendency at the 5% level ($p = 0.138$). Similarly the Mann-Whitney test was conducted to statistically test if there was a significant difference between the answering tendencies of inpatients and outpatients with respect to the overall effectiveness of the hospitals service and the test result shows that males and females have the same scoring tendency at the 5% level ($p = .822$).

Analysis of Kruskal-Wallis test

Analysis of Kruskal-Wallis test indicates that there were difference in scoring tendency between respondents with different hospitals ($p = 0.000$). On the other hand there were no significant differences in scoring tendency between respondents with different levels of education ($p =$

0.170), occupation of respondent (P=0.130) and between respondents with different age groups (p = 0.280). This result is consistent with descriptive analysis indicated in prior parts which vividly exhibits as respondents in different hospitals have varying level of satisfaction with effectiveness of the health care service.

Table 5.7 Summary of Mann-Whitney and Kruskal-Wallis tests

Summary of Mann-Whitney tests			
Grouping variables	satisfied with overall effectiveness of the hospitals service		
Gender of respondents	Mann-Whitney U	16420.000	
	Wilcoxon W	32891.000	
	Z	-1.483	
	Asymp. Sig. (2-tailed)	.138	
Type of patient	Mann-Whitney U	16566.000	
	Wilcoxon W	27151.000	
	Z	-.225	
	Asymp. Sig. (2-tailed)	.822	
Summary of Kruskal-Wallis tests			
Grouping variable	Test statistic		
	Chi-Square	df	Asymp. Sig.
Hospitals	27.232	6	.000
Age of respondents	5.076	4	.280
Educational level of respondents	6.416	4	.170
Occupation of respondents	7.113	4	.130

Source : Based on survey data, 2019

Conclusion

The overall result of the descriptive analysis indicated in prior parts revealed the public hospitals studied have poor performance in effectiveness dimension of health care service. The bivariate and multivariate statistics also revealed the significance of some variables affecting effectiveness of health care service. The variables, such as thorough treatment and examination, good explanation regarding medical tests, Careful checking of everything while treating and examining, and being allowed to say important things during medication showed statistical significance in the bivariate analysis affecting level of satisfaction of patients. On the other hand the multivariate logistic regression analysis revealed thorough treatment and examination, good explanation regarding medical tests, and Careful checking of everything while treating and

examining enhances patients level of satisfaction for effectiveness sub dimension of health care service quality respectively by 3.147 times, 6.258 and 3.042 times as compared to unavailability of such attributes of health care service.

With the objective of enhancing the quality of health care service for over two decades Ethiopia has undertaken a number of major strategic initiatives, EHRIG, EHAQ, CASH, APTS, SaLTS and EHSTG. Despite this strategic initiatives the health care service is not yet to the expected level because of many internal and external factors which have been bitterly affecting both the provision of quality of health services in public hospitals across the country and increasing public grievances.

Hence the evidence from this study suggests the presence of loop holes in the health care facilities demanding a great deal of work ahead to ameliorate plethora of problems to cater the health care needs of citizens.

5.3.2 The state of Health Care Service Safety in Public Hospitals: Patients' Perspective

Health care safety is one of the sub dimensions of health care service quality. And it refers to the degree to which health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care itself (National Patient Safety Foundation 2000). Safety is a dimension that is closely related to effectiveness, although distinct from it in its emphasis on the prevention of unintentional adverse events for patients. Hence the health care service reform measures of Ethiopia also were expected to alleviate incidences of medical errors in public hospitals.

Similarly CIHI (2013) describes Patient's Safety as an essential component of health care quality and is the dimension of performance, wherein a hospital has the appropriate structure and uses care delivery processes that measurably prevent or reduce harm or risk to patients, health care providers and the environment, and which also promote the notion.

On the other hand Sammer et al. (2010) indicated that to Err (to show too much of care) on the side of safety is better to avoid medical errors. In United States hospitals alone kills between 44,000 and 98,000 each year. They further revealed that more people die from medical errors in a year than from highway accidents, breast cancer, or AIDS.

Therefore health care organizations are expected to create an environment in which culture of safety is an explicit organizational goal, becomes a top priority, and is driven by leadership (Kohn et al. 2000, p.6). The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management.

5.3.2.1 Descriptive analysis on safety of hospitals service

To investigate the safety dimension of the hospitals studied data was collected from both inpatients and out patients and the analysis is presented as follows.

As indicated in table 5.8 below the respondents were provided a five point likert scale statement to indicate their level of agreement "doctors never expose me to unnecessary risk" and 58(15.4%), 142(37.8%) and 176(46.8%) of respondents respectively responded as they disagree, neutral and agree. Almost 38% of respondents are undecided and there are several possible explanations the prime one is safety is a technical aspect of health care service quality and may be a bit difficult to understand to patients.

Similarly respondents were approached with a statement of 'Medical personnel cares patients safety' and indicated that 80(21.3%), 131(34.8%) and 165(43.9%) responded as they disagree, neutral and agree. again in here only 43.9 percent of patients approached viewed appropriate care is exercised by physicians which is upsetting.

Majority of the respondents 216(57.4%) indicated that they consider medical personnel are professional and makes them feel safe and 197 of patients approached (52.4%) feel safe during medical operations. on the other hand the majority of respondents indicated that the hospital's procedures & systems are good at preventing errors from happening & causing injuries 48.9%(189) and the remaining 49(13%) disagree and 143(38%) neutral. Similarly of the 376 patients approached 52.4 % (197) feels as the hospital is safe.

Medication errors are common in general practice and in hospitals. Both errors in the act of writing (prescription errors) and prescribing faults due to erroneous medical decisions can result in harm to patients. Any step in the prescribing process can generate errors. Slips, lapses, or

mistakes are sources of errors, as an unintended omissions in the transcription of drugs. Faults in dose selection, omitted transcription, and poor handwriting are common.

Responses from the structured questionnaire revealed the following results regarding prescribing the right drug for the patients pain 23(6.1%), 219(58.2%) and 134(35.6%) respectively disagree, neutral and agree. The majority of respondents 58.2 % (219) are not sure whether the drug subscribed to them is appropriate or not the likely explanation for this is as it requires technical knowhow. On the same manner 196(52.1%) of patients approached revealed as they are undecided on whether the drug has creating complication and the 8 % (30) disagree and the remaining 39.9 % feels as they have faced the complication.

Majority of the respondents 53.2 % (200) indicated as they have received advice from health professionals regarding risk factors & precautions to take after leaving the hospital. On the other hand 9% (34), indicated their disagreement and 37.8%(142) are neutral.

Finally the respondents were asked to rate their level of agreement regarding their overall level of satisfaction on safety procedures of the hospitals on a five point likert scale. The analysis indicated that 58 percent of respondents(218) failed to agree and 42%(158)agree. This indicates that the hospitals health care service provision has an immense safety concern.

Table 5.8 Descriptive statistics on the safety dimension of health care service quality

S.No.	Sub dimensions of safety of hospitals health care service	Disagree F/%	Neutral F/%	Agree F/%
1	Doctors never expose me to unnecessary risk	58(15.4%)	142(37.8%)	176(46.8%)
2	Medical personnel cares patients safely	80(21.3%)	131(34.8%)	165(43.9%)
3	Medical personnel are seen professional to feel safe	51(13.6%)	109(29%)	216(57.4%)
4	I Feel safe during medical operations	51(13.6%)	128(34%)	197(52.4%)
5	The hospital's procedures & systems are good at preventing errors from Happening & causing injuries	49(13%)	143(38%)	189(48.9%)
6	Hospital is safe	51(13.6%)	128(34%)	197(52.4%)
7	The doctors have prescribed the right drug for my pain	23(6.1%)	219(58.2%)	134(35.6%)
8	I have faced no drug complication(drug incompatibility)	30(8%)	196(52.1%)	150(39.9%)
9	Satisfied with advice given to me from health professionals regarding risk factors & precautions to take after I left the hospital.	34(9%)	142(37.8%)	200(53.2%)
10	Satisfied with overall safety procedures	158(42%)		218(52%)

Source: Based on survey data, 2019

One of the manifestations of failures to exercise due safety care is reported to be prescribing errors. Morgan T. et al. (2009) indicated prescribing errors were defined as medication incidents initiated during the prescribing process. These include the inappropriate selection of a medication, dose, dosage form, or route of administration, and inappropriate or inadequate instructions for use of a medication. In some studies, a prescribing error also included a medication order that does not comply with accepted practice or legal requirements. Supply errors are also referred to as dispensing errors, and were defined as medication incidents initiated during the process of supplying medications to the patient. Supply errors include the failure to prepare or supply a medication, dose, dosage form, amount or instructions for medication use as it is ordered or to comply with accepted standards.

According to EPHI (2018) Safety is an essential part of the health service delivery system. Health workers must be able to work in a safe environment and must be provided with all the safety training and equipment they need to carry out their duties. They must also be able to render services to their patients in the safest manner, which means using the best standards for safety precautions. Disposing of needles and medical products properly, sterilizing medical equipment appropriately and disinfecting toilets and work areas are among the basic safety standard precautions expected in health facilities. In 2018 Service readiness for standard precautions for infection prevention was assessed based on the availability of the following tracer items: disposable or auto-disable syringes, disinfectant, appropriate storage of sharps waste, safe final disposal of infectious waste, latex gloves, safe final disposal of sharps, soap and water OR alcohol based hand rub, and appropriate storage of infectious waste.

The 2018 SARA, indicated that among all Ethiopian health care facilities only 3 percent of them had all 9 tracer items for standard precaution for infection prevention and on average, facilities had 4 of the 9 items with an overall standard precaution readiness score of 42 percent. Sixteen percent of facilities had appropriate storage of infectious waste. Out of 9 standard precaution tracer items, on average facilities in Benishangul-Gumuz had 3 items (33 percent) as compared with facilities in Addis Ababa which had 8 items (90 percent) out of nine. Eleven percent of facilities in urban setting had all items for infection prevention and less than one percent of facilities in rural had all items for infection prevention.

The available empirical evidence also suggests the prevalence of drug prescription errors in Ethiopian hospitals and adverse drug errors, infections in particular and safety problems in general were reported in Addis Ababa public hospitals.

For instance (Eshetie et al. 2015) indicated prevalence of 9.2 adverse drug effects (ADE) out of 1000 medication doses and increased with age, length of hospital stay. Muche et al. (2018) revealed three out of four patients (75.51%) experienced at least one drug therapy problem, Gutema et al. (2018) in their study on the use of antibiotics in three clinical wards in the largest tertiary hospitals for a period of one year indicated that three out of four patients were prescribed antibiotics and surgical site infections constituted a large burden of the infections treated in the hospitals, Beyamo et al. (2019) overall incidence of health care associated infection has been increased and burden of these infections is staggering and significant numbers of health care workers were not complied with standard precaution practices, Assefa (2013) the drug prescription practices for antibiotic and injection shows significant deviation from the standard recommended by WHO.

Similarly Fekadu (2014) revealed the incidence of prescribing and medication administration errors (MAEs) in the pediatric wards of Black Lion and Zewditu Memorial Hospitals out of 2401 medical records investigated to assess prescribing error on 27 nurses administering drug to pediatric inpatients five thousand eleven prescribing errors were documented. The prescription writing error were the most frequent 2386 (99.4%), followed by wrong dose 1673 (69.67%), drug-drug interaction 767 (31.9 %) and wrong frequency 185 (7.7%).

Feleke et al. (2015) also indicated the prevalence of high discrepancies at hospital discharge with discrepant dosing of medication being identified as the most frequent type of medication discrepancy. The most frequently occurring drugs involved in wrong dose and frequency was ceftriaxone (586 times). The most frequent drug-drug interaction was the concurrent prescribing of ampicillin and gentamicin (610 times). Mekonnen et al. (2017) indicated overall patient safety score of 46%,

The other major problem with respect to safety aspect of health care quality is health care facility acquired infection.

According to the infection prevention guideline of FMOH (2019) the following activities are supposed to be fulfilled to mitigate infection in hospitals and Regional health bureaus are responsible to oversee the implementation: hand hygiene, use of gloves , personal protective equipment and drapes for health care professionals , surgical Antisepsis , safe practices in the operating room , safe and appropriate use of injections , waste, management , instrument processing , processing Linen , traffic flow and activity pattern, housekeeping , clinical laboratory services, blood bank and transfusion services, isolation precaution guidelines for health care facilities , preventing nosocomial infections , preventing infectious diarrhea and managing food and water Services , preventing nosocomial pneumonia , management of infection prevention programs , and infection monitoring (surveillance) activities.

The above guideline is very sound if applied unquestionably it will significantly mitigate the likely hood of infection on patients and also will enhance the safety of health care professionals. However the researcher's observation on the panorama of the facilities and the opinion of key informants of the hospitals tells the gloomy picture of the facilities with respect to their readiness to mitigate infection.

For instance the panorama in Gandi memorial hospital reveals disruption of running water, the old buildings of Black lion, Menlik the II, Yekatit 12 and Zweditu memorial hospitals are the chief exhibits in this deficit of sanitation in the facilities.

In addition to hospitals' problems of sanitation infrastructure low awareness of health care professionals regrading infection prevetion is another safety concern (FMOH 2019).Hence providing in-service infection prevention training appears to be useful in enhancing health care workers'awareness level and health authorities and facilities should facilitate the training and implementation (Mekonnen et al.2017).

Review of relevant documents indicated that the ministry of health has produced and launched implementation of different guidelines to ameliorate safety issues to both patients and health care professionals including Infection prevention guidelines for health care facilities 2004, Ethiopian hospital reform implementation guidelines 2010,Ethiopian standard treatment guidelines for general hospital 2014, and clean and timely care in hospital for institutional transformation 2019.

Despite all these guidelines there are still a great deal of grievances regarding this safety dimension of hospital service provision. Patients and their family members who are alleged to have sustained damage from medical error at public hospitals are rampant these days in Addis Ababa. Among the public hospitals encompassed in this study Zewditu Memorial and Yekatit 12 hospitals take the lion's share in terms of safety problems.

For instance in Zewditu Memorial Hospital a person admitted to the hospital seeking help to overcome asthma has now faced severe damage on his two eyes, two ears and other parts of his body. The patient's families claimed that some of the medications were not made with their consent. However the Physician who undertook the medication, Dr. Adefris Bahiru, on his part says the damage is sustained in the process of medication, not due to medical error.

Similarly in Zewditu Hospital two patients with identical names namely Selam Hagos and Selam Demoze received different treatments than the intended one. Selam Hagos was appointed months before for goiter treatment and Selam Demoze for gallbladder duct. Selam Hagos treated for gallbladder duct though she was appointed for goiter treatment and the other patient with nick name namely Selam Demoze was about to receive goiter treatment but she was appointed for gallbladder duct and realizing the situation she has stopped the physicians from performing the operation.

Reflection on NPM

As indicated in prior parts of the study the health care service of the country including public hospitals is reformed under the orientation of NPM which requires explicit standards and measures of performance. In line with this element of NPM standards were developed including standard treatment guidelines for hospitals, infection prevention guidelines, and Ethiopian hospital reform implementation guidelines. However the implementation of these guidelines is questionable as manifested by plethora of problems in health care service provision including safety issue.

As per NPM rigorous measures of performance is required in the public hospitals subjecting hospital managers to be responsible and focus on their specific responsibilities and carrying out those tasks efficiently and effectively. However this doesn't seem to work in the context of the public hospitals addressed in this study.

Moreover as per the tents of NPM the Ethiopian health care system stipulates hospitals to be managed by professional managers. The FMOH had embarked on a wide range reform particularly since 2006, the year when Dr. Tedros launched the Ethiopian Hospital Management Initiative (EHMI). Some of the programs under EHMI focus on improving the management of hospitals and health care centers by equipping them with trained professionals. Traditionally, almost all of the state owned hospitals throughout the country are run by physician medical directors who not only have to run hospitals but also spend a significant amount of their time caring for patients.

In 2008, a collaboration between the FMOH, Yale University, Jimma University in Ethiopia and the then William Jefferson Clinton Foundation AIDS Initiative (CHAI) to train hospital CEOs saw a remarkable result when, in 2010 (one year later than it was planned), Jimma University graduated 25 Hospital CEOs (two women and 23 men) with Master of Health care and Hospital Administration (MHA).

However, out of the 25, only one of the two women, Liya Tadesse (MD), the current minster of minsterty of health was being assigned to work at St.Paul Hospital. Thirty graduates of the second round (one woman and 29 men), were all assigned as hospital CEOs in different regional cities.

Hence this vividly shows the departure of the FMOH and AACHB from the notion of NPM ‘‘hands on professional managmnet’’. This failure to place managerial tasks on the hands of professionals unquestionably will serve as a negative catalyst in deterioration of the health care service delivery of the hospitals.

5.3.2.2 Predictors of satisfaction on hospital safety procedures

Factor analysis

Factor analysis is a multivariate statistical method for reducing large numbers of variables to fewer underlying dimensions. The data’s suitability for factor analysis was conducted through Kaiser-Meyer-Olkin (KMO) test. KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for

factor analysis. Hence the KMO value is .928 the data was found to be suitable for factor analysis(see appendix 5).

Of the 10 dimensions which are included in the instrument to understand the safety of health care service provision in the hospitals only two components has an Eigen value above one (see appendix 5). Therefore these two variables explain 64.8 percent of overall variability of the safety of hospitals health care service. Hence only these two dimensions were encompassed in the logistic regression model to test their significance.

In standard regression, the co-efficient of determination (R^2) value gives an indication of how much variation in y is explained by the model. This cannot be calculated for logistic regression but the 'Model Summary' table gives the values for two pseudo R^2 values which try to measure something similar. The model summary revealed that between 44% and 62% of the variation in patient satisfaction with hospital service safety can be explained by the model (see appendix 5).

Logistic regression of safety variables

As shown in table 5.9 below the two attributes of safety which are included in the regression analysis showed statistical significance in bivariate analysis (Chi-square test) at a 5% level of significance($p < 0.000$). Consequently, the multivariate logistic regression analysis which controls the undesirable effects of confounding variables was used by taking all the two predictor variables into account. The backward stepwise regression which controls the problem of multicollinearity was employed and remained to be significantly and independently associated with patient's satisfaction with hospitals health care service safety dimension.

The multivariate logistic regression analysis shows that medical staffs capability not to expose patients to unnecessary risk significantly affects patients satisfaction with respect to safety dimension of hospital service ($p < 0.05$, $exp=4.916$, 95% CI). Similarly extent of care exercised by medical personnel to patients during treatments also significantly affects the satisfaction of patients regarding the safety dimension of hospital service ($p < 0.05$, $exp=7.282$, 95% CI).

Hence the medical staffs care not to expose patients to unnecessary risk increases the odds of patient satisfaction regarding safety of health care service by almost 5 times as compared to unavailability of such care to patients. Similarly the multivariate logistic regression analysis

indicated strong association between medical staffs provision of due care to patients safety and patients satisfaction with hospital service safety dimension. The model estimated that medical staffs care for patient safety enhances the satisfaction of patients with safety dimensions of health care service provision by seven times as compared to unavailability of such care to patients.

Table 5.9 Summary of statistical tests for safety dimension

Sub Dimensions of health care service effectiveness		Satisfied with overall safety procedures		Bivariate Chi-Square Tests of association		Multivariate logistic regression	
		Not satisfied	satisfied	Df	Sig.	Odds ratio Exp(B)	Sig.
Doctors never expose me to unnecessary risk	Disagree	184	84	1	0.000	4.916	.001
	Agree	34	74				
Medical personnel cares patients safely	Disagree	200	18	1	0.000	7.282	.002
	Agree	11	147				

Source : Based on survey data,2019

5.3.2.3 Mann- Whitney and Kruskal-Wallis analysis of variance

Mann- Whitney tetst

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females regarding the overall safety procedures of the hospitals service and the test result as indicated in table 5.10 below shows that males and females have the same scoring tendency at the 5% level ($p = .825$). Similarly the Mann-Whitney test was conducted to statistically test if there was a significant difference between the answering tendencies of inpatients and outpatients with respect to the overall safety of the hospitals service and the test result shows that males and females have the same scoring tendency at the 5% level ($p = .657$).

Krusakal walis test

Analysis of Kruskal-Wallis test indicates that there were difference in scoring tendency between respondents with different hospitals ($p = 0.002$). On the other hand there were no significant differences in scoring tendency between respondents with different levels of education ($p =$

0.291), occupation of respondents (P=0.113) and between respondents with different age groups (p = 0.474).

Table 5.10 Summary of Mann- Whitney and kruskal walis tests for safety dimension

Summary of Mann- Whitney tests for safety dimension			
Grouping variables	Satisfied with overall safety procedures		
Gender of respondents	\Mann-Whitney U	17448.500	
	Wilcoxon W	33919.500	
	Z	-.221	
	Asymp. Sig. (2-tailed)	.825	
Type of patient	Mann-Whitney U	16358.500	
	Wilcoxon W	43154.500	
	Z	-.444	
	Asymp. Sig. (2-tailed)	.657	
Summary of kruskal walis tests for safety dimension			
Grouping variable	Test statistic		
	Chi-Square	df	Asymp. Sig.
Hospitals	20.900	6	.002
Age of respondents	3.523	4	.474
Educational level of respondents	4.961	4	.291
Occupation of respondents	7.461	4	.113

Source :Based on survey data,2019

Conclusions:

The analysis based on survey of patients, observation of health care service facilities, key informat interviews, hospital service related documents and empirical literature revealed as there is a severe deficit of patient safety culture in Ethiopian public hospitals.

The two sub dimensions of safety which are included in the regression analysis showed statistical significance in both bivariate and multivariate analysis. The multivariate logistic regression analysis shows the medical staffs care not to expose patients to unnecessary risk increases the odds of patient satisfaction regarding safety of health care service by almost 5 times as compared to unavailability of such care to patients. Similarly the model estimated that medical staffs care for patient safety boosts the satisfaction of patients with safety dimensions of health care service provision by seven times as compared to unavailability of such care to patients.

Hence creating a positive patient safety culture by implementing actions that support all dimensions of safety is inevitable. In addition the findings show the need to excersise prudent care regarding infection prevention, medical errors, and drug prescription errors. .

5.3.3 The State of Health Care Service Responsiveness: Patients' Perspective

Responsiveness

Responsiveness refers to how a system treats people to meet their legitimate non-health expectations (WHO 2000,WHO 2000b). Another term that is often used synonymously with responsiveness is patient-centeredness. Patient centeredness is the degree to which a system actually functions by placing the patient/user at the center of its delivery of health care and is often assessed in terms of patient's experience of their health care. This experience of care refers to the caring, communication and understanding that should characterize the clinician-patient relationship. The emphasis here is on the patient's report of her or his experience with specific aspects of care and goes beyond her or his general satisfaction or opinion regarding the adequacy of care.

The greater the responsiveness of the health system, the higher will be the level of people's comfort, irrespective of its impact on health. Improvements in responsiveness may come before changes in performance on the other goals. As it does not require a major investment, responsiveness can be improved much faster than health. Furthermore an important improvement in responsiveness does not necessarily entail a great investment in technology or staff as required for health promotion. Measuring responsiveness indicates which domain is more important from the individuals' viewpoint and needs more solemn attention, in addition, information received from inequality distribution of responsiveness level can be used for guiding health systems' resources to areas with inadequate services(Gostin et al. 2003).

According to CIHI (2013) responsiveness is ensured when a hospital places patients at the center of care and service delivery by paying particular attention to patients' and their families' needs, expectations, autonomy, access to hospital support networks, communication, confidentiality, dignity, choice of provider and desire for prompt, and timely care .

5.3.3.1 Descriptive analysis on responsiveness of hospitals service

This part of the study assesses the non-technical aspects of care using hospital service responsiveness (HSR), which quantifies the degree to which the patients' expectations is fulfilled. As shown in Table 5.11 eighteen items were posed in the questionnaire to investigate

the responsiveness of the services of the hospitals studied and the Cronbach's alpha test showed a satisfactory value of 0.761.

Less than 50 percent of the respondents indicated their agreement for the following statements advanced to them regarding the responsiveness dimension of health care service quality.

Medical personnel have individual attention to patients 18.88%, medical personnel are always willing to help patients 22.88%, Medical personnel are sympathetic for patients' problems 23.14%, health professionals courtesy and respect is satisfactory 24.73%, medical personnel always have time for patients 27.39%, health care professional's explanation of my health condition was understandable. 31.65%, the doctors do not use medical terms without explaining what they mean 34.57%, doctors listen carefully to what I have to say 38.56%, my doctors treats me in a very friendly and courteous manner 41.76%, doctors are not too businesslike and impersonal towards me 42.55%, doctors always do their best to keep me from worrying 49.47%.

Though there is increasing recognition that the non-technical aspects of health care quality – particularly the inter-personal dimensions of care – are important components of health system performance, evidence from the survey indicates poor performance as majority of the respondents indicated their disagreement for the responsiveness dimension in the facilities.

On the other hand more than 50 percent of respondents responded affirmatively for the following responsiveness attribute statements. medical personnel always explain medical implementations to patients 56.38%, consent is sought before testing or starting treatment 60.90%, the doctors who treated me have a genuine interest in me as a person 65.43%, consultations carried out in a manner that protects patient confidentiality 86.17%, the doctors do not make me feel foolish 86.17%, confidentiality of information Provided by patients is preserved 93.62%.

With respect to being satisfied with the overall responsiveness of the hospitals service 258 respondents (68.60%) disagreed, and only 118(31.34) percent of respondents indicated their agreement with the statement which is worrying.

Generally the survey revealed that the public hospitals studied has poor performance with responsiveness dimension of non-technical health care service quality indicator. As discussed in in prior parts (chapter four) the number of health care professionals is low relative to high

number of patients seeking medical care, as a result the health care professionals may fail to give due attention for each patient resulting dissatisfaction. It is a public fact that a good number health professionals in the public hospitals are engaged in private health care facilities and some has their own clinics resulting the devotion of less time in the public hospitals and this in return also affects their interaction with their patients. The low responsiveness of the health care service facilities also related with low health expenditure manifested in the salary of health care service professionals and in return affecting their motivation, commitment and magnitude of time devoted to patients.

Table 5.11 descriptive statistics on responsiveness of hospital services

Responsiveness dimensions	Disagree	Neutral	Agree
	F/%	F/%	F/%
Health professionals courtesy and respect is satisfactory	129/34.31%	154/40.96%	93/24.73%
Medical personnel are sympathetic for patients' problems	126/33.51%	163/43.35%	87/23.14%
Medical personnel Have individual attention to patients	130/34.57%	160/42.55%	71/18.88%
Medical personnel are always willing to help patients	131/34.84%	174/46.28%	86/22.88%
Health care professional's explanation of my health condition was understandable.	92/24.47%	165/43.88%	119/31.65%
Medical personnel always have time for patients	70/18.62%	203/53.99%	103/27.39%
Medical personnel always explain medical implementations to patients	94/25.00%	70/18.62%	212/56.38%
Confidentiality of information Provided by patients is preserved	1/0.27%	23/6.12%	352/93.62%
Consultations carried out in a manner that protects patient confidentiality	1/0.27%	51/13.56%	324/86.17%
consent is sought before testing or starting treatment	93/24.73%	54/14.36%	229/60.90%
The doctors do not use medical terms without explaining what they mean	42/11.17%	204/54.26%	130/34.57%
The doctors who treated me have a genuine interest in me as a person	51/13.56%	79/21.01%	246/65.43%
The doctors do not make me feel foolish	1/0.27%	51/13.56%	324/86.17%
Doctors always do their best to keep me from worrying	41/10.90%	149/39.63%	186/49.47%
Doctors listen carefully to what I have to say	87/23.14%	144/38.30%	145/38.56%
Doctors are not too businesslike and impersonal towards me	58/15.43%	158/42.02%	160/42.55%
My doctors treats me in a very friendly and courteous manner	36/9.57%	183/48.67%	157/41.76%
Overall responsiveness of the hospitals service	258/68.60%	-	118/31.340%

Sources: Based on survey data ,2019

In line with the above argument Robone et al. (2011) reported based on data on responsiveness from the World Health Survey that health care expenditures per capita are positively associated with responsiveness. Aspects of responsiveness are also associated with public sector spending (negatively) and educational development (positively).

Hence from a policy perspective, improvements in responsiveness may require higher spending levels.

Similar local and international studies reported that responsiveness of the health care facilities significantly affects the overall satisfaction of patients and their adherence to treatment.

Sailed et al. (2013) showed that patients' perceptions on health care provider interaction had a significant influence on patient satisfaction and adherence to treatment. Birhanu et al (2010) also reported in their facility based study encompassing 768 out-patients in six health facilities interpersonal processes including perceived empathy, perceived technical competency, non-verbal communication and patient enablement significantly influence patient satisfaction.

Another cross-sectional survey by Yakob & Busisiwe (2017) encompassing seven responsiveness domains (attention, autonomy, amenities of care, choice, communication, confidentiality and respect) measured the health service responsiveness performance revealed low performance on the autonomy, choice, attention and amenities domains.

Recent evidence suggests that mistreatment of women during childbirth is a global challenge facing health care systems. Sheferaw et al. (2019) indicated that out of 379 women who were interviewed 281 (74%) reported any mistreatment. Physical and verbal abuse were reported by 7 (2%) and 31 (8%) women interviewed respectively. Failure to meet professional standards of care and poor rapport between women and providers were reported by 111 (29%) and 274 (72%) women interviewed respectively.

International empirical literature also suggests the importance of responsiveness dimension to patients. Geldsetzer et al. (2018) indicated in their study on responsiveness dimension which includes four countries China, South Africa, Russia and Ghana. A total of 23,749 patients were included in the analysis. The proportion of participants who gave a bad rating for this health care quality dimension varied from 4.3% (95% confidence interval) in China to 50.8% (95%

CI = 46.0-55.6) in Ghana . The study reported a strong negative association between increasing household wealth and health service responsiveness experience.

Peltzer (2009) in a comparative study between private and public health facilities reported that the degree of responsiveness with publicly provided care was significantly lower than in private health care facilities. Overall patient non-responsiveness for the public out-patient service was 16.8% and 3.2% for private care.

Interview with key informants

Interview with key informant physicians indicated the fact that effective communication and interaction are indispensable to understand and be understood with patients. They revealed that patient-centered communication is respectful and responsive to patients' preferences, needs, and values. They further emphasized that health communication in hospitals apparently constitutes the largest part of the health system's information space to patients about their health. However they disclosed that due to the sheer number of patients they are unable to offer thorough individual attention to all and as a result they are forced to be less responsive.

The physicians further revealed that there is high workload and every medical doctor handles 25-40+ patients a day on average. This huge figure of patients pushes physicians to rush to the next patient skipping some narratives from the patient. Such burden unquestionably leads physicians to fatigue and lowers patient satisfaction.

The officials of AACHB also corroborates with the views of the physicians and further added a good number of patients are from outside Addis Ababa and especially from surroundings of Addis Ababa who are unable to communicate in Amharic making the communication difficult. Of the seven hospitals encompassed in this study the only hospital arranged interpreters is Saint Paulo's hospital.

The officials further stressed that most often the traditional approach gives the upper-hand to physicians, however, following the health-care service reform, recently the process has turned to patient-centered services though still complaints exist on proportional time allocation for patients to share information freely. They further added that currently the Physicians are progressive in implementing the Care, Respectful and Compassionate, Ministry of Health National Health

Promotion and Communication Strategies (2016-2020) which is potentially advancing the health communication process.

The researchers through observation also noticed physicians respectfully treating patients in the emergency ward, the pediatrics, the inpatient and the outpatient departments. In the observation it was noticed that physicians restlessly running, talking, interviewing while too many patients were waiting for their turn to see the doctors.

5.3.3.2 Predictors of satisfaction on hospital safety procedures

Factor analysis

Kaiser-Meyer-Olkin (KMO) test was carried out to check how suited the data is for Factor Analysis (see appendix 6). The test measures sampling adequacy for each variable in the model and for the complete model. The lower the proportion, the more suited the data is to Factor Analysis. KMO returns values between 0 and 1. A rule of thumb for Interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for factor analysis. On the other hand Bartlett's test of sphericity small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data. Since the KMO value is above 0.6 and test of sphericity is below 0.05 the data is suitable for factor analysis.

Eighteen variables which are attributes of **responsiveness** dimension were included in the instrument to understand the responsiveness of health care service in the hospitals and only five component has an Eigenvalues value above one. These five variables explain 69.6 percent of the variability on responsiveness of the health care service (see appendix 6).

logistic regression analysis

In standard regression, the co-efficient of determination (R^2) value gives an indication of how much variation in y is explained by the model. This cannot be calculated for logistic regression but the 'Model Summary' table gives the values for two pseudo R^2 values which try to measure something similar. The model summery revealed that between 45% and 65 % of the variation in patient satisfaction with hospital service responsiveness can be explained by the model (see appendix 6).

As shown in table 5.12 below all the variables encompassed in the regression analysis (Health professionals courtesy and respect, Medical personnel sympathy for patients' problems, Medical personnels' individual attention to patients, Medical personnels' willingness to help patients, understundability of health care professional's explanation to patents regrading their health condition) showed statistical significance in the bivariate analysis (Chi- square test) at a 5% level of significance ($P < 0.000$).

Similarly the multivariate logistic regression analysis shows that Health professionals courtesy and respect significantly affects the satisfaction of patients regarding the responsiveness dimension of hospital service ($p < 0.05$, $\exp=2.682$, 95% CI). The model predicts that the availability of health professional's courtesy and respect enhances the odds of being satisfied with responsiveness of the hospitals service by 2.7 times as compared to unavailability such courtesy and respect.

Similarly the multivariate logistic regression analysis indicated strong association between medical personnel's sympathy for patients' problems and patients satisfaction with responsiveness dimension of health care service quality ($p < 0.05$, $\exp=2.521$, 95%CI). Hence the medical staffs' sympathy to patient's problems increases the odds of patients' satisfaction on hospitals service responsiveness by 2.5 times as compared to not being sympathetic to patients' problems.

In the same way the multivariate logistic regression analysis indicated the presence of relationship between medical personnels' individual attention to patients and patients satisfaction with responsiveness dimension of hospitals service ($p < 0.05$, $\exp=7.112$, 95%CI). The model revealed that medical personnels' individual attention to patientsis more likely to enhance the odds of patient's satisfaction regarding responsiveness dimension of the hospitals service by seven times as compared to unavailability of such individual attention.

On the other hand the willingenes of medical personnel to help patients significantly affects the their staisfaction to responseveness dmiension of health care quality ($p < 0.05$, $\exp=13.716$, 95%CI).This implies medical staffs willingness to help patients increases patient satisfaction with responsiveness dimension of health care service quality by almost fourteen times as compared to unavailability of such willingness to help.

Though the fifth predictor variable namely, Health care professional’s explanation of patients health condition was understandable. Showed association with patient’s satisfaction with service responsiveness on the bivariate analysis (Chi-square test, $p < 0.000$), the multivariate logistic regression failed to indicate association with satisfaction of patients with the dimension ($p < 0.409$, $\exp = .780$, 95% CI).

Table 5.12 summary of Logistic regression analysis

Sub Dimensions of health care service responsiveness		Satisfied with overall responsiveness of the hospital service		Bivariate Chi-Square Tests of association		Multivariate logistic regression																																								
		Not satisfied	Satisfied	Df	Sig.	Odds ratio Exp(B)	Sig.																																							
Health professionals courtesy and respect is satisfactory	Disagree	223	35	1	0.000	2.682	.000																																							
	Agree	62	56					Medical personnel are sympathetic for patients’ problems	Disagree	253	5	1	0.000	2.521	.000	Agree	23	95	Medical personnel Have individual attention to patients	Disagree	258	0	1	0.000	7.112	.000	Agree	11	107	Medical personnel are always willing to help patients	Disagree	247	11	1	0.000	13.716	.000	Agree	14	104	Health care professional’s explanation of my health condition was understandable.	Disagree	234	24	1	0.000
Medical personnel are sympathetic for patients’ problems	Disagree	253	5	1	0.000	2.521	.000																																							
	Agree	23	95					Medical personnel Have individual attention to patients	Disagree	258	0	1	0.000	7.112	.000	Agree	11	107	Medical personnel are always willing to help patients	Disagree	247	11	1	0.000	13.716	.000	Agree	14	104	Health care professional’s explanation of my health condition was understandable.	Disagree	234	24	1	0.000	.780	.409	Agree	41	77						
Medical personnel Have individual attention to patients	Disagree	258	0	1	0.000	7.112	.000																																							
	Agree	11	107					Medical personnel are always willing to help patients	Disagree	247	11	1	0.000	13.716	.000	Agree	14	104	Health care professional’s explanation of my health condition was understandable.	Disagree	234	24	1	0.000	.780	.409	Agree	41	77																	
Medical personnel are always willing to help patients	Disagree	247	11	1	0.000	13.716	.000																																							
	Agree	14	104					Health care professional’s explanation of my health condition was understandable.	Disagree	234	24	1	0.000	.780	.409	Agree	41	77																												
Health care professional’s explanation of my health condition was understandable.	Disagree	234	24	1	0.000	.780	.409																																							
	Agree	41	77																																											

Source: Based on survey data, 2019

5.3.3.3 Mann-Whitney and Kruskal-Wallis analysis of variance

Mann-Whitney test

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females regarding the overall effectiveness of the hospitals service and the test result as indicated in table 5.13 below shows that males and females have the same scoring tendency at the 5% level ($p = 0.478$). Similarly the Mann-Whitney test was conducted to statistically test if there was a significant difference between the

answering tendencies of inpatients and outpatients with respect to the overall effectiveness of the hospitals service and the test result shows that males and females have the same scoring tendency at the 5% level ($p = .087$).

Kruskal-Wallis test

Analysis of Kruskal-Wallis test indicates that there were difference in scoring tendency between respondents with different educational levels ($p = .017$). On the other hand there were no significant differences in scoring tendency between respondents in different hospitals ($p = .708$), occupation of respondent ($P=.616$) and between respondents with different age groups ($p = .118$)

Table 5.13 Summery of Mann- whitney and kruskal walis test

Summery of mann- whitney test for responsiveness dimension			
Grouping variables	Satisfied with overall responsiveness of the hospital service		
Gender of respondents	\Mann-Whitney U	17046.500	
	Wilcoxon W	36156.500	
	Z	-.710	
	Asymp. Sig. (2-tailed)	.478	
Type of patient	Mann-Whitney U	15338.500	
	Wilcoxon W	42134.500	
	Z	-1.709	
	Asymp. Sig. (2-tailed)	.087	
Summery of kruskal walis test for responsiveness dimension			
Grouping variable	Chi-Square	Df	Asymp. Sig.
Hospitals	3.769	6	.708
Age of respondents	7.356	4	.118
Educational level of respondents	12.091	4	.017
Occupation of respondents	2.659	4	.616

Source : Based on survey data ,2019

Conclusion

The analysis presented in this part based on survey of patients, reseracher's personal observation of the hospitals, key informant interviews, documentary analysis and review of relevant literature shows the low responsiveness of the facilities to patinets. On the other hand through the infrenatal sttaistics all the five variables encompassed in the regression analysis showed statistical significance in the bivariate analysis and four of this variables shows statistical significance in multivariate logistic regression analysis.

Health care professionals courtesy and respect significantly affects the satisfaction of patients and enhances the odds of being satisfied with responsiveness of the hospitals service by 2.7 times as compared to unavailability such courtesy and respect.

Similarly medical personnel's sympathy for patients' increases the odds of patients' satisfaction on hospitals service responsiveness by 2.5 times as compared to not being sympathetic to patients' problems.

In the same the way the model revealed that medical personnels' individual attention to patients is more likely to enhance the odds of patient's satisfaction regarding responsiveness dimension of the hospitals service by seven times as compared to unavailability of such individual attention. On the other hand the willingness of medical personnel to help patients significantly affects the patient's satisfaction by almost fourteen times as compared to unavailability of such willingness to help.

The evidence from this study suggests that willingness of medical personnel to help patients significantly affects patients satisfaction followed by medical personnels' individual attention to patients, Health care professionals courtesy and respect and medical personnel's sympathy.

CHAPTER SIX:THE STATE OF HEALTH CARE SERVICE ACCESSIBILITY IN PUBLIC HOSPITALS PATIENTS' PERSPECTIVE

6.1 Introduction

Accessibility is the ease with which health services are reached. Access can be physical, financial or temporal, and requires that health services availability. According to (CIHI 2014) access to comprehensive hospital services corresponds to the range of hospital services available and the hospital's ability to meet the needs of the population or a particular patient without financial, organizational or geographical obstacles standing in the way of seeking or obtaining these services.

Access is the opportunity to reach and obtain appropriate health care services in situations of perceived need for care (Levesque et al. 2013). It refers to the presence of physical (availability and accommodation), economic (affordability), temporal (appropriateness), cultural (acceptability), and approachability dimensions in using health services (Burgess et al. 2011, Brunson` 2011, Levesque et al. 2013). Physical dimensions represent access to general health care supplies and the ease of travelling to health care provider locations, while economic dimensions are those related to the cost of seeking and obtaining health care in relation to a patient's or household's income (Fortney et al. 2011, Knowles et al. 1997).

Temporal dimension of access is the time required to receive services, such as an appointment wait-time, time spent while waiting in reception, receiving treatment, and waiting for the next appointment.

The cultural dimension of access signifies the acceptability of health services, such as delivering services using languages and mode of communication suitable to patients, and indiscrimination of patients (Fortney et al. 2011). The approachability dimension relates to the awareness of the people that some form of health service exists, can be reached, and have an impact on their health (Levesque et al. 2013). According to Knowles et al. (1999), a priority of health care reform is expanding access to cost-effective health services that maximize impact on health outcomes. Improving access may imply providing services free of charge or even paying consumers an incentive, or bringing services to the consumers, thus reducing time and travel costs to zero.

As per the above discussion health care service accessibility has many sub dimensions and this study divided this attributes of accessibility in to three namely:

1. Temporal sub dimension of health care service accessibility : it refers to the time it takes to get medical services
2. Availability sub dimension of health care service accessibility: refers to the accessibility or availability of facilities required for the care I the hospitals.
3. Affordability sub dimension of health care service accessibility: refers to the affordability or ease of paying for medical services of the hospitals.

Hence in the following part each of the three sub dimensions of health care service accessibility are discussed.

6.2 Temporal Sub Dimension of Hospital Service Accessibility

A patient's access to health care is usually a difficult issue that concerns most health care systems. The objective of a health care system is basically to keep healthy patients healthy and to enable sick patients to become healthy. The second goal is usually taken care of by health care professionals who see patients in health care facilities including clinics, hospitals, homes or rehabilitation facilities. In each of these facilities, there can be a considerable gap between planned goal and actual experience. This goal-performance gap usually arises from problems with patient timely access of health care service.

Accrding to (FMOH 2019) timeliness of care is at the heart of everything in health care settings. The right time is underappreciated thought especially in health care and we are yet to work on the '*right time*' aspect of it. It is important to be truthful with patients about why we are late, how long they are going to have to wait, and to give options. Try to make tardiness the exception to the rule because:

- When hospitals are on time, they are demonstrating **H**ospitality to their patients
- When hospitals are on time, they are demonstrating **E**nthusiasm for being there
- When hospitals are on time, they are demonstrating a decent **A**ttitude
- When hospitals are on time, they are showing **R**espect to their patients
- When hospitals are not on time, they can help ease the situation by being **T**ruthful about why they are behind.

Timely care is saving lives of the diseased and being on time is not final outcome, but more specifically a key to running and maintaining a thriving medical practice. Timely care reduces waits and harmful delays for those receiving care. Delay in care increase risks and discomfort for patients with serious illnesses or injuries with potential complications that negatively affects health outcomes due to delays in diagnosis and treatment.

6.2.1 Descriptive analysis on public hospitals timely service provision

To investigate the temporal sub dimension of hospitals service accessibility six questions were forwarded to the respondents. As shown in table 6.1 below regarding the acceptability of waiting time that lapses before getting the medical service 139 (37%) of respondents revealed their disagreement, 161(42.8%) agreed and the rest 76(20.2%) are neutral.

The implication is that more than half of the respondents are not feeling contentment (they are either disagreed or neutral) concerning the time it takes to get the services of the hospitals and this unquestionably may have a negative consequence on the aptness or the timely delivery of medical service as it is one of the very critical manifestations of good health care system.

Similarly 228 (61%) of the respondents encompassed in the survey failed to agree on the possibility of getting medical service on short notice and 260(69.1%) of respondents also failed to agree on the ease of getting medical service in an emergency.

On the other hand 370(98%) of the respondents feels that as they should not wait for too long to get for an emergency service. Here it is noticeable the existence of the negative service accessibility gap between what patients are expecting and what actually they are experiencing (98% expect easy access for an emergency care and only 31% has experienced or feels the possibility of getting the service without waiting too long).

With respect to having medical operation on time the respondents opined consistently with the above discussed points and only 92(24.5%) has indicated their agreement, while 163 respondents(43%) indicated as the appointment time is suitable for them.

Table 6.1 descriptive statistics on temporal sub-dimension of health care service accessibility

Items	Disagree		Neutral		Agree	
	F	%	F	%	F	%
Waiting time before getting the service is acceptable	139	37%	76	20.2%	161	42.8%
It's Possible to get medical care on short notice	174	46.3%	54	14.4%	140	37.3%
it is easy for me to get medical care in an emergency	194	52%	65	17%	117	31%
Where I get medical care , people should not have to wait too long for emergency treatment	0	0%	6	2%	370	98%
The Hospital has a medical operations on time	204	54.2%	80	21.3%	92	24.5%
Appointment time is always suitable for patients	126	34%	77	20%	163	43%

Source: Based on survey data, 2019

If a health care system aims to provide sound service it needs to furnish timely care for its patients , otherwise it falls badly short of a reasonable goal of effective health care service provision. Poor access or delays or wait times to receive health care inevitably results in increased pain and suffering for those who require care. More importantly, the cost to society of treating disease after it has advanced due to treatment delays is much more than shoring up resources to render immediate care when needed.

Timely access to health care is associated with improved health outcomes and contributes to cost control (comino et al. 2012). Having timely access to primary care increases patient satisfaction as well as the quality of care delivered.

Waiting for a health care appointment can often impose a physical and emotional burden on an individual who is in pain or worried about a serious health condition. Studies have shown that adverse consequences may arise from prolonged waiting for primary care appointments (Pomerantz et al. 2008). For example, prolonged wait times for cancer and heart disease have been associated with an increased risk of morbidity and mortality due to a delay in care. Similarly, patients suffering from mental health conditions, who do not receive timely access to care, often experience a rapid decline in their condition and a lost opportunity for effective treatment. Subsequently, worse health outcomes are often associated with higher costs to individuals, as waiting for care may be burdened by a loss of income due the inability to work.

For instance a study (Ijo 2016) indicated waiting time was one of the major problems reported 90.2% of respondents where 20% reported to have been waiting for 4-5hrs without being seen by a specialist.

Information secured through interview with key informant physicians also substantiates the above argument and the health care professionals acknowledged the long waiting time before patients received the required care. They further opined that due to the sheer number of patients it takes a great deal of time for patients to receive consultation and communications with physicians. On the other hand as indicated in prior chapter there is poor communication, between receiving and referring health facilities, unnecessary referrals, and patients coming without important documentation as a source of delay in care and patient overcrowding.

Balew & Yismaw (2019) also revealed a delayed turnaround time of laboratory results, Sultan et al. (2019) reported that Inter-facility transfers accounted for the largest proportion of ambulance utilization and dispatch in Addis Ababa and ambulance transport time was twice as long compared to international recommendations of less than eight minutes for emergent transports.

A study conducted encompassing 48 sub-Saharan countries and 4,908 public hospitals indicated that 29.0% people and 28.2% women of child bearing age are located more than 2-h travel time from the nearest hospital and physical access to emergency hospital care provided by the public sector in Africa remains poor and varies substantially within and between countries (Ouma et al. 2018).

6.2.2 Predictors of satisfaction on temporal aspect of service provision

Factor analysis

To carry out factor analysis the data's suitability was checked through Kaiser-Meyer-Olkin (KMO) test (see appendix 7). KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for factor analysis. On the other hand Bartlett's test of sphericity small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data. Since the KMO value is above 0.6 and test of sphericity is below 0.05 the data is suitable for factor analysis.

Of the six dimensions which are included in the instrument to understand the timely accessibility of health care service in public hospitals only two component has an Eigen value above one(see appendix 7).These two variables explain 71.6 percent of overall variability of the timeliness of service provision in the hospitals. Hence only these two items were encompassed in the logistic regression model to test their significance.

In standard regression, the co-efficient of determination (R^2) value gives an indication of how much variation in y is explained by the model. This cannot be calculated for logistic regression but the 'Model Summary' table gives the values for two pseudo R^2 values which try to measure something similar. The model summery revealed that between 42% and 60% of the variation in patient satisfaction with timely hospital service accessibility can be explained by the model(See appendix 7).

Logistic regression analysis

As represented in table 6.2 below the two variables encompassed in the model namely: Acceptability of waiting time for medical service, and possibility of getting medical service on short notice showed statistical significance ($p < 0.000$) in the bivariate analysis (Chi- square test) at a 5% level of significance. Similarly the multivariate logistic regression analysis which controls the undesirable effects of confounding variables was used by taking predictor variables into account. The backward stepwise regression which controls the problem of multicollinearity was employed and acceptability of waiting time for medical service, and possibility of getting medical service on short notice found to be statistically significant and independently associated with patient's satisfaction with hospitals service accessibility.

The multivariate logistic regression analysis shows that acceptability of waiting time for medical service, and possibility of getting medical service on short notice significantly affects the satisfaction of patients regarding the accessibility dimension of hospital service.

Acceptability of waiting time for medical service ($p < 0.05$, $\exp=15.766$, 95% CI) enhances patient satisfaction by almost sixteen times as compared to unacceptability of waiting time. Similarly possibility of getting medical service on short notice ($p < 0.05$, $\exp=8.444$, 95% CI) increases the patients satisfaction with accessibility dimension of health care service by 8.4 times as compared to the non-possibility of getting medical service on short notice.

Table 6.2 summary of inferential statistics on temporal sub dimension of access

Sub Dimensions of health care service accessibility	Satisfaction with the accessibility of Hospitals service		Bivariate Chi-Square Tests of association		Multivariate logistic regression		
	Not satisfied	satisfied	Df	Sig.	Odds ratio Exp(B)	Sig.	
Waiting time before getting the service is acceptable	Disagree	142	73	1	0.001	15.766	.001
	Agree	1	160				
It's Possible to get medical care on short notice	Disagree	141	87	1	0.000	8.444	.002
	Agree	2	146				

Source : Based on survey data, 2019

6.2.3 Mann-Whitney and Kruskal-Wallis analysis of variance

The Mann-Whitney test

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females regarding the overall accessibility time dimension of the hospitals service and the test result shows that males and females have the same scoring tendency at the 5% level ($p = 0.493$). Similarly the Mann-Whitney test was conducted to statistically test if there was a significant difference between the answering tendencies of inpatients and outpatients with respect to the overall accessibility of the hospitals service and the test result

shows that males and females have the same scoring tendency at the 5% level ($p = .693$).

Kruskal-Wallis test

Analysis of Kruskal-Wallis test indicates that there were no difference in scoring tendency between respondents with levels of education ($p = .753$). On the other hand there were no significant differences in scoring tendency between respondents with different levels of

occupation ($p = .664$), age of respondent ($P=.660$) and between respondents with different hospital ($p = .326$).

Table 6.3 summary of Mann-Whitney and kruskal walis tests

summary of Mann-Whitney tests for temporal sub dimension			
Grouping variables	satisfied with the overall accessibility of the hospitals service		
Gender of respondents	\Mann-Whitney U		17302.000
	Wilcoxon W		36412.000
	Z		-.390
	Asymp. Sig. (2-tailed)		.696
Type of patient	Mann-Whitney U		15338.500
	Wilcoxon W		42134.500
	Z		-1.709
	Asymp. Sig. (2-tailed)		.087
summary of kruskal walis tests for temporal sub dimension			
Grouping variable	Chi-Square	df	Asymp. Sig.
Hospitals	6.946	6	.326
Age of respondents	2.414	4	.660
Educational level of respondents	1.906	4	.753
Occupation of respondents	2.391	4	.664

Source: Based on survey data, 2019

The discussion with key informant physicals and officials of the hospitals indicated that the hospitals plan patient catering time as a key performance indicator (KPI) but most of the time they fail to attain it. For instace out patient waiting time for consultation was about 72 mints in one of the hospitals approached however this is higher from the target indicator which is 40 minute or less.

The participants of the interview opined that outpatient waiting time is important health care in hospital service, if waiting time is much long patient perceive as barriers to actually obtaining services. Improving patient's satisfaction towards health care services by reducing their Waiting time, attending the patient in time and sympathetic approach will create a positive image of hospital in the minds of people and will also help the hospital to build an image in the community. However they contend that the sheer number of patients and other factors forced the hospitals not to offer the medication service on the right time.

The key informants further indicated that among the major causes of long waiting time includes mismatch of patient arrival (arrived too early) and service commencement, and staff inefficiencies in prioritizing attending to patients. Staff time usage efficiency (percentage of work time spent attending to patients) was low. They further suggested actions to reduce waiting times included, opening facilities earlier, providing appropriately timed appointments for follow-up patients (the only patients for whom appointments were feasible) and interventions to encourage staff to prioritize attending to patients.

6.3 Service Availability Sub Dimension of Hospital Service Accessibility

Availability sub dimension of health care service accessibility refers to the accessibility or availability of facilities required for the health care service needed in the the hospitals.

The survey instruments has encompassed seven questions on a five point likert scale format to investigate the availability sub- dimesions of hospital service accessibility. The theme of the statements provided for the respondents were: ease of asking medical professionals when needed, reaching medical professionals without problem, easy access to the medical specialists needed, availability of laboratory tests in the hospital laboratory, fast delivery of laboratory tests in the hospitals labratory, availability of prescribed drugs in the hospital's pharmacy, availability of services on the appropriate mode of communication suitable to patients and no encountering discrimination.

6.3.1 Descriptive analysis on Availability Sub Dimension of Hospital Service Accessibility

The folowing table 6.4 summerized the descriptive statstics of the survey data related to availability sub dimension of hospital service accessibility. It is apparent from table 6.4 below that more than half of the respondents failed to agree for the first three questions including ease of asking medical professionals when needed (153/41%), reaching medical professionals without problem(152/40%), easy access to the medical specialists needed(152/40%).

As it is indicated in prior parts the hospitals has sheer number of patients, low number of staffs than needed and poor efficiency of medical staffs resuting negative outcome on the avaiability of the aformentiined desirable attributes of hospital service and this lends support to substantiate previous findings in the literature.

Medical laboratory work is composed of the technical activities that produce laboratory results for patient care and the management activities that support the technical work. It is crucial for proper treatment of patients and surveillance of the disease. However, laboratory diagnosis in Ethiopia is constrained by inadequate infrastructure, consumables and insufficient skilled personnel. Furthermore, the perceptions and attitude of physicians on the quality of laboratory services also present a significant challenge in the utilization of the available services.

With respect to the availability of laboratory tests in the hospital only 42%(157) agreed and similarly regarding fast delivery of laboratory tests in the hospitals only 40% (152) disclosed their agreement. As substantial portion of the respondents failed to agree with laboratory related services of the hospitals it is indicative of problems in the service.

Table 6.4 Descriptive Statistics on availability sub dimension of hospitals service accessibility

Items	Disagree		Neutral		Agree	
	F	%	F	%	F	%
If I have a medical question , I can reach a doctor for help without any problem	148	39%	75	20%	153	41%
I have easy access to the medical specialists I needed	144	38%	80	21%	152	40%
I'VE got the ordered laboratory tests in the hospital laboratory	89	24%	130	35%	157	42%
The ordered laboratory tests in the hospital's laboratory delivered fast	139	37%	85	23%	152	40%
I'VE got all the prescribed drugs in the hospital's pharmacy	93	25%	126	34%	157	42%
I've Received services using languages and mode of communication suitable to me.	52	14%	56	15%	268	71%
I have faced no discrimination	45	12%	49	13%	282	75%

Source: Based on survey data, 2019

In line with the above analysis empirical evidence with the quality and accessibility of hospitals laboratory services is gloomy. An assessment of quality of Antenatal Care laboratory Services including 422 pregnant mothers in Addis Ababa public hospitals indicated as the quality of antenatal care laboratory services was unsatisfactory. Shortage of supplies including all type of basic reagents, and other materials severely truncated the quality of laboratory services of the hospitals which leads to dissatisfaction and delays in seeking and obtaining the laboratory services (Melese et al. 2018).

A similar study on quality perception and utilization of laboratory test result among physicians in encompassing 227 physicians on 12 hospitals revealed that 144(67.3%) and 110(51.4%) had poor quality perception and utilization of laboratory test result respectively (Demeke 2018). Studies on laboratory services also reports shortage of manpower, equipment, chemicals and other supplies, absence of a quality assurance program network and problems in maintenance of equipment (Tegbaru et al. 2004, Teklemariam et al. 2013.).

Another Hospital based cross sectional study which assessed patient satisfaction on laboratory services among SLMTA program implementing hospital laboratories at Zewditu memorial, Ras Desta Damtew memorial, Yekatit 12, Terunesh-Bejieng, Gandhi memorial and Minilik II hospitals in Addis Ababa revealed that out of the 596 patients 317 (53%) were satisfied with the laboratory services given in the six hospitals under Addis Ababa City Administration. Patient satisfaction was reported to be Low with the adequacy of sitting arrangement in waiting area, Cleanness of Latrine and Time spent waiting to get the laboratory result (Tefera 2017). Similar survey conducted by Getachew et al. (2017) with 210 patients who had received laboratory service reported to have 59.7% overall patient satisfaction toward clinical laboratory services.

Lack of medical devices is also hampering the accessibility of medical services of the facilities as indicated by a number of studies. For instance Girma et al. (2013) indicated as the number of comprehensive emergency obstetric care (EmOC) qualifying facilities is below the UN's minimum recommendation. Similarly Wondafrash et al. (2016) revealed that out of 299 medical devices inspected in three hospitals more than a third were not functional. Purchasing devices with bids and preference for cheap price, lack of training on how to operate devices, less sense of accountability, power interruption, staff work overload and lack of maintenance experts, and inappropriate referral system were among the reported reasons for influencing availability and utilization of medical devices.

Another national survey by Berhane et al. (2015) including 587 physicians from 49 public hospitals in six regions showed shortages of various types of medical services. The services most frequently reported to be in short supply, either daily or weekly, were access to surgery, specialist and intensive care units, drug prescriptions and admission to hospital. The most common rationing strategies used daily or weekly were limiting laboratory tests, hospital drugs,

and radiological investigations and providing second best treatment. Almost 9 out of 10 physicians were so troubled by limited resources that they often regretted their choice of profession.

In this study discussion with key informants also vividly witnessed different adverse consequences of resource scarcity including a good number of patients face severe morbidity or mortality due to resource scarcity. The resource shortage forces health care professionals for rationing the service including beds. Physicians encounter numerous dilemmas due to resource scarcity, and they report the lack adequate guidance for how to handle them. The consequences for patients and the professionals are substantial.

As indicated in table 6.4 above only 42%(157) respondents agreed on the availability of all prescribed drugs on the hospital's pharmacy. This shows the prevalence of great deal of financial burden on the patients as the prices of essential drugs in private outlets are expensive compared to public outlets. In national drug policies of many countries, ensuring availability and affordability of essential medicines is indicated among the major policy objectives. To this end, countries with low and middle income compile such medicines into National Essential Medicines Lists (NEMLS).

Essential medicines (EMs) are those medicines which satisfy the priority health care needs of the population. Although it is a fundamental human right, access to essential medicines has been a big challenge in developing countries particularly for children. World health organization recommends assessing the current situations on availability and affordability of EMs as the first step towards enhancing access to them. The empirical evidence on availability and price of medicines indicates the existence of a wide supply gap in the area.

A study of which aims to measure the availability, affordability, and prices of Ems from 15 public to 40 private sectors' drug outlets in Ethiopia indicated that the average availability of essential medicines was 43 % at public and 42.8 % at private sectors. Lowest priced medicines were sold at median of 1.18 and 1.54 times their international reference prices (IRP) in the public and private sectors, respectively. Medicines were unaffordable for treatment of common conditions prevalent in the zone at both public and private sectors as they cost a day or more days' wages for the lowest paid government unskilled worker (Sado et al. 2016).

A similar comprehensive survey was carried out in 2013 with the objective of measuring and comparing the price and availability of locally produced and imported medicines including 81 drug outlets of public, private and NGO in six regions of the country including Addis Ababa. The survey shows more locally produced products were procured than imported products and locally produced products were on average 45% higher priced than the imported products hinting significant savings would be possible if only imported medicines were procured for a few medicines. Moreover the study shows locally produced products had greater mean availability (48%) than imported products (19%). Overall, availability was sub-optimal at 64% (WHO 2016).

Another study on availability and affordability of commonly prescribed antibiotics at a tertiary hospital in Ethiopia encompassing private and public pharmacies of 13 antibiotics indicated that availability of the antibiotics in the private and public pharmacies was 92.3% and 98.5%, respectively. The study showed that treatments of commonly diagnosed infectious conditions remain unaffordable according to the WHO criteria (Gutema, and Engidawork, 2018).

In line with the above argument Worku & Loha (2017) revealed that only 31.9% of patients approached were satisfied with availability of drugs in the pharmacies of public hospitals.

In general the analysis of primary data, researcher's observation in the premises of the facilities, key informant interviews, document analysis and review of the empirical evidence asserts the unavailability and high price of medicines, calling for immediate action by the concerned parties at least to ameliorate the problem.

Ensuring access to medicines is complex; it requires governments, through their policies, to balance the availability of quality assured medicines, whilst ensuring that they are affordable, and at the same time meeting the priority health needs of the population. One mechanism of mitigating the unavailability and high price of drugs is supporting local production of medicines in the expectation that it will result in increased medicine availability and lower medicine prices.

Shortage of medical equipments especially for NCDs such as cancer, and cardio vascular disease is very high in the public hospitals of Addis Ababa city. For instance the Black Lion Hospital in Addis Ababa is currently the only health care facility in Ethiopia providing comprehensive cancer treatment and there are two machines but one is not functioning well and two thirds of the patients for cancer treatment are coming from rural areas and it takes months

for a patient to get the chance of treatment as the waiting list is high. The situation not only affects the patients but also the family/households as the out of pocket expenditure is high due to cancer treatment.

According to Tigeneh et al. (2015) Cancer is a major public health problem in many low income countries (LICs), including Ethiopia. A survey from Addis Ababa cancer registry indicates that 64,000 new cases of cancer occur annually.

Nowhere is poverty more evident than in the health care system for instance:

A cancer patient in black lion hospital was supposed to get chemo (additional treatment), but due to lack of money her husband took her to their rural home and when they come back after three years selling household animals the disease exacerbated and spread into her entire body which is a bit difficult to recover now.

A technical advisor for prevention and control of cancer in ministry of health indicated that MOH is doing great to ameliorate the problem and cited acute shortage of resource to acquire the machineries required. He further opined that unlike communicable disease which concerns plenty of parties people with cancer are voiceless.

Another patient approached in the hospital revealed as she is unable to secure beds and hence forced to stay in the corridors of the hospital as she don't have the means to rent a hotel or a nearby relative.

A physician interviewed in black lion hospital cancer center indicated that the challenges of cancer treatment service in Ethiopia emanate from the patients themselves, the administering body, the professionals, and the technology limitations. He emphasized that several assignments are waiting for the policy makers, the professionals, the communities and other concerned bodies to combat the alarmingly growing burden of cancer in Ethiopia. Escalating the awareness of the general population about cancer, expanding well-developed diagnostic and treatment centers, and producing well-trained competent oncology professionals are the forefront challenges in combating cancer in Ethiopia

On the other hand 268 respondents (71%) indicated that they have received the medication service using appropriate language and mode of communication, similarly 282 respondents

revealed as they have faced no discrimination (75%). Of course the majority of patients heading to public hospitals in Addis Ababa do speak amharic and for those who don't the facilities are supposed to arrange translators but this service is available only in Saint paulos hospital. On the other hand patient experiences of discrimination during hospitalization are relatively low (12%) and are associated with lower patient ratings of care. The most frequent causes of discrimination were language, age, and having a disease that is viewed negatively by others.

6.3.2 Predictors of satisfaction on availability sub dimension of Hospital Service Accessibility

Factor analysis

Kaiser-Meyer-Olkin (KMO) test was used to test how suited the data is for Factor Analysis. The test measures sampling adequacy for each variable in the model and for the complete model. The lower the proportion, the more suited the data is to Factor Analysis. KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for factor analysis. On the other hand Bartlett's test of sphericity small values (less than 0.05) of the significance level indicate that a factor analysis may be useful with the data. Since the KMO value is above 0.6 and test of sphericity (see appendix 8) less than 0.05 the data is suitable for factor analysis.

Of the six dimensions which are included in the instrument to understand the availability of certain attributes in public hospitals only three component has an Eigenvalues value above one (see appendix 8). These three variables explain 86 percent of overall variability of the availability aspect hospitals services. Hence only these three elements were encompassed in the logistic regression model to test their significance.

In standard regression, the co-efficient of determination (R^2) value gives an indication of how much variation in y is explained by the model. This cannot be calculated for logistic regression but the 'Model Summary' table gives the values for two pseudo R^2 values which try to measure something similar. The model summary revealed that between 47% and 68% of the variation in patient satisfaction with hospital service availability can be explained by the model (see appendix 8).

As represented in table 6.5 below all of the three variables encompassed in the model showed statistical significance in the bivariate analysis (Chi-square test) at a 5% level of significance. Similarly the multivariate logistic regression analysis which controls the undesirable effects of confounding variables was used by taking predictor variables into account. The backward stepwise regression which controls the problem of multicollinearity was employed and easy access to the medical specialists needed and getting the ordered laboratory tests in the hospital laboratory found to be statistically significant and independently associated with patient's satisfaction with hospitals service accessibility.

Table 6.5 summary of inferential statistics on availability subdimension of access

Sub Dimensions of health care service accessibility		Satisfaction with the accessibility of Hospitals service		Bivariate Chi-Square Tests of association		Multivariate logistic regression	
		Not satisfied	satisfied	Df	Sig.	Odds ratio Exp(B)	Sig.
If I have a medical question , I can reach a doctor for help without any problem	Disagree	195	28	2	0.003	2.766	.408
	Agree	119	44				
I have easy access to the medical specialists I needed	Disagree	187	37	2	0.001	8.444	.003
	Agree	73	80				
I'VE got the ordered laboratory tests in the hospital laboratory	Disagree	204	15	2	0.02	9.06	.002
	Agree	110	47				

Source : Based on survey data,2019

The multivariate logistic regression analysis shows that ease of access to the medical specialists needed ($p < 0.05$, $\exp = 8.444$, 95% CI) enhances patient satisfaction by almost eight times as compared to inaccessibility to medical specialists. Similarly obtaining ordered laboratory tests in the hospital laboratory ($p < 0.05$, $\exp = 9.06$, 95% CI) increases the patients satisfaction with accessibility dimension of health care service by 9 times as compared to the non-possibility of getting ordered laboratory tests in the hospitals laboratory.

6.3.3 Mann-Whitney and kruskal walis tests of independence

The Mann-Whitney test

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females regarding the overall accessibility time dimension of the hospitals service and the test result as shown in table 6.6 below revealed that males and females have the same scoring tendency at the 5% level ($p = 0.827$). Similarly the Mann-Whitney test was conducted to statistically test if there was a significant difference between the answering tendencies of inpatients and outpatients with respect to the overall accessibility of the hospitals service and the test result shows that males and females have the same scoring tendency at the 5% level ($p = .698$).

Kruskal-Wallis test

Analysis of Kruskal-Wallis test indicates that there were no difference in scoring tendency between respondents with levels of education ($p = .575$), respondents with different levels of occupation ($p = .551$), age of respondent ($P=.143$), but there is a significant difference in answering tendencies of respondents with different hospital ($p = .032$).

Table 6.6 Summery of Mann-Whitney U and kruskal walis tests

Summary of Mann-Whitney U tests for availability sub dimension of access			
Grouping variables	satisfied with the overall accessibility of the hospitals service		
Gender of respondents	\Mann-Whitney U		17449.500
	Wilcoxon W		36559.500
	Z		-.219
	Asymp. Sig. (2-tailed)		.827
Type of patient	Mann-Whitney U		16404.000
	Wilcoxon W		26989.000
	Z		-.389
	Asymp. Sig. (2-tailed)		.698
Summary of kruskal walis tests for availability sub dimension of access			
Grouping variable	Chi-Square	df	Asymp. Sig.
Hospitals	13.797	6	.032
Age of respondents	6.871	4	.143
Educational level of respondents	2.901	4	.575
Occupation of respondents	3.040	4	.551

Source : Based on survey data, 2019

6.4 Affordability Sub Dimension of Hospital Service Accessibility

Health care finance in low-income countries is characterized by the dominance of out-of-pocket payments and the relative lack of prepayment mechanisms, such as tax and health insurance. Households without full health insurance coverage face a risk of incurring large medical care expenditures should they fall ill. This uninsured risk reduces welfare. Further, should a household member fall ill, the out-of-pocket purchase of medical care would disrupt the material living standards of the household. If the health care expenses are large relative to the resources available to the household, this disruption to living standards may be considered catastrophic. One conception of fairness in health finance is that households should be protected against such catastrophic medical expenses (WHO 2000b).

An individual is deemed to face catastrophic medical expenses if/her medical spending exceeds some fraction of household income or total expenditure in a given period, usually one year (Berki 1986, Russell 2004). The idea is that spending a large fraction of the household budget on health care must be at the expense of the consumption of other goods and services.

6.4.1 Descriptive analysis on affordability of public hospitals' services

To understand the affordability of the health care services this survey approached respondents with six statements to indicate their level of agreement with five point Likert. As indicated in the table 6.7 below out of 376 respondents 265(70.5%) worried about having to pay large medical bills, similarly 214 (57%) of the respondents revealed as it is a problem sometimes to pay for their medical care, only 84(22.3%) of the respondents feels that they can get medical care without facing financial setback, similarly 130(35%) indicated as they go without medical care needed as it is expensive to them, similarly 231(61.4%) revealed as they are not feeling of protection of financial hardship for medication and 268(71.2%) reported as the amount charged is not reasonable.

Even though public hospitals charge very small amount compared to their private counterparts, the substance of the responses of the patients approached vividly shows the prevalence of financial burden to get medical care. Health is a function of income and in turn income is a function of level education acquired. Generally well educated citizens have decent jobs which enabled them to earn well to finance their health and other life expenditures.

Hence analysis of the occupation and level of education of respondents approached may shed some light on why they feel financial hardship to get medical service of the facilities studied. As indicated in chapter four on the profile of respondents out of the 376 respondents 114(30.3%) have attained 12 grade and under, 138(36.7%) certificate, 67(17.8%) diploma, 44(11.7%) BA degree and 13(3.5%) above BA degree.

On the other hand out of the 376 respondents 48(12.8%) were government employees, 76(20.2%) housewives, 65(17.3%) unemployed, 138(36.7%) private employees and 49(13%) merchants.

The above figures of the respondent's level of education and type of occupation are indicative of their low income which directly affects their ability to afford for medication bills even for the relatively cheap public health facilities.

In line with the above argument Feinstein et al.(2006) indicated that income and education are very important factors that interacts in many important ways influences on health. This makes it hard to assess their independent effects. However, empirical investigations often find that the effect of education on health is at least as great as the effect of income.

Those with more years of schooling tend to have better health and well-being and healthier behaviors. Education is an important mechanism for enhancing the health and well-being of individuals because it reduces the need for health care, the associated costs of dependence, lost earnings and human suffering and also helps to enhance income.

For example, one study finds that for individuals born in the United States between 1914 and 1939, an additional year of schooling reduces the probability of dying in the next 10 years by 3.6 percentage points (Lleras-Muney 2005). Another study finds that for the cohort of Swedish men born between 1945 and 1955, an additional year of schooling reduces the risk of bad health by 18.5% (Spasojevic 2003).

Table 6.7 Summary of statistical tests on affordability of medical service

Sub Dimensions of health care service effectiveness		Satisfaction with the effectiveness of Hospital's service		Bivariate Chi-Square Tests of association		Multivariate logistic regression	
		Not satisfied	Satisfied	Df	Sig.	Odds ratio Exp(B)	Sig.
I've never worried about having to pay large medical bills	Disagree	107	158	1	0.000	5.927	.003
	Agree	107	4				
Sometimes it is a problem to cover my share of the cost of medical care visit	Disagree	56	158	1	0.000	6.542	.002
	Agree	158	54				
feel that I can get the medical care I needed without being set back financially	Disagree	130	161	1	0.000	4.689	.004
	Agree	84	1				
Sometimes I go without medical care I needed because it is too expensive	Disagree	50	80	1	0.000		
	Agree	164	82				
Regardless of the health problems I have now or develop later, I feel protected from financial hardship	Disagree	91	140	1	0.000		
	Agree	123	22				
The amount I have paid for medical care needed is reasonable	Disagree	144	124	1	0.000		
	Agree	70	38				

Source : Based on survey data ,2019

To ameliorate the financial burden of acquiring health care services Ethiopia has developed the essential health service package allowing some medical services to be exempted. The essential health services package (EHSP) defines exempted services as services that should be provided at no charge to all mainly in public facilities since they address priority public health goals (Ministry of Health 2005) These services are free at all public health care delivery levels. It also states that the Ethiopian government will mobilize the required external aid and domestic

resources for these services. The following figures shows financing arrangement of the health sector including the Essential health service packages.

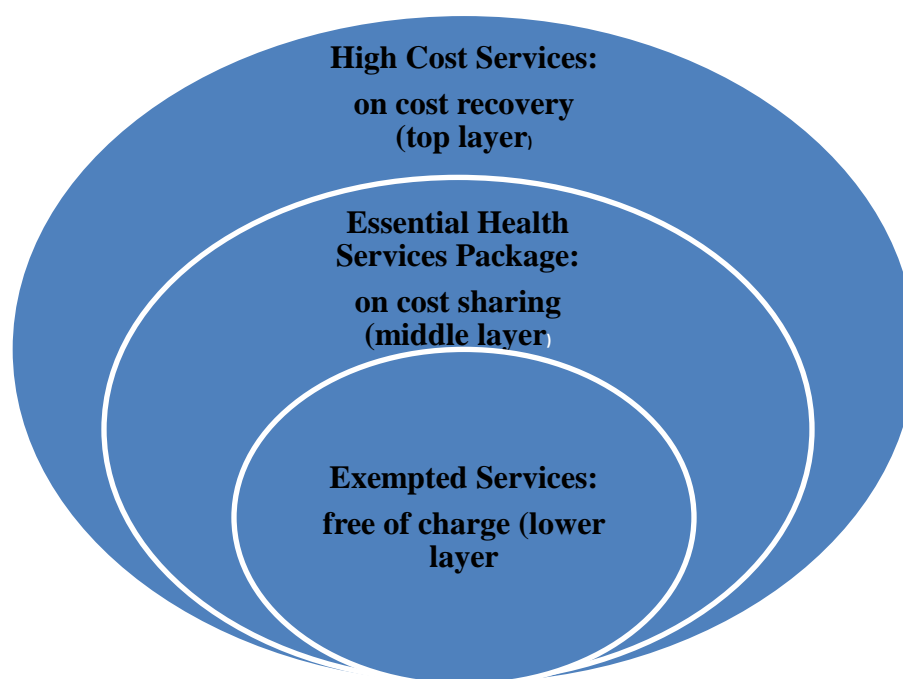


Figure 6.1: Financing arrangement of the health sector including the EHSP

Source: FMOH (2005)

As indicated in the above figure 6.1 the exemption covers the lower layer and the middle layer of health services. The lowest layer is selected public health services that need to be provided to everyone free of charge, or exempted services. According to the FMOH standards, exempted services include the expanded program on immunizations (EPI), antenatal care (ANC), treatment for tuberculosis (TB) (sputum diagnosis, drugs, and follow-up), family planning, postnatal care (PNC), leprosy, delivery, HIV care (voluntary counseling and testing and prevention of mother to child transmission), and treatment for malaria (Ministry of Health 2005).

On the other hand the middle layer represents the part of the essential health service package that is offered on a cost-sharing basis, or partially subsidized by the Ethiopia government. These services often include outpatient and inpatient services (that are not exempted services) related to communicable and non-communicable diseases at the primary health care level. The top layer represents services that are outside of the EHSP (commonly referred to as high cost services-e.g.

cancer treatment, dialysis) which are provided at full cost recovery, or the costs of providing such service are charged to the patient receiving that service.

The three disbursement channels practiced in has also different sources of funds .Channel one refers to those funds coming through the central treasury ministry of finance and its regional and woreda counterparts. Channel two refers to funds secured through aid and assistance of different health programs to federal and regional governments. On the other hand Funds disbursed through channel three are generated by the health care service provider facilities and go directly to implementing partners (non-governmental organizations and contracting agencies) without using the government modalities (Alebachew et al. 2015).

All exempted medication services are financed by foreign countries and other international organizations engaged with health related activities.

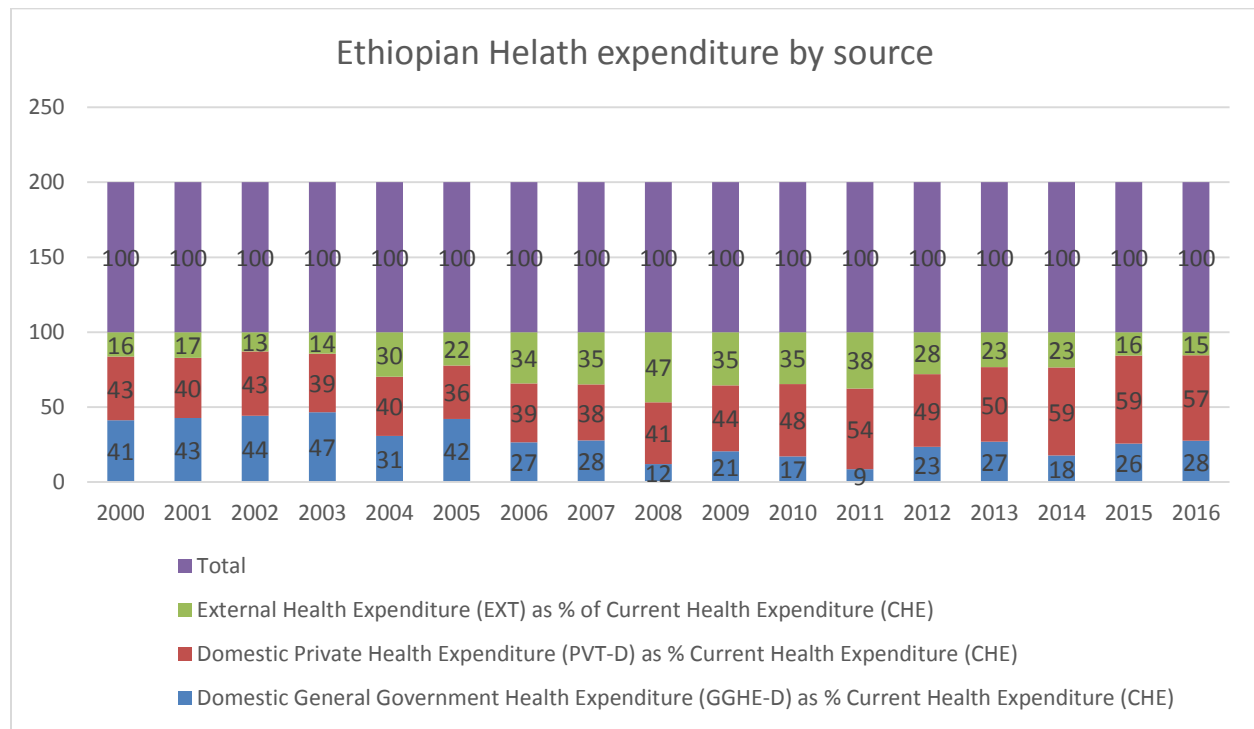


Figure 6.2 Ethiopian health expenditure by source

Source: WHO 2016

Therefore the provision of exempted health care services is largely depends on the availability of resources from development partners and its magnitude is beyond the control of Ethiopian government. Moreover as indicated in figure 6.2 the amount of financial assistance from international donors is declining over time due to economic downturn and as a result the sustainability of financing exempted services is through aid is questionable. This create a huge problem on accessibility of health care services of the country.

Therefore financing mechanisms should be designed to ensure domestic resources gradually take over the financing of exempted services.

Catastrophic health care expenditure

Catastrophic health expenditure (CHE) refers to any expenditure for medical treatment that can pose as a threat towards a household's financial ability to maintain its subsistence needs. It occurs when people have to pay large sum of money on health in relation to their income. Total health expenditure of 10% or more from the total income is often considered as indication of CHE.

World Health Organization (WHO) indicated that whenever the health expenditure is equal or exceeding 40% of a household's non-subsistence income, it is considered catastrophic. Subsistence need is defined as the minimum requirement for household to maintain basic life needs in a society. The basic life needs are food, shelter, clothing and certain household goods. Household subsistence income use the standard poverty line decided by the country as a tool to determine its' threshold. Hence household's non-subsistence income is the remaining money after basic needs have been met Ezat et al. (2017).

The likely hood of facing catastrophic health expenditure due to out-of-pocket payments is high for non-communicable diseases as this categories of services are not exempted as indicated in figure 6.1. Mostly this types of disease arises due to change in life style in urban centers including diseases such as cancer, cardiovascular, diabetes and hypertension.

Corroborating to the above argument of prevalence of catastrophic health expenditure Tessema et al. (2018), Tadesse et al. (2017), Tolla et al. (2016), Kore & Mariam (2018) revealed in their study regrading non-communicable diseases, prominently cancer, have become the second

leading cause of death in the adult population of Ethiopia. Cancer, and more prominently breast cancer, poses a substantial public health threat in Ethiopia. Evidences further suggests that seeking prevention and treatment services for cardiovascular disease in Addis Ababa poses substantial financial burden on households, affecting the poorest and those who reside outside Addis Ababa more. For instance 27 percent of participants of these studies experienced catastrophic health expenditure due to out-of-pocket payments on direct medical costs and direct non-medical costs for cardiovascular treatment. Patients in Addis Ababa and out of Addis wait a lot of appointments because of shortage of dialysis service in public hospitals so the people lost their life exposed to high cost in the private dialysis center. Low income, residence outside Addis Ababa and hospitalization increased the likelihood of experiencing catastrophic health expenditure.

Equally important studies (Husøy et al. 2018, Hailu and Haile, 2013, Gebreslassie 2018, Negash, 2016, Haile Michael et al. 2019) further showed substantial number of patients with the aforementioned NCDs are exposed to catastrophic health expenditure and household saving and support from relatives was the main means of coping strategy. For instance the mean outpatient cost per patient for cervical cancer is reported to be \$407.2 (around Br 13, 000). The studies further revealed that people with depression and high disability were more likely to face catastrophic expenditures and impoverishment from OOP payments.

Due to this catastrophic healthy expenditure nowadays it is the new normal to see patients of NCDs and their families in the streets of Addis Ababa begging for money to finance their health expenditures.

Key Challenges reated with Non communicable disease (NCDs) and way forward

Key Challenges reated with Non communicable disease (NCDs) includes weak structure at all levels of the health system (FMOH, AACHB), Human resource constraints (Staff inadequacy, staff turnover), Shortage of budget allocated to NCDs as per the helath care policy the focus is on CDs, weak service availability and readiness at all levels, gaps in quality of services provision, Weak logistics supplies management system at all level including facilities and weak program health information management system.

To address the aforementioned loopholes related with NCDs measures should be taken encompassing creation and strengthening NCDs Program structure at all levels of the health system, addressing human resource shortage at FMOH and AACHB , Strengthening integration, coordination and collaboration efforts both internally and externally, expansion of NCDs services provision at health facilities and communities level, strengthen integration of NCDs prevention and control efforts in to existing system, Strengthen logistics supply management system of NCDs program, Strengthen quality improvement of NCDs interventions, and Strengthen evidence generation and NCDI information management system.

Studies in sub Saharan Africa also reveal the wide spread burden of financing health care service by households. An investigation of the catastrophic and impoverishing effects of OOP health payments in Sub-Saharan countries of Africa shows heavy financial burden of getting medication. 16.4% of households in Nigeria incurred catastrophic health payments and OOP health payments led to a 0.8% rise in poverty headcount in the country (Samson & Moshin 2018). Many African countries the structural adjustment program signaled a significant shift from a predominantly welfare scheme to the introduction of user fees and the subsequent proliferation of private health care provision. This reforms which are in line with neoliberal ideology are reported to be defective in significant ways leading to problems of inequity, accessibility, and sustainability (Asakitkpi 2019, Goudge et al. 2009). A similar survey in South Africa revealed that Livelihoods exhausted from previous illness and death, low income, and limited social networks, prevented consultation with monthly expenditure for repeated consultations as high as 60% of income (Goudge et al. 2009).

Though facilitating and promoting social health insurance scheme is regarded as one alternative of mitigating the financial burden of health care service in Ethiopia many problems hamper this option too. Studies suggest that there is little knowledge about the concept and elements of health insurance. In Ethiopia some concepts such as, risk pooling and sharing are not well understood (Obse et al. 2015).

Outcomes of Health care financing reform

In 1998 Ethiopia has introduced a health care financing and adopted cost recovery mechanisms based on the principle that health care demand is price inelastic; so that more resources can be generated for the health sector without reducing the demand by the poor. The resources acquired through user charges were aimed to enhance the accessibility of health care service as one of its many objectives. However there many who argued that this reform has exacerbated the financial burden of getting medical service on patients.

Guda 2007, Kassa 2013 argued that introducing cost recovery schemes gives rise in health care cost, reduction of the demand for health care significantly in greater proportion relative to the better off. In other words an increase in user fee is likely to drive out the largest portion of the poorest households from receiving medical care, The poor are required to pay significantly greater proportion of their income to health care than the better off in order to get treatment resulting widening the inequality in access to basic health care services

Similarly Barnett & Tefera (2010) in their study revealed user fees presents a substantial psychological and financial burden and are one of the barriers to health care use, especially for poor households. For some families the costs of a sudden health shock combined with loss of income and assets can lead to indebtedness, distress asset sales and hardening of poverty cycles.

Furthermore Memirie (2016) on his study concerning household out-of-pocket (OOP) expenses associated with health care visits for cases of pneumonia and diarrhea in children under five years of age reported catastrophic consequences and impoverishment. The mean total medical expenditures [in Ethiopian Birr (ETB)] per outpatient visit were 148 ETB for pneumonia and 116 ETB for diarrhea while per inpatient care were 1182 ETB for severe pneumonia and 1470 ETB for severe diarrhea. 7% and 6% of the households with a case of severe pneumonia and severe diarrhea respectively were pushed below the extreme poverty threshold of PPP \$1.25 a day.

World Bank (2016) indicated that high share of out of pocket expenses undermines some of the gains in equity in Ethiopia. Among the lowest income quintile group, 55 percent did not utilize outpatient services, and 45 percent did not utilize inpatient services for financial reasons. The numbers are significantly lower—at 19.6 and 9.7 percent—among the highest income quintile

group. As indicated in the following figure both overall per capital health expenditure and per capita out of pocket (OOP) expenditure increasing over time in Ethiopia.

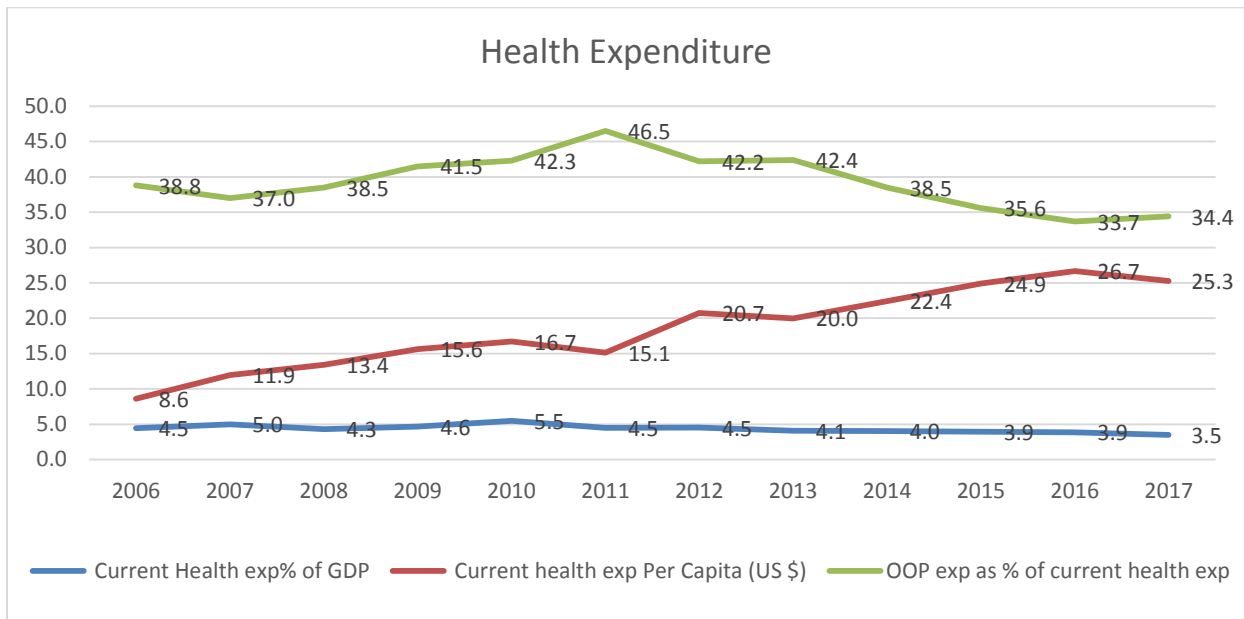


Figure 6.3 Ethiopian health expenditure , Source :WHO 2018

In April 2001, heads of state of African Union countries including Ethiopia met and pledged to set a target of allocating at least 15% of their annual budget to improve the health sector. Based on the agreement twenty-seven countries have increased the proportion of total government expenditures allocated to health (GGHE/GGE) since 2001. However, only Rwanda and South Africa have achieved the Abuja Declaration target of "at least 15% ". Meanwhile, seven countries reduced their relative contributions of government expenditures to health during the period and Ethiopia is one of them and this implies that citizens are more burdened of financing their medical expenditures. The following figure depicts the the dwindling of domestic general government health expenditure as a percentage of general government expenditure over time.

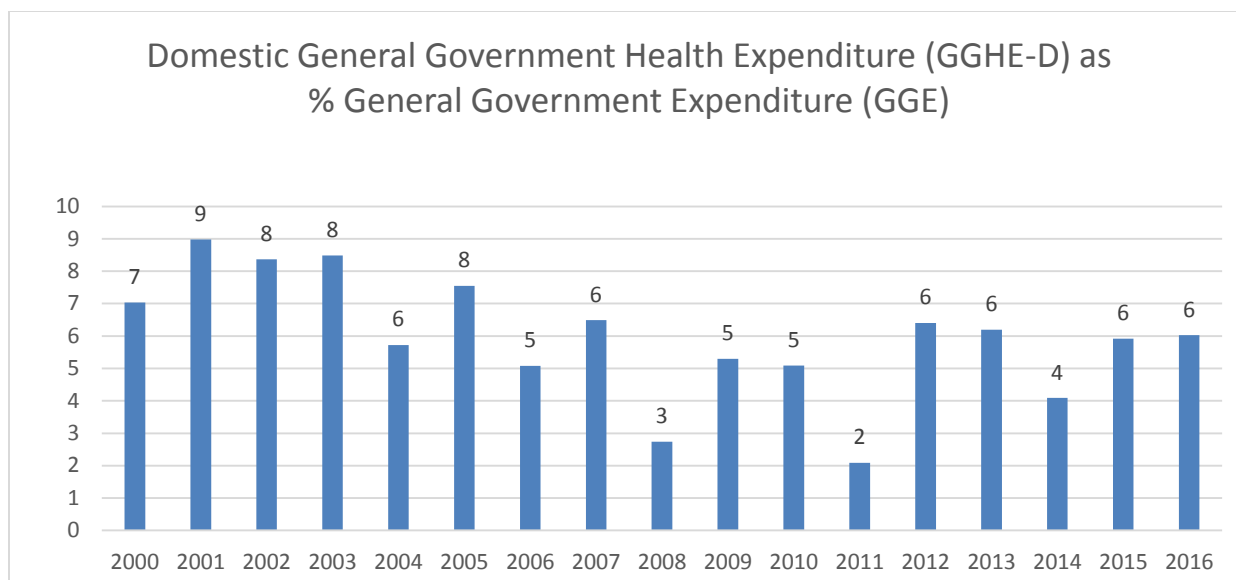


Figure 6.4 domestic general government expenditure , Source: WHO 2016

The state of health care service quality and accessibility is the function of the magnitude of health care expenditure and efficient use of available resources, in Ethiopian case it seems both are missing as manifested by the country's place in global health care index. The global access to health care index measures the conditions that allow for good access to active and relevant health care services, such as policy, institutions and infrastructure. The index takes a forward-looking approach to the category, namely, is the country implementing the right mechanisms today for optimal access tomorrow?

Ranking of 60 countries from Africa and Middle East Five of the bottom seven countries are in Sub-Saharan Africa and places Ethiopia ,Nigeria and Uganda in the bottom five raking 55th with an access index of 3.2 points out of 10 points (The Economist Intelligence Unit 2017).

A symptom of poor access to decent health care service in Africa in general and Ethiopia in particular is manifested in the trend of rising medical tourism. For instance in 2010, the average amount spent on health in African countries per person was \$135 (£100) compared to \$3,150 in high-income countries. Hence the public health care system continues to deteriorate at alarming level with lack of money being the main problem.

Due to an apparent lack of faith in the health systems at home the leaders of Nigeria, Angola, Zimbabwe, Benin and Algeria and Ethiopia are leaving behind poorly funded health services,

which most of their citizens have to rely on. The issue with these trips abroad is not only the implied criticism of the medics at home, but that they also serve to undermine the health system (BBC, August 13, 2017). Ethiopia spends over half billion Birr for medical tourism every year (The Reporter Newspaper, 31, August 2019).

Reflection on NPM

The health care financing reform of Ethiopia which mainly focuses on user charges has strong background in the private management techniques in the public sector and named as new public managment. The private business model has been criticized on the ground that public sector is different from the private sector (Yamamoto 2003).As noted by Atreya & Armstrong (2002), public and private sectors are different; therefore, theories of the private sector are not relevant to the public sector.

As these authors contend, the important difference is their objective. The private sector is profit oriented; whereas, the public sectors are service oriented with the objective of ensuring social equity. Likewise, Mongkol (2007) argues that areas of public services and administration have distinct political, constitutional, and social dimensions. According to these scholars, these dimensions make public sector dissimilar from the private sector.

Private sector practices are rarely adopted in government operations. The above analysis vividly shows as patients are facing catasrophic health expenditure and as a result causing further impoverishment. Here extreme caution must be exercised while comparing the outcome of the analysis with the theory and the mismatch may be either NPM oriented reforms are unfitting to the public sector or there is problem in the implmentaion.

6.4.2 Predictors of satisfaction on affordability of public hospitals services

Factor Analysis

To run factor analysis the data's suitability was checked through Kaiser-Meyer-Olkin (KMO) test .The test measures sampling adequacy for each variable in the model and for the complete model. KMO returns values between 0 and 1. A rule of thumb for interpreting the statistic is if the value is above 0.6 then the data is deemed to be suitable for factor analysis. On the other hand Bartlett's **test of sphericity** small values (less than 0.05) of the significance level indicate

that a factor analysis may be useful with the data. Since the KMO value is above 0.6 and **test of sphericity is below 0.05** the data is suitable for factor analysis(see appendix 9).

Of the six dimensions which are included in the instrument to understand the affordability of the health care service in the hospitals only three component has an Eigenvalues value above one (see appendix 9). These two variables explain 65.6 percent of overall variability of the accessibility of hospitals health care service. Hence only the following two dimensions are encompassed in the logistic regression model to test their significance.

As represented in table 6.7 above of the three variables encompassed in the model all showed statistical significance in the bivariate analysis (Chi- square test) at a 5% level of significance. Similarly the multivariate logistic regression analysis which controls the undesirable effects of confounding variables was used by taking predictor variables into account. The backward stepwise regression which controls the problem of multicollinearity was employed.

The multivariate logistic regression analysis shows that financial worries of accessing health care service ($p < 0.05$, $\exp = 5.927$, 95% CI) reduces patient satisfaction by almost six times as compared to not being worried to finance the service.

Similarly problem to cover share of the cost of medical care visit ($p < 0.05$, $\exp = 6.542$, 95% CI) reduces the patients satisfaction with accessibility dimension of health care service by 6.5 times as compared to the not facing such financial problem.

6.4.3. Mann- Whitney and Kruskal-Wallis analysis of variance

Mann- Whitney tetsts

The Mann-Whitney test run to statistically testing if there was a significant difference between the answering tendencies of males and females regarding the overall accessibility of the hospitals service and the test result as indicated in the following table 6.8 shows that males and females have the same scoring tendency at the 5% level ($p = 0.997$). Similarly the Mann-Whitney test was conducted to statistically test if there was a significant difference between the answering tendencies of inpatients and outpatients with respect to the overall accessibility of the hospitals service and the test result shows that inpatients and outpatients have the same scoring tendency at the 5% level ($p = .589$).

Kruskal-Wallis test

Analysis of Kruskal-Wallis test indicates that there were no difference in scoring tendency between respondents with levels of education ($p = .215$). On the other hand there were no significant differences in scoring tendency between respondents with different levels of occupation ($p = .627$), age of respondent ($P=.894$), but there is a significant difference in answering tendencies of respondents with different hospital ($p = .032$).

Table 6.8 summery of Mann- Whitney and Kruskal-Wallis tests

Summery of Mann- Whitney tetsts			
Grouping variables	satisfied with the overall accessibility of the hospitals service		
Gender of respondents	\Mann-Whitney U		17644.500
	Wilcoxon W		34115.500
	Z		-.003
	Asymp. Sig. (2-tailed)		.997
Type of patient	Mann-Whitney U		16272.500
	Wilcoxon W		26857.500
	Z		-.540
	Asymp. Sig. (2-tailed)		.589
Summery of kruskal walis tests			
Grouping variable	Chi-Square	df	Asymp. Sig.
Hospitals	13.797	6	.032
Age of respondents	1.104	4	.894
Educational level of respondents	5.789	4	.215
Occupation of respondents	2.597	4	.627

Source : Based on survey data, 2019

6.5 Patients overall Experience of hospital service

The patients were forwarded three final statements which are indicative of the overall experience of the services that they have received. The questions were posed in a five point Likert scale form and converted in to binomial response as agree and disagree here in the analysis. The theme of the statements were experience with the hospital's service, recommending the hospitals service for others and whether there are things that needs improvemnet in the hospitals.

As indicated in the table 6.9 below 206 (55%) of the respondents indicated good experience with the facilities services through their agreement while the remaining 170(45%) failed to agree.

Table 6.9 Descriptive statistics on good experience of patients in the hospitals

Hospital's Name	Disagree		Agree		Total
	Frequency	Percentage	Frequency	Percentage	Total
Black lion	52	46%	61	54%	113
Gandi	16	41%	23	59%	39
Damawi Menilik II	26	49%	27	51%	53
Ras Desta	17	44%	22	56%	39
Saint Paulos	16	30%	38	70%	54
Yekatit 12	23	55%	19	45%	42
Zewditu Memorial	20	56%	16	44%	36
Overall	170	45%	206	55%	376

Source: Based on survey data 2019

The following table 6.10 revealed the rank of the hospitals encompassed in the study based on the magnitude of their patient's good experience in their health care service provision. 70% of the respondents of saint Paulo's hospital feels contentment in its service and the hospital ranked first followed by Gandi memorial hospitals with 59%. At the bottom are Yekatit 12 hospitals ranked 6th with 42% and Zewditu Memorial stands 7th with only 44% good experience.

St. Paul Hospital's exemplary services

In the above ranking of hospitals encompassed in this study St. Paul stood first and there are plethora of evidences supporting this.

It is now a day to day trend for people to travel to high-quality medical service provider countries seeking medical care and treatment. Particularly, in a situation where they are tied up with particular health problems and disorders, looking for alternatives in overseas is a common phenomenon.

It is a blatant fact that every year thousands of Ethiopians travel abroad, mainly to Thailand, India, South Africa, and other destinations in search of high quality medical services. As a result, a huge amount of foreign currency is spent to those countries.

Saint Paulo's hospitals is working hardly to ameliorate the aforementioned problems and much-admired for its commitment recently. The hospital's kidney dialysis service, the service which has been entailing patients a huge amount of capital in overseas, has become fully functional. And kidney transplantation has also become a reality in the hospital. Recently, the first phase of

a center in which infertility treatment is offered launched. By doing so, the hospital is advancing its services and striving to lessen the health burden of its citizens and save the hard currency spend in overseas.

The hospital's director Dr. Lidya Tefera noted that the Hospital has been doing its best of level to provide quality services. Successively, it is recording greater achievements. For instance, currently it is enabled to offer pre and post-natal services for over 800 and 3000 mothers respectively. The number of women who got this service in the hospital has exceeded to 30 thousand per year. Furthermore, the Hospital has realized facility that deals with Mother Child Health (MCH) care with over 400 beds.

With the aim to enhance maternal and child care, the College is constructing new, eight floor building. The building is expected to commence giving services within months. To boost its efforts in making sure customers' satisfaction, the Hospital has opened Fertility and Reproductive Medicine Facility Center equipping with state of the art medical equipment and well trained professionals.

The Center has planned to treat 2000 couples per year. Mentioning that the service is the first ever center of government health institution, the director said that the treatment is assisted with state of the art medical equipment.

Every year closely 1000 people travel abroad in searching of this treatment spending significant amount of hard currency. Hopefully, the launching of the service will benefit thousands of people and save the hard currency spend to medical treatment in overseas, she remarked. The travel apart from medication cost, cause cultural challenges. Hoping many could benefit from the center in the forth coming years the hospital is now open for clients of locals and neighboring countries.

In addition to the pioneering of treatments for the above NCDs the hospital also devoted to enhancing its responsiveness to patients through facilitating translators for those who can not speak Amharic.

Table 6.10 Descriptive statistics on ranking of hospitals based patient experience

Rank		Agree	Total	%
1	Saint Paulos	38	54	70%
2	Gandi	23	39	59%
3	Ras Desta	22	39	56%
4	Black lion	61	113	54%
5	Damawi Menilik II	27	53	51%
6	Yekatit 12	19	42	45%
7	Zewditu Memorial	16	36	44%

Source: Based on survey data 2019

As shown in the figure 6.5 below 53 percent of the inpatients approached has good experience with the hospitals service and 56 percent of outpatients also reported the same. There is no that much difference in responding tendency and experience of inpatients and outpatients as it is indicated in man Whitney test of variance in prior parts.

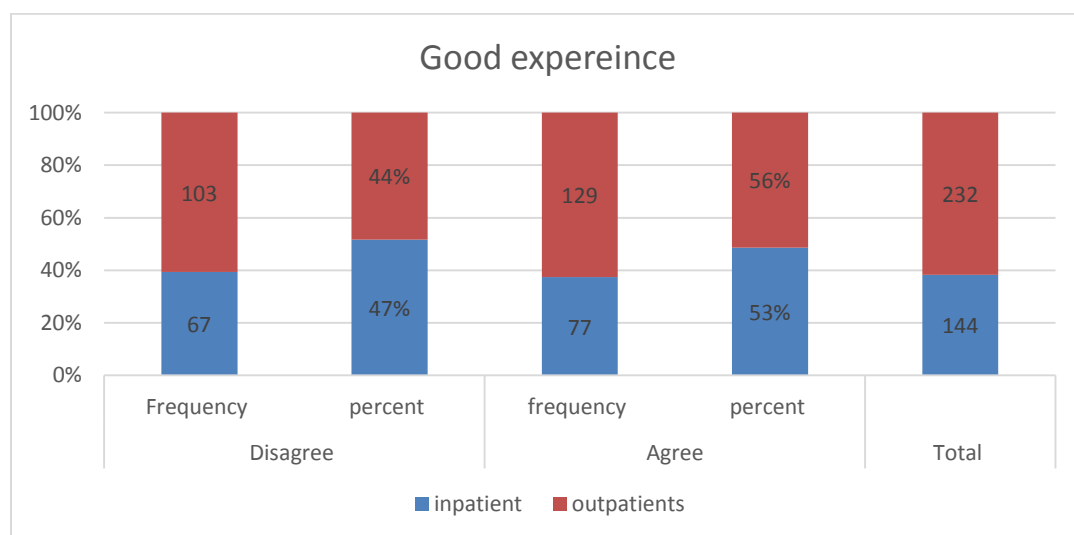


Figure 6.5 Good experience inpatient vs outpatients, Source :Based on survey data,2019

As depicted in figure 6.6 below 95.5 percent of respondents (359) reported that there are things that need to be improved and only 4.5 percent (17) feels contentment with the current practice implying no further action needed. The recommendations encompass effectiveness, safety, responsiveness and accessibility dimension of health care service.

The specific recommendations of the respondents include investment in hospital infrastructure such as medical machineries, toilets, waiting area, beds, enhancing the number of health care

professionals, timely service provision, health care staffs respect to patients, and availability of drugs.

Despite the gaps in patient satisfaction in public hospitals encompassed in the study, the officials of FMOH cited massive improvement in the health sector of the country in general and public hospitals in particular.

Key informant interviews with two officials of FMOH indicated that subsequent to the effort the country has made to improve its health care services, over the past decades impressive achievements are gained in terms of health facility infrastructure, human resource and all dimensions of health care service though they are not suffice.

The informants argued that Ethiopia expanded access to medical services throughout the country Over the past two decades guided by its successive HSDPs. The country has implemented its strategy of expanding and rehabilitating primary health care facilities resulting the construction of 16,440 health posts, 3,586 health centers and over 311 all over the country. In Addis Abeba alone, there are 96 health centers, 11 public hospitals, 28 private hospitals and 882 clinics.

The informants emphasized that the country has enhanced its capability of offering complex treatments which were unthinkable in earlier decades. The officials cited as an example the services provided currently by Black lion and saint Paulo's hospitals retrospectively comparing with their past. Currently the hospitals are offering sophisticated medications for NCDs such as cancer, cardiovascular, infertility treatment, kidney transplant and diabetes. A fully operational cardiac catheterization laboratory service, capable of providing clinically complex care to critically ill-heart patients, is commenced and cancer treatments become operational in the country.

They emphasized that kidney dialysis, the service which has been entailing patients a huge amount of capital in overseas, has become fully functional. And kidney transplantation has also become a reality locally. Recently, the first phase of a center in which infertility treatment is offered launched. By doing so, the country is advancing its services and striving to lessen the health burden of its citizens and save the hard currency spend in overseas. Concurrently, the country is endeavoring to be one of medical destinations in the region and beyond.

The officials acknowledged the inadequacy of resources committed to the health sector to achieve the health sector goals. They stressed that the existence of backlog of problems on all spheres of public service in the country has played as a negative catalyst in reducing resources devoted to the health sector.

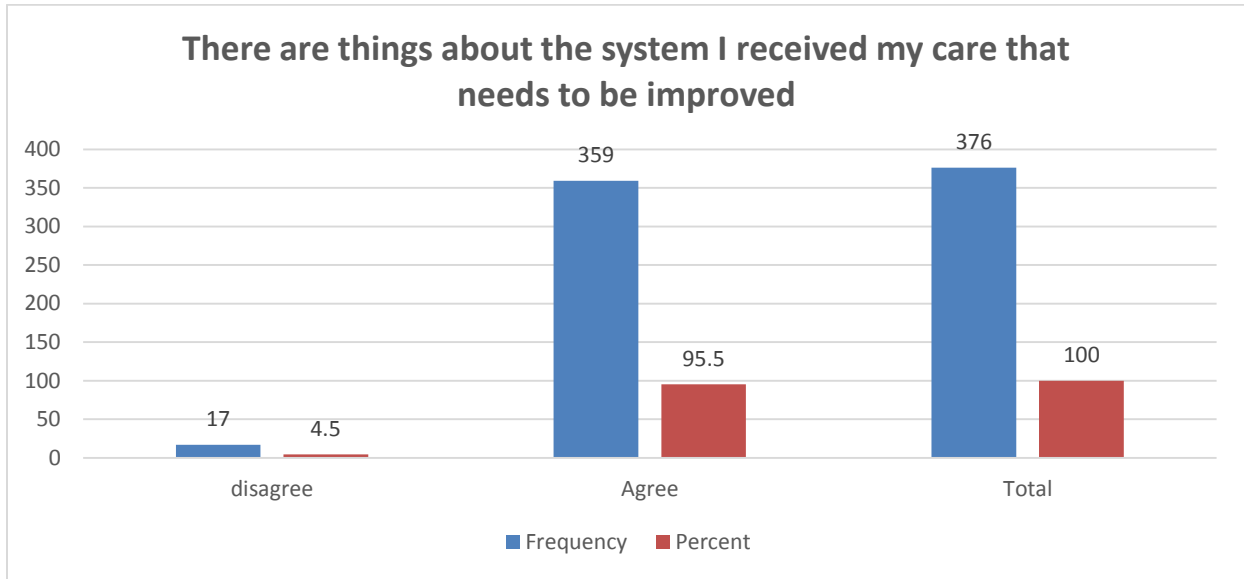


Figure 6.6 Issues requiring improvement ,source: Based on survey data, 2019

Source :Based on survey data,2019

As shown in figure 6.7 below Regarding recommendation of the service the respondents/patients received to others the response is comparable with their service experience in the facilities leading to only 54.5% willing to recommend while the remaining 45.5 percentare not willing to do so.

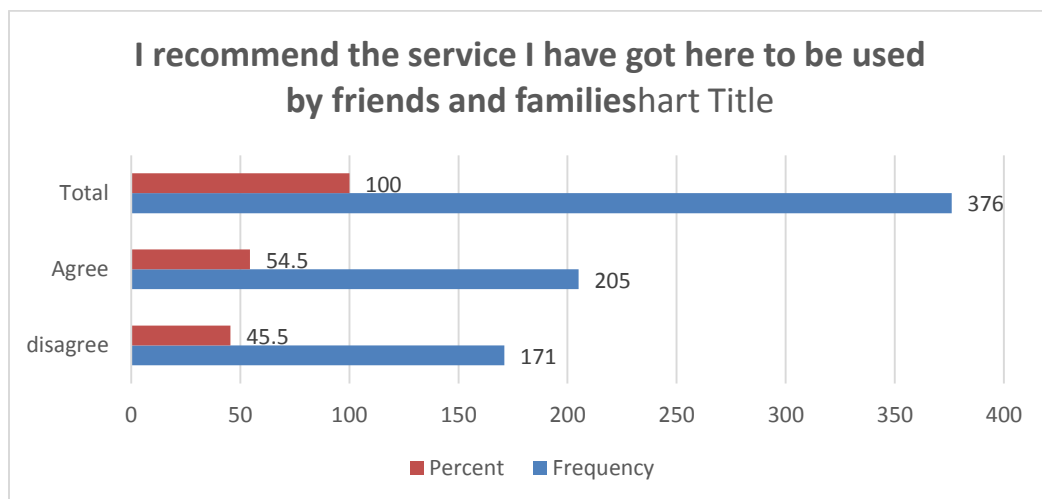


Figure 6.7 Recommendation of hospital service to others

Based on survey data, 2019

6.6 Operational Efficiency of Public Hospitals

Efficiency is the system’s optimal use of available resources to yield maximum benefits or results (McGreevey 1997). It speaks to a system’s ability to function at lower costs without diminishing attainable and desirable results. Actual goal attainment achieved related to what could be achieved given the resources available (WHO 2000).

Papa Nicolas & smith (2010) divides efficiency as macroeconomic and microeconomic efficiency. Macro-efficiency refers to the overall allocation of public and private expenditures in the health system, i.e. is overall health spending at the “right” level. On the other hand micro-efficiency refers to the value for money realized with available resources, i.e. is the health system as productive as possible in light of the system inputs and desired outputs. This study is concerned with micro efficiency perspective of the concept. In this study Efficiency referred to a hospital’s optimal use of inputs to yield maximal outputs, given its available resources.

Many nations seek to provide their population with an efficient, equitable and effective health care system. This is certainly true of Ethiopia which has experienced substantial population growth and increased life expectancy in recent decades. These have, in turn, increased demand for health care services.

According to Mann et al. (2015) Health has been a priority for the Government of Ethiopia (GoE), as evidenced by the scale up of health care services through different programs since 2004/05. Although government provides strong political support for health progress, so far it provided a declining share of its own-revenue towards health over the last 10 years, supporting only 16% of the total health expenditure (THE) according to the 2010/11 National Health Accounts (NHA) (FMOH, 2014). GoE relies heavily on external donors (50%) and out-of-pocket spending (34%) to finance services for its population of over 94 million (FMOH 2014, World Bank 2014a).

Therefore health service is proportionally more reliant on external resources which is declining, yet total funding still falls short of ambitious health sector plans to provide an array of cost-exempt services and meet the health-specific targets of national plans. The resulting resource gaps inhibit essential service delivery and could jeopardize further expansion of the health care system (Berman, 2013). Yet while public spending on health is remarkably low Ethiopia, in comparison with many other low income countries, it is rather low as a share of GDP.

The low amount of Ethiopia's government expenditure relative to other developing countries together with declining amount of development assistance for health by donors calls for efficient use of available resources.

Barroy et al. (2018) indicated the existence of the potential to increase Domestic Fiscal Space for Health in low income countries through increased tax revenues, a greater prioritization of health in the overall budget, and improved technical efficiency of health spending in a sample of 64 LMICs. Improved efficiency was referenced as having high potential for DFSH expansion in especially in low income countries.

Similarly Berman et al. (2018) also indicated that improvements in health outcomes in Ethiopia benefited from the large increase in development assistance for health received in recent years, most of which supported its primary care system. Increased domestic resource mobilization for health will be needed to sustain progress given recent and likely future declines in external support.

Therefore one major mechanism of insuring the sustainability of health care services in general and public hospitals service in particular is improving efficiency of health care provider facilities. Even without injecting new revenues, reprioritization of budget and technical efficiency improvements could significantly expand domestic fiscal space for health (95% CI, 77%, and 102%).

Taking into account the aforementioned points there is the need to incorporate technical efficiency in a systematic manner as a core source of domestic fiscal source of health (DFSH) in the future. One of the objectives of this study was to measure the technical efficiency of public hospitals of the designated study area using different input–output combinations, and to identify the factors that influence their efficiency. This study has tried to measure the efficiency of Addis Ababa public hospitals under the sample but due to the inadequacy of the data to estimate technical efficiency in both Stochastic Frontier Analysis (SFA) and data envelopment analysis (DEA) methods the measurement objective is not materialized. Hence the study is confined on the review of empirical literature with respect to technical efficiency of the health care facilities of the country in general and public hospitals of Addis Ababa city in particular.

In the Ethiopian case there are scanty of empirical evidence regarding health care facilities efficiency in general and public hospitals in particular. Getachew (2002) employed Stochastic Frontier Analysis to measure the technical efficiency of eight selected public hospitals in Ethiopia. The study used two outputs and five inputs to estimate the contribution of each input in the production process of health output. The outputs were outpatient visit and inpatient visit, while labor time spent by different professionals and administrative staffs, budget allocated to drugs, number of beds and depreciation of capital (building). The estimation showed only three hospitals exhibited some degree of technical efficiency.

During the same period, Balcha (2002) examined the technical efficiency of 40 health centers in Ethiopia. The study employed DEA model for a one year data set to obtain the efficiency scores and regressed the efficiency scores against health center operating characteristics using both OLS and Logit models. For inputs he used: Doctors/ health officers, Nurses, Health assistants, other technical staffs and Administrative staff while for outputs he used: Outpatient visits, maternal & child care visits & delivery services The DEA results indicated that, 62.5% of the health centers

were technically inefficient and 60% were scale inefficient while the OLS and Logit results showed that location and availability of hospitals in the area significantly affected level of efficiency.

Likewise another study Seid (2006) measured the efficiency of seventeen hospitals in Addis Ababa using a five year panel data (2000/01-2004/05) employing both parametric and non-parametric models. The study used DEA and DEA-Malmquist models (non-parametric approach) to identify the level of efficiency of hospitals, while determinants of technical efficiency were examined using a censored-Tobit regression model (parametric approach). Results of the CRS DEA model showed that only five (29.4%) hospitals were found technically efficient, while 12(70.6%) were inefficient.

A study by Sandro et al. (2010) measured hospital efficiency encompassing 47 hospitals (both governmental and non-governmental) located in 5 regions (Tigray, Amhara, Oromia, SNNP, and Addis Ababa) indicated that high level of performance was found in facilities in both public and private sectors in terms of efficiency. Factors affecting performance of the hospitals were found to be the hospital governance autonomy, the incentives, and the management framework which governs a facility, regardless of ownership state.

Similarly Dessie E. et al. (2016) assessed cost efficiency of public hospitals and indicated that potential areas where improvements in resource allocation and use could lead to more efficient health service provision within the health care facility. Primary hospitals expenditures increased slightly as the number of outpatient equivalent visits increased. Horizontal and vertical spreads indicate possible inefficiencies within these health facilities. Some primary hospitals had high spending but low output, which may indicate inefficiency in resource use such as over staffing relative to utilization rates. Other primary hospitals appear to be more efficient with low levels of spending relative to output.

Some departments within primary hospitals appear to be more efficient in resource use compared to others. All departments show a positive linear relationship between department level expenditures and outpatient equivalent visits. Relatively high spending and low output or high output and low spending still exist across primary hospital departments. The former relationship

indicates possible inefficiencies in resource use relative to output levels such as too many staff or primary hospitals forced to procure drugs and pharmaceutical supplies from private dispensaries, which are more costly, due to stock-outs.

Referring to global normative recommendations, such as from the WHO, Ethiopia faces a substantial health worker shortage; however, health worker productivity is very low for primary hospitals. The studied primary hospitals have on average 2.54 outpatient equivalent visits per clinical staff per day. This is even lower than the average for health centers, at 3.7 (3). Tigray has the highest outpatient equivalent visits per clinical staff per day (5.8), while Oromia has the lowest (1.5). This overall low output production for primary hospitals is brought on by low demand and high supply of clinical staff. The studied primary hospitals have higher staffing than the government norm, most likely due to the higher defined catchment areas covering multiple woredas rather than the envisioned one primary hospital for each woreda. The low health worker productivity findings are consistent with estimates of health worker productivity in other developing countries such as Kenya and Ghana.

Murad et al. (2017) examined the relative technical efficiency of 12 hospitals in Eastern Ethiopia. Using six-year-round panel data for the period between 2007/08 and 2012/13, this study examines the technical efficiency, total factor productivity, and determinants of the technical inefficiency of hospitals.

The DEA Variable Returns to Scale (VRS) estimate indicated that 6 (50%), 5 (42%), 3 (25%), 3 (25%), 4 (33%), and 3 (25%) of the hospitals were technically inefficient while 9 (75%), 9 (75%), 7 (58%), 7 (58%), 7 (58%) and 8 (67%) of hospitals were scale inefficient between 2007/08 and 2012/13, respectively.

Memirie et al. (2019) examined the cost-effectiveness of selected MNH interventions in an Ethiopian setting and indicated that 12 out of the 13 interventions included in the analysis were highly cost-effective. Interventions targeting newborns such as neonatal resuscitation (institutional), kangaroo mother care and management of newborn sepsis with injectable antibiotics were the most cost-effective interventions with higher incremental cost-effectiveness ratios.

Alebachew & Waddington (2015) in their study of achievements and challenges of three major reforms in the area of human resources for health in reported efficiency gains in terms of overall training costs and the wage bill of mid –level health care professionals. Their study further asserted that even under the hypothetical assumption that sufficient medical specialists such as obstetricians, surgeons, anesthetists, and general practitioners were available to staff the increasing number of primary and district hospitals, they would present a serious budgetary challenge. Furthermore, the limited international marketability of the skills of mid-level professionals helps address inefficiencies created by the international brain-drain due to the emigration of health professionals. Furthermore the deployment of mid-level professionals, especially emergency surgical officers, to primary and district hospitals has improved the efficiency of the use of infrastructure. Prior to the programme, the surgical and obstetric services in these health facilities had been unutilized or underutilized because of the lack of qualified personnel.

Manyazewal et al. (2018) revealed though implementation of the reform measures resulted substantial gain in infrastructure and workspace, the health care system in public hospitals was still fragmented as confirmed by limited magnitude of efficiency gains (50%).

Clinical services:proxies of hospitals efficiency

Hospitals house a range of clinical services, including diagnostic and therapeutic interventions for acute and chronic conditions. Clinical units may be designated by acuity (emergency, intensive care), by condition (cancer), by intervention (surgery) or by population (paediatrics, obstetrics). By type of patient OPD(out patient department) and inpatient departments.

OPD Attendant Per capita

In 2018 a total of 88,436,993 OPD visits were made at health facilities. This makes the OPD attendance per capita to be 0.9 visits. OPD Attendance Per capita is relatively high in Tigray, Dire Dawa, Addis Ababa and Harari regions. Lowest OPD attendance per capita is reported in Somali (0.21), Afar (0.36), and Oromia (0.62).

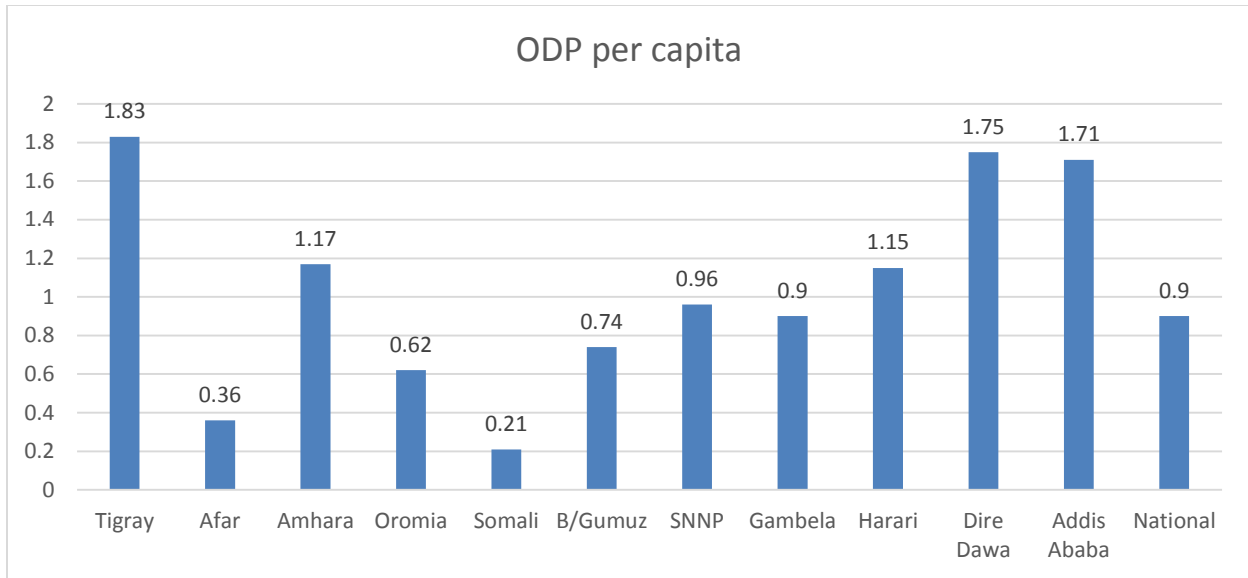


Figure 6.8 Bed Occupancy Rate (BOR), Source : FMoH 2018

Bed occupancy rate (BOR) is a measure of the efficiency of inpatient services. Hospitals are most efficient at a BOR of 80 – 90%. If the BOR is lower, resources may be wasted. If the BOR is higher than 90%, it means there is a danger of staff burnout and over-crowding during sudden increases in demand for services. In 2018, there were a total of 1,154,438 inpatient discharges with Bed Occupancy Rate (BOR) of 42%. Regional disparities were observed across regions, between 16% in Somali region and 53% and 50 % in Amhara and Harari regions respectively. The low BOR in some of the regions need further investigation to find of the actual reasons and take corrective measures.

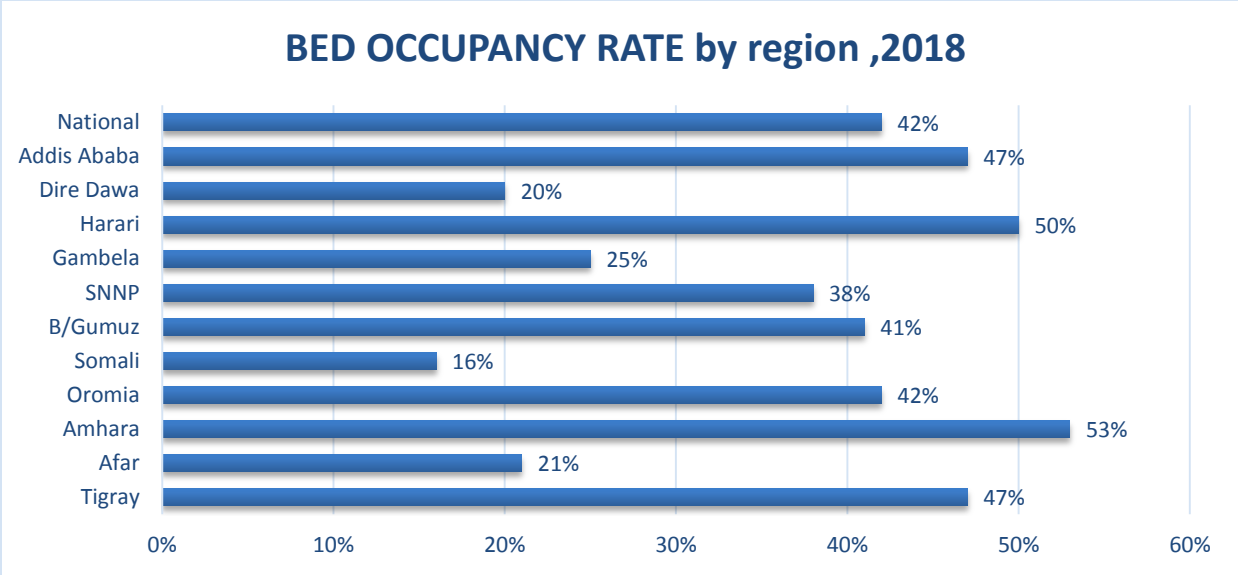


Figure 6.9 Bed occupancy rate by region,2018

Source : FMOH,2018

Corruption jeopardizing the quality, accessability and efficiency of public hospials health care service

No matter how well resourced a health sytem by either public or private sources, are vulnerable to corruption. Health sector fraud drains limited public resources and can compromise population health by reducing access to care, lowering the quality of services, or even directlyharming individuals.

Ethiopia’s health sector has many problems including limited resources, a high burden of disease, and weak institutions, but corruption also plays a role. Corruption in Ethiopia’s health sector has been relatively small compared to that in other countries and sectors. Low public health spending and limited job options for public health staff workers may explain why the health sector has been less prone to fraud and abuse (Janelle 2012).

However, rapidly rising expenditures, a growing private health sector, concentrated procurement, and new financing arrangements are increasing the sector’s vulnerability to corruption.An assessment of the nature and extent of corruption within Ethiopia’s health sector indicates procurement is identified as a special area of concern.

It is often difficult to ensure the integrity of procurement in the health sector because it involves such a diverse range of specialized goods and services. Ethiopia’s national drug formulary runs to 572 pages, listing hundreds of drugs, each with its own quality indicators and dosages. Supplies ranging from protective gloves to catheters, and equipment ranging from diagnostic blood tests to x-ray imagery, are all objects of procurement that must be properly specified, put out for bids, verified upon delivery, and used properly((Drug Administration and Control Authority of Ethiopia 2007).

Until 2003, salaries accounted for more than 60 percent of public health spending, but today pharmaceuticals and commodities are the largest and fastest-growing share of public and foreign expenditures in health. All of these factors make procurement a special area of concern (Janelle 2012).

Evidence from documentary analysis confirms the above argument and shows the prevalence of corruption in public hospitals of Addis Ababa especially hospitals under AACHB. For instance in yekatit 12 hospital in the process of acquiring drugs and outsourcing support services such as sanitation and food supply has exposed the entity to resource abuse and theft in a systematic way. This is verified through key informant physicians of the hospital and an investigation documentary video by Ethiopian television on its “fit le fit” program which is also currently available on you tube.

Table 6.11 procurement of of drugs and supplies at exaggerated price

Item	Actual market price of the medicine from PFCA or the market/ per unit	Winner price/unit	Difference
Adhesive plaster 12.5 cm X5m of 6 rolls			
CD-8 detergent of 1 liter/bottle	800	1080	280
Digoxin 0.25 mg tablet of 500 /tin	320	4500	4180
Spinal needle (LP) no 21	15.27	29	13.73
1 liter GV per liter	39,000	Br 540,000	501,000
Ampicillin 50 vial	145 birr	849/unit	704
Laundry service	1,258,000	6.465,600	5,307,600
63 inch television			197,000

Source: Hahu Ethiopia, 2018

The hospital acquires the medicines and other supplies with limited auction with violation of public procurement agencies rules (PPA) resulting millions of public resource abuse for personal benefit. The hospitals failed to pay its debt in arrears for PFCA for the medicine provided, but as indicated in the above table 6.7 it acquires medicines and other supplies in a much exaggerated price. Similarly the laundry service was costing the hospital Br 1, 258,000 per year and outsourced it with Br 6,465,600 without any feasibility study and with great deal of quality deterioration (Hahu Ethiopia, 2018). As per rules risk allowance is allowed only for ICU Operation, emergency department, and infant/burning/ birth delivery staff, however the hospital was paying for 48 employees which are not in the listed departments.

Similarly In Dagamiwi Menlik the II hospital drugs are acquired without even taking into account demand and the available stock in the store at a very inflated price. As a result of these the price of the drugs in the hospitals pharmacy were reported to be sold at a higher price than the private pharmacies resulting poor demand and expiration of the drugs. The key informants from black lion and zewditu hospital also indicated problems with the acquisition of Personal protection equipment (PPE) and other medical machineries including purchase of low quality products and delay in delivering the supplies after a good sum of money is paid for suppliers.

Addis Ababa health bureau was supposed to conduct follow up and periodic audit for hospitals under its jurisdiction, but it failed to fulfill its responsibilities. Unquestionably the resources diverted for individuals in the chain of corruption could have significantly contribute to maintain the quality, accessibility and efficiency of the facilities and this in turn may result patient satisfaction.

Reflection on NPM

The substance of the above discussion shows the overall operational inefficiency of public hospitals and these result did not support the notion of NPM which emphasizes on greater discipline and parsimony in resource use. NPM stresses on private sector styles of management and is adamant that the public sector should seek to behave in a more business-like approach. The underlying principle behind this argument is that efficiency of public service provision is enhanced when a public-sector agency conducts its affairs in accordance with business principles. Greater discipline and economy in resource use is taken as an important element of

NPM. Public service agencies must pay much greater attention to the use of financial and human resources at their disposal and emphasize on lowering cost and better quality. Though the reform measures of health care facilities were carried out under the auspices of NPM, the actual outcome of the analysis did not support the theory.

As indicated in the literature review part of this study the health care reform measures which are implemented in public hospitals has been implemented under auspices of NPM and one of this elements exercised was decentralization which enables the public managers to be the maker and breaker of their entity. The above discussion provides additional support to understand the loopholes of NPM. Through decentralization managers may centralize decision making which enables them to have authority to make all decision within their organization and this is Paradox of centralization through decentralization. This centralized decision making can generate its own pressure for arbitrary action and corruption (World Bank 1997). A supporting view is provided by Polidano & Hulme (2001) who claims that public management in developing countries is afflicted by corruption and nepotism and that such practices may hinder NPM implementation. NPM may not be useful for public sectors in developing countries that have been greatly affected by corruption (Bale & Dale 1998).

For Bovaird and Löffler (2003), discretionary authority or freedom of management within public sector organizations provides more opportunities for unethical behaviors. Correspondingly, Hughes (2003) accentuates that contracts with governments are kept secret for a number of reasons. Consequently, transparency is lacking in terms of practice which in turn may result corruption and towards maximizing managers self interest instead of public interest.

In contrast to the above discussion some participants of hospital administrators indicated that though as result of decentralization they are bestowed an autonomy on the affairs of their hospital, they contend that strategic decisions were being made centrally with little or no consultation with hospital managers. They indicated that as they did not have the authority to decide important issues, and strategic decisions were under the jurisdiction of high level officials. Important decisions such as procurement of medicines, supplies, and equipment were made centrally without considering the needs of facilities.

This is in complete paradox with the commandments of NPM which indicates “Hands-on professional management in the public sector”.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

The main objective of this research is to investigate the public health care service delivery state of selected public hospitals of Addis Ababa city. There are a great deal of logical backgrounds for conducting this study. Firstly, though there are theoretically appealing arguments to understand hospitals service provision state from the mouths of the horse (patient's perspective) there is still little empirical research conducted in Ethiopia in general and in Addis Ababa in particular.

Secondly, this dissertation is also motivated by the methodological flaws of the available literature on hospitals service state assessment which mainly failed to incorporate the major health care service dimensions (health care service effectiveness, safety, responsiveness, accessibility, and operational efficiency). Moreover, the prevalence of unresolved controversies regarding the appropriateness of NPM type health care reform measures and the reforms resultant effect necessities this study.

Theoretical lenses of new public management was applied to analyze and interpret data to effectively answer the research questions. The analysis and interpretation of results was also made based on the conceptual model developed in chapter two of this dissertation. Using a mixed concurrent triangulation strategy and giving equal emphasis to quantitative and qualitative aspects, the study investigated the state of public hospitals health care service provision.

The study investigated the state of the health sector of Addis Ababa and pointed out the implications for improvement. The study also analyzed the service delivery state of the selected public hospitals of Addis Ababa city using international hospitals performance assessment frameworks and health care service dimensions encompassing health care service effectiveness, safety, responsiveness, accessibility, and operational efficiency.

Using relevant theoretical and conceptual frameworks developed in chapter two, the analysis and interpretation of primary and secondary data has led to key findings, which the researcher believes have effectively answered the research questions posed under section one. The following conclusion, theoretical contributions, directions of future research and policy

recommendations, which are thoroughly informed by analysis and interpretation of data, are drawn.

7.2 Conclusion

Conclusion entails empirical knowledge prompted by the three interrelated and key components of the study: (1) health care service quality encompassing its sub dimensions: effectiveness, safety and responsiveness. (2) Health care service accessibility encompassing its sub dimensions: temporal, availability and affordability (3) Operational efficiency of the hospitals

The collective outcomes of the conclusions have contributed to bridge or narrow the gaps noted in knowledge with respect to understanding the state of health care service delivery of selected public hospitals of Addis Ababa city.

7.2.1 Health Care Service Quality

As indicated in chapter two of the study health care service quality has three aspects. First a quality health care service should provide effective health care service which is as needed for treatment, prevention or palliation using appropriate technology. The second component of quality health care is safe delivery of the service in a manner that achieves high reliability in care processes and minimizes medical errors. The third and the last manifestation of quality health care is patient-centeredness (responsiveness) and provided in a timely way with compassion and professional friendly human relation with the patient.

The first element of health care service quality is its effectiveness and in this regard the overall satisfaction of patients with this aspect of health care service quality was sought and the majority 268 respondents (71.28%) indicated their contentment on the services of the facilities and the remaining 109 (28.9%) indicated discontentment. The Mann-Whitney and Kruskal-Wallis tests indicated as there is no significant difference between different groups of respondents (gender, type of patient, level of education, work and age) regarding the health care service state of the public hospitals.

The study vividly indicates the fact that the intended connections between, health centers and hospitals through referral system is not practiced properly yet. Hence Failure of implementing the referral system designed is creating burden on the hospitals as patient head towards hospitals

for medical services that would have been received at health centers. Failure of practicing the referral system while negatively affecting the effectiveness of the hospitals it also undermines the efficiency of the primary health care facilities as they are not properly used.

The multivariate logistic regression analysis shows that through treatment and examination of patients ($p < 0.05$, $exp = 3.147$, 95% CI), medical staffs provision of good explanation regarding medical tests ($p < 0.05$, $exp = 6.258$, 95% CI), careful checking and examining of patients during treatment ($p < 0.002$, $exp = 3.042$, 95% CI) significantly affects patients satisfaction with the effectiveness of the hospitals services.

The second element of quality health care service provision is safety. Patient safety is a fundamental principle of health care service every point in the process of care giving contains a certain degree of inherent unsafety. Adverse events may result from problems in practice, products, procedures, or systems. The overall level of satisfaction on safety procedures of the hospitals indicated that 58 percent of respondents (218) dissatisfaction and 42% (158) satisfaction.

The 2018 services availability and readiness Assessment (SARA), indicated that among all Ethiopian health care facilities only 3 percent of them had all 9 tracer items for standard precaution for infection prevention and on average, facilities had 4 of the 9 items with an overall standard precaution readiness score of 42 percent. The available empirical evidence also suggests the prevalence of hospital acquired infections, drug prescription errors and adverse drug errors in Ethiopian hospitals. Hence creating a positive patient safety culture by implementing actions that support all dimensions of safety culture is inevitable.

The multivariate logistic regression analysis shows that medical staffs capability not to expose patients to unnecessary risk ($p < 0.05$, $exp = 4.916$, 95% CI) and extent of Care exercised by medical personnel to patients during treatments ($p < 0.002$, $exp = 7.282$, 95% CI) significantly affects the satisfaction of patients regarding the safety dimension of hospital service.

The third aspect of health care service quality is its responsiveness. Responsiveness or patient-centeredness is a functional health care quality dimensions which shows how a system treats people to meet their legitimate non-health expectations. With respect to being satisfied with the overall responsiveness of the hospitals service 258 respondents (68.60%) disagreed, and only

118(31.34) percent of respondents indicated their agreement with the statement. Generally the survey revealed that the public hospitals studied has poor performance with responsiveness dimension of non-technical health care service quality indicator.

The number of health care professionals is low relative to high number of patients seeking medical care, as a result the health care professionals may fail to give due attention for each patient resulting dissatisfaction. It is a public fact that a good number health professionals in the public hospitals are engaged in private health care facilities and some has their own clinics resulting the devotion of less time in the public hospitals and this in return also affects their interaction with their patients. The low responsiveness of the health care service facilities also related with low health expenditure manifested in the salary of health care service professionals and in return affecting their motivation, commitment and magnitude of time devoted to patients.

The multivariate logistic regression analysis shows that Health professionals courtesy and respect ($p < 0.05$ $\exp=2.682$, 95% CI), medical personnel's sympathy for patients' ($p < 0.05$ $\exp=2.521$, 95%CI), medical personnels' individual attention to patients ($p < 0.05$ $\exp=7.112$, 95% CI), and willingness of medical personnel to help patients ($p < 0.312$, $\exp=13.716$, 95%CI) increases patient satisfaction with responsiveness dimension of health care service quality.

7.2.2 Health Care Service Accessibility

In the context of health care service accessibility refers to the ease with which health services are reached. Health care service accessibility has many sub dimensions and this study divided these aspects of accessibility in to three namely temporal sub dimension of health care service accessibility, availability sub dimension of health care service access accessibility, and affordability sub dimension of health care service accessibility.

The first element of accessibility is timely (temporal) service provision. Temporal sub dimension of health care service accessibility refers to the time it takes to get medical services. Poor access or delays or wait times to receive health care inevitably results in increased pain and suffering for those who require care. The multivariate logistic regression analysis shows that acceptability of waiting time for medical service ($p<0.05$, $\exp=15.766$, 95% CI), and possibility of getting medical service on short notice ($p<0.05$, $\exp=8.444$, 95% CI) significantly affects the satisfaction of patients regarding the accessibility dimension of hospital service.

The second element of accessibility is availability. Availability sub dimension of health care service accessibility refers to the availability of facilities required for the health care service provided in the hospitals. More than half of the respondents failed to agree for ease of asking medical professionals when needed (153/41%), reaching medical professionals without problem (152/40%), easy access to the medical specialists needed (152/40%). The study further revealed the prevalence of problems in laboratory service constrained by shortage of manpower, equipment, chemicals, lack of training on how to operate devices, less sense of accountability, power interruption, staff work overload and lack of maintenance experts, inappropriate referral system and absence of a quality assurance program network were among the reported reasons for influencing availability and utilization of medical devices.

The resultant effect of these laboratory related problems include unavailability of laboratory tests and delayed delivery of laboratory tests results and in turn this results patients to incur substantial out of pocket expenditures. The services most frequently reported to be in short supply, either daily or weekly, were access to surgery, specialist and intensive care units, drug prescriptions and admission to hospital. The resource shortage forces health care professionals for rationing the service including beds. Physicians encounter numerous dilemmas due to resource scarcity, and they report they lack adequate guidance for how to handle them.

Regarding the availability of prescribed drugs in the pharmacy of the hospitals only 42% (157) respondents agreed on the availability of all prescribed drugs on the hospital's pharmacy. This shows the prevalence of great deal of financial burden on the patients as the prices of essential drugs in private outlets are expensive compared to public outlets. The empirical evidence on availability and price of medicines indicates the existence of a wide supply gap in the area.

In general the analysis of both primary data and review of the empirical evidence asserts the unavailability and high price of medicines, calling for immediate action by the concerned parties at least to ameliorate the problem. On the other hand 268 respondents (71%) indicated that they have received the medication service using appropriate language and mode of communication, similarly 282 respondents revealed as they have faced no discrimination (75%). Of the seven hospitals encompassed in this study only saint paulos hospital has arranged interpreters for patients who can not communicate in maharic.

The multivariate logistic regression analysis revealed the statistical significance of ease of access to medical specialists ($p < 0.05$, $exp = 8.444$, 95% CI), and getting the ordered laboratory tests in the hospitals laboratory ($p < 0.05$, $exp = 9.06$, 95% CI) that enhances patient satisfaction.

The third element of accessibility is affordability of the health care services. Affordability sub dimension of health care service accessibility basically refers to the affordability or ease of paying for medical services of the hospitals including drugs. Health care finance in low-income countries is characterized by the dominance of out-of-pocket payments and the relative lack of prepayment mechanisms, such as tax and health insurance. Households without full health insurance coverage may face catastrophic medical expenses which disrupt the material living standards of the household.

Out of 376 respondents encompassed in the survey 265(70.5%) revealed their worries about having to pay large medical bills, similarly 214 (57%) of the respondents revealed as it is a problem sometimes to pay for their medical care, only 84(22.3%) of the respondents feels that they can get medical care without facing financial setback. Similarly 130(35%) indicated as they go without medical care needed as it is expensive to them, 231(61.4%) indicated as they are not feeling of protection of financial hardship for medication and 268(71.2%) reported as the amount charged is not reasonable.

Even though public hospitals charge very small amount compared to their private counterparts, the substance of the responses of the patients approached vividly shows the prevalence of financial burden to get medical care.

The Ethiopian public hospitals services provided in three layers, top, middle and lower, in terms of financing. To ameliorate the financial burden of acquiring health care services the lower and middle layers covers exemption for essential health services package. Hence the likely hood of facing catastrophic health expenditure due to out-of-pocket payments is high for top layer non-communicable diseases as this categories of services are not exempted including Cancer, cardiovascular disease, diabetes, and hypertension.

All provision of exempted health care services is largely depends on the availability of resources from development partners and its magnitude is beyond the control Ethiopian government which is declining currently. Hence the sustainability of financing exempted services is through aid is

questionable, therefore financing mechanisms should be designed to ensure domestic resources gradually take over the financing of exempted services.

Evidences suggests that seeking prevention and treatment services for cancer and cardiovascular disease in Addis Ababa poses substantial financial burden on households, affecting the poorest and those who reside outside Addis Ababa more. Though facilitating and promoting social health insurance scheme is regarded as one alternative of mitigating the financial burden of health care service in Ethiopia studies suggest that there is little knowledge about the concept and elements of health insurance.

The analysis further suggest that Ethiopia's health care financing reform of the 1998 results increase in user fee and as a result drives out the largest portion of the poorest households from receiving medical care. The poor are required to pay significantly greater proportion of their income to health care than the better off in order to get treatment resulting widening the inequality in access to basic health care services.

The multivariate logistic regression analysis shows that being never worry about having to pay large medical bills ($p < 0.002$, $exp=5.927$, 95% CI), not facing problem to cover share of the cost of medical care visit ($p<0.05$, $exp=6.542$, 95% CI) , and getting medical care service without financial set back ($p<0.05$, $exp=4.689$, 95% CI) enhances patient satisfaction.

Patients overall Experience of hospital service

The patients were forwarded three final statements on a five point Likert scale form which are indicative of the overall experience of the services that they have received. The theme of the statements were experience with the hospital's service, recommending the hospitals service for others and whether there are things that needs improvemnet in the hospitals.

206 (55%) of the respondents indicated good experience the facilities services through their agreement while the remaining 170(45%) indicated their disagreement. With respect to ranking the public hospitals based on customer contentment saint Paulo's stands first as 70% of the respondents feels satisfaction with its service followed by followed by Gandi memorial hospitals with 59%. At the bottom are Yekatit 12 hospitals ranked 6th with 42% and Zewditu Memorial

stands 7th with only 44% good experience. 53 percent of the inpatients approached has good experience with the hospitals service and 56% percent of outpatients also reported the same.

95.5 percent of respondents (359) reported that there are things that needs to be improved. Regarding recommendation of the service the respondents/patients received to others the response is comparable with their service experience in the facilities leading to only 54.5% willing to recommend while the remaining 45.5 percent disclosed their unwillingness to do so.

7.2.3 Operational Efficiency of Health Care Service Provision

Efficiency refers to the health care facilities optimal use of available resources to yield maximum benefits or results. To provide the growing number of population with high quality, accessible, and affordable health care service it is a must to maintain operational efficiency of the facilities. In Ethiopia in general and in Addis Ababa in particular the low amount of resource allocated for the health sector, the relatively few number of health care professionals, the inadequacy of health infrastructure and declining amount of development assistance calls for more efficient use of the available resources.

Even without injecting new resources, reprioritization of budget and technical efficiency improvements could significantly expand domestic fiscal space for health. Studies indicated the existence of the potential to increase Domestic Fiscal Space for Health in Ethiopian public hospitals by improving their technical efficiency. However a good number of studies reported the operational inefficiencies of the health care facilities.

Ethiopia faces a substantial health worker shortage; however, health worker productivity is low. Moreover failure to properly use the available infrastructure (medical devices) is also is a major contributory factor to inefficacy. Manyazewal et al. (2018) revealed though implementation of the reform measures resulted substantial gain in infrastructure and workspace, the health care system in public hospitals was still fragmented as confirmed by limited magnitude of efficiency gains (50%).

7.3 Knowledge Contribution of the Study

Despite the fact that studies have been conducted on public service delivery, comprehensive works on public hospital service provision state in Ethiopia and AACPH contexts are very scarce. Hence this study is carried out to address this problem on the state of public hospitals service provision in Addis Ababa city context. As per the knowledge of the researcher this study is the first in its kind that tried to examine public hospitals service provision state encompassing patients as data source, major health care service dimensions and NPM as a theoretical lens of analysis.

Thus this study attempted to provide relevant and reliable information for hospitals administrators, policy makers and politicians on the current health care service provision state of the public hospitals. Hence this contribution on this less researched topic expected to narrow the knowledge gap.

7.4 Policy Implications

Based on the findings of this study, the following points which has policy implications for public hospitals, AACHB and FMoH are suggested:

I. Addis Ababa city health bureau

- ✓ The analysis indicated the passive role of AACHB in controlling and exercising regular follow-up of hospitals under its jurisdictions which in turn hampers their quality, accessibility and operational efficiency. Hence the bureau need to continue playing significant roles in ensuring and improving the quality of health services provided in public hospitals under its jurisdiction through active follow-up and support to the hospitals.
- ✓ Procurement and financing of services in Ethiopian public hospitals should be in accordance with the Food, Medicine and Health Care Administration and Control Authority (FMHACA), Ministry of Finance and Economic Development (MoFED), and other national rules and procedures. The corruption suspects discovered in the study needs to be taken care of and the bureau needs to bring those involved to justice. Moreover to address the loopholes in procurement sound internal control system needs to be established.

II. Addis Ababa health bureau and Ministry of health

- a. The FMOH and AACHB should regularly research, review, monitor, and evaluate the existing public hospital services and their performances to ensure high quality (effective, safe and responsive health care service , accessible(timely, with required facilities affordable) and efficient health care service to citizens
- b. As indicated in the analysis part of the study citizens are facing catastrophic health care expenditure due to the unavailability of full-fledged laboratory services, machineries especially for NCDs and medicines in the pharmacies of the hospitals. Hence maximum effort needs to be exerted to upgrade public hospitals with up-to-date health care service infrastructure including for hospital laboratories, and hospital machineries to treat NCDs such as cancer, diabetes, and cardiovascular disease and avail at least essential drugs.
- c. To mitigate catastrophic health care expenditure AACHB and FMOH should work to enhance the awareness of the society on health insurance and create innovative options at reasonable price.
- d. The FMOH and AACHB should continue their partnership with development partners giving various technical, administrative, and financial supports for public hospitals. However, more emphasis must be placed on research, technology transfer, and share best practices than providing routine and low-level technical supports.

III. Public hospitals

- a. There are very good guidelines prepared by ministry of health including safety, infection prevention, drug prescription and hospital service implementation. However as indicated in the analysis part of the study there are noticeable gaps with complying with those guidelines. Hence regular supervision systems should be established to enforce implementation of the standard operating procedures and guidelines to ensure health care is provided at a standard level.
- b. Though for years the hospitals were under reform, it was noticed that patient waiting time in public hospitals is still a major source of grievance. Hence the public hospitals need to strive to deliver health care services on the schedule convenient for both patients and the hospitals. They should avoid unnecessarily longer waits for clinical examinations or result distributions.

- c. Public hospital should strive to mitigate patient's dissatisfaction through better handling of patient complains and concerns in a pleasant manner. The hospitals should try to understand patients' expectations right in the beginning to ensure increased patient understanding. The extent of patient satisfaction or dissatisfaction with health services should be assessed regularly through surveys and the hospitals should instantly use the survey results for service improvement interventions. These could result in higher quality of care, with fewer preventable medical mistakes and malpractices. Thus, public hospitals should maintain adequate staff numbers, ensure that each case team is always covered, and ensure that staff do pay close attention to the times that people have to wait. With these, the hospitals could also reduce medical related morbidities and mortalities.
- d. The hospitals should evaluate and strengthen their supply chain management systems to ensure all the reagents, drugs, equipment, and other supplies required for the day-to-day services stock-in at all times.

IV. Ethiopian government

- a. In general, it was very acceptable that the Ethiopian government made its level to improve the health of its citizens, but the amount of resource allocated for health as a percentage of total government expenditure is very low in comparison to other countries with similar level of economic development. As a result citizens are exposed for catastrophic health care expenditure, hence government of Ethiopia needs to be committed in enhancing the health budget For instance in 2001 Ethiopia has accepted the Abuja declaration to commit at least fifteen percent of government expenditure to health, but the resource allocated for health is not more than seven percent of overall government outlay.
- b. The analysis of health care service financing of the country indicate Ethiopia's heavy reliance on foreign aid for health which is unreliable. Therefore government should gradually enhance its capability of financing the health care expenditure of the country from local sources.
- c. The review of documents and interview with health care professionals indicated their dissatisfaction with the poor infrastructure of their facilities and the remuneration system, as a result of this for years a good number of professionals have left the country in pursue

of better payment. Therefore government should strive to enhance satisfaction of health care service professionals through fulfilling infrastructure needs of the facilities, better payment system, arranging cars and houses on long term payment basis.

7.5 Suggestions for Future Research

The central objective of this study was to examine health care service provision state of the selected public hospitals of Addis Ababa city. In order to achieve the objectives of this study primary and secondary data was secured and thoroughly analyzed. However, the study has some kind of limitations, which need further investigations by researchers in the future.

The findings of this study cannot be generalized to the entire Ethiopia. The study was limited in scope to Addis Ababa city public hospitals (AACPH) only. Due to financial reasons together with the recent political unrest in regions the author was unable to address regional hospitals in the study. Encompassing hospitals in other urban centers of the country may have enhanced the comparability of outcomes and generalizability of state of health care service provision to the entire country. Thus, comparative study that would broaden the scope would generate more meaningful and useful outcomes than the present study. Therefore, future researchers may compare AACPH with other cities or one regional state with other regional states or among regional states. It is, therefore, important to suggest a comparative research between or among different cities in the country.

Due to unavailability of adequate data (5-10 years hospital input/output data) the researcher was unable to estimate operational efficiency of public hospitals using DEA approach. Estimating operational efficiency would have contributed in understanding the relationship between operational efficiency and other health care service dimensions and value for money. Therefore future researchers may involve hospital operational efficiency estimation using relevant inputs, outputs and techniques of efficiency measurement.

In addition to including the perspectives of officials of AACPH and FMoH, the researcher has exerted a great deal of effort to secure the views of politicians and policy makers regarding the health care service of the country in general and Addis Ababa city in particular. However, material evidence was not obtained due to the unwillingness of these parties. Having the views of policy makers and politicians may have helped to corroborate evidence from other sources. Thus

Future researchers may encompass politicians and policy makers as research participant in order to include their viewpoints, especially on the prevailing political commitment of leaders in strengthening health care service.

The researcher has keen interest to pursue his future career in the area of health care service research particularly in efficiency estimation using DEA and SFA approaches.

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Appendices

Appendix 1: Questionnaire Distributed to Respondents

Addis Ababa University

Colleague of Business and Economics

Department of public administration and development management

Title: The state of public health care service in ethiopia: health service quality, accessibility and operational efficiency in the case of addis ababa public hospitals

Dear Respondents,

Thank you for devoting your time to complete this questionnaire. I, Tofik Musema, am currently studying PhD in Public administration at the University of Addis Ababa School of Business and Economics, and I am expected to conduct a research as required for fulfilment. The main purpose of this study is to investigate the contribution of health care reform measures to improvement in health care quality, accessibility and efficiency of Ethiopian public hospitals.

In the first place, I would like to remind you that genuine and candid response to the questions has a great value for the success of the study, and has no any effect on you. The purpose of this questionnaire is to secure data to assess the contributions of health care reform measures to improvement in health care quality, accessibility and efficiency of selected public hospitals. The interview is entirely voluntary and strict confidentiality will be maintained and no reports of this study will ever identify you in any way.

Thank you for cooperation!

Name of the hospital _____ Questionnaire No. _____

PART ONE: Socio demographic Characteristics of respondents

Instruction: please put tick (√) mark in the box

Type of patient	Inpatient <input type="checkbox"/>			Out patient <input type="checkbox"/>		
Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>				
Age range	18-25 <input type="checkbox"/>	26-35 <input type="checkbox"/>	36-45 <input type="checkbox"/>	46-55 <input type="checkbox"/>	Above 55 <input type="checkbox"/>	
Occupation	Government employee <input type="checkbox"/>	Private Employee <input type="checkbox"/>	House wife <input type="checkbox"/>	Merchan <input type="checkbox"/>	Farmer <input type="checkbox"/>	unemployed <input type="checkbox"/>
Level of education	12 grade and under <input type="checkbox"/>	certificate <input type="checkbox"/>	Diploma <input type="checkbox"/>	Degree <input type="checkbox"/>	Above BA degree <input type="checkbox"/>	
Have you referred by another medical institution to this hospital?	Yes <input type="checkbox"/>			NO <input type="checkbox"/>		
If your answer for the above question is yes, from what kind of facility?	Health center <input type="checkbox"/>		Private hospita <input type="checkbox"/>			
	Public hospital <input type="checkbox"/>		Private clinic <input type="checkbox"/>			
	Public Clinic <input type="checkbox"/>					

If you have visited public hospitals without prior visit to other primary level public health care facilities, (health centers) indicate your reason briefly:

PART II- QUESTIONS PERTINENT TO RESEARCH OBJECTIVES

Instructions:

- ✓ Please indicate your responses for all questions by marking “√” in the block that you feel are the most appropriate.
- ✓ Please read the numbers as follows: Strongly agree (5), Agree (4), Neutral (3), Disagree (2), strongly disagree (1).
- ✓ Please answer the questions as honestly, frankly, and objectively as possible. The researcher understands the fact that there are no right/wrong answers and your response only reflects your personal perspective regarding the issue in question.

Effectiveness is an element of technical quality which refers to the accuracy of the medical diagnoses and procedures or the compliance of professional specifications and the adequacy of physical infrastructure of the hospitals.						
S.#	Dimensions	1	2	3	4	5
	I - Effectiveness					
E-1	The doctors are more thorough in treating and examining me					
E-2	Doctors are good about explaining the reason for medical tests					
E-3	When I go for medical care , they are careful to check everything when treating and examining me					
E-4	During my medical visits , I am always allowed to say everything that I think is important					
E-5	I have some doubts about the ability of the doctors who treated me					
E-6	Sometimes I feel Some of the doctors I have seen lack experience with my medical problems					

E-7	Sometimes the doctors make me wonder if their diagnosis is correct								
E-8	I think the hospital has everything needed to provide complete medical care								
E-9	The hospital is clean and has a pleasant appearance and interior								
E-10	The hospital has clean and good-looking personnel								
E-11	The hospital Keeps my records properly								
E-12	The hospital performs the medication as promised								
E-13	Satsfied with the overall efectiveness of the service								
Your Comments : Please feel free to write any comments about the hospital service effectiveness i.e. competence of personnel, soundness of infrastructure, success of operation, and change in health state).									
Safety: The dimension of safety means the degree to which hospital health care processes avoid, prevent, and ameliorate adverse outcomes or injuries that stem from the processes of health care itself. A hospital is considered to provide health care service safely when it has the appropriate structure, and uses care delivery processes that measurably prevent or reduce harm or risk to patients, and health care providers.									
	II – Safety	1	2	3	4	5			
S-1	Doctors never expose me to unnecessary risk								
S-2	Medical personnel cares patients safely								
S-3	Medical personnel are seen professional to feel safe								
S-4	I Feel safe during medical operations								
S-5	The hospital’s procedures & systems are good at preventing errors from Happening & causing injuries								
S-6	Hospital is safe								
S-7	The doctors have prescribed the right drug for my pain								
S-8	I have faced no drug complication(drug incompatibility)								
S-9	Satisfied with advice given to me from health professionals regarding risk factors & precautions to take after I left the hospital.								
S-10	Satisfied with overall safety procedures								
Your Comments: Please feel free to write any comments about health care service safety (injuries, procedures, drug compatibility problems).									
Responsiveness: Responsiveness refers to placing patients at the center of care and service delivery by paying particular attention to patients’ and their families’ needs, expectations, autonomy, access to hospital support networks, communication, confidentiality, dignity, choice of provider and desire for prompt, and timely care									
	III. Responsiveness	1	2	3	4	5			
R-1	Health professionals courtesy and respect is satisfactory								
R-2	Medical personnel are sympathetic for patients’ problems								
R-3	Medical personnel Have individual attention to patients								
R-4	Medical personnel are always willing to help patients								
R-5	Health care professional’s explanation of my health condition was understandable.								
R-6	Medical personnel always have time for patients								
R-7	Medical personnel always explain medical implementations to patients								
R-8	Confidentiality of information Provided by patients is preserved (except if the Information is needed by other health care providers).								
R-9	Consultations carried out in a manner that protects patient confidentiality								
R-10	consent is sought before testing or starting treatment								
R-11	The doctors do not use medical terms without explaining what they mean								
R-12	The doctors who treated me have a genuine interest in me as a person								
R-13	The doctors do not make me feel foolish								
R-14	Doctors always do their best to keep me from worrying								
R-15	Doctors listen carefully to what I have to say								
R-16	Doctors are not too businesslike and impersonal towards me								
R-17	My doctors treats me in a very friendly and courteous manner								
R-18	Satisfied with overall res[onsiveness of the hospital service								

Your Comments: Please feel free to write any comments about responsiveness of the hospitals service provision.

Access: is the opportunity to reach and obtain appropriate health care services in situations of perceived need for care. In the context of this study access will refer to the presence of physical (availability & accommodation), economic (affordability), temporal (appropriateness) and cultural dimension. Physical dimensions represent access to general health care supplies and the ease of travelling to health care provider locations, while economic dimensions are those related to the cost of seeking and obtaining health care in relation to a patient's or household's income. Temporal dimension of access is the time required to receive services, such as an appointment wait-time, time spent while waiting in reception, receiving treatment, and waiting for the next appointment. The cultural dimension of access signifies the acceptability of health services, such as delivering services using languages and mode of communication suitable to patients, and indiscrimination of patients.

	IV. accessibility	1	2	3	5	4
	<u>If I need hospital care , I can get admitted without any trouble</u>					
A-1	Waiting time before getting the service is acceptable					
A-2	It's Possible to get medical care on short notice					
A-3	It is easy for me to get medical care in an emergency					
A-4	Where I get medical care , people should not have to wait too long for emergency treatment					
A-5	The Hospital has a medical operations on time					
A-6	Appointment time is always suitable for patients					
A-7	If I have a medical question , I can reach a doctor for help without any problem					
A-8	I have easy access to the medical specialists I needed					
A-9	I'VE got the ordered laboratory tests in the hospital laboratory					
A-10	The ordered laboratory tests in the hospital's laboratory delivered fast					
A-11	I'VE got all the prescribed drugs in the hospital's pharmacy					
A-12	I've Received services using languages and mode of communication suitable to me.					
A-13	I have faced no discrimination					
A-14	I've never worried about having to pay large medical bills					
A-15	Sometimes it is a problem to cover my share of the cost of medical care visit					
A-16	I feel that I can get the medical care I needed without being set back financially					
A-17	Sometimes I go without medical care I needed because it is too expensive					
A-18	Regardless of the health problems I have now or develop later, I feel protected from financial hardship					
A-19	The amount I have paid for medical care needed is reasonable					
A-20	satisfied with the overall accesabilty of medical service					

You're Comments: Please feel free to write any comments about the hospital's service accessibility (i.e. physical, temporal, financial and economic).

Patients overall Experience of hospital service	1	2	3	4	5
I have a good experience with the hospital's service(I am satisfied with the medical care I receive)					
I recommend the service I have got here to be used by friends and families.					
There are things about the system I received my care that needs to be improved					

Appendix 2: Interview Guide for Key Informant Interviews

Addis Ababa health bureau officials Interview Guide

Addis Ababa University

College of Business and Economics

Department of Public Administration and Development Management

PhD Program in Public Management and Policy

Research Title: “The state of public health care service in Ethiopia: health service quality, accessibility and operational efficiency in the case of Addis Ababa public hospitals”. In-depth semi structured interview protocol to collect data from Addis Ababa health bureau, Ministry of health and Hospital administrators

Interview Date: _____ Time: _____

Location: _____ Organization: _____

Qualification of the interviewee: _____ Year of experience: _____

Current Position: _____ Interviewer: _____

Introduction:

Thank you for your contribution to this thesis as a respondent. This interview is conducted to collect data for the PhD research entitled “The state of public hospitals health care service provision in Ethiopia: The case of Addis Ababa public hospitals”. Your experiences and reflections will significantly add value as an input to this thesis. I assure you that the information you provide will be used only for academic research purpose and anonymity of the respondent will be maintained throughout the research process. Thank you for your cooperation.

I. Quality of public hospitals services under AAHCB

1. What do you think are the challenges facing health service delivery in Addis Ababa City in the following areas?
 - a. Health facility: adequacy, quality, accessibility etc..
 - b. Health professionals: Adequacy, professional, motivation etc.
 - c. Health financing: Adequacy, self-sufficiency, sustainability etc
 - d. The safe delivery of health care services
 - e. Responsiveness of of the public hospitals
2. How do you evaluate the implemtnaion of various health care reform guidelines of health care facilitifes?

II- *accessibility of health care services of public hospitals services under AACHB*

- a) How do you evaluate the affordability and availability of health care services in the city in genral and public hospitals in aprtcular?
- b) How do you evaluate the availability and affordability of drugs in the public hospitals phramcy and other pharmacies owned by the AACHB?

III- Efficiency of health care services provision and expenditure management practice of public hospitals under AACHB

- a. How do you evaluate the efficiency of health care service provision of the hospitals?
- b. How do you evaluate the procurement procedure and practice of the the public hospitals under AAHB? Openness and clarity of the procurement policy;The extent to which the selection rules do not give room for orruption and abuse of resources

Interview guide for public hospitals health care professionals

**Addis Ababa University
College of Business and Economics
Department of Public Administration and Development Management
PhD Program in Public Management and Policy**

Research Title: “The state of public health care service in ethiopia: health service quality, accessibility and operational efficiency in the case of addis ababa public hospitals”. In-depth semi structured interview protocol to collect data from Addis Ababa health bureau, Ministry of health and Hospital administrators

Interview Date: _____ Time: _____

Location: _____ Organization: _____

Qualification of the interviewee: _____ Year of experience: _____

Current Position: _____ Interviewer: _____

Thank you for your contribution to this thesis as a respondent. This interview is conducted to collect data for the PhD research entitled “The state of public hospitals health care service provision in Ethiopia: The case of Addis Ababa public hospitals”. Your experiences and reflections will significantly add value as an input to this thesis. I assure you that the information you provide will be used only for academic research purpose and anonymity of the respondent will be maintained throughout the research process. Thank you for your cooperation.

I. Health care service quality of public hospitals

1. Challenges faced reagarding health care service delivery of your hospital
2. Satisfaction with remuneration and provision of health cae service in the hospital

II- *Accessibility of health care services*

How do you evaluate the overall aceedsability of your hospitals services to patients ?

III- Efficiency of health care services provision and expenditure management practice of public hospitals under AACHB

1. How do you evaluate the efficiency of health care service provision of your hospitals?
2. How do you evaluate the procurement and expenditure management practice of your hospital?

Interview guide for officials of Ministry of health

Addis Ababa University

College of Business and Economics

Department of Public Administration and Development Management

PhD Program in Public Management and Policy

Research Title: “The state of public health care service in Ethiopia: health service quality, accessibility and operational efficiency in the case of Addis Ababa public hospitals”. In-depth semi structured interview protocol to collect data from Addis Ababa health bureau, Ministry of health and Hospital administrators

Interview Date: _____ Time: _____

Location: _____ Organization: _____

Qualification of the interviewee: _____ Year of experience: _____

Current Position: _____ Interviewer: _____

Thank you for your contribution to this thesis as a respondent. This interview is conducted to collect data for the PhD research entitled “The state of public hospitals health care service provision in Ethiopia: The case of Addis Ababa public hospitals”. Your experiences and reflections will significantly add value as an input to this thesis. I assure you that the information you provide will be used only for academic research purpose and anonymity of the respondent will be maintained throughout the research process. Thank you for your cooperation.

1. The achievements of health care service reform measures on providing quality health care service, challenges, and further policy concerns of ensuring quality health care service.
2. The achievements of health care service reform measures on accessibility of health care services, challenges, further policy Concerns of ensuring accessibility.
3. Operational Efficiency of health care service provider facilities and the practice of expenditure management, challenges and future policy concerns.

✓ Value for money

✓ Procurement of drugs and other supplies

Appendix 3: public hospitals observation Checklist

No.	Things observed	Observers notes
1	Organization of hospitals and how hospitals are organized	
2	Patient Admission processe	
3	Coordination and integration of care	
4	Management of patient records	
5	Performance of health care professionals in their duty	
6	Patiets and facilities of cardio vascular, cancer ,daibets	
7	How health care professional are treating patients	
8	Availability of health care service equipments	
9	Safety procedures	
10	Responsiveness of staff	
11	AVailability of enogh toilets and water in the facilities	
12	Physical comfort and cleanliness of the facility	
13	Availability of adequate and suitable waiting facilities	
14	Suitability of the facility for disabled	
15	Reasonableness of the time taken to provide services to patients	
16	Patient physician communication	
17	Availability of drugs in the pharmacies of the hospitals	
18	Affordability of drugs in the pharmacies of the hospitals	
19	Availability of overall hospiatal amenties	

Appendix 4: statistical figures on effectiveness sub dimension of quality

Tests for reliability of data

Reliability Statistics	
Cronbach's Alpha	.814
No of Items	13

Model summery

Model Summary			
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	221.114 ^a	.460	.657

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

Test for suitability of data for factor analysis

KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.770
Bartlett's Test of Sphericity	Approx. Chi-Square	2562.549	
	df	55	
	Sig.	0.000	

Total Variance Explained

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings				Rotation of sum SQL
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	3.947	35.879	35.879	3.947	35.879	35.879	3.856
2	2.290	20.815	56.694	2.290	20.815	56.694	2.510
3	1.684	15.310	72.004	1.684	15.310	72.004	1.692
4	1.013	9.209	81.213	1.013	9.209	81.213	1.040

Factors analysis of effectiveness variables

Variables in the equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Effectiveness1	1.147	.466	6.049	1	.014	3.147
Effectiveness2	1.834	.557	10.858	1	.001	6.258
Effectiveness3	1.113	.364	9.323	1	.002	3.042
Effectiveness4	-.324	.320	1.024	1	.312	.723
Constant	-11.231	1.612	48.535	1	.000	.000

a. Variable(s) entered on step 1: Effectiveness1, Effectiveness2, Effectiveness3, and Effectiveness4.

Appendix 5: statistical figures on safety sub dimension of quality

Tests for reliability of data

Reliability Statistics	
Cronbach's Alpha	N of Items
.862	10

Tests for Suitability of data for factor analysis

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.928
Bartlett's Test of Sphericity	2675.671
Approx. Chi-Square	
Df	36
Sig.	.000

Factors analysis of safety -

Factors analysis of safety -							
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.591	51.012	51.012	4.591	51.012	51.012	4.030
2	1.245	13.829	64.841	1.245	13.829	64.841	2.438
3	.960	10.670	75.511				
4	.843	9.365	84.876				
5	.525	5.830	90.706				
6	.435	4.832	95.537				
7	.278	3.091	98.628				
8	.123	1.372	100.000				
9	2.776E-016	3.084E-015	100.000				

Extraction Method: Principal Component Analysis.

Variables in the equation									
		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	saf1	1.593	.230	47.758	1	.000	4.916	3.129	7.723
	saf2	1.985	.248	63.972	1	.000	7.282	4.477	11.845
	Constant	-12.692	1.234	105.852	1	.000	.000		

a. Variable(s) entered on step 1: saf1, saf2.

Variables in the equation

Appendix 6: statistical figures on responsiveness sub dimension of quality

Reliability tests

Reliability Statistics	
Cronbach's Alpha	N of Items
.761	18

Test for suitability of data for factor analysis :KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.664
Bartlett's Test of Sphericity	Approx. Chi-Square	1862.251
	Df	21
	Sig.	.000

Factor analysis.

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.270	23.723	23.723	4.270	23.723	23.723
2	2.990	16.612	40.335	2.990	16.612	40.335
3	2.334	12.969	53.304	2.334	12.969	53.304
4	1.810	10.054	63.358	1.810	10.054	63.358
5	1.129	6.271	69.629	1.129	6.271	69.629
6	.888	4.933	74.562			
7	.803	4.462	79.024			
8	.699	3.882	82.906			
9	.602	3.344	86.250			
10	.537	2.982	89.232			
11	.460	2.558	91.790			
12	.400	2.224	94.013			
13	.371	2.061	96.074			
14	.263	1.463	97.537			
15	.185	1.029	98.566			
16	.135	.750	99.316			
17	.123	.684	100.000			
18	-3.053E-016	-1.696E-015	100.000			

Extraction Method: Principal Component Analysis.

Variables in the equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	responsiveness1	.986	.260	14.369	1	.000	2.682	1.610	4.466
	responsiveness2	.925	.249	13.756	1	.000	2.521	1.547	4.110
	responsiveness3	1.962	.378	26.993	1	.000	7.112	3.393	14.909
	Responsiveness4	2.619	.420	38.951	1	.000	13.716	6.027	31.216
	Responsiveness5	-.248	.300	.683	1	.409	.780	.433	1.406
	Constant	-20.892	2.162	93.405	1	.000	.000		

a. Variable(s) entered on step 1: responsiveness1, responsiveness2, responsiveness3, Responsiveness4, Responsiveness5.

Appendix 7: statistical figures on temporal sub dimension of access

Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.819	7

Test for Suitability of data for factor analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.711
Bartlett's Test of Sphericity	Approx. Chi-Square	1558.645
	Df	10
	Sig.	.000

Factor analysis

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.195	53.242	53.242	3.195	53.242	53.242
2	1.101	18.347	71.589	1.101	18.347	71.589
3	.837	13.952	85.541			
4	.608	10.132	95.673			
5	.224	3.737	99.410			
6	.035	.590	100.000			

Logistic regression analysis

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Accessibility1	2.758	.364	57.368	1	.000	15.766
	Accessibility2	2.134	.301	50.101	1	.000	8.444
	Constant	-12.734	1.362	87.348	1	.000	.000

a. Variable(s) entered on step 1: Accessibility1, Accessibility2.

Appendix 8: statistical figures on availability sub dimension of access

Cronbach's Alpha	N of Items
.790	8

Reliability Statistics

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.664
Bartlett's Test of Sphericity	Approx. Chi-Square	1862.251
	Df	21
	Sig.	.000

Factor analysis

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.445	49.213	49.213	3.445	49.213	49.213
2	1.551	22.153	71.366	1.551	22.153	71.366
3	1.028	14.686	86.052	1.028	14.686	86.052
4	.920	13.140	99.193			
5	.037	.523	99.716			
6	.012	.166	99.882			
7	.008	.118	100.000			
Extraction Method: Principal Component Analysis.						

Appendix 9: statistical figures on affordability sub dimension of access

Reliability Statistics		
Cronbach's Alpha	N of Items	
.690	7	
Test for Suitability of data for factor analysis		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.649	
Bartlett's Test of Sphericity	Approx. Chi-Square	890.899
	df	15
	Sig.	.000

Factor analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.513	41.886	41.886	2.513	41.886	41.886
2	1.426	23.759	65.645	1.426	23.759	65.645
3	1.003	16.709	82.355	1.003	16.709	82.355
4	.552	9.199	91.553			
5	.396	6.594	98.148			
6	.111	1.852	100.000			

Extraction Method: Principal Component Analysis.

Logistic regression analysis

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	Accessibility14	1.785	.367	23.684	1	.001	5.957
	Accessibility15	1.878	.240	61.160	1	.000	6.542
	Accessibility16	1.545	.382	16.367	1	.002	4.689
	Constant	-14.949	1.683	78.887	1	.000	.000

a. Variable(s) entered on step 1: Accessibility14, Accessibility15, and Accessibility16.