

**SCHOOL OF PUBLIC HEALTH**  
**COLLEGE OF HEALTH SCIENCES**  
**UNIVERSITY OF GHANA**



**ASSESSMENT OF QUALITY OF HEALTHCARE IN NATIONAL HEALTH  
INSURANCE CREDENTIALLED HOSPITALS IN THE GREATER ACCRA REGION**

**BY**  
**NICHOLAS AFRAM OSEI**  
**(10051534)**

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN  
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A  
DOCTOR OF PHILOSOPHY IN PUBLIC HEALTH DEGREE**

**APRIL 2023**

**DECLARATION**

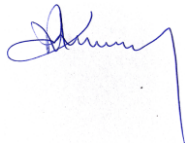
I, Nicholas Afram Osei, do hereby declare that apart from references made for which due acknowledgment has been made, the thesis is my personal work.



27/04/2023

.....  
Nicholas Afram Osei  
(Student)

.....  
Date



.....27/04/2023.....

.....  
Prof. Patricia Akweongo  
(Supervisor)

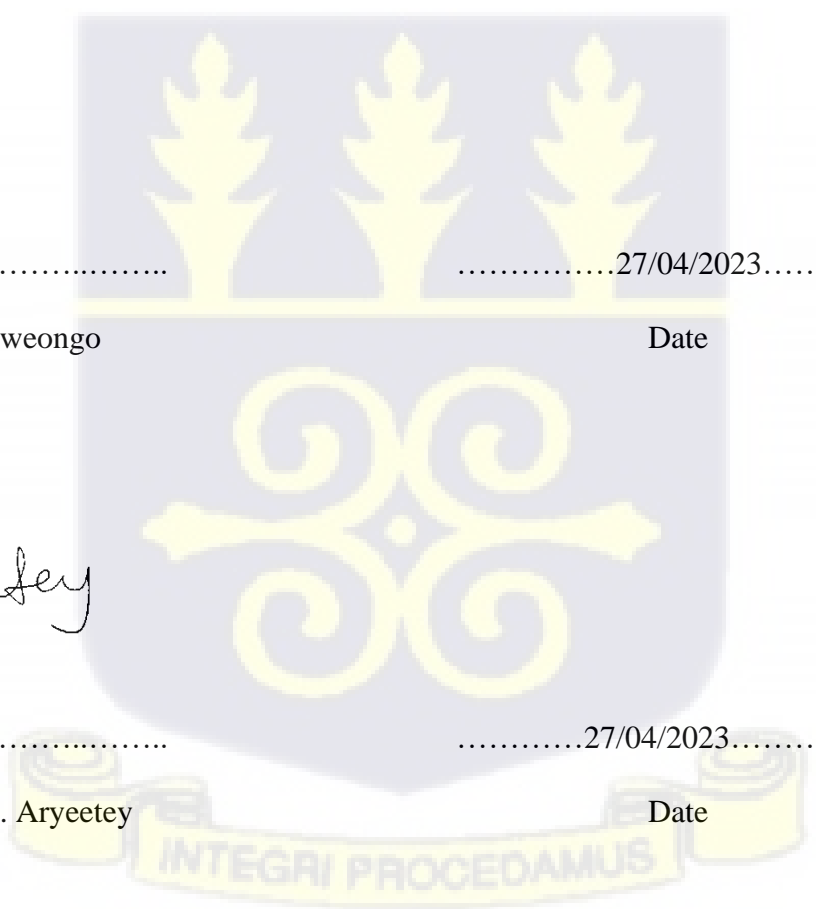
.....  
Date



.....27/04/2023.....

.....  
Dr. Genevieve C. Aryeetey  
(Supervisor)

.....  
Date



## **DEDICATION**

This thesis is dedicated to my wife and children, my parents and siblings, relatives, friends, and co-workers.



## ACKNOWLEDGEMENT

I would like to acknowledge the contributions of the under-listed for their diverse contributions in helping to come out with this document. The Almighty God for how far he has brought me and seeing me through the course amidst all the challenges.

Prof. Patricia Akweongo and Dr. Genevieve Aryeetey for supervising this work.

Dr. Augustine Adomah-Afari, SPH.

Faculty members and staff of the School of Public Health (SPH) especially the Department of Health Policy Planning and Management (HPPM) for their advice and encouragement.

I also extend my heartfelt gratitude to the examiners.

I thank my wife and children for their support and prayers.

The followings are also acknowledged:

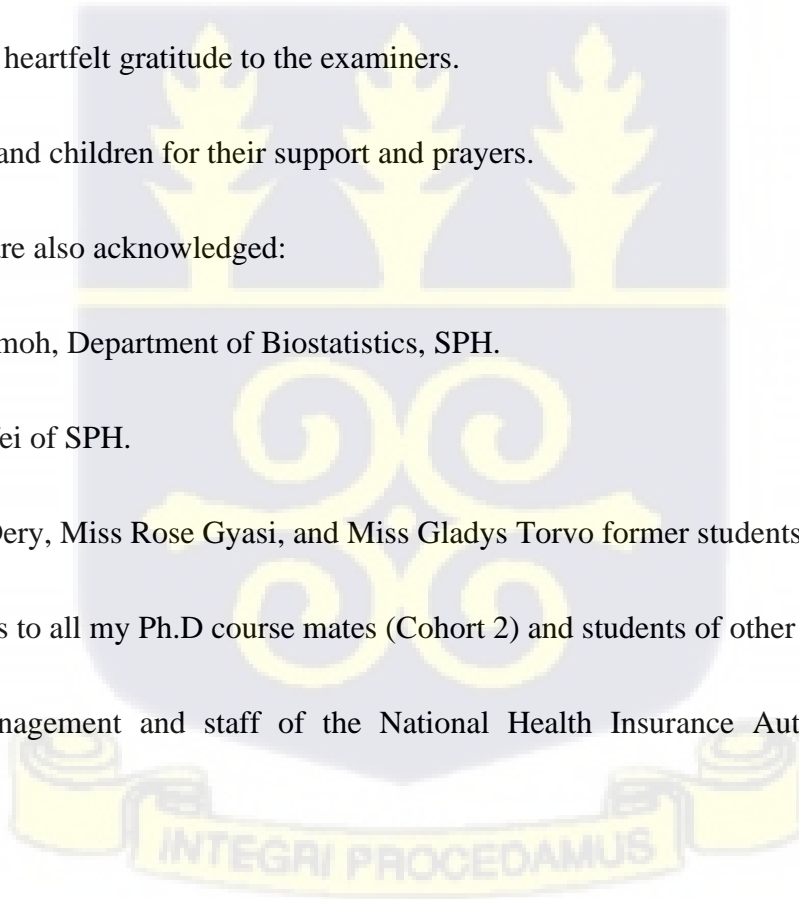
Prof. Duah Dwomoh, Department of Biostatistics, SPH.

Miss Marian Offei of SPH.

Mr. Richmond Dery, Miss Rose Gyasi, and Miss Gladys Torvo former students of SPH.

I also give thanks to all my Ph.D course mates (Cohort 2) and students of other cohorts.

I thank the management and staff of the National Health Insurance Authority for partial sponsorship.



**Table of Contents**

<b>DECLARATION</b> .....	<b>i</b>
<b>DEDICATION</b> .....	<b>ii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iii</b>
<b>LIST OF FIGURES</b> .....	<b>viii</b>
<b>LIST OF TABLES</b> .....	<b>ix</b>
<b>LIST OF ABBREVIATION</b> .....	<b>x</b>
<b>ABSTRACT</b> .....	<b>xii</b>
<b>CHAPTER ONE</b> .....	<b>1</b>
<b>INTRODUCTION</b> .....	<b>1</b>
<i>1.1 Background to the Study</i> .....	<b>1</b>
<i>1.2 Problem Statement</i> .....	<b>3</b>
<i>1.3 Justification of the study</i> .....	<b>5</b>
<i>1.4 Objectives</i> .....	<b>6</b>
1.4.1 General Objective.....	<b>6</b>
1.4.2 Specific objectives.....	<b>6</b>
<i>1.5 Research Questions</i> .....	<b>7</b>
<b>CHAPTER TWO</b> .....	<b>8</b>
<b>LITERATURE REVIEW</b> .....	<b>8</b>
<i>2.1 Introduction</i> .....	<b>8</b>
2.1.0 Quality of Health Care Services.....	<b>9</b>
2.1.2 Types of Classifications of Quality of Care .....	<b>12</b>
Theoretical Review .....	<b>14</b>
2.1.3 Quality Models .....	<b>14</b>
2.1.3.1 Technical and Functional Quality Model.....	<b>14</b>
2.1.3.2 Servqual or Gap Model.....	<b>15</b>
2.1.3.3 Attribute Service Quality Model.....	<b>15</b>
2.1.3.4. Synthesised Service Quality Model .....	<b>16</b>
2.1.3.5 Performance Only Model.....	<b>17</b>
2.1.3.6 Donabedian’s Quality Assessment Model .....	<b>17</b>
2.1.3.7 Outcome .....	<b>19</b>

2.1.4 Quality Dimensions .....	20
Empirical Review of the Quality of Care .....	19
2.1.5.1 Structure assessment .....	19
2.1.6 Process Assessment.....	25
2.1.7 Outcome Assessment .....	27
2.1.8 Health Insurance and Quality of Care among Insured and Uninsured .....	29
2.2.3 Health Care Financing. ....	35
2.2.3.1 Tax Funding .....	36
2.2.3.2 Out-of-Pocket Payment or User Fees. ....	37
2.2.3.3 Prepayment or Insurance System .....	38
2.2.3.3.1 Mandatory Health Insurance .....	39
2.2.3.3.2 Voluntary Health Insurance or Private Health Insurance.....	39
2.3.2 Utilisation of Health Services under the National Health Insurance Scheme in Ghana....	40
2.4 <i>NHIA and Credentialing of facilities</i> .....	41
2.4.1 Credentialing.....	41
2.4.2 Claims reimbursement .....	42
2.5 <i>Provider Experiences of Claims Reimbursement on Quality of Health Care</i> .....	44
2.6 <i>Conceptual Framework</i> .....	45
2.7 <i>Summary of the Literature</i> .....	49
<b>CHAPTER THREE</b> .....	<b>50</b>
<b>METHODS</b> .....	<b>50</b>
3.1 <i>Introduction</i> .....	50
3.2 <i>Study Design</i> .....	52
3.3 <i>Study Area</i> .....	52
3.4 <i>Study Population</i> .....	56
3.4.1 Inclusion Criteria .....	56
3.4.2 Exclusion Criteria .....	57
3.5 <i>Study Variables</i> .....	57
3.5.1 Dependent / Outcome Variable.....	57
3.5.2 Independent Variables.....	57
3.6 <i>Sampling</i> .....	61
3.6.1 Sample Size Determination.....	61
3.6.2 Sampling Method .....	62
3.7 <i>Data Collection</i> .....	67
3.7.1 Qualitative Data Collection (Key Informant Interview (KII)).....	67
3.7.2 Documentary Review/Medical Records Review .....	68
3.7.3 Quantitative Data Collection .....	68
3.7.4 Data Quality Assurance.....	70

3.7.5 Data Analysis.....	70
3.7.5.1 Qualitative Data Analysis .....	70
3.7.5.2 Quantitative Data Analysis .....	71
<b>3.8 Ethical Considerations .....</b>	<b>72</b>
3.8.1 Ethical Clearance .....	72
3.8.2 Permission from the Study Sites .....	72
3.8.3 Informed Consent.....	73
3.8.4 Confidentiality and Anonymity .....	73
3.8.5 Data Storage and Usage.....	73
3.8.7 Risk and Benefits.....	74
3.8.8 Results Dissemination.....	74
3.8.9 Conflict of Interest.....	74
<b>3.9 Summary of the Chapter.....</b>	<b>74</b>
<b>CHAPTER FOUR .....</b>	<b>75</b>
<b>RESULTS.....</b>	<b>75</b>
<i>4.0 Introduction to the chapter .....</i>	<i>75</i>
<i>4.1 Socio-demographic and Socioeconomic Characteristics of Health Workers.....</i>	<i>75</i>
<i>4.2 Sociodemographic and Socioeconomic Characteristics of Patient Respondents .....</i>	<i>78</i>
<i>4.3 Assessing Structure Quality in Credentialed Hospitals.....</i>	<i>81</i>
4.3.1 Structure Quality Assessment based on Availability of Medicines.....	81
4.3.1.1 Availability of Staff in the Credentialed Hospitals .....	83
4.3.1.2 Credentialed Hospitals-Staff Availability Matrix.....	85
4.3.2 Availability Human Resource.....	86
4.3.3 Availability of Hospital Infrastructure .....	87
4.3.4 Availability of Financial Resources.....	89
4.3.5 Reasons Affecting Quality of Healthcare in the Credentialed Hospitals .....	90
<i>4.4 Assessment of Process Factors.....</i>	<i>96</i>
4.4.1 Characteristics of Patients whose Records were examined for the Standard of Treatment .....	96
4.4.2 Standard Treatment for Patients.....	98
4.4.3 Clinical Assessment of Treatment among Patients (Exit Interview).....	100
4.4.4 Assessment of Patients Waiting Time .....	101
4.5.1 Patients' Satisfaction with the Quality of Healthcare.....	103
4.5.2. Proportion of standard of care among the credentialed hospital.....	104
4.5.3 Distribution of standard of treatment (record review) in the credentialed hospitals .....	105
4.5.4 Chi-square analysis: Association between facility characteristics (ownership, prescriber type and insurance status) and standard of treatment .....	105
<i>4.6 Summary of the Chapter.....</i>	<i>106</i>

<b>CHAPTER FIVE.....</b>	<b>108</b>
<b>DISCUSSION OF FINDINGS .....</b>	<b>108</b>
<i>5.0 Introduction .....</i>	<i>108</i>
<i>5.1 Structure Quality.....</i>	<i>109</i>
5.1.1 Availability of Medicines .....	109
5.1.2 Infrastructure.....	109
5.1.3 Availability of Medical Equipment and Consumables .....	110
5.1.4 Availability of staff/Human resource .....	111
5.1.5 Availability of Financial Resources.....	112
5.1.6 Factors Influencing Quality .....	113
5.1.7 Quality of care under the NHIS .....	114
<i>5.2 Process Factor .....</i>	<i>116</i>
5.2.3 Outcome .....	119
5.2.3.1 Health workers' perception of quality of health care in the credentialed hospitals.....	119
<i>5.3 Summary of the Chapter.....</i>	<i>121</i>
<b>CHAPTER SIX.....</b>	<b>123</b>
<b>STUDY SUMMARY, CONCLUSION, AND RECOMMENDATIONS.....</b>	<b>123</b>
<i>6.1 Study summary .....</i>	<i>123</i>
6.1.2 Major findings concerning the objectives .....	123
6.1.3 Structural Factors .....	124
6.1.4 Process Factors.....	124
6.1.5 Outcome Factors .....	125
6.1.6 Reimbursement of claims .....	126
6.1.7 Comparing standard of treatment in the credentialed government, private and mission hospitals in the Greater Accra Region .....	126
<i>6.2 Conclusion.....</i>	<i>126</i>
<i>6.3 Recommendations .....</i>	<i>128</i>
<i>6.4 Study limitation .....</i>	<i>129</i>
<i>6.5 Further research .....</i>	<i>130</i>
<i>6.6 Study's Contribution to Knowledge. ....</i>	<i>130</i>
<b>REFERENCES.....</b>	<b>132</b>
<b>APPENDIX: I DATA COLLECTION TOOLS .....</b>	<b>168</b>
<b>APPENDIX II: ETHICAL APPROVAL LETTER.....</b>	<b>192</b>

**LIST OF FIGURES**

**Figure 1.1: Conceptual Framework for Assessing Quality of Health Care in NHIS’ Credentialed Hospitals.....46**

**Figure 3.1. Study Area (Greater Accra Region).....54**

**figure.4.2: - Patients’ Satisfaction with Quality of Healthcare .....103**



## LIST OF TABLES

<b>Table 2.1: Quality of Healthcare Definitions.....</b>	<b>12</b>
<b>Table 2.2: Quality Dimensions Postulates by Authors .....</b>	<b>18</b>
<b>Table 2.3: NHIS income and Expenditure Pattern-2010-2013 .....</b>	<b>43</b>
<b>Table 3.1: Number of Health Facilities in Greater Accra Region (GAR).....</b>	<b>55</b>
<b>Table 3.2: Operational Definition of Variable.....</b>	<b>58</b>
<b>Table 3.3: Proportionate Distribution of Sampled Respondents for Hospital Survey .....</b>	<b>65</b>
<b>Table 4.1: Sociodemographic/socioeconomic characteristics of the health workers in Credential health facilities.....</b>	<b>76</b>
<b>Table 4.2: Sociodemographic and Socioeconomic Characteristics of Patient Respondents .....</b>	<b>79</b>
<b>Table 4.3A: Staff Availability in the Credentialed Hospitals.....</b>	<b>84</b>
<b>Table 4.3B: Credentialed Hospitals-Staff Availability Matrix according to WISN from Table 4.3A .....</b>	<b>85</b>
<b>Table 4.4: Characteristics of Patients Medical Records Review .....</b>	<b>96</b>
<b>Table 4.5A: Standard Treatment for Patients.....</b>	<b>99</b>
<b>Table 4.6: Assessment of Waiting Time (Process Quality) in the Credentialed Hospitals. ....</b>	<b>102</b>
<b>Table 4.10: Distribution of responses on the standard of care among the credentialed hospital ....</b>	<b>104</b>
<b>Table 4.11: Chi-square analysis: Association between facility characteristics (ownership, prescriber type, and insurance status) and standard of treatment in the credentialed hospitals .....</b>	<b>106</b>



## LIST OF ABBREVIATION

ABBREVIATION	MEANING
BRFSS	Behavioral Risk Factor Surveillance System
CHAG	Christian Health Association of Ghana
CHI	Community Health Insurance
CHPS	Community-based Health Planning and Services
DEA	Data Envelopment Analysis
DHS	Demographic Health Survey
DMU	Decision Making Units
GHS	Ghana Health Service
Gov't	Government
GSS	Ghana Statistical Service
HMO	Health Maintenance Organization
IDI	In-Depth Interview
IOM	Institute of Medicine
KII	
MEPS	Medical Expenditure Panel Survey
MICS	Multistage Indicator Cluster Survey
MOH	Ministry of Health
NDPC	National Development Planning Commission
NHIA	National Health Insurance Authority
NHIL	National Health Insurance Levy
NHIS	National Health Insurance Scheme
NYS-SCHIP	New York State's State Children Health Insurance Program
OECD	Organization for Economic Corporation and Development
OOP	Out of Pocket Payment
OPD	Outpatient Department
PNDC	Provisional National Defense Council
SPH	School of Public Health
SSNIT	Social Security and National Insurance Trust

UHC	Universal Health Coverage
UK	United Kingdom
USA	United States of America
VAT	Value added Tax
WHO	World Health Organization



## ABSTRACT

### Background

Ghana introduced the National Health Insurance Scheme (NHIS) in 2003 to provide financial risk protection against the cost of basic quality care for residents. To ensure the achievement of high quality of healthcare, the National Health Insurance Authority (NHIA) credentialed health facilities are required to guarantee to provide services that will meet the satisfaction of the NHIS members. There have been wide reports of poor quality of care provided to insured clients in the National Health Insurance Scheme credentialed hospitals. Empirical data on quality of care in these hospitals as evidence for policy decision is limited and the factors contributing to poor quality in credentialed facilities are less explored.

### Objective

Using Donabedian's model of quality, this study evaluated the quality of healthcare in NHIS-credentialed hospitals including government, private, and mission facilities for both insured and uninsured patients in the Greater Accra Region.

### Methods

The study employed a cross sectional design using a mixed methods approach to collect data in selected hospitals (Public, Mission and Private). A multistage sampling technique was used. A simple random sampling method was applied to select the region while cluster sampling was used in selecting the hospitals. Purposive and convenient sampling methods were then applied in the selection of 630 patients and 250 health workers for the survey. The study reviewed medical

records and administered structured questionnaires to survey participants and key informant interview for hospital in-charges.

## **Results**

More than half (50.7%) of patients received good standard care with highest quality of care in private health hospitals and least in government hospitals.

There was no difference in quality of care for both insured and uninsured patients in private hospitals. However, the insured patients in mission hospitals reported that they received good quality of care compared with the uninsured, while in the government hospitals, the uninsured reported that they received good quality care.

More than half (51.3%) of respondents (insured and uninsured) indicated that they were satisfied with quality of healthcare received in the hospitals. (63.5%) of the insured and (36.5%) of uninsured reported they were satisfied with the healthcare accessed.

Regarding process quality, factors such patient confidentiality, staff attitudes, staff turnover, and prescribing restrictions had a significant impact on the standard of care provided in the credentialed facilities.

Results on structures how those credentialed facilities have adequate human resources according to WHO's WISN scores but insufficient financial and infrastructure resources.

Average waiting time of 31.13 minutes at the hospitals was close to Institute of Medicine (IOM) standard (30 minutes). Majority of patients (62.0%) received medicines prescribed.

## **Conclusion**

The assessment of healthcare quality in NHIS-credentialed hospitals, using Donabedian's model which includes structure, process, and outcome, indicated that all three aspects of quality were well-maintained. Both patients and health workers reported satisfaction with the quality of healthcare, showing no significant difference in care based on health insurance status. This suggests that the quality of healthcare provided to both insured and uninsured patients was comparable.

Moreover, the standard of treatment in these hospitals was found to be in line with the guidelines stipulated by health regulatory bodies. This alignment with treatment guidelines further supports the finding of good quality healthcare in NHIS-credentialed hospitals across government, private, and mission facilities in the Greater Accra Region.

## **Recommendations**

To improve the quality of care in health facilities, it is essential to increase training and recruitment of health workers, particularly pharmacists and midwives. Ensuring regular funding to the NHIA for claims reimbursement and timely vetting and payment of healthcare provider claims is also critical. Additionally, intensifying membership drives and improving enrollment initiatives, such as mobile phone renewals and workplace renewals, can boost participation. Addressing out-of-pocket payments for services and medicines covered by NHIS, with stakeholder collaboration, is necessary to sustain the scheme. Prompt claims payments to providers will ensure the availability of resources and enhance the quality of healthcare, addressing current issues caused by delays in reimbursements.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Health care quality remains a major challenge to both healthcare providers and users globally (Shenoy et al, 2017). Providing quality health care is one of the topmost priorities in any care delivery system (Shenoy et al, 2017). Achieving ultimate quality health care is confronted with several challenges with inadequate financing of health care as a major one (*Nketiah et al. (2019)*).

Substandard quality of care not only contributes to the global disease burden and unmet health needs, it also exerts a substantial economic impact, with considerable cost implications for health systems and communities across the world. Approximately 15% of hospital expenditure in high-income countries is used to correct preventable complications of care and patient harm (WHO, 2020). Poor-quality care disproportionately affects the more vulnerable groups in society, and the broader economic and social costs of patient harm caused by long-term disability, impairment, and lost productivity amount to trillions of dollars each year (Slawomirski et al, 2017).

Beyond the effects on people's lives, poor-quality care wastes time and money. Making quality an integral part of universal health coverage is both a matter of striving for longer and better lives and an economic necessity. Building quality in health systems is affordable for countries at all levels of economic development. The lack of quality is an unaffordable cost, especially for the poorest countries (WHO, 2018).

Irrespective of the country or its health system, the major concern of all health stakeholders is to ensure that quality care is delivered with the available limited resources. There is also evidence

that globally, there exists a gap between the health care received by patients and what they expected (Chang, BL. et al. 2020). There are also variations in practice at all levels of care resulting in outcomes that cannot be explained. (Flottorp, Jamtvedt, Gibis, & McKee, 2010).

For low- and middle-incomes countries (LMICs), focusing on quality as the hallmark for achieving universal health coverage represents a significant chance. A health system in the process of growth can be shaped, guided, and cultivated to align with the intended direction. Quality can be embedded into policies, processes, and institutions as the system grows and develops (Velenyi, 2016). There is also evidence that the impact of health interventions is undermined by the poor quality of care in LMIC (Akachi & Kruk, 2016).

Empirical evidence from the growing body of work on quality measurement indicates that there are gaps globally in all the domains of quality health services (Chang, BL. et al. 2020). These gaps present opportunities to improve the quality of care and the health of populations. For instance, an assessment of the Sierra Leonean health system revealed a low density of human resources for health, low capacity for disease surveillance in the community, infrastructural deficits in health facilities, and weak supply chain for essential medicines (Velenyi, 2016).

In trying to improve quality of health care, various forms of health care financing methods have been adopted by various countries including health insurance or prepayment systems, which provide greater financial protection to households (Preker & Carrin, 2004).

Ghana adopted the National Health Insurance Scheme (NHIS) in 2003 after experimenting with various health financing strategies such as taxes and out-of-pocket payments and community health insurance systems.

To help deliver on its mandate of providing quality and affordable healthcare for the citizens, the NHIA (National Health Insurance Authority) introduced new conditions in its credentialing process, a process that assesses the capacity of health facilities to provide quality care. One such condition required the facilities to meet the minimum standard of care set by the Health Facilities Regulatory Agency (HeFRA) and must have obtained an operating license from HeFRA. Obtaining the license confirmed that the facility has the minimum staffing, and infrastructure required to provide adequate care to patients.

This system is put in place to ensure that the problems regarding financial constraints, staffing, and basic infrastructure availability are addressed for basic health care delivery.

In 2017, a World Bank study by Wang et al, revealed that there is a direct link between high enrolment and high quality of care. From 2011 to 2014, the number of people who visited hospitals as inpatients increased from less than 0.5 per capita in 2005 to 3 per capita, while the number of people who used outpatient services increased from 0.5 per capita in 2005 to 1.1 per capita in 2014.

## **1.2 Problem Statement**

According to MacDonald, (2017), credentialing is a formal process that operates a recognized sequence of guidelines that assures patients that they are being treated by providers whose qualifications, training, licensure, and ability to practice medicine are acceptable. Credentialing also ensures that all healthcare workers are held to the same standard.

Despite the critical role of credentialed health facilities in providing essential healthcare services, there is a concerning gap in the assessment and assurance of quality healthcare in the Greater Accra

Region. The lack of comprehensive evaluation mechanisms and the inconsistent application of existing quality standards have led to variable healthcare outcomes and patient experiences. This problem is compounded by the region's rapid urbanization and population growth, which place additional strains on healthcare infrastructure and services. The absence of a robust system to assess and monitor the quality of healthcare in credentialed facilities not only hinders the ability to identify and address deficiencies in care but also undermines public trust and satisfaction in the healthcare system. Therefore, there is an urgent need to develop and implement a comprehensive assessment framework that can systematically evaluate the quality of healthcare services in credentialed health facilities within the Greater Accra Region, ensuring that all individuals have access to safe, effective, and high-quality care.

The credentialing process designed by the NHIA seeks to address healthcare issues in the areas of finance, staffing, adequate equipment, and proper operating systems. Facilities that obtain the HeFRA (Health Facilities Regulatory Agency) operating license have demonstrated fulfillment of the minimum requirements for these areas and are, therefore, to provide adequate basic quality care for patients. However, the effectiveness of the credentialing process translating into quality healthcare needs further testing to measure the healthcare outcomes. As reported by Duku et al, (2018) and (Nketiah et al. (2019). They indicated that NHIS is characterized by:

Long waiting times, inaccurate diagnoses, inappropriate prescriptions and advice, frequent drug stock-outs, prices of services, staff attitude, hospital environment, poor communication from providers to patients, and dissatisfaction with quality of care provided under the NHIS.

To inform health policy decisions, this study seeks to evaluate the quality of treatment in the NHIS's credentialed hospitals (government, private, and mission) from the perspectives of patients,

health workers, and care using the Donabedian quality assessment model of structure, process, and outcome.

### **1.3 Justification of the study**

Several studies, including those by Duku et al. (2018) and Nketiah et al. (2019), have assessed the healthcare quality under Ghana's NHIS, highlighting notable disparities in service quality between insured and non-insured clients at credentialed NHIS facilities.

The Greater Accra Region, as the economic and administrative hub of Ghana, experiences a confluence of factors that make the assessment of healthcare quality a complex and urgent matter. The region's burgeoning population places immense pressure on healthcare facilities, often stretching their capacity and resources. This dynamic environment necessitates a nuanced examination of how quality of care is maintained, compromised, or improved within credentialed health facilities.

Moreover, this research holds significant implications for healthcare policy and planning in Ghana. The findings are poised to inform the Ministry of Health and other stakeholders about the specific challenges and opportunities in maintaining and enhancing healthcare quality within credentialed facilities. This evidence-based approach to policy formulation and implementation is crucial for the efficient allocation of resources and the strategic improvement of healthcare services, ultimately ensuring that the national healthcare system is responsive to the needs of its population. By employing a mixed-methods approach, combining quantitative assessments with qualitative insights from healthcare providers and patients, this study aims to develop a robust and holistic understanding of healthcare quality in credentialed facilities in the region. The methodologies and

findings of this research will enrich the academic literature, providing a model for similar studies in other regions and contributing to the broader field of healthcare quality assessment.

## **1.4 Objectives**

The study objectives have been divided into general and specific objectives.

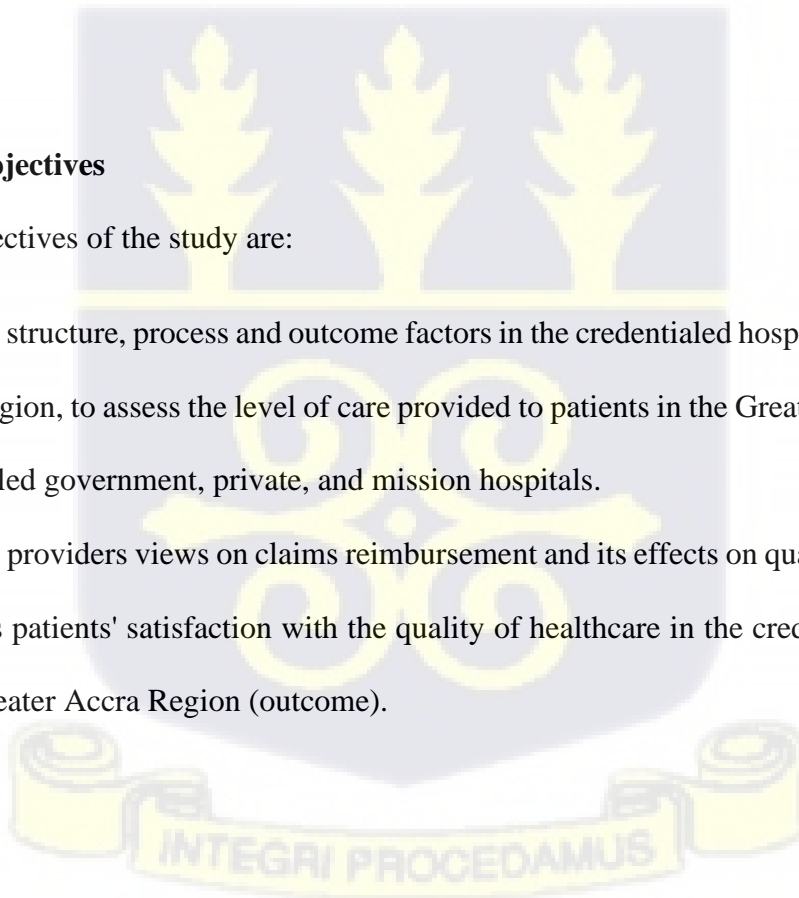
### **1.4.1 General Objective**

The general objective of the study is to assess the quality of healthcare in the National Health Insurance Scheme's credentialed hospitals (government, private, and mission) in the Greater Accra Region.

### **1.4.2 Specific objectives**

The specific objectives of the study are:

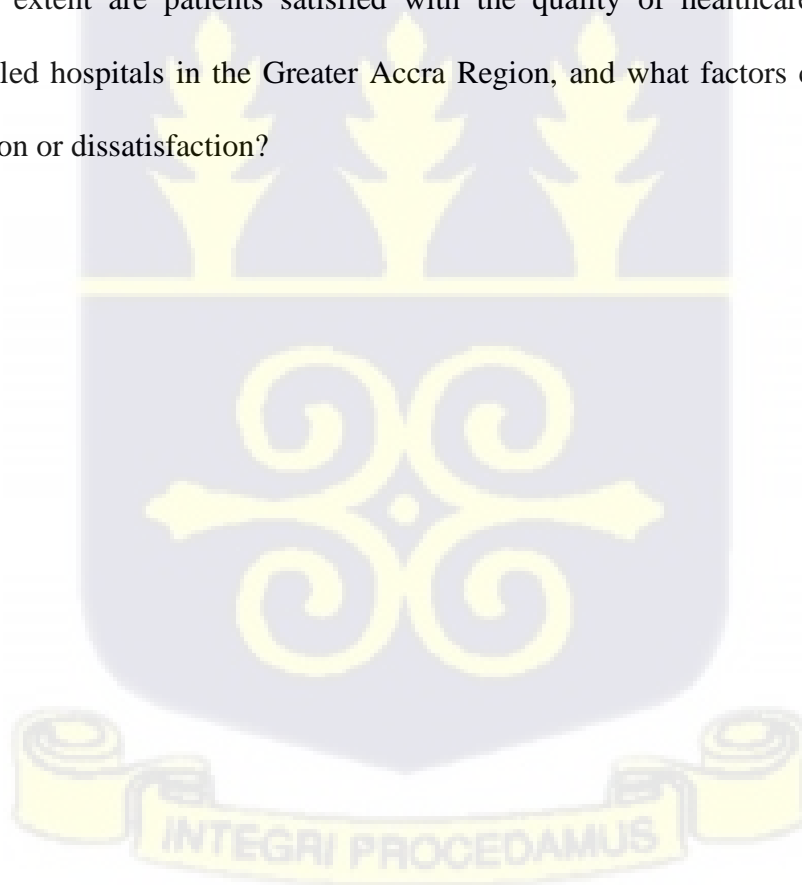
1. To assess structure, process and outcome factors in the credentialed hospitals in the Greater Accra Region, to assess the level of care provided to patients in the Greater Accra Region's credentialed government, private, and mission hospitals.
2. To assess providers views on claims reimbursement and its effects on quality of health care
3. To assess patients' satisfaction with the quality of healthcare in the credentialed hospitals in the Greater Accra Region (outcome).



### 1.5 Research Questions

The main research question is to assess the quality of healthcare in the NHIS credentialed health facilities (government, private and mission).

1. How do structure, process, and outcome factors in credentialed hospitals in the Greater Accra Region influence the level of care provided to patients across government, private, and mission hospitals?
2. What are the perspectives of healthcare providers on claims reimbursement in the Greater Accra Region, and how do they perceive its impact on the quality of healthcare services?
3. To what extent are patients satisfied with the quality of healthcare they receive in credentialed hospitals in the Greater Accra Region, and what factors contribute to their satisfaction or dissatisfaction?



## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

A review of papers and studies on the assessment of quality of the healthcare provided by health facilities is presented in this chapter. Articles and studies were retrieved from the internet by searching major terminologies and phrases in the study topic such as "health insurance," "quality of health care in credentialed hospitals," "health insurance and quality of health care," and "quality of health care among patients" in databases such as Google Scholar, PubMed, and MEDLINE, among others. These databases were used because they are well-known for their comprehensive coverage, credibility and extensive availability to a wide variety of peer-reviewed literature in the fields of medicine, health policy, and healthcare management. Using pertinent keywords, retrieval strategies were focused to filter only English-language, peer-reviewed papers that had been published within a given time window. To make sure that all pertinent papers were included, a methodical approach was taken, and abstracts were evaluated for relevancy. Only research addressing assessment of quality in credentialed facilities by patients was considered; research that did not were excluded. By reading the abstracts of the articles related to the topic selected and reviewed, they were appraised for their relevance to the issue.

A review of papers and studies on health insurance knowledge and quality is presented in this chapter. Articles and studies were retrieved from the internet by searching major terminologies and phrases in the study topic such as "health insurance," "quality of health care in credentialed hospitals," "health insurance and quality of health care," and "quality of health care among insured and uninsured" in databases such as Google Scholar, PubMed, and MEDLINE, among others. By

reading the abstracts of the articles related to the topic selected and reviewed, they were appraised for their relevance to the issue.

This chapter has been divided into two (2) major sections.

The first section is on the theoretical framework of quality of health and covers quality definitions, types, dimensions, assessment methods, and quality assessment model including Donabedian's (1988) model.

The second section which is the empirical review section covers all aspects of the objectives of the study. It focuses on quality of care among patients. Also included in this section are information on NHIA and facility credentialing, health care financing and how funding is delivered to the credentialed institutions.

The utilization of health care under NHIS in Ghana has also been analyzed in this section.

Addressing the quality of health care under various financing mechanisms and also how the National Health Insurance System (NHIS) reimburses health-care services as well as the study's conceptual framework.

### **2.1.0 Quality of Health Care Services**

Any healthcare system must deliver high-quality services that prioritize patient care while ensuring effective, efficient, and equitable medical treatments. This section contains a summary of these parameters.

To achieve the best health outcomes, these services must guarantee prompt, safe, and appropriate care, thereby improving population health, reducing disparities, and increasing patient satisfaction.

As McGlynn (1997) stated, "Quality of healthcare means balancing the competing views and needs of purchasers, patients, and healthcare professionals."

Blumenthal, (1996) provides different perspectives to quality of healthcare definitions and accordingly identified four (4) main quality perspectives: Health care professional perspectives; Patient perspective; Health care plan and organization Perspective; and Purchaser perspectives.

These were further extended as follows: health care workers prefer to describe quality in terms of features of service and results, resulting in a definition of quality that emphasizes technical excellence and characteristics of the patient-professional interaction (Blumenthal, 2000).

Patient perspective definition of quality considers the preferences and values of patients and their opinion about their care. It also addresses satisfaction of care as well as health outcomes such as morbidity, mortality, and functional status (Blumenthal, - 1996). The health care plan and organization perspective place greater emphasis on the general health of the population and the function of the organization (Blumenthal, - 1996). The definition from this perspective, therefore, considers the ability of the plan to meet the needs of those enrolled.

According to Darzi et al, (2023), Service quality in healthcare is multifaceted, encompassing elements like promptness, reliability, and the general management and administration of health services, according to a systematic analysis by Oxford Academic (Darzi et al., 2023).

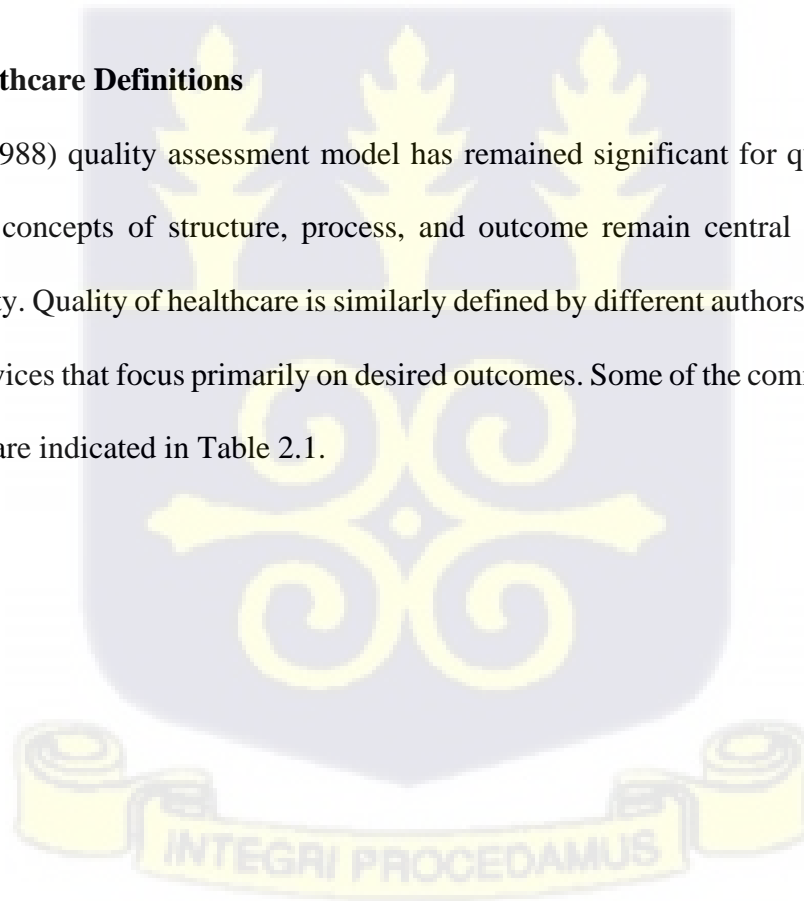
In research published on SpringerLink, Lai et al. (2019) emphasizes the importance of balancing the diverse needs of patients, healthcare providers, and policymakers to achieve high-quality care. This involves addressing both structural and process to enhance patient satisfaction and outcomes.

The purchaser's perspective is concerned with population-based quality and organizational performance measurements (Blumenthal, (1996). It is more concerned with the value of care, which includes the cost of care and the efficiency with which it is delivered.

Øvretveit, (1992) identified three (3) components of quality: These were: client, professional, and management. Client quality deals with meeting patients' unique needs and wants at the lowest cost with courtesy and on time. Professional quality involves carrying out the techniques and procedures essential to meet the client's requirements while managerial quality involves optimum and efficient use of resources to achieve the organizational objectives.

### **Quality of Healthcare Definitions**

Donabedian's (1988) quality assessment model has remained significant for quality assessment. The organizing concepts of structure, process, and outcome remain central to measuring and improving quality. Quality of healthcare is similarly defined by different authors and organizations as providing services that focus primarily on desired outcomes. Some of the common ones reported in the literature are indicated in Table 2.1.



**Table 2.1: Quality of Healthcare Definitions**

<b>AUTHOR</b>	<b>YEAR OF PUBLICATION</b>	<b>DEFINITION</b>
Institute of Medicine (IOM)	2001	“Quality is the degree to which health services for individual and population increase the likelihood of desired health outcomes and are consistent with current professional knowledge”
Palmer, Donabedian, & Povar	1991	“Quality of care is the production of improved health and satisfaction of a population with the constraint of existing technology, resources, and consumer circumstances”
Steffen	1988	“Quality medical care is the capacity of the elements of that care to achieve legitimate medical and nonmedical goals”
American Medical Association	1986	“Quality of care is care that consistently contributes to improvement or maintenance of quality and or duration of life.”
Donabedian	1980	“Quality of care is the care which is expected to maximize inclusive measures of patient welfare after one has taken into account the expected gains and losses that attend the process of care”

### 2.1.2 Types of Classifications of Quality of Care

Clinical and service quality are the two basic forms of service quality recognized by Bakar, Seval Akgün, and Al Assaf (2008). They defined clinical quality as the activities of the health-care process, such as specialists' skills, adequate medicines, and medical supplies, among others, that directly affect outcomes, whereas service quality includes the various factors that influence

patients' experiences, such as comfort, provider support, waiting time, appointments and follow-up visits, and the hospital's physical environment, among others.

Bakar, et al (2008) defined service quality as meeting or exceeding customer expectations or offering flawless services. Furthermore, they divided service quality into three categories: interpersonal quality (respect, emotional support, and cultural appropriateness); access (to location, waiting time, and service hours); and overall quality (respect, emotional support, and cultural appropriateness).

Service quality, according to Lehtinen and Lehtinen (1982), is the result of a customer's contact with parts of the service organization. These experts defined three forms of quality: physical quality (which refers to the physical aspects of a service, such as equipment or a building); psychological quality (which refers to the psychological aspects of a service); Corporate quality (which includes the company's image or profile) and Interactive quality (which includes the company's website) (which is derived from the interaction between staff and customers as well as between some customers and other customers).

Balancing the diverse needs of patients, healthcare providers, and policymakers to achieve high-quality care involves addressing structural and process quality, enhancing patient satisfaction, and outcomes, thereby setting the stage for further studies on healthcare improvement.

This focus on quality is consistent with the definitions that emphasize increasing desired health outcomes, leveraging current professional knowledge, and maximizing patient welfare within existing constraints, as highlighted by sources like Lai et al. (2019) and other experts.

## **Theoretical Review**

### **2.1.3 Quality Models**

In a variety of sectors, various quality models/theories that offer the framework for quality assessment have been established. The Donabedian model, Technical and Functional model, Servqual or gap model, Attribute Service model, Synthesized model, and Performance Only model are some of the most common service models. This section briefly discusses a few of the models, with a focus on Donabedian's (1988) model.

The Donabedian Model is highly regarded for quality assessment in healthcare because it provides a comprehensive framework that links healthcare processes and structures to patient outcomes. The strength of the Donabedian Model lies in its systematic approach that helps identify areas needing improvement and ensures a holistic evaluation of healthcare quality. It allows for targeted interventions by distinguishing between different aspects of care delivery and linking them to outcomes, thus facilitating continuous quality improvement.

#### **2.1.3.1 Technical and Functional Quality Model.**

Grönroos created this technical and functional model (1984). The concept was founded on the idea that a company may compete successfully if it understands consumers' perceptions of quality and the factors that influence service quality. According to proponents of the approach, managing perceived service quality means that the company must match the expected service to what was received (perceived service) in order to achieve client satisfaction. Technical quality, functional quality, and image quality are the three components of service quality that have been introduced. Technical quality has been defined as what a customer obtains as a result of his or her contacts with the organization (i.e. the product), and this serves as the foundation for the customer's

assessment of the service's quality. The model has been criticized that it does not explain how to measure functional and technical quality (Seth, Deshmukh, & Vrat, 2005).

### **2.1.3.2 Servqual or Gap Model**

The service quality (SERVQUAL) model, developed by Parsuraman et al (1985), suggests that service quality is a function of the dissimilarity between expectation and performance along the quality dimensions. Though this model provided clarity on service quality as a function of perception and expectations, it had some gaps as shown below.

The following gaps were discovered as a result of this:

1. The gap between customer expectations and management's interpretations of such expectations (not knowing what consumers expect).
2. Disparity between management's conceptions of customer expectations and service quality requirements (improper service-quality standards).
3. Distinction between service quality criteria and the actual service provided (service performance gap).
4. Distinction between the service provided and the information provided to consumers regarding the service provided (whether promise matches delivery).
5. The gap between what customers expect and what they get

### **2.1.3.3 Attribute Service Quality Model**

The Attribute Service Quality model, developed by Haywood-Farmer (1988) was introduced to address the flaws in the Servqual model, it states that a service company has a high quality of service if it fulfills consumer inclination based on a cognitive approach to decision making, where consumers would use a compensatory process to evaluate attributes associated with the option in order to form expectations of service quality.

It emphasizes three (3) fundamental characteristics of services: physical hospitals (location, size, hospital reliability, process flow and timeliness range of services), human behavior (timeliness, speed of communication, courtesy, friendliness, attitude, neatness, and politeness among others), and professional judgment (competence, advise, guidance, inventiveness, honesty, secrecy, adaptability, discretion, and knowledge) Kelley, E., & Hurst, J. (2006).

The model is criticized for not offering practical procedures capable of helping management to identify service quality problems or practical means of improving the service quality. (Haywood-Farmer, 1988); (Seth et al., 2005).

#### **2.1.3.4. Synthesised Service Quality Model**

The Synthesised Service Quality model, developed by Brogowicz et al, proposes that a service quality gap can exist even when a client has not yet experienced the service but has learned about it through word of mouth, advertisement, or other media channels (Brogowicz, Delene, & Lyth, 1990). As a result, both potential customers' opinions of service quality offered and actual customers' impressions of service quality experienced must be considered.

In a classic managerial framework of planning, execution, and control, the model's goal is to determine the parameters related with service quality.

According to proponents of this model, it depicts total service quality deficiencies as a result of both technical and functional gaps, and management must establish both what consumers want and how to meet those expectations.

To limit, mitigate, or eliminate service quality gaps, management must plan, implement, and control the services delivered. It also examines three (3) aspects that influence technical and

functional quality expectations: company image, external influences, and traditional marketing operations. The model's shortcomings have been noted as the requirement for existential validation and evaluation for various types of service settings (Brogowicz, Delene, & Lyth, 1990). (Seth et al., 2005).

#### **2.1.3.5 Performance Only Model**

The Performance Only model, developed by Cronin and Taylor (1992), looked at the proportion of service quality and its link to consumer satisfaction and purchase intentions. These researchers compared computed difference scores to perceptions and found that perceptions were the only superior indicators of service quality. They created SERVPERF, a performance-only assessment instrument, and stated that service quality is a type of consumer attitude, and that the performance-only measure of service quality is a better way to measure service quality. Cronin and Taylor (1992) argued that performance should be used to describe all types of service settings rather than performance-generalized. Furthermore, the model was unable to establish a quantitative link between customer happiness and service quality. (1992, Cronin & Taylor), (Seth et al, 2005).

#### **2.1.3.6 Donabedian's Quality Assessment Model**

Donabedian is best known for his tripartite approach to the assessment of quality health care known as the "structure-process-outcome" model (Donabedian, (1980), (Rupp, 2018).

Donabedian (1980) indicated that the degree of quality reflects "the extent to which the care provided is expected to achieve the most favorable balance of risk and benefits" and further explained that the arrows suggest a directional influence between the three (3) components of the model.

"Improvements in care structure should result in improvements in clinical processes, which should improve patient outcomes" (Donabedian, 1988). The model's three (3) components (structure, process, and outcome) were further defined as follows:

The framework in which care is administered is referred to as "structure," which includes hospital facilities (environment), employees (education, training, experience, and certification), financing, and equipment (Donabedian, 1988).

Throughout the health-care delivery process, "process" refers to how care is delivered and the connection between patients and clinicians (Donabedian, 1988).

The consequences of health care on the health condition of patients and the public are referred to as "outcome" (Donabedian, 1988).

Brownson and Petiti, (1998), observed that each of the components of the model may be assessed differently or in combination depending on the quality indicators being assessed. Many structure metrics, for example, are employed in hospital accreditation decisions. The use of structural evaluation in quality assurance assumes that structures have an impact on the output. If a hospital has a specific number of skilled employees, a certain structure, or enough space, it is considered that it is providing high-quality care. The link between structural measures and health outcomes, on the other hand, is difficult to establish (Brownson & Petit, 1998). Though linking model components can be difficult, numerous research have successfully used individual model components to quantify quality (see Boateng and Awunyor-Vitor, (2013), Yawson et al, (2013), Juma and Manongi, 2013). (2009).

According to Brownson and Petit (1998), adherence to a particular minimal standard of structure is required to ensure some level of quality. However, ensuring that structures are in place is not

enough to guarantee quality, as structures that meet certain quality standards may not guarantee that processes are appropriate or that outputs are satisfactory.

Structure measures are usually concrete and easy to use. However, Brownson and Petit, (1998), have indicated that the association between process and outcome is not well established and developing evidence for such association is difficult. This is because the links between these quality measures are complex. Additionally, it is easy to determine whether one is qualified to practice, but difficult to assess the extent to which the individual can apply the knowledge and skills that have been acquired to provide quality of care (Brownson & Petitti, 1998).

Structure and process measures have their strengths and weaknesses. Some of the strengths identified with process measures are that it is attractive to health care providers as it directly relates to what they do. It may be relatively easy to explain as it may be directly linked to outcomes and can be used to make inferences about individual providers.

Its weaknesses have been identified as it not being an important predictor of outcome, it may increase health care costs, especially where it does not improve health outcomes and does not show what processes of care are related to outcomes.

#### **2.1.3.7 Outcome**

Outcome is used in health care organizations and systems to assess the quality and to guide efforts to improve it. It is also used in clinical research to measure the effectiveness of different interventions. However, outcome measures as a quality assessment tool have been criticized on the basis that; many outcomes are not closely linked to the quality of care. This is because they are

affected by many social factors such as income and social security that are not related to the treatment provided. The outcome of interest may take a longer time to manifest and therefore, may not be a good measure of quality in the short term and the data collection system required to collect outcome data are not routinely available in clinical settings. - (retrieved, November 30, 2015, from <http://www.esourceresearch.org>.)

The difficulty in demonstrating the relationship between structure, process, and outcome is a significant drawback of the Donabedian Model. However, quality assessment across all three components - structure, process, and outcome - provides a more comprehensive evaluation than focusing on a single component. Analyzing quality in all three components is essential because a shortcoming in one area can be compensated by strengths in another, offering a more balanced assessment of healthcare quality. Kelley, E., & Hurst, J. (2006).

#### **2.1.4 Quality Dimensions**

Various individuals and organizations have developed some quality dimensions to aid in quality assessment. Different authors contextualized the dimensions in quality assessment. The following are the drawn differences and similarities between the authors.

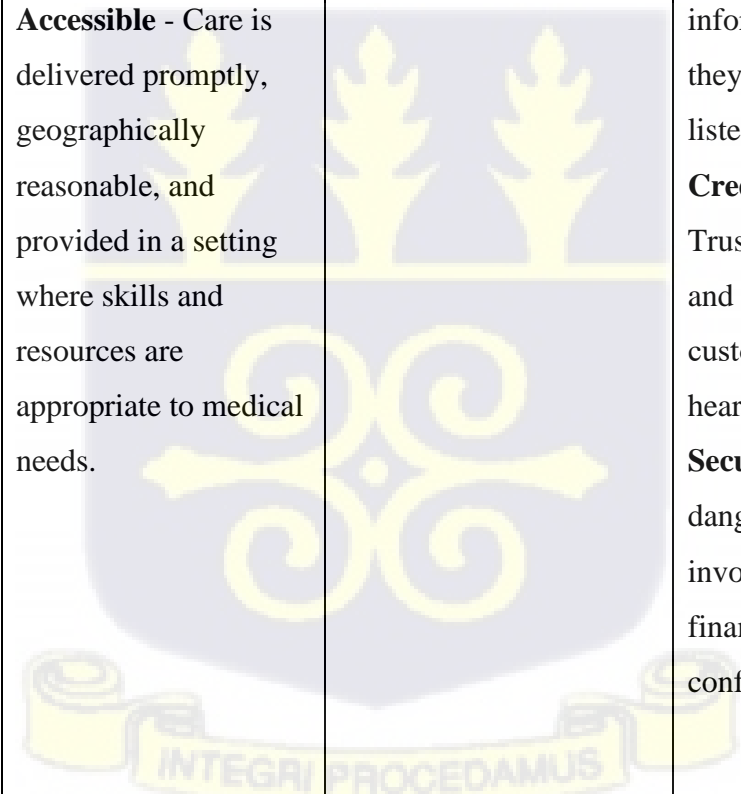


**Table 2.2: Quality Dimensions Postulates by Authors**

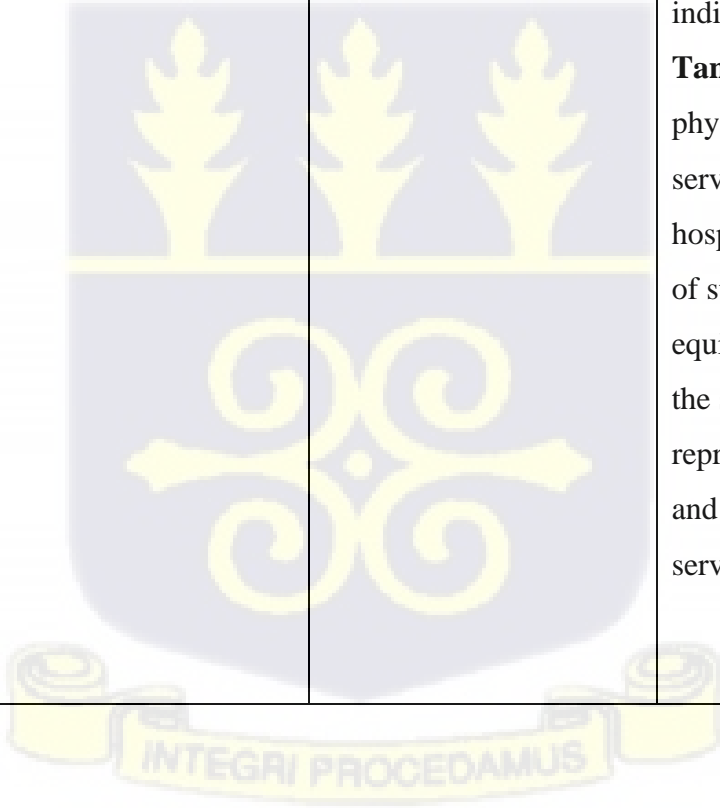
<b>Donabedian, (1990)</b>	<b>The Institute of Medicine (IOM, 2000)</b>	<b>The World Health Organization (WHO, 2006)</b>	<b>Feld, (2012), identified six quality processes</b>	<b>Parasuraman, et al (1985)</b>	<b>Jencks, (1995)</b>
-------------------------------	--	--	---	--------------------------------------	-----------------------



<p><b>Effectiveness</b> - The degree to which attainable health improvements are realized.</p> <p><b>Efficiency</b> - Ability to obtain the greatest improvement at the lowest cost</p> <p><b>Equity</b> - Fairness in the distribution of health care resources and its effects on health.</p> <p><b>Efficacy</b> - Ability of care at its best to improve health.</p> <p><b>Acceptability</b> - Conforming to patient preferences regarding</p>	<p><b>Effective</b> - Service based on scientific knowledge and avoiding underuse and overuse.</p> <p><b>Efficient</b> - Reducing waste in the process of care including waste of equipment, supplies, ideas, and energy.</p> <p><b>Equitable</b> - Care that is equal for all people irrespective of personal characteristics like gender, ethnicity, geographical location, and socioeconomic status</p>	<p><b>Effective</b> - Care delivered in an evidence-based manner that results in improving health outcomes for individuals and the community and based on need.</p> <p><b>Efficient</b> - Care that minimizes resources and avoids waste.</p> <p><b>Equitable</b> - Care which does not vary in quality due to personal characteristics like gender, race, ethnicity, geographical location, or socioeconomic status</p> <p><b>Acceptable/ patient-centered</b> - Care that</p>	<p><b>Effective</b> - Starting the appropriate treatment.</p> <p><b>Efficacy</b> - Making the appropriate diagnosis</p> <p><b>Acceptability</b> - Stimulating the appropriate compliance/adherence to treatment.</p> <p><b>Responsiveness</b> - Scheduling the appropriate follow-up.</p> <p><b>Identification</b> - Recognizing patients at risk for diseases.</p> <p><b>Screening</b> - Conducting appropriate evaluation</p>	<p><b>Access</b> - Easy to approach or contact. It also includes easy accessibility of the service, waiting time to receive service, convenient working hours, and convenient location of service hospital</p> <p><b>Responsiveness</b> - Involves willingness of staff to provide service promptly.</p> <p><b>Reliability</b> - Consistency of performance and dependability. It also means the organization performs service right the first time and honors its promise.</p> <p><b>Competence</b> - Possession of the required skills and</p>	<p><b>Access to care</b> - Availability of care.</p> <p><b>Appropriate process of care</b> - Treatment and processes of care that leads to better outcomes.</p> <p><b>Process of care</b> - Methods used in providing the care</p> <p><b>The outcome of care</b> - Improvement from intervention.</p> <p><b>Customer satisfaction</b> - Meeting</p>
---	--	---	---	--	---

<p>accessibility, patient-practitioner relation, the amenities, the effects of care, and the cost of care i.e. meeting customers' preferences in all aspects of health delivery.</p> <p><b>Optimality</b> - Balancing cost and benefits.</p> <p><b>Legitimacy</b> - Conforming to social preferences in all aspects of health delivery.</p>	<p><b>Patient-centered care</b> - Care that is respectful and responsive to individual patients' preferences, needs, and values.</p> <p><b>Safe</b> - Avoiding injuries to patients from the care that is intended to help them.</p> <p><b>Timely</b> - Reducing waits and delays for both care receivers and givers.</p>	<p>considers preferences and aspirations of individual service users and their cultures</p> <p><b>Safe</b> - Care that minimizes risk and harm to service users</p> <p><b>Accessible</b> - Care is delivered promptly, geographically reasonable, and provided in a setting where skills and resources are appropriate to medical needs.</p>		<p>knowledge to provide the service</p> <p><b>Courtesy</b> - Politeness, respect, consideration, and friendliness of contact personnel</p> <p><b>Communication</b> - Keeping customers informed in the language they can understand and listening to them.</p> <p><b>Credibility</b> - Trustworthiness, honesty and also having customers' best interest at heart.</p> <p><b>Security</b> - Freedom from danger, risk, or doubt and involves patient safety, financial security, and confidentiality.</p>	<p>customers' expectations.</p>
---	---	--	---	---	---------------------------------

				<p><b>Understanding/knowing the customer</b> - It entails making the efforts to understand the customer's needs e.g. knowing the customer's specific requirements and provision of individualized care.</p> <p><b>Tangibles</b> - include physical evidence of service e.g. physical hospitals, the appearance of staff, tools and equipment used to provide the service, physical representation of service, and other customers in the service hospital</p>	
--	--	--	--	---	--



From the table above, it is observed that that characteristics like effectiveness, efficiency, efficacy and equity are amongst the most often used quality dimensions by authors.

As an alternative, Jencks (1995) and Parasuraman et. al (1985) have offered quality dimensions including access to care, responsiveness, reliability and care process among others as quality characteristics.



## **Empirical Review of the Quality of Care**

Empirical evidence, which is primarily gathered by observation or experimentation, is an important aspect of the scientific process of study for validating or disproving a given hypothesis, assertion, or claim.

The following are empirical studies that used the Donabedian paradigm (structure, process and outcome) to assess healthcare quality.

### **2.1.5.1 Structure assessment**

Structure relates to the input of the settings in which care is provided and can be measured through an examination of the organizational structure, material resources (environmental, technology, tools, among others), and human resources. Physical structures/hospitals, equipment, drugs, supplies, utilities (water and power), trained staff, financial resources, and information systems are some of the characteristics considered under this component (Haj, Lamrini & Rais, 2018).

Structure variables influence how doctors and patients interact in a health-care system, and they are indicators of the average quality of care provided within a hospital or system. (Donabedian, 1988).

In the delivery of health care services and their outcomes, the structure of quality health systems is critical. Structure, process, and outcome have been highlighted as essential instances of quality systems in health care, where structure substantially correlates with process and outcome (Kunkel, Rosenqvist, & Westerling, 2007).

Gnawali et al (2009), reported that 74% of the insured patients perceived quality to be good compared with 83% of uninsured in Burkina Faso. On availability of nurses, the insured reported 64% for a good while the uninsured reported 75%, and on availability of drugs, 48% of the insured answered yes with 55% for the uninsured in Burkina Faso.

Fenny et al, (2014) observed that overall quality satisfaction was 97% while dissatisfaction was 7% among both insured and uninsured clients in Ghana. These researchers also found that the level of satisfaction was highest in health centers and Community-based Health Planning and Services (CHPS) (98%) with District Hospitals/ Private hospitals and Clinics recording 92.2% and 91.6% respectively in Ghana. They further observed that though, the hospitals had the appropriate trained staff and availability of functional equipment, adherence to malaria treatment protocol was, low especially laboratory confirmation (10% laboratory test for uninsured and 4% for insured). This support the assertion that having good structures in place is not sufficient to assure quality and demonstrating that structures meeting certain criteria do not also ensure that processes are appropriate or outcomes are good (Brownson & Petitti, 1998).

Boateng and Awunyor-Vitor, (2013) found that majority of respondents held a negative perception of the adequacy of service delivery, including rooms, equipment, health professionals, the attitude of providers, and technical quality of care, which negatively influenced their decision to renew their NHIS policy in the Volta Region of Ghana.

Schneider and Hanson, (2007), assessed the cost impact of two provider payment systems- user fees by uninsured and capitation payments by the insured in a Micro Health Insurance scheme in 52 Health Centres in Rwanda. The study identified that the marginal and average cost for insured patients under capitation was lower than for the uninsured who paid under fee-for-service. Though

the study intended to assess cost impact, it also captured quality data through exit interviews using the availability of medicines, waiting time, patient assessment of tests, level of staff knowledge, and overall patient satisfaction as indicators and reported that both the insured and uninsured judged quality of care received to be equal. However, on the availability of medicines, 10% of the uninsured indicated that they did not receive all their prescribed medicines, which was inferred to mean less intense treatment among the uninsured.

Waiting time is often driven to a greater extent by staff conditions in health facilities, according to Akin, et al (2005), and patients in a relatively understaffed hospital spend more time waiting to be seen. These researchers suggested that if health-care facilities could raise their staffing levels, waiting times may be decreased at the price of quality. Between 1989 and 1997, the study found that staff credentials improved in clinics but decreased in hospitals, and quality grew greatly in affluent villages for both clinics and hospitals, but to a lesser extent in poorer villages. In addition, drug availability in clinics increased by 12%.

Yawson et al, (2013) found that with the introduction of the National Health Insurance Scheme, the insured visited the Outpatient Department (OPD) at shorter intervals than the uninsured, there was increased OPD attendances with prolonged waiting time for the insured (about 3 hours overall waiting time at the Records, Consulting, and Pharmacy waiting for areas and about 90 minutes to 3 hours for uninsured) in the Central Region of Ghana. The differences were attributed to the documentation process for the insured. It was also observed that though, there were differences in waiting time at Records and Pharmacy between insured and uninsured, there was no difference in waiting time for consultation.

Baltussen, Yé, Haddad, and Sauerborn, (2002) also observed that respondents were relatively positive on quality indicators related to personnel practice and conduct, and health care delivery but were less positive on items related to adequacy of resources and services, and financial and physical accessibility in Burkina-Faso. In particular, the availability of drugs for all diseases on the spot, adequacy of rooms and equipment in the hospitals, and cost of care and access to credit were poorly valued.

Inadequately qualified health professionals, shortages of vital pharmaceuticals, poor attitude of health workers, and large distances to health facilities in Uganda were also noted by Kiguli et al, (2009) as issues affecting the quality of service delivery.

The scarcity of necessary pharmaceuticals and medical supplies; inaccurate diagnosis due to a lack of diagnostic equipment; staff-related difficulties; and a limited variety of treatments given in Tanzania were identified by Kamuzora and Gilson (2007).

Vera, (1993), examined the meaning of quality of care for women who received health services at family planning clinics in Santiago, Chile, and reported that the women defined high quality of care as “being treated like a human being”. The women identified specific quality elements to include cleanliness, promptness, availability of service, making time for consultation, learning opportunities for themselves and their partners, and cordial treatment.

A study of user perceptions of quality of care at Kilosa Hospital's OPD in Tanzania discovered that verbal abuse of patients by health care providers, lack of responsiveness to patients' needs, delays in the hospital, unreliable supply of medicines, lack of confidentiality, and partiality in health care provision were all factors affecting the hospital's quality of care (Juma & Manongi, 2009).

A study on Vietnam government hospitals found that they had good infrastructure, but the quality of service was poor (Tuan, Dung, Neu, & Dibley, 2005). Though quality was poor in government hospitals, it was significantly better than in private hospitals. Tuan et al, (2005) also found that practices in both government and private hospitals were below the national standard, especially management of chronic health problems.

Members may be more inclined to voluntarily join in CHI with medical coverage, according to Vialle-Valentin et al. Perceptions of quality of treatment affect Community Health Insurance (CHI) membership, and coverage for and availability of medicines may be major factors of this view.

Andaleeb, (2000), stated that quality of service depends on market incentives and since private hospitals are not subsidized, and depend on income from clients, they will be more inclined than government hospitals to provide quality service and to meet patients' needs better. This will enable them to build a satisfied and loyal client base who will revisit and serve as a source of referral to friends and relatives thereby sustaining their long-term viability. This, the government hospitals have little incentive to do. This lack of responsiveness, dedication, or quality assurance tends to suggest that service quality will be rated low in government than in private hospitals.

One of the main reasons why patients prefer private hospitals to government hospitals, according to Juma and Manongi (2009), is because of weak interpersonal relationships. When compared to government hospitals, workers in private hospitals have been described as being more sympathetic and courteous. In a study conducted in China, a similar conclusion was reached (Lim, Yang, Zhang, Feng, & Zhou, 2004).

Pérotin, et al, (2013), reported that patients' experiences in private and government hospitals were different in most quality dimensions in the United Kingdom (UK). However, hospital ownership in and of itself did not influence the level of quality experienced by an average patient.

A systematic review in low-and middle-income countries to compare performances of government and private health care systems reported that the private sector was usually more efficient, accountable, or medically effective than the government sector, however, the government sector seemed to lack timeliness and friendliness towards patients (Basu, Andrews, Kishore, Panjabi, & Stuckler, 2012).

A study revealed that environmental cleanliness, waiting time and provider-patient relationship were critical factors for patients' satisfaction with quality in Northern Ghana (Atinga et al, (2011). However, communication was observed as a non-predictor of patients' satisfaction with quality. They also identified environmental cleanliness as the strongest factor influencing patient satisfaction with quality (Atinga et al., 2011).

Yawson et al, (2013), reported that health care providers stated that workload had increased under NHIS, also there were delays in reimbursement, which was affecting the frequency of supply of medicines and other medical supplies, which could affect the quality of care in the hospital.

In the Upper East Region of Ghana, Dalinjong and Laar (2012) investigated the impact of the National Health Insurance Scheme (NHIS) on the behavior of health care professionals in the treatment of insured and uninsured customers. According to the study, while NHIS secured bulk cash collections for services delivered, it increased use and reduced out-of-pocket payment at the point of service. Higher utilization resulted in increased workload in hospitals, which was partly ascribed to insureds abusing services. They also claimed that claims processing delays were

generating a lack of supplies and medicines, prompting some providers to prefer out-of-pocket payment over insurance. All of these factors can have an impact on the delivery of high-quality healthcare.

### **2.1.6 Process Assessment**

Process refers to what is done in giving and receiving care and its assessment involves evaluating the processes of care itself (i.e. how provider tasks and clinical processes are organized and performed).

Process measures of health care include both its technical quality and the experiences of patients receiving the care (Akachi & Kruk, 2016). Rupp, (2018) referred to the process as the interactions that occur between health care providers and patients, including, but not limited to, what providers do with, to, and for their patients.

Some of the variables under this component include adherence to clinical guidelines for preventive, therapeutic, and rehabilitative care, diagnostics, (technical quality), information and instructions to patients on care, and attitude of staff towards clients (interpersonal quality) (Haj, Lamrini & Rais, 2018). Donabedian (1988) explains that measurement of the process is nearly equivalent to the measurement of quality of care because the process contains all the acts of health care delivery.

Alatinga and Fielmua (2011) evaluated the quality of care provided under the NHIS in Northern Ghana and found that more insured people were treated immediately in hospitals than uninsured people (58.3 percent versus 50 percent), and 42 percent of insured people were treated within 30 minutes compared to 27.1 percent of uninsured people. The study also discovered that staff attitude

was rated very good by more insured (78%) than uninsured (59.8%). In addition, when compared to the uninsured, more insured (85.7 percent) were satisfied with the care they received (80 percent). Despite the fact that there was a clear distinction in the quality of care between insured and uninsured participants' responses, there was a clear distinction in the quality of care between insured and uninsured participants' responses. There was no statistically significant variation in quality ( $p=0.365$ ).

Turkson, (2009), assessed the perceived quality of health care in a rural district in the Central Region of Ghana and found that 90% of respondents indicated their satisfaction with care. The study observed that the mean expected maximum waiting time for seeking health care in the hospital was one hour. Approximately, 83% of respondents reported waiting for less than 1 hour before registering or receiving their cards, 14.7% waited for 1-2 hours while 1.9% waited for more than 2 hours. The respondents also rated the attitude of the staff as good. Though respondents perceived the quality of health to be high, they also identified poor attitude of health care staff, long waiting time, inadequate staff, high cost of services, frequent referrals, and lack of ambulance as factors affecting the quality of health care.

Jehu-Appiah et al, (2012), reported that respondents were satisfied with the quality assessment done under technical quality e.g. effectiveness of the treatment, providers making a good diagnosis, quality of medicines, timeliness in getting the necessary care, and getting immediate care when needed.

In Zaire, Haddad and Fournier (1995) investigated the types of quality offered by health providers and found that women preferred interpersonal quality (respect, cordiality, and frankness), technical quality, and to a lesser extent integrity.

When asked to choose two attributes that a nurse should possess, most respondents prioritized relational components, such as empathy and communication, over technical skills. This preference underscores the importance of interpersonal interactions in perceptions of healthcare quality (Campbell et al., 2021; Layne et al., 2021). Studies have shown that relational quality significantly influences patient satisfaction and safety culture, highlighting the necessity for healthcare providers to balance relational and technical competencies in their practice (BMC Primary Care, 2021; Healthcare, 2021) (BioMed Central) (MDPI).

### **2.1.7 Outcome Assessment**

Outcome refers to the effect of care on the health status of patients and population and can be assessed by evaluating clinical results and impacts, and patients' satisfaction with care provided. Some of the variables under this component include patient satisfaction, health status, and outcome of delivery, patient wellbeing and good use of resources. Outcome measures are sometimes seen as the most important indicators of quality because improving patient health status is the primary goal of health care (Donabedian, 1988).

The function of outcome is to determine whether goals of care were achieved and has criteria associated with health status, cost of care and patients' satisfaction, patient wellbeing, and good use of resources. (Haj, Lamrini, and Rais, 2018)

A Multiple Indicator Cluster Survey conducted in 2011 in Ghana reported that 42% of women aged 15-49 years and 39% of men aged 15-59 years reported that National Health Insurance Scheme (NHIS) card holders received quality care in health facilities compared with uninsured, 26% women and 22% men indicated that quality of care was the same for both insured and

uninsured, 21% of women and 20% of men reported that they received worse quality of care compared with the uninsured (Ghana Statistical Services. (GSS), 2012)

In Bangladesh, Andaleeb (2001) highlighted essential service quality factors for patients and their relationship to patient satisfaction. Quality perceptions were discovered to have a significant impact on service quality. Patients may be hesitant to use hospital services due to a negative opinion of quality. As a result, patient satisfaction was linked to the quality of health-care services.

Criel and Waelkens, (2003) assessed the decline in enrolment in Miliando Mutual Health Organization in Guinea and observed that though subscribers most often had fast access to health care, they were dissatisfied with the quality of care they received at the health centers. Subscribers were dissatisfied because they were receiving poor care, delays in recovery from sicknesses, and received poor medicines, and unfriendly reception at the hospitals. They preferred to seek care in the private sector or hospitals because people get well fast, good medicines were supplied, diagnoses were well made, there was good reception and good doctors and patients were well-taken care of.

In a study of patient and healthcare provider perceptions of quality in Ghanaian hospitals, researchers discovered that there were significant disparities in overall perceptions of quality between patients and healthcare providers, with variances in 18 of the 22 quality ratings utilized in the study (Abuosi, 2015). Patients ranked 5 out of 22 indicators as favorable (25 percent), while providers evaluated 14 signs as such (64 percent). Patients and health care professionals both ranked 2 (9%) of the 22 indicators as negative, and patients rated 15 (68%) of the 22 indicators as somewhat favorable, compared to 6 (27%) for health care providers. These discrepancies revealed that, while consumers had concerns about the quality of service in many areas of health care

delivery, health care practitioners didn't seem to notice, resulting in more indicators being rated as favorable (Abuosi, 2015).

### **2.1.8 Health Insurance and Quality of Care among Insured and Uninsured**

Various studies have disclosed that health insurance is associated with differences in quality between insured and uninsured. Some of these studies are as indicated in this section:

A global study on health insurance and the quality of care among insured and uninsured populations reveals significant insights. A systematic review of health insurance impacts in low- and middle-income countries (LMICs) shows that insurance generally improves health care utilization and financial protection, though the effect on health status is less consistent. This underscores the complexity of insurance schemes and the need for nuanced policy approaches to improve healthcare quality comprehensively (Erlangga et al. 2019). These findings set the stage for further research into optimizing health insurance systems to ensure equitable and high-quality care for all populations.

Research conducted in Ghana highlights that the insured often perceive higher quality of care compared to the uninsured, although this perception does not always translate into actual differences in care received. This study emphasizes that insured patients tend to report better satisfaction and health outcomes due to increased access to services and financial protection provided by insurance schemes (Abuosi et al. 2016).

Schmidt et al, (2009), compared maternal health outcomes of women enrolled in the National Health Insurance Scheme (NHIS) and those not enrolled in Ghana and observed that those insured were more likely to use prenatal care, deliver in a hospital, attended to by trained health professionals, less likely to experience birth complications, and infant deaths than uninsured.

These have facilitated access to health care and provision of better health care to the insured than the uninsured indicating that Ghana's National Health Insurance Scheme was accomplishing the purpose for which it was established -that is, improving health care access for the insured (Schmidt et al, (2009).

Brugiavini and Pace, (2011), also reported from the assessment of data from the 2008 Ghana Demographic Health Survey (GDHS) that NHIS had positively and significantly affected utilization. Also, being enrolled positively affected the probability of receiving formal antenatal care, check-up before delivery, institutional delivery, and being assisted during delivery by a trained person.

Dixon et al, (2013), analyzed household data from the Ghana Demographic Health Survey (GDHS) 2008 of the perception of National Health Insurance members on services under the National Health Insurance Scheme (NHIS). The analysis revealed that more respondents (55.3% female and 46.9% male) rated health services under NHIS as better than before the scheme, 34.2% of females and 42.3% of males rated health services the same as before NHIS while 10.5% of females and 9.9% males rated health services worse under NHIS.

Dalinjong and Laar, (2012), reported that NHIS had promoted access to health care for the insured in Ghana. However, the insured perceived that they waited longer in the hospitals, verbally abused by providers, had a less physical examination and have been discriminated against compared with the uninsured when receiving treatment. There was no difference in satisfaction with the quality of care statistically though more uninsured respondents were satisfied with care (82%) compared with insured (76%).

In Burkina-Faso, Gnawali et al. (2009) found that 74 percent of insured people thought the quality of care was good, compared to 83 percent of uninsured people.

Robyn et al, (2013), assessed the role of Community-based Insurance enrolment on the quality of care in Burkina-Faso. The study measured the contrast in an objective and perceived quality and patient satisfaction between insured and uninsured and reported that the insured perceived quality of care to be better, while objectively they received worse care compared with the uninsured.

Spaan et al (2012) evaluated the impact of health insurance on resource mobilization, financial protection, and service utilization, quality of care, social inclusion, and community empowerment in low-and-lower income countries in Africa and Asia through a systematic review. They reported that strong proof showed that Community Based Health Insurance (CBHI) and Social Health Insurance (SHI) improved service utilization, protect members financially by reducing out-of-pocket payment, and improved resource mobilization. However, weak evidence pointed to a positive effect of both CBHI and SHI on quality of care and social inclusion.

Shi, (2000), analyzed data from a household component of the 1996 Medical Expenditure Panel Survey (MEPS) in the United States of America to determine the association between type of health insurance coverage and quality of primary care and the independent effect of insurance status on primary care. The analysis revealed that the experience of primary care varied according to insurance status and that the insured obtained better primary care than the uninsured, and the privately insured obtained better care than the government-insured. Those insured through fee-for-service coverage received better care than those insured through health maintenance organizations (HMOs).

Hoffman and Paradise, (2008), reviewed some studies in the United States of America (USA) to determine the relationship between health insurance and access to health care in the USA. The review assessed the insured and uninsured using access to primary and preventive care, treatment of acute and traumatic conditions, and medical management of chronic diseases as indicators. The review indicated a strong association between health insurances coverage and access to primary and preventive care, treatment of acute and traumatic conditions, and medical management of chronic conditions. Additionally, it indicated that being uninsured was connected to having adverse health outcomes, for instance, the decline in health and function, having preventive health problems, severe diseases at the time of diagnosis, and premature death.

Newacheck, et al. (1998) looked analyzed data from the 1993/1994 National Health Survey in the United States of America (USA) to see if health insurance coverage affected children's access to primary care. According to the study, 13% of children in the United States were without health insurance. When compared to children who were insured, children without health insurance were 6 times more likely to have the regular source of health care (24 percent versus 4%), and nearly 4 times more likely to have gone without required medical care (22.2 percent versus 6.1 percent). Access to primary care was also highly linked to having health insurance, according to the study. These factors may eventually result in a discrepancy in the quality of care provided to insured and uninsured patients.

Kempe et al, (2005) observed that more families were often able to see health care providers as soon as desired for routine care with decreased unmet health needs after enrolment in Colorado's Child Health Plan in the U.S.A. The proportion of patients who saw providers for routine care also increased (64.2% before and 70.5% after enrolment for children 3 years and above, 88.9% before

and 94.4% after enrolment of children less than 3 years. The proportion of patients who rated their care as best increased from 39.4% before enrolment to 41.6% after enrolment.

Similar research of the impact of New York State's State Children's Health Insurance Program (NYS-SCHIP) found that health insurance improved access and quality (Szilagyi et al, 2007). (2004). According to the study, the number of children with a regular source of care improved after enrollment (from 86% to 97%), while the proportion of children with unmet health requirements declined (31 percent to 19 percent). The majority of health-care services were used in the same way. The proportion of children who received preventive care visits, on the other hand, climbed from 74% to 82 percent. Following enrolling, the proportion of children who used their regular source of care for most or all of their visits increased (from 47% to 89%), indicating improved continuity of care. Enrollment in NYS-SCHIP was linked to better access, continuity, and quality of care, according to the findings.

Nelson et al, (2005), examined the association between health insurance coverage and quality of care provided to diabetic patients in the U.S.A. using data from the 2000 Behavioural Risk Factor Surveillance System (BRFSS). The assessment revealed that most of the diabetic patients were covered under Medicare (44%) and private health insurance (39%). 11% of patients below 65 years were found to be uninsured. Most of the uninsured were African Americans or Hispanics with reported low incomes and education. It was also observed that the uninsured were less likely to report for an annual check-up or daily glucose monitoring than those with private insurance.

Newacheck, et al, (1998), examined the status of near-elderly (55-64 years) women's insurance coverage in the USA and how it influenced their use of health care services. The assessment was done among women both insured and uninsured for services like physician's visits, hospital stays,

dental visits, and use of prescription drugs. The study identified that women who had insurance presentations were more likely to use health care services compared with uninsured.

Gobah and Zhang, (2011), observed that age, educational level, and occupation were associated with membership in the scheme with more insured seeking formal care when sick compared with uninsured (70.8% verse 6%) in the Akatsi District in Ghana. More of the insured also rated the quality of care to be good compared with the uninsured (67% verse 33. %).

In the United States, Asch et al (2006) examined the rate at which individuals of various socioeconomic classes received recommended care. According to the findings, 54.9 percent of the participants received the prescribed treatment. More women than men said they received good treatment (56.6 percent verse 52.3 percent). More blacks (57.6 percent) and Hispanics (57.5 percent) reported somewhat higher quality care than whites (54.1 percent), and more participants with greater income reported high-quality care than those with lower income (57.5 percent vs. 52.1 percent) (56.6 percent verse 53.1 percent). In addition, medicare respondents reported slightly more high-quality acute, chronic, and preventive care than uninsured respondents (56.9 percent verse 53.7 percent).

In the United States, Grazier et al. (1986) discovered that gender, age, and income influence consumers' choice of health care plans. They discovered that women were more likely than men to be dissatisfied with their health-care plans. When it came to quality, they discovered that age was strongly linked to it. Female respondents placed a larger priority on quality than male respondents.

Some studies have also reported no quality differences between insured and uninsured.

Fenny et al, (2014), observed that there were no differences in almost all the responses received from insured and uninsured in Ghana. Staff friendliness was the same for both insured and uninsured (97.5%); satisfaction at reception (55.8% for insured and 57.5 for uninsured); satisfaction with consultation (97.9 for insured and 97.5% for uninsured); all medicines received (94.2% for insured and 95% for uninsured); follow-up request (43.1% for insured and 45% for uninsured). For the revisit, 97.5% of insured and 87.5% of uninsured reported they would revisit the hospital when sick and 97.7% of insured and 87.5% of uninsured reported recommending the hospitals to friends and relatives.

According to Gusmano et al. (2002), there was minimal difference in care between insured and uninsured patients, and insurance status had little bearing on the quality of care obtained on site. When a Community Health Physician had to refer uninsured patients, however, the absence of insurance created a concern. They confirmed that uninsured individuals frequently did not receive extra services for which they were referred because physicians found it more difficult to arrange specialized or non-emergency hospital care for uninsured patients than for insured patients.

Lu and Hsiao, (2003), assessed the Taiwanese Health Insurance and reported that though there was no comprehensive information on clinical quality, clinical quality had neither improved nor declined with the introduction of the Taiwanese Health Insurance.

### **2.2.3 Health Care Financing.**

According to Lave and Peele, (2005), financing methods used to finance personal health care services play a major role in shaping a country's health care system and the quality of care it provides. They also influence terms under which people access health care delivery, types of health care provided, and the mechanisms used to allocate health care services. They also influence how

cost of health care services are distributed over the population by income and health status, (Lave & Peele, 2005).

Mossialos et al, (2002), identified five types of health care financing which include: taxation, social health insurance, voluntary and private health insurance out-of-pocket payment or cash and carry and donations. These have been explained below as to how they influence the types and dimensions of quality of health care.

### **2.2.3.1 Tax Funding**

Direct taxes paid on individuals, households, and businesses, as well as indirect taxes levied on transactions and goods, such as value added tax and excise duty, are the most common sources of tax or government revenue (Mossialos et al., 2002). Government financing may also come from local or international borrowing. Donors may sometimes provide government funding in the form of a loan or a grant (McIntyre, 2007).

Government, independent, or semi-independent agents may collect the taxes on behalf of government.

The fundamental advantage of tax funding is that it has a broad income base, meaning that cash can come from a variety of sources. Its downsides include the merging of money with other tax receipts, as well as the fact that it is cyclical and hence more prone to boom and bust cycles (Mossialos et al., 2002).

There are two main models of tax funding. These are: National health (Beveridge) model and Social insurance (Bismarck) model.

Bismarck model is an insurance system, which is jointly financed by employee and employers through payroll deductions often deducted at source. The model is designed to have all citizens covered and not meant for profit. On the other hand, Beveridge model is a nationalised health care system, which is financed through government taxes. Citizens do not pay directly for their medical bills (Nguyen, 2017).

The health sectors' main source of revenue comes from taxes. The quality of care provided to patients is significantly impacted when these levies needed to reimburse healthcare facilities are not mobilized in a timely manner.

#### **2.2.3.2 Out-of-Pocket Payment or User Fees.**

Out-of-pocket payments refers to payments made to health care providers directly by patients (McIntyre, 2007). It includes user fees, co-payment and other informal payments made by patients in health facilities to health workers. This mode of financing has been identified to reduce access to health care in most countries and has several consequences for health care access and utilisation and catastrophic for the poor (Onah & Govender, 2014).

This financing system cannot ensure that every citizen has access to health care and people are often left in sickness or incur huge debt because they cannot afford to pay for medical care (Nguyen, 2017), Gilson and McIntyre, (2005) also indicated that, OOP fees may be low at primary level, however, such fees can encourage self-medication and the use of partial drug dose or it may prevent early use of hospitals or non-use resulting in increased morbidity and mortality.

Tangcharoensathien et al, (2011) reported that countries with a high share of out-of-pocket payments are more likely to have a high proportion of households facing catastrophic health

expenditure, which is defined “as spending more than 40% of household consumption expenditure, excluding food, on health, more than 25% of non-food consumption expenditure of households on health, or more than 10% of total household consumption expenditure on health”.

A study in Georgia by Gotsadze, Bennett, Ranson, and Gzirishvili, (2005), reported that health care services are financially burden and private payment (out-of-pocket) creates financial barriers to access to health services. They indicated that members of the poorest households were less likely to seek health care when they were sick than people from more affluent households. To overcome these financial barriers, households have adopted various strategies, which are likely to contribute to declining economic status and worsening health outcomes of the poor families.

It is reported that in Ghana, out-of-pocket payment accounted for 45% of revenue in the health facilities (Akazili, Gyapong, & McIntyre, 2011).

### **2.2.3.3 Prepayment or Insurance System**

People contribute regularly to the cost of health care through tax payments and/or health insurance contributions in a prepayment health care financing or insurance system. It provides households with greater financial safety than out-of-pocket financing and is hence preferable to out-of-pocket financing (Preker & Carrin 2004).

In this financing system, funds are readily made available to health service providers and as such providers are more inclined to provide quality service to patient than out-of-pocket financing.

McIntyre, (2007), indicated that there were several types of health insurance, but could be broadly categorised as Mandatory Health Insurance or National Health Insurance (NHI) and Voluntary or Private Health Insurance Systems/ Schemes.

#### **2.2.3.3.1 Mandatory Health Insurance**

Also known as National Health Insurance (NHI) or Social Health Insurance (SHI), mandatory health insurance is one of the mechanisms for raising and pooling funds for financing health services. SHI systems are normally for employees and employers as well as self-employed. In most cases, members of the scheme are obliged to make their contributions by law. To ensure financial sustainability, governments sometimes pay subsidies into the schemes' funds (Doetinchem, Carrin & Evans, 2010). Member contributions are based on average expected cost of health service used by the entire insured group. Contributions from members of the scheme are sometimes held in a single or multiple funds and these funds may be run by government, nongovernmental or parastatal organizations ((Doetinchem, et al, 2010).

#### **2.2.3.3.2 Voluntary Health Insurance or Private Health Insurance**

This type of insurance scheme is often employment-based with contributions shared between employees and employers (McIntyre, 2007). Savedoff and Sekhri, (2004), indicated that there are three (3) types of private health insurance schemes namely: not for profit; for profit and community insurance. They also indicated that unlike other insurance schemes, Private Health Insurance Schemes (PHIS) often promote unequal access, large numbers of uninsured and turns to favour the rich than the poor. They also posit that unregulated or poorly designed PHIS can increase inequalities, providing coverage for the young and healthy. However, when properly managed, they can play a positive role in access and equity.

### **2.3.2 Utilisation of Health Services under the National Health Insurance Scheme in Ghana**

According to reports, Ghana's National Health Insurance Scheme (NHIS) has lowered cost barriers to health treatment and increased utilization (Schieber et al, 2012). About 12 million people, or 40% of the population, were covered by the scheme by the end of 2019. Prior to the scheme's introduction, less than 1% of the population was covered by an insurance plan (NHIA, 2020). Between 2005 and 2019, the use of outpatient health care services increased by more than fourfold (0.6 million in 2005 and 16.9 million in 2010 to 35.1 million in 2019) Inpatient utilization grew from 28,906 in 2005 to 973,524 in 2009,19 (National Health Insurance Authority (NHIA), 2020).

In 2005, the NHIA adopted a fee-for-service payment system to reimburse credentialed providers. However in 2008, a Ghana version of diagnosis-related system was introduced in order to control the growing costs that had been noted under the fee-for-service payment system. The Ghana diagnosis-related (DRG) systems method has been implemented at all levels of care across the country. It is used to pay for both outpatient and inpatient services (OPD and IPD), whereas fee for service is still used to pay for drugs. The Ghana diagnosis-related systems (G-DRG) group related diagnoses and calculate the average cost of care. As a result, the G-DRG was eventually found to have aided in cost escalation, more than tripling the cost of claims seen under the Fee for Service. Because of health insurance, OPD attendance jumped from 597,859 in 2005 to 35.1 million in 2019. This amounts to GHC7.6 million (\$3.53 million) in claims expenditure in 2005 and GHC721.2 million (\$360.6 million) in 2014. The average outpatient claim cost climbed by approximately 50% between 2007 and 2014, from GHC6.93 (US\$2.80) to GHC18.12 (US\$7.31), and outpatient claims accounted for 70% of total claims received by NHIA in 2014. This amounted to 40% of the total claim costs covered by NHIA.

The growth of claims expenditure has outpaced the growth of the NHIS revenue since 2009, causing a sizable deficit.

Claims expenditure rose from 7.6 million (GH¢) in 2005 to 1.1 billion (GH¢) in 2014, making reimbursement difficult and affecting quality of care rendered.

## **2.4 NHIA and Credentialing of facilities**

### **2.4.1 Credentialing**

Ghana adopted the National Health Insurance Scheme (NHIS) in 2003 to provide affordable and universal healthcare to its citizenry and order to help deliver on its mandate; NHIA introduced new conditions in its accreditation process known as credentialing, a process that assesses the capacity of health facilities to provide quality care.

This system was put in place to ensure that the problems regarding financial constraints, staffing, and basic infrastructure availability are addressed for basic health care delivery.

Credentialing is a continuing administrative procedure for certifying the qualifications of licensed facilities and professionals, as well as assessing their background. It is used by hospitals and other health-care facilities, educational organizations, and insurance companies to verify the qualifications of their doctors and other professionals, as well as to award privileges to provide certain services and execute specific medical or dental operations, (Ogle et al, 2008).

Proper credentialing can help hospitals limit the amount of potential medical malpractice cases while also ensuring that patients receive high-quality care.

According to MacDonald, (2017), credentialing is a formal process that operates a recognized sequence of guidelines that assures the patients that they are being treated by providers whose qualifications, training, licensure, and ability to practice medicine are acceptable. Credentialing also ensures that all healthcare workers are held to the same standard.

The NHIA allows health care facilities of any ownership which is recognized by the Ministry of Health of Ghana and in good standing with Health Facilities Regulatory Agency to apply for credentialing. New health facilities applicants eligible for requesting credentials must be in existence for at least six months with a good record of service provision. (Retrieved on March 4, 2022, from <http://www.NHIS.gov.gh>). The facility must have quality assurance standards, utilization review, and a payment mechanism by the Authority. Health care providers should have a formal quality assurance program in place and permit the Authority or any person authorized by the Authority to inspect the premise and record. The NHIA credential lasts for the initial four years and is renewable every 2 years (Retrieved on March 4, 2022, from <http://www.NHIS.gov.gh>).

#### **2.4.2 Claims reimbursement**

Reimbursement deals with how health care providers are paid after they have rendered services to insured clients. There is a relationship between credentialing and reimbursement. Credentialing determines what level of care a facility is placed and this determines what tariffs should be applied to the facility (Retrieved on March 4, 2022, from <http://www.NHIS.gov.gh>). Another important element in reimbursement is the provider payment methods/mechanisms. Since the inception of NHIS in Ghana there has been a lot of complaints from health care providers about low reimbursement and delays in payment for services rendered and these have led to withdrawal of services sometimes. The most important component of reimbursement is the availability of

financial resources. This has been a major problem of NHIS in Ghana as it is reported that the NHIS receives less than it spends which directly affects claims reimbursement. The table below shows the trends of income and expenditure patterns between 2010 and 2013.

**Table 2.3: NHIS income and Expenditure Pattern-2010-2013**

YEAR	INCOME (mGhc)	EXPENDITURE (mGhc)	SUPPLUS OR DEFICIT (mGhc)	CLAIMS PAYMENT (mGhc)	PERCENTAGE %
2013	904.3	1001.11	-96.80	785.64	78.15
2012	773.83	788.32	-14.49	616.47	78.2
2011	617.67	764.07	-146.40	549.77	73.63
2010	460.96	531.33	-70.37	397.71	74.85

*Source: NHIA, 2013*

Some studies have identified some other factors that affect provider reimbursement.

Akweongo et al, (2021) identified key barriers to provider reimbursement as; lack of qualified persons processing claims, unclear vetting procedures, failure of NHIS staff to draw the attention of health care providers to resolve discrepancies in time, lack of clarity of claims, inaccurate data, the use of non-professionals for claims vetting as some of the barriers to proper credentialling and subsequently provision of quality care.

Sakyi, Atinga and Adzei, (2012) indicated that the managerial problems of the hospitals under NHIS in Ghana were cash flow delays from the health insurance authorities, lack of capacity to procure essential and non-essential drugs and medical consumables, inability to initiate and carry

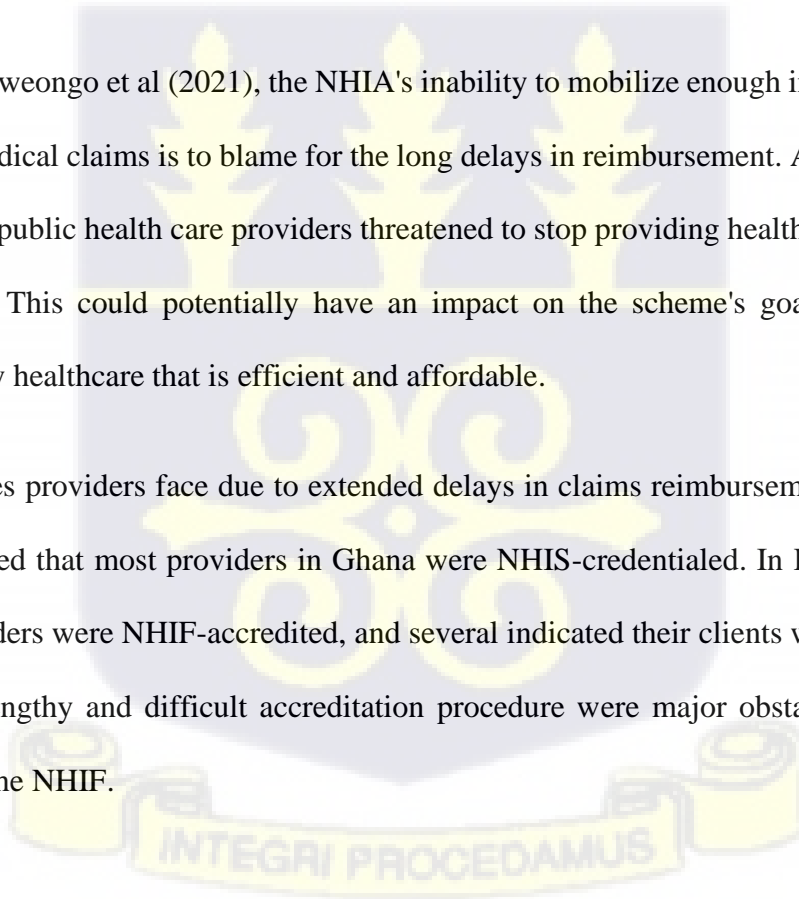
out effective administrative work, inadequate logistics and human resources, limited space and moral hazards.

## **2.5 Provider Experiences of Claims Reimbursement on Quality of Health Care**

While Ghana's NHIS has been praised globally as an excellent example of promoting and improving access to health service delivery, only 1% of all claims submitted by credentialed health facilities were settled between 31 and 60 days. Further, the proportion of claims settled beyond 90 days increased consistently from 26% in 2011 to 100% in 2014 respectively (National Health Insurance Authority, NHIA), 2015).

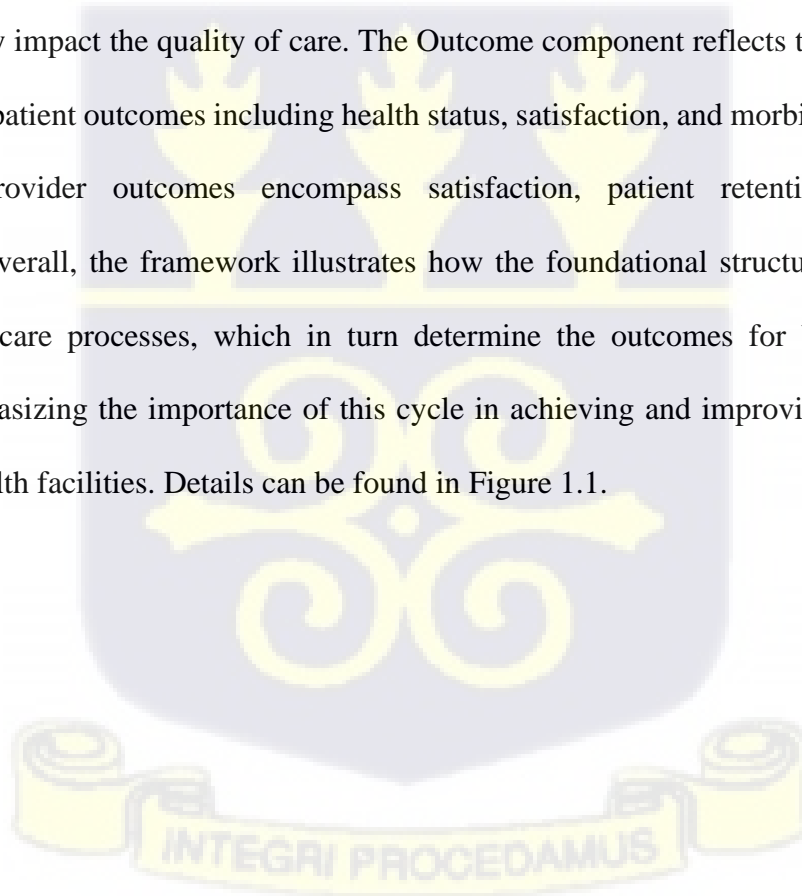
According to Akweongo et al (2021), the NHIA's inability to mobilize enough income to meet the rising cost of medical claims is to blame for the long delays in reimbursement. As a result, several commercial and public health care providers threatened to stop providing health services to NHIS clients in 2014. This could potentially have an impact on the scheme's goal and purpose of providing quality healthcare that is efficient and affordable.

Despite the issues providers face due to extended delays in claims reimbursement, Sieverding et al. (2018) reported that most providers in Ghana were NHIS-credentialed. In Kenya, fewer than half of the providers were NHIF-accredited, and several indicated their clients were not on NHIF. In Kenya, the lengthy and difficult accreditation procedure were major obstacles to providers' involvement in the NHIF.



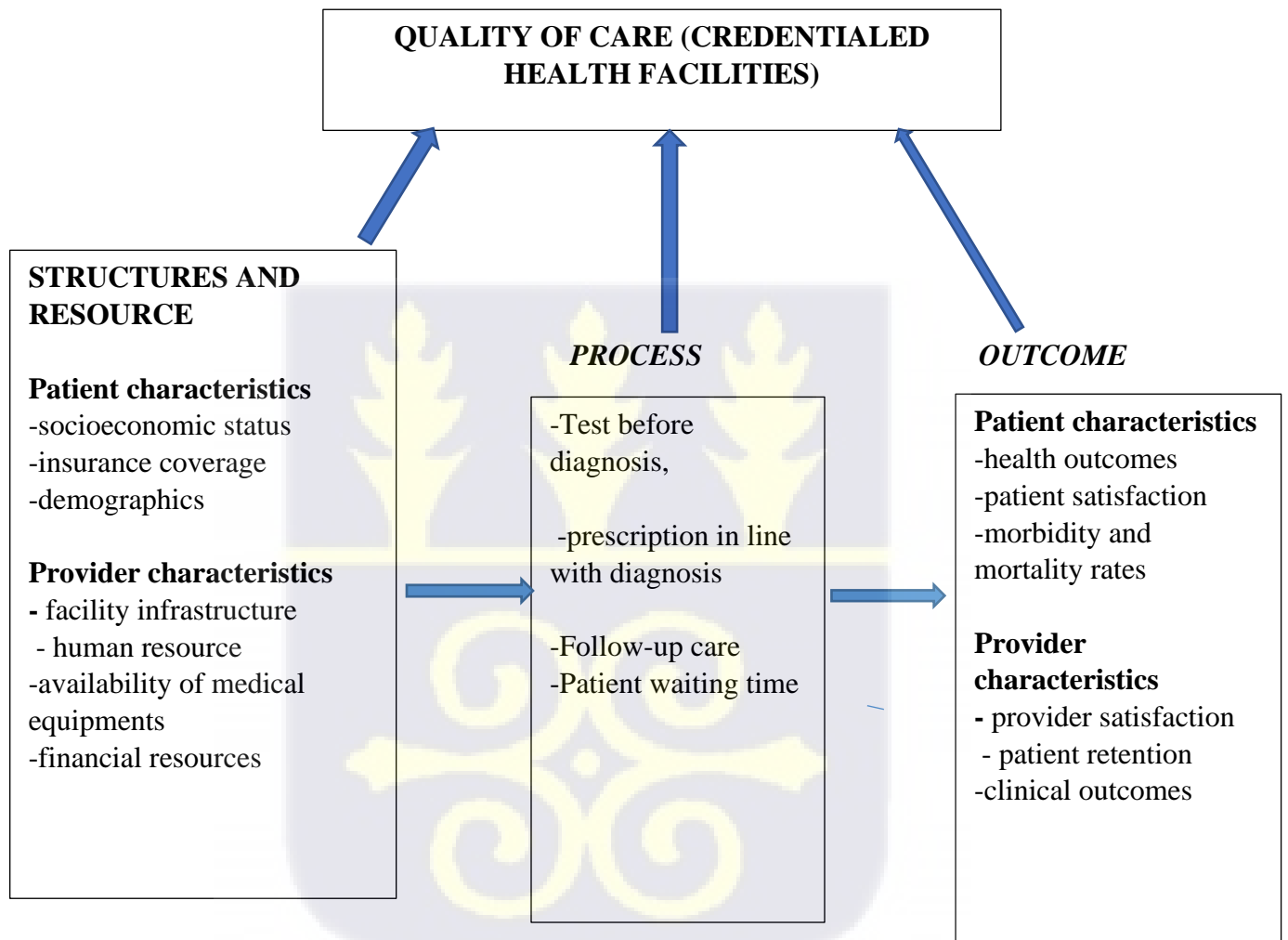
## 2.6 Conceptual Framework

This conceptual framework highlights the interconnected factors that influence the quality of care in credentialed health facilities, organized into three main components: Structures and Resources, Process, and Outcome. Structures and Resources include patient factors like socioeconomic status, insurance coverage, and demographics, as well as provider factors such as facility infrastructure, human resources, medical equipment, and financial capacity, all of which shape the healthcare delivery environment relating to the overall perception of quality. The Process component focuses on the specific activities within healthcare settings, including testing before diagnosis, ensuring prescriptions align with diagnoses, providing follow-up care, and managing patient wait times, all of which directly impact the quality of care. The Outcome component reflects the results of these processes, with patient outcomes including health status, satisfaction, and morbidity and mortality rates, while provider outcomes encompass satisfaction, patient retention, and clinical effectiveness. Overall, the framework illustrates how the foundational structures and resources influence healthcare processes, which in turn determine the outcomes for both patients and providers, emphasizing the importance of this cycle in achieving and improving quality care in credentialed health facilities. Details can be found in Figure 1.1.



**Figure 1.1: Conceptual Framework for Assessing Quality of Health Care in NHIS'**

**Credentialed Hospitals.**



*Source: Adopted from Donabedian (1988) model.*

This study assesses quality of health care in the NHIS credentialed hospitals (government, private and mission) using Donabedian's (1988) quality assessment model of structure, process and outcome.

Donabedian (1988) observed that the information from which inferences can be drawn about the quality of health care could be classified under three categories: "structure", "process", and "outcome". The model links structure and process of care to patient care outcomes. Donabedian (1988) indicated that direct relationships may exist between these three components of the model. This approach to quality assessment is possible only because good structures increase the likelihood of good process, and good process increases the likelihood of good outcomes (Donabedian, 1988). Additionally, improvements in structure of care should lead to improvements in the clinical processes and improvements in clinical processes should in turn improve patient outcomes. In this study, the interdependence of the model has been addressed through multiple methods of data collection and triangulation of the results.

Structure relates to the characteristics of the contexts in which health care is provided, and it may be measured by examining organizational structure, material resources (environmental, technology, tools, and so on), and human resources.

The term "process" refers to what is done when providing and receiving care, and its assessment include analyzing the care procedures themselves (that is how provider task and clinical processes are organized and performed and personal interactions between staff and patients and patient waiting time).

Outcome refers to the effect of the care on the health status of patients and population after the care. It can be assessed by evaluating outcomes of care through the assessment of clinical results and impacts, and patients and stakeholders' perception and satisfaction with care provided. (Donabedian, 1988).

Credentialing is an important quality assessment process and tool. Credentialing under NHIS has a structure similar to Donabedian quality structure which consist of input, process and outcome. Like Donabedian model, each of these three components (input, process and output) can be used alone, or a combination of all the components gives comprehensive assessment. Under NHIS, credentialing is undertaken before a health facility is allowed to provide healthcare to its client. This is to ensure that members are seen by qualified professionals, facilities can provide services they claim to provide (whether they are capable of providing the care). All these are aimed at providing quality healthcare.

The study adopted Donabedian's (1988) quality assessment model, using the following indicators: availability of essential medicines, adequate infrastructure human resource, financial resources, medical consumables under structure quality; adherence to treatment protocols (laboratory test before diagnosis and test in line with standard protocols, medicines prescribed and whether medicines prescribed were also in line with treatment and follow-up care) and patient waiting time under process quality. Patient satisfaction with care (general quality perception) and health workers' perception of quality of health care were assessed under outcome quality.

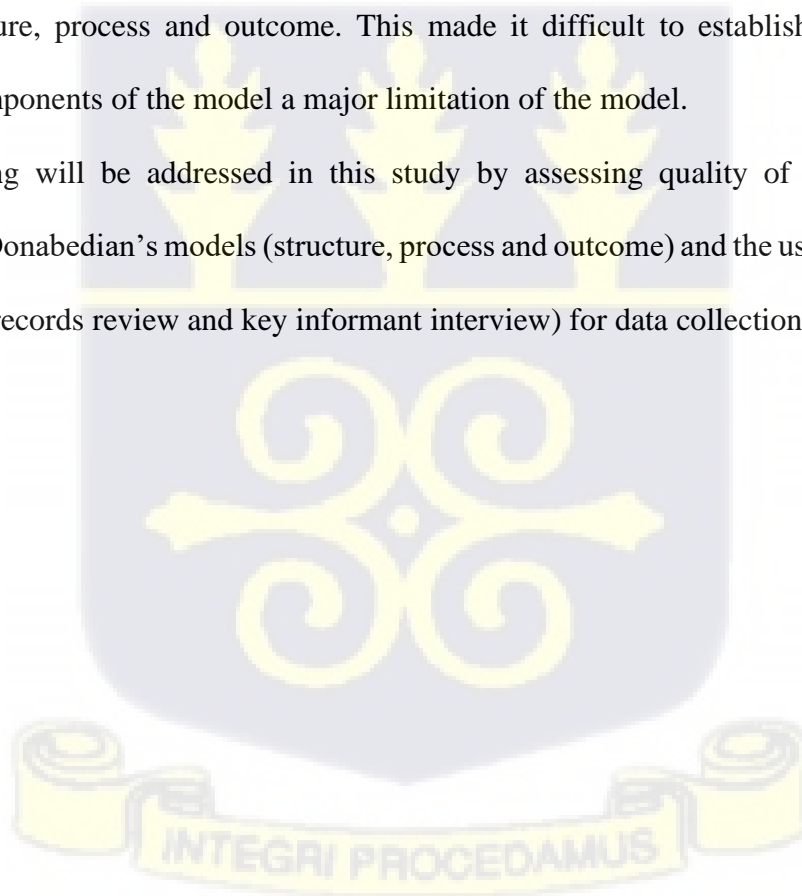
## 2.7 Summary of the Literature

The review of the existing literature on the subject helped in identifying some of the studies and documents related to the topic from which a lot had been learnt bringing in deeper understanding of the topic. However, some observations were also made:

In the first place, most of the studies on quality were done from patients' perspective without recourse to the perceptions of the health care providers. Health care providers' perception is important in quality assessment as it improves it.

Secondly, most of the studies also assessed quality under one component of Donabedian quality model of structure, process and outcome. This made it difficult to establish any relationship between the components of the model a major limitation of the model.

This shortcoming will be addressed in this study by assessing quality of care in all the 3 components of Donabedian's models (structure, process and outcome) and the use of multiple tools (exit interview, records review and key informant interview) for data collection.



## CHAPTER THREE

### METHODS

#### 3.1 Introduction

This chapter deals with research methodology used in collecting data for analysis in the study. Some of the broad topics discussed in this chapter include: philosophical assumption of the study, study design, study area, study population, variables of the study definitions, sampling methods including sample size calculation, data collection methods and tools, data analysis and ethical considerations.

#### Philosophical Assumption

Arguably, how researchers proceed on research depends on a range of factors including their beliefs about social world (ontology) and nature of knowledge and how it can be acquired (epistemology) (Ritchie, Lewis, Nicholls, & Ormston, 2013). Ontology deals with what constitutes reality and how its existence can be understood while epistemology deals with what is considered valid knowledge and how it can be obtained. These philosophical ideas have led to two main positions (positivist and interpretivist), which have been driving the debate on qualitative and quantitative research approaches.

#### Positivist Assumptions

The positivists believe that facts exist independently of personal ideas and thinking and are guided by cause-and-effect laws (Ritchie et al, 2013). The positivist/post positivist philosophy holds that effects or outcomes are most likely determined by cause. Positivist knowledge is founded on the thorough observation and assessment of objective reality in the real world. They believe that

scientific methods are the only way to do research that is acceptable. They begin their research with a hypothesis, collect data to support or contradict the hypothesis, and then revise the hypothesis as needed to conduct additional tests (Creswell, 2013). As a result, positivist scholars prefer to perform quantitative research. Quantitative researchers used prepared instrument-based questions, performance data, attitude data, observational data, and census data, as well as statistical methods to analyze the data.

### **Interpretivist Assumption**

On the other hand, interpretivists see the world as constructed and interpreted (Creswell, 2013). They believe that people want to know more about how they live and operate. They provide their experiences and subjective meanings on certain objects and things. These researchers are looking for nuanced views because these meanings are variable. The purpose of research is to rely on participants' perspectives on the problem as much as possible (Creswell, 2013). As a result, interpretivists prefer to do qualitative research. When a study involves emerging methods, open-ended questions, interview data, observational data, document data, and audiovisual data, qualitative research methods are used, according to Creswell (2013).

### **Post-positivist/Postmodernists Assumption**

Due to the inherent limitations in single research strategy or approach and researchers recognising that all methods have limitations, they feel that these limitations could be neutralised or cancelled by adopting combination of both quantitative and qualitative methods (mixed methods). Creswell,(2013) observed that a mixed method approach is useful for capturing the best of quantitative and qualitative data, when researchers want to generalise findings to general

population, develop a detail view of the meaning of phenomenon or concept for individuals. It is used in multiple forms of data drawing all possibilities from statistical and text analysis.

### **3.2 Study Design**

To gather and analyze the data, this study used a mixed method design, combining quantitative and qualitative methodologies (concurrent mixed methods). A cross-sectional design approach was used for the quantitative whilst qualitative approaches were used to answer exploratory research objectives. This design was chosen because the research aimed to comprehensively assess and generate detailed meaning of the phenomenon under study. According to Creswell (2003), the mixed methods approach combines quantitative and qualitative data collection and analysis methods and is useful for capturing the best of quantitative and qualitative data when researchers want to generalize findings to the general population or develop detailed meaning of a phenomenon or concept from individuals.

### **3.3 Study Area**

The study was conducted in the Greater Accra Region, which was purposely selected. At the time of the study, the region was the smallest among the sixteen (16) administrative regions in Ghana in terms of land area and also the most densely populated - (retrieved August 3, 2023 from <http://www.ghana.gov.gh>).

#### ***Geography and Demography***

There are currently 16 administrative regions. The Greater Accra Region has a total land area of 3,245 square kilometers, accounting for 1.4 percent of Ghana's total land area. After the Ashanti Region, it is the second most populous region. The 2021 population and housing census showed a

population of 5,446,237 or 17.69% of Ghana's total population, and it has remained the country's most densely inhabited region since 1960.

The Greater Accra Region shares borders in the North with Eastern Region, West with Central Region, East with Volta Region and South with Gulf of Guinea.

At the time of data collection, the region had 16 administrative Assemblies comprising of two (2) metropolitans, eight (8) municipals and six (6) ordinary district Assemblies.

The Greater Accra Region is occupied by almost all tribes/ethnic groups in the country. The major ethnic groups are Akan (39.8%), Ga-Dangme (29.7%), Ewe (18%) with other ethnic groups forming the remaining 12.5%. However, the most single sub-ethnic group in the region is the Gas forming 18.9%.

The region also has various religious groups, but it is predominantly occupied by Christians (83%), Moslem (10.2%), and traditional religion (1.4%) with the remaining 4.6% professing no faith.

It also falls within dry coastal equatorial climatic zone with temperatures between 20-30 degrees celcius. The annual rainfall is between 635mm along the coast and 1,140mm in the northern part. There are two rainfall seasons in the region: April to June and July to October.

Total fertility rate in the region also varies between 2.2 and 5.1.



### *Economy*

The region's active working population, which numbers about 2,428,054 individuals, accounts for 63.87% of the local economy. 51.23% of people work in sales and service-related occupations, while 12.6% work in professional, technical, and related fields. Production, transportation operations, sales, clerical and associated labour, and services are the top jobs for both men and women (Population and Housing Census, 2021).

On the other hand, there is a greater concentration of technical and professional employees in the Greater Accra Region. One of the nation's two major harbours and the only international airport are located in this area. The offices of the Government and Parliament are located there.

Figure 3.1 illustrates a map of the Greater Accra Region.



**Figure 3.1. Study Area (Greater Accra Region).**

*Source: [www.ghana.gov.gh](http://www.ghana.gov.gh) (retrieved, March 23, 2018)*

### Healthcare provision

In 2018, the Greater Accra Region had a total of 1087 health facilities. Community-based Health Planning and Services (CHPS) were 498 and Clinics were 322, with District Hospitals being 8, and Hospitals 99 (DHIMS, (MOH/GHS) Facts and Figures, 2018). In table 3.1, the details of health facilities in the region are compared to national statistics.

**Table 3.1: Number of Health Facilities in Greater Accra Region (GAR)**

HEALTH FACILITIES (CREDENTIALLED)	GAR	National	Percentage
CHPS	498	5421	9.19
Clinics	322	998	32.26
District Hospitals	8	140	5.71
Health Centres	40	1004	3.98
Hospitals	99	357	27.73
Maternity Homes	104	346	30.05
Polyclinics	14	38	36.84
Psychiatric Hospitals	2	3	66.6

*Source: Field Data*

The proportion of facilities by private ownership (99) represented 4.84%, government (1882) 91.94% and mission/Christian (66) 3.22%. (DHIMS, (MOH/GHS) Facts and Figures, 2018)

The following hospitals were randomly selected for the study; Ga West Municipal Hospital in Amasaman (government), Achimota Hospital in Achimota (government), Kaneshie Polyclinic in Kaneshie (government), La General Hospital in La (government), Ashongman Community

Hospital in Ashongman (private), Darbem Hospital in Ashaiman, (private), New Crystal Hospital in Tema (private), The Rock Hospital in Odorkor (private), Alpha Medical Centre (Pentecost Hospital) in Madina (mission) and Faith Evangelical Hospital in Bubuashie (mission).

Data on key health professionals in the region as at 2017 showed the Doctor/patient ratio was 1 doctor to 3,052 patients and that of nurse/patient was 1 nurse to 530 patients.

(DHIMS, (MOH/GHS) Facts and Figures)

### **3.4 Study Population**

The study population included both NHIS insured and uninsured patients who were seen at the Out-Patients Department (OPD) in selected NHIS credentialed hospitals (private, mission and government hospitals) in the Greater Accra Region. In addition, the study included health care staff (medical doctors, nurses, midwives, physician assistants, pharmacists among others in the selected hospitals.

#### **3.4.1 Inclusion Criteria**

The study included patients from the OPD in selected NHIS credentialed hospitals in Greater Accra Region and key health care staff in these hospitals who consented to be part of the study. Children who were under the age of 18 years were interviewed with permission and assent from their parents/guardians. Parents of younger children answered questions on their behalf. Patients for post discharge reviews were also interviewed.

### **3.4.2 Exclusion Criteria**

Healthcare providers and in-patient patients who could not allocate the necessary time for participation due to other commitments or conflicting schedules were excluded. Additionally, healthcare providers or facility heads with less than the minimum required years of experience were excluded, as they may not possess sufficient relevant data.

### **3.5 Study Variables**

The variables in the study were divided into two categories: dependent or outcome variables and independent or major effect factors (Table 3.3)

#### **3.5.1 Dependent / Outcome Variable**

The dependent variable is Quality of care in the NHIS credentialed hospitals in Greater Accra. Quality of health care was measured by combining structural quality, process quality, and patient satisfaction (outcome) with quality of care.

#### **3.5.2 Independent Variables**

The following independent variables were measured in the study:

- Socio-demographic variables: -age, gender, ethnicity, religion, marital status, number of children and number of dependants.
- Socioeconomic variables: -level of education, employment status and income
- Other independent variables: - health insurance status, type of facility

These variables were measured through exit interviews.

**Table 3.2: Operational Definition of Variable**

Variable Type	Variable	Operational Definition	The Outcome Measurement	Data source
Dependent/ Outcome	Quality of care in credentialed hospitals	Health care consistent with professional knowledge and ethics provided to the satisfaction of the care recipients and other stakeholders.	<ul style="list-style-type: none"> <li>• Patient satisfaction with healthcare.</li> <li>• No medical errors.</li> <li>• Improved health status</li> </ul>	Patient exit interviews, Questionnaire for health care workers, Key Informant Interview (KII) for hospital in-charges, Review of patients' medical records
Dependent/ Outcome	Structural <ul style="list-style-type: none"> <li>• availability of essential medicines</li> <li>• Availability of health workers</li> </ul>	Stock of essential drugs for healthcare.  Standard human resource requirements (WHO) - Number of skilled staff available	Limited stockout of essential medicines  Percentage of medicines served to patients in the facilities.  Availability of adequate skilled staff	Exit interview  Key informant interview  Key informant interview. Document review.
Dependent/ Outcome	Process <ul style="list-style-type: none"> <li>• Timeliness of care</li> <li>• Laboratory test for diagnosing disease</li> </ul>	Time patient spent waiting at the hospital (How long patients waited at OPD before seen by a prescriber)	Patients spending less time at OPD	Patient Exit interview, Review of patients

	<ul style="list-style-type: none"> <li>Medicines prescription in line with diagnosis.</li> <li>Follow-up or continuity of care</li> </ul>	<p>Facilities requesting a laboratory test before diagnosis</p> <p>Medicines prescribed in line with treatment protocols.</p> <p>Facility provides follow up care for those requiring a review</p>	<p>Percentage of investigations requested by facilities</p> <p>Patients receiving medicines prescribed according to protocol</p> <p>Number of requests for reviews and referrals by facility</p>	<p>Review of patients' medical records</p> <p>Review of patients' medical records</p>
Dependent/ Outcome	<p>Outcome quality</p> <ul style="list-style-type: none"> <li>Patients' satisfaction with care received (general quality satisfaction)</li> </ul>	<p>Patients' judgement on care received (the extent to which patients are happy with healthcare received).</p>	<p>Percentage of patients satisfied with healthcare received</p>	<p>Patient exit interviews,</p>
Independent variables	<ul style="list-style-type: none"> <li>National Health Insurance status</li> </ul>	<p>Client registered with NHIS</p>	<p>A member with valid (active and non-expired) card.</p>	<p>Inspection of card.</p> <p>Exit interview.</p>

Independent variables	Sociodemographic, <ul style="list-style-type: none"> <li>• Age</li> <li>• Sex</li> <li>• Educational level,</li> <li>• Religion</li> <li>• Ethnicity</li> </ul>	Age in completed years Female/male Educational status of respondent	Reported by respondents. Reported by respondents. Primary / Secondary or higher	Exit interview. Questionnaire Review of patients medical records.
-----------------------	---	---	---	---



### 3.6 Sampling

This section presents the methods that were used to sample the research participants and the sample size determination.

#### 3.6.1 Sample Size Determination

##### Quantitative Sample Size

The Cochran's formula was used to calculate the sample size;

$$\text{Minimum Sample Size } n = \text{Design Effect} \times \frac{\left(\frac{Z_{\alpha}}{2}\right)^2 P(1 - P)}{e^2}$$

Where,

$\frac{Z_{\alpha}}{2}$  = is the standard normal variate (at 5% type I error,  $P < 0.05$ ,  $\frac{Z_{\alpha}}{2}$  is 1.96).

$P = 42.1\%$  is the proportion of the population who experienced quality of care with a valid NHIS card (GSS). 2012).

$e =$  The margin of error is 5%

Design effect (which quantifies the extent to which the expected sampling error in a survey departs from the sampling error that can be expected under simple random sampling) was estimated to be 1.5 (Demographic and Health Survey, 2014)

By substituting the above parameters into the equation, a minimum sample size of approximately 567 was obtained. Considering non-response rate of 10% for responder apathy and data loses, the estimated final sample size for the study was  $567/0.90 = 630$ . Therefore, a minimum sample size of 630 patients (insured and uninsured) were interviewed.

Additionally, two hundred and fifty (250) health workers were also interviewed.

### Qualitative Sample Size

For the qualitative study, seven (7) Key Informant Interviews (KII) were conducted with heads of seven of the selected hospitals.

### 3.6.2 Sampling Method

A multistage sampling method was applied to select the study participants. Sampling is the process of obtaining information about an entire population by examining part of it (Haque, 2010).

Simple random, cluster, purposive and convenience methods were used for sampling respondents (patients, healthcare workers, head of hospitals) respectively.

Haque, (2010) explained that sampling is used for various reasons. Some of the reasons are; that it is cheaper and more economical than the census, provides small numbers that make data collection and analysis to be carried out accurately and efficiently, the preferred method for researchers dealing with a larger population such as the population of a country.

Taherdoost, (2016), signposted that researchers neither have time nor resources to analyze the entire population, they therefore apply sampling techniques to reduce the number of cases.

Generally, sampling techniques can be grouped into two namely, probability or random sampling and non-probability or non-random sampling.

#### ***Quantitative (probability) sampling***

Cluster of hospitals/polyclinics was randomly selected from the three (3) clusters, and then further grouped into facility ownership:

1. Public
2. Private
3. Mission.

Four (4) hospitals were randomly selected from each cluster of public and private hospitals.

Sequential sampling: This method was used to select participants in the hospitals (both patients and health workers) for the exit interview.

Proportional sampling: The sample was drawn from each of the selected hospitals based on their OPD attendances.

### ***Cluster Sampling Method***

Cluster sampling was used in the selection of the hospitals. Haque, (2010) has described clustering sampling as a method in which sampling units are not individual elements of the population, but groups of elements or groups of individuals. Etikan and Bala (2017) have also indicated that cluster sampling is economical but gives less precision. Acharya, et al, (2013) reiterated that it is the most practical to use in large national surveys, which usually require a large sample size, and very useful when the population is widely scattered and impractical to sample and select a representative sample of all the elements. “Cluster sampling is advantageous for researchers whose subjects are fragmented over a large geographical area, it saves time and money” (Davis, 2005).

Cluster sampling was used in this study when it became necessary to select hospitals from other health facility types (CHPS, Health Centres, Clinics, and Maternity Homes amongst others) and also the selection of hospitals by ownership (government, private, and mission).

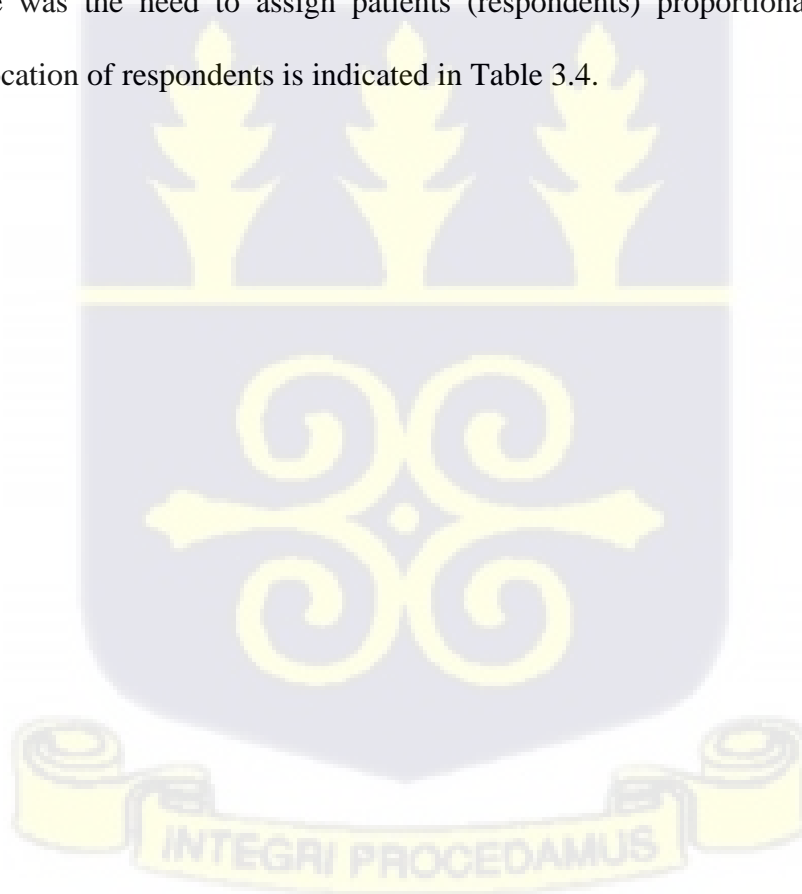
A sampling frame of the list of NHIS credentialed health facilities in Greater Accra Region for 2017 was obtained from the National Health Insurance Authority (NHIA). The facilities were grouped into a cluster of facility types (Health Centres, and Clinics, and Hospitals and Polyclinics) as indicated in Table 3.1. The cluster of facilities were randomly selected from the cluster of facility types. The cluster was further classified into a cluster of government, mission, and private hospitals (further details in the appendix). From the clusters of government and private hospitals, four (4) hospitals were randomly selected. For the cluster of mission hospitals, there were only

two (2) hospitals and therefore all the two (2) hospitals were selected. This brought the number of hospitals selected to ten (10) (4 for government, 4 for private, and 2 for mission).

### ***Proportional Representative Sampling***

A proportional representative sampling was used to determine the number of respondents selected from each of the selected hospitals using OPD attendances. In proportional representative sampling, the population is divided into subpopulations called strata. The investigator then draws a sample from each stratum based on the strata population or contribution to the population.

This method was applied because each of the hospitals had a different number of OPD attendances and hence there was the need to assign patients (respondents) proportionally. The detailed proportional allocation of respondents is indicated in Table 3.4.



**Table 3.3: Proportionate Distribution of Sampled Respondents for Hospital Survey**

District/ scheme	Name of provider	Average monthly number of claims	Percentage of claim proportionate to overall total claim (%)	No. Participants
Adenta	Pentecost Hospital (Alpha Medical)	5,576	12.89	81
Okaikoi	Faith Evangelical Mission Hospital	1,966	4.55	29
Ga	Ga West Municipal Hospital, Amasaman	4,946	11.44	72
Kpheshie	La General Hospital	5,413	12.52	79
Ashaiman	Darbem Clinic	2,332	5.39	34
Tema	New Crystal Health Services-Tema	4,550	10.52	66
Ga	Ashongman Community Hospital	4,706	10.88	69
Ga	Achimota Hospital	6,872	15.89	100
Okaikoi	Kaneshie Polyclinic	4,484	10.37	65
Ablekuma	The Rock Hospital	2,399	5.55	35
<b>Total</b>		<b>43,244</b>	<b>100</b>	<b>630</b>
<b>Average</b>		<b>3,931</b>		

Source: Field Data

## **Qualitative (non-probability) Sampling**

### **Purposive sampling**

Two (2) hospitals were purposefully selected from the cluster of mission hospitals (as there were only 2 hospitals in that cluster).

Ten (10) heads of healthcare facility(ies) were purposively selected for Key Informant Interviews

### ***Convenience Sampling Method and Purposive Sampling Method***

Convenience sampling is a type of non-probability sampling that involves the sample being drawn from that part of the population that is close to hand, it is most useful for pilot testing. It is cheap, efficient and simple to implement. Respondents are frequently chosen because they are in the right place at the appropriate time when the survey was conducted (Acharya, et, al, 2013). Patients that meet the inclusion criteria are recruited, which is a standard practice in clinical research. It is one of the most widely utilized and least expensive ways. Variability and bias, on the other hand, cannot be assessed, and generalization cannot be made outside of the sample. (Acharya and colleagues, 2013).

### **Exit Interviews Sampling**

Patients (insured and uninsured) were chosen for the study based on their availability in the hospitals and their agreement to participate. After the patients had undergone treatment and were leaving the hospitals, personal contact was made with them. The purpose of the study was stated and consent taken, those who agreed to participate completed a questionnaire or were interviewed. The data collection process lasted for a period of three (3) months averaging seven to ten (7 - 10) patients and three (3) healthcare professionals daily at the OPD of the selected facilities.

Purposive sampling is the type of sampling in which the researcher selects samples arbitrarily based on what he/she considered important and believes to be representative of the population. Purposive sampling often has big sampling errors and carry misleading conclusion (Haque, 2010).

Both purposive and convenience sampling methods were applied to select seven (7) heads of hospitals for the Key Informant Interviews (KII) conducted in seven hospitals. This strategy was also applied to purposively and conveniently select the other 250 health workers, including unit heads to answer the questionnaires. Thus, the selection of health workers was also based on availability and consent to participate (convenient sampling).

### **3.7 Data Collection**

Both qualitative and quantitative methods were used to collect data for the study. Data were from both primary and secondary sources. The primary data source was from patients and health care staff and secondary data from patients' medical records at the selected hospitals. These were achieved using hospital exit interviews, questionnaires, key informant interviews (KII), and review of medical records. The patients and health workers responded to the research questionnaires provided. The hospital heads participated in the key informant interviews.

Data collection took place between July, and September 2018.

#### **3.7.1 Qualitative Data Collection (Key Informant Interview (KII))**

A semi-structured interview guide was used to conduct Key Informant Interviews (KII) with seven (7) heads of the selected hospitals at their various facilities, which lasted around an hour. This method was used to assess hospital structural and outcome quality, as well as to learn about the perspectives of hospital executives. The hospital heads were interviewed by the researcher about

a variety of quality issues affecting NHIS hospitals. This further clarified how the NHIS contributes to the quality of health treatment in hospitals. Appendix C contains a full interview guide.

### **3.7.2 Documentary Review/Medical Records Review**

For process quality, documentary review/medical records review was done on patients (exit interviewees) who gave their consent for their health records to be examined by research assistants at the credentialed facilities. The main activity was a case audit of care given as captured by the patient records; care provided was compared with the standard treatment protocols (standard treatment guidelines) for some of the common conditions such as malaria presented by patients. This also offered the opportunity for actual quality to be assessed. The tool or checklist for data collection was developed based on the treatment protocols as indicated in the Standard Treatment Guidelines (STG) 2017 version. In all, 270 manual patient records (folders) were examined. The folders were examined for five key processes of care. These were:

An indication that investigations (laboratory tests) were requested before diagnosing; investigations in-line with standard treatment protocols (STG); prescription of medicines; prescribed medicines in-line with diagnosis, and finally, whether there was a follow-up care.

### **3.7.3 Quantitative Data Collection**

Patients were given a structured questionnaire comprising open and closed-ended questions that was developed from an earlier study (Chehab et al, 2001). There were three sections to the questionnaire. Participants' socio-demographic information was collected in the first section (sex, age, educational status, marital status, religion, ethnicity, occupation, among others). Data on health insurance was collected in section two (2). The third section gathered information on

healthcare quality. Quality assessment was done using quality assessment tools. Variables assessed in the overall quality of health care included: Structure (waiting time, availability of medicines, and availability of staff). Process included (laboratory tests before diagnosing diseases, follow-up care, medicines in line with diagnosis).

Process was assessed by comparing treatment given with the standard treatment guidelines for conditions presented by the patients as reported in the appendix of this report.

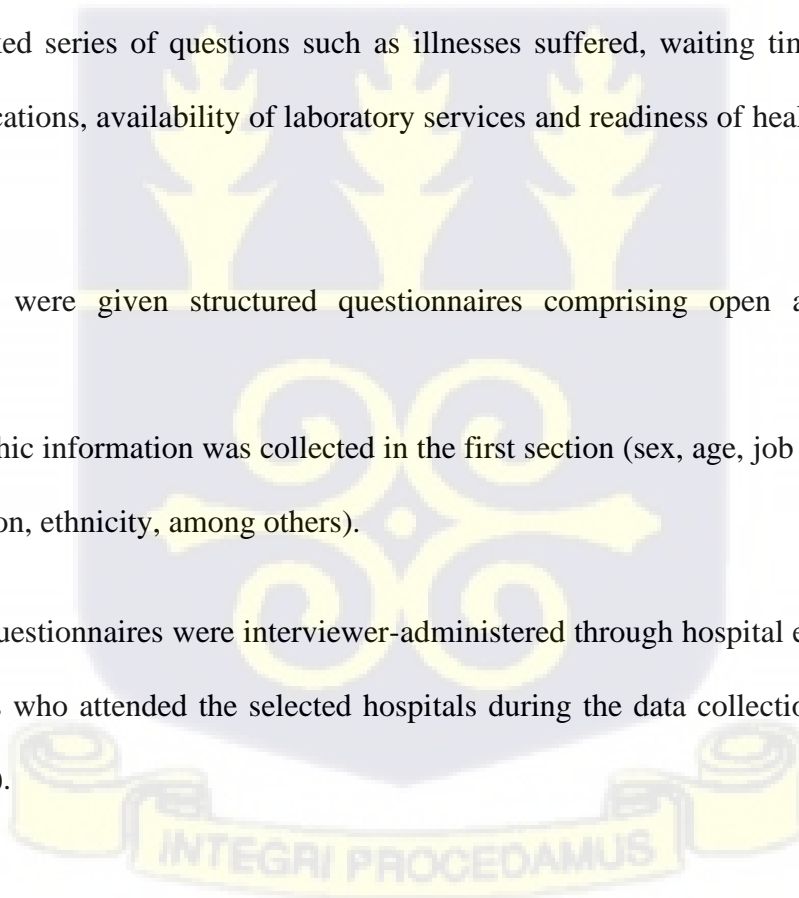
Outcome (patients' satisfaction with care received and health workers' perception of quality of health care under NHIS).

Patient were asked series of questions such as illnesses suffered, waiting time, availability of prescribed medications, availability of laboratory services and readiness of healthcare workers in attending.

Health workers were given structured questionnaires comprising open and closed-ended questions.

Socio-demographic information was collected in the first section (sex, age, job description, years of service, religion, ethnicity, among others).

The structured questionnaires were interviewer-administered through hospital exit interviews for both the patients who attended the selected hospitals during the data collection period (July to September 2018).



The questionnaires were also administered to patients and health workers who consented to the study. In all, 630 patients and 250 health workers responded to different survey questionnaires. Interviews averaged 30 minutes for each of the surveys (patient and health workers).

#### **3.7.4 Data Quality Assurance**

Three research assistants were recruited and trained to assist in data collection and data entry. To ensure data quality, each of them did separate entries using SPSS software, and the results were compared. The questionnaires were also coded to ensure easy identification where necessary. In addition, all the key informant interviews and discussions were recorded, field notes were taken, and transcription was done for the key informant interviews.

#### **3.7.5 Data Analysis**

This section presents how data collected from various sources were analyzed. The data collected from various sources were analyzed using appropriate analytical methods

The analysis was done relative to the study objectives. Key analyses were done to determine the following: sociodemographic and socioeconomic characteristics of respondents, standard/quality of health care in the credentialed hospitals, client satisfaction with the quality of care between insured and uninsured, reported patient quality satisfaction, structure (observed and perceived), health workers' quality perception, and variables associations. Both qualitative and quantitative data analytical tools were used for the analysis of the research data as presented below.

##### **3.7.5.1 Qualitative Data Analysis**

Qualitative interview data were analyzed using Nvivo7 software. The recorded Key Informant Interviews (KII) with the facility in-charges/heads were transcribed using the Microsoft word

application. A thematic analysis of the data was used as transcripts with significant statements and phrases related to the quality of health care provided to clients under the implementation of the National Health Insurance Scheme were grouped into major themes and coded using the Nvivo application. The major themes identified during the analysis were: the availability of resources (medicines, human resources, financial resources, and other consumables), adequate infrastructure, health workers' perception of quality of healthcare, and contribution of NHIS to the quality of healthcare.

### **3.7.5.2 Quantitative Data Analysis**

To analyse the structure, process, and outcome factors in credentialed hospitals, a structured questionnaire with checklists on various aspects of hospital infrastructure (structure), clinical practices and protocols (process), and patient health outcomes was deployed to the patients.

Quantitative data were entered, cleaned and analyzed using Stata MP Version 13. Findings on the level of healthcare provided in government, private, and mission hospitals were then compared using statistical tests to identify significant differences. Additionally, multivariate regression analysis was done to determine the impact of structural and process factors on patient outcomes.

In assessing providers' views on claims reimbursement and its effects on the quality of healthcare, Key Informant interviews were conducted to elicit information from healthcare providers. The measure of administrators' satisfaction with the reimbursement process and their perception of its impact on healthcare quality was ascertained. Descriptive statistics was then used to summarize the data to explore the relationship between reimbursement satisfaction and perceived quality of care.

Patients' satisfaction with the quality of healthcare in credentialed hospitals in the Greater Accra Region was measured through a satisfaction survey. The survey included questions that cover various dimensions of care, such as waiting times, cleanliness, staff attitudes, and treatment effectiveness. Responses were then quantified using Likert scales, and the overall satisfaction levels calculated. Statistical methods such as Chi-square test was employed to compare satisfaction levels across different hospitals and patient groups.

### **3.8 Ethical Considerations**

Different strategies were applied to ensure compliance with ethical issues associated with the use of human subjects in research. These have been explained below.

#### **3.8.1 Ethical Clearance**

Ethical clearance was granted by the Ethics Review Committee of the Ministry of Health/ Ghana Health Service (reference number: **GHS-ERC: 08/01/ 2017**).

#### **3.8.2 Permission from the Study Sites**

A letter of introduction from the Department of Health Policy, Planning and Management, School of Public Health, College of Health Science, University of Ghana was sent to the selected health facilities through the Regional and District Health Directorates to seek permission to use their facilities for the study. Similar letters of introduction were written by these facilities to the departments and staff of the selected hospitals as well.

### **3.8.3 Informed Consent**

A participant consent form was designed and signed by participants to confirm their willingness to participate in the study after the purpose of the study, expected outcome, the use of the study, benefit, potential risk, duration, and their responsibilities had been duly explained to them. Thus, both implied and explicit consent from patients and health care staff were sought before they participated in the study. The participant consent forms are shown in appendix C, D, and E.

### **3.8.4 Confidentiality and Anonymity**

Participants were assured of the confidentiality and anonymity of themselves and the information they gave, as well as the ability to withdraw from the study at any time without being victimized in any way. On questionnaires, participants' identities were concealed by using codes rather than their names.

### **3.8.5 Data Storage and Usage**

Data is stored in both soft and hard copies. In both instances, the data is protected. The soft copy of the data is protected under a password, which is only known to the researcher. The hard copy data is protected under lock and key with the key kept by the researcher. Participants were also assured that the data would be used for only its intended purpose -that is, for academic research.

### **3.8.6 Compensation**

Participants were told that there was no compensation for taking part in the study before the commencement of the interview and the filling of the questionnaire.

### **3.8.7 Risk and Benefits**

Respondents were promised that participating in the study would pose no risk to them or their families, and that there would be no financial incentive to do so.

### **3.8.8 Results Dissemination**

Results of the study are presented in both soft and hard copies and shall be presented to the School of Public Health for it to be sent to the School of Graduate Studies. With the permission from the University, information or the results will be shared with external institutions, for example, the Ministry of Health (MOH), Ghana Health Services (GHS), National Health Insurance Authority (NHIA), Christian Health Association of Ghana (CHAG), as well as the hospitals where patients were selected for the study.

### **3.8.9 Conflict of Interest**

In the study, there were no conflicts of interest.

### **3.9 Summary of the Chapter**

This chapter examined how the mixed methods (qualitative and quantitative) approach was used in this study to collect both primary and secondary data for analysis. The study was carried out at ten health facilities in the Greater Accra Region, according to the chapter. In addition, the chapter explained how data was analyzed. To fulfill the desired criteria, ethical considerations were attended to during the study's conduct. The results of the data analysis are presented in the following chapter.

## CHAPTER FOUR

### RESULTS

#### 4.0 Introduction to the chapter

This chapter is made up of a compilation of study results of the data collected and analyzed to respond to the research objectives of the study. The results are presented in line with the three (3) components of the Donabedian quality assessment models of structure, process, and outcome. Also presented in this chapter are the results of the qualitative assessment presented thematically. The quantitative data are presented in text, tables, and charts to help further explanation of the data. The chapter ends with a summary section.

#### 4.1 Socio-demographic and Socioeconomic Characteristics of Health Workers

A total of 250 health professionals were interviewed, and 110 (44.0%) of them were nurses, as indicated in (Table 4.1). The age range for the median was 30 (28-35). A little over one-third, or 86 (34.4%), of the health professionals were men, with women making up the majority. 250 health professionals were employed, 124 (49.6%) were married, and 8 (3.2%) were living together.

A median (IQR) of 4(2-6) indicates that 50% of respondents have worked for at least 4 years. The number of people earning less than GHS 2000 was larger, at 194 (77.6%), while 56 (22.4%) made more than GHS 2000. Table 4.1 displays specific sociodemographic and socioeconomic traits of health professionals.

**Table 4.1: Sociodemographic/socioeconomic characteristics of the health workers in Credential health facilities**

<b>Socio-demographic/socioeconomic variables</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
<i>Age (years)</i> Median (LQ-UQ)	30(28-35)	
<i>Sex</i>		
Male	86	34.4
Female	164	65.6
<b>Total</b>	<b>250</b>	<b>100</b>
<i>Marital status</i>		
Never married	118	47.2
Married	124	49.6
Cohabiting	8	3.2
Total	250	100
<i>Ethnicity</i>		
Akan	131	52.4
Ewe	53	21.2
Ga/Damgbe	40	16.0
Dagomba	16	6.4
Others	10	4.0
Total	250	100
<i>Dependents</i> Median (LQ-UQ)		
	2(0-4)	

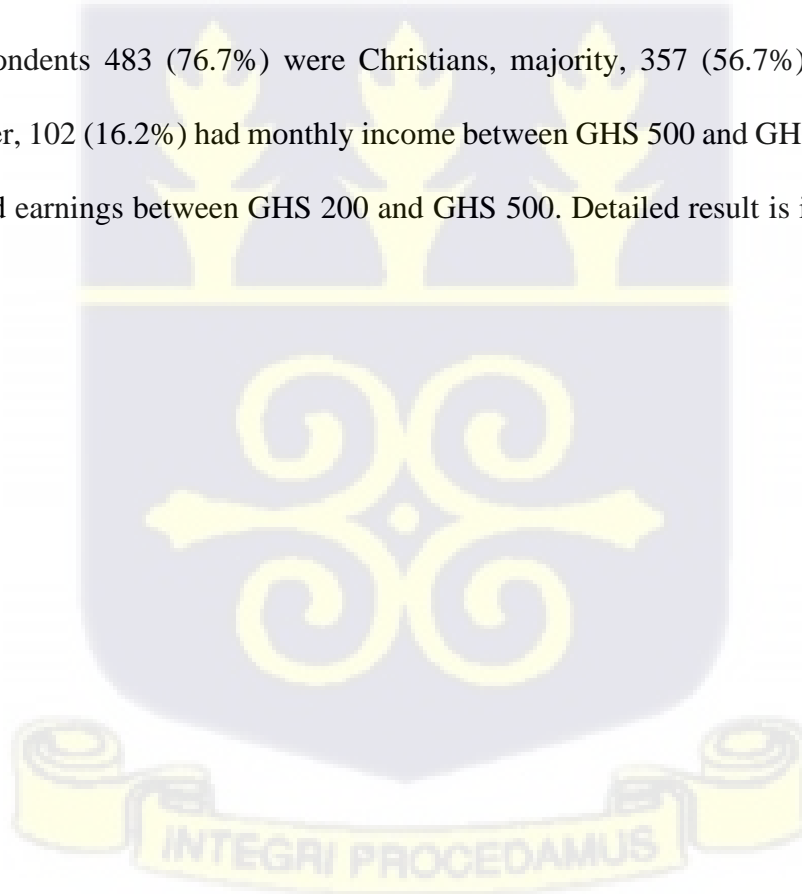
<b>Religious affiliation</b>		
Christianity	230	92
Muslim	14	5.6
Other religions	6	2.4
Total	250	100
<b>Level of education</b>		
≤ Secondary/SHS	9	3.6
≥ Tertiary	241	96.4
Total	250	100
<b>Monthly income</b>		
< GHS 2000	194	77.6
≥ GHS 2000	56	22.4
Total	250	100
<b>Working experience</b>		
Median (LQ-UQ)	4(2-6)	
<b>Profession</b>		
Medical Doctor	16	6.4
Physician Assistant	17	6.8
Nurse	115	46.0
Midwife	38	15.2
Pharmacist	23	9.2
Lab technician	29	11.6
Others	12	4.8
Total	250	100

Source: Field Data

#### 4.2 Sociodemographic and Socioeconomic Characteristics of Patient Respondents

This section presents the quantitative findings as well as results of the exit interviews with patients who attended the OPD. The response rate was 100% (630/630). The results showed that a little over a third were (227; 36.0%) of the respondents were females. The majority were males. The median age of the respondents was about 30 years [(LQR-UQR-30 (17-51)]. In all, 223 (35.4%) were married while 194 (30.8%) were not. The median number of children of respondents was 2 (0-4). A total of 10 (1.6%) of the respondents were disabled.

Majority, 221 (35.1%) had attained educational level up to Junior High School with 57 (9.1%) having no educational attainment with a male to female educational distribution of 1:2. A higher number of respondents 483 (76.7%) were Christians, majority, 357 (56.7%) had no monthly income. However, 102 (16.2%) had monthly income between GHS 500 and GHS 1,000 while 109 (17.3%) reported earnings between GHS 200 and GHS 500. Detailed result is indicated in Table 4.2.



**Table 4.2: Sociodemographic and Socioeconomic Characteristics of Patient Respondents**

<b>Sociodemographic variables</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>
<i>Age (years)</i> Median age (LQ-UQ)	30(17-51)	
<b>Sex</b>		
Male	227	36.0
Female	403	64.0
Total	630	100
<b>Marital status</b>		
Never married	194	30.8
Married	223	35.4
Widowed	55	8.7
Cohabiting	133	21.1
Divorced/Separated	12	1.9
Others	13	2.1
<b>Total</b>	630	100
<b>Ethnicity</b>		
Akan	291	46.2
Ewe	133	21.1
Ga/Dangbe	131	20.8
Dagomba	45	7.1
Others	30	4.8
<b>Total</b>	630	100

<b>No of children</b> Median (LQ-UQ)	2(0-4)	
<b>Dependents</b> Median (LQ-UQ)	1(0-4)	
<b>Socioeconomic variables</b>		
<b>Level of education</b>		
None	73	11.6
Primary/JHS	237	37.7
Secondary/SHS	176	27.9
Tertiary	113	17.9
Others	31	4.9
<b>Total</b>	630	100
<b>Religious affiliation</b>		
Christianity	483	76.7
Muslims	97	15.4
Traditionalists	35	5.6
Others	15	2.3
<b>Total</b>	630	100
<b>Employment status</b>		
None	207	32.9
Casuals	135	21.4
Permanent	266	42.2
others	22	3.5
<b>Total</b>	630	100

<b>Monthly income</b>		
Below Ghc200	21	3.3
Gh¢ 200 - Gh¢ 500	109	17.3
Gh¢ 500 - Gh¢ 1000	102	16.2
Gh¢ 1000 – Gh¢ 2000	357	56.7
Gh¢ 2000 – Gh¢ 3000	31	4.9
Above 3000	10	1.6
<b>Total</b>	<b>630</b>	<b>100</b>

*Source: Field Data*

### **4.3 Assessing Structure Quality in Credentialed Hospitals.**

This section presents the results of the analysis related to structure quality variables.

Structure quality variables included in the study were: the adequacy of key health staff (Doctors, Nurses, Midwives, and Pharmacists) at the hospitals, availability of medicines, material resources, medical consumables, and infrastructure. Respondents reported on the availability of medicines while and availability of staff was assessed through data collected from the hospitals on the four (4) key staff category above mentioned above as well as from qualitative data from the heads of the hospitals.

#### **4.3.1 Structure Quality Assessment based on Availability of Medicines**

Assessment of structure quality based on the availability of medicines was derived from patients' responses on the availability of medicine in the credentialed hospitals.

The analysis showed that the majority, 385 (62.0%) of patients reported having received medicines prescribed while 215 (38%) reported not receiving medicines prescribed. No table for one variable answers

The qualitative narrative on medicines availability in credentialed facilities reveal that facilities rarely run out of drugs especially for the mission and private health facilities, however in-charges of government facilities reported shortages at certain times especially when the central stores have stockouts or when the prices of NHIS are so low compared to prevailing market prices

*“.... No, we don't run out of stock at all. It is a no-go area. Stock out means excuse me “death” because you don't know who will come in and need what. It's something we don't entertain at all....” (IDI, Private hospital).*

*“.... I think we rarely run out of medicines. So in most cases of between 95-98% of all our prescriptions are served in-house....” (IDI, Mission hospital).*

*“.... Medicines; occasionally faces challenges, one; because we are supposed to pick most of our medicines from our medical stores so when they do not have it then we are short-out of stock....” (IDI, Government hospital)”.*

*“.... Sometimes, there are stock outs. Just recently, they introduced this system; actually, they reduced the prices of NHIA medications by about 30% to 50%. So, the medicines we had in stock we've had to give it out at a lower cost and the hospital is going to lose on that....” (IDI, Government hospital).*

#### 4.3.1.1 Availability of Staff in the Credentialed Hospitals

This assessment was done to determine whether the hospitals had adequate staff to carry out their activities in terms of workload. The assessment was done by comparing the OPD attendance with the staff strength of some of the key personnel in the hospitals using the World Health Organization's Workload Indicators of Staffing Need (WISN) (World Health Organization (WHO), 2016). The availability of four (4) key staff, Doctors, Nurses, Midwives, and Pharmacists was assessed.

It was observed that in most of the hospitals, there were adequate number of Doctors and Nurses while Midwives and Pharmacists were inadequate in comparison (World Health Organization (WHO), 2016). The detailed result is shown in Table 4.3A.



**Table 4.3A: Staff Availability in the Credentialed Hospitals**

Staff availability assessment using WHO workload indicators of staff need (WISN) staffing norms.										
OPD Attendance										
FACILITY	Mission	Mission	Government	Government	Government	Government	Private	Private	Private	Private
	Pentecost Hospital	Faith Mission Hospital	Ga West Municipal Hospital	La General Hospital	Kaneshie Polyclinic	Achimota Hospital	Darbem Hospital	The Rock Hospital	Ashongman Community Hospital	New Crystal Hospital Tema
AVERAGE ANNUAL OPD ATTENDANCE	102,960	25,200	73,740	71,976	110,304	120,000	20,028	28,200	84,000	54,600
<b>Average per facility type</b>	64,080		94,005				46,707			
Minimum number of Doctors required (WISN)	13	3	7	7	23	23	3	3	13	5
Number of Doctors available	23	10	15	25	6	17	4	6	17	10
<b>Variance</b>	<b>10</b>	<b>7</b>	<b>8</b>	<b>18</b>	<b>-17</b>	<b>-6</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>5</b>
Minimum number of Nurses required (WISN)	95	35	67	67	115	115	35	35	95	53
Number of Nurses available	127	27	228	90	160	160	36	18	41	21
<b>Variance</b>	<b>32</b>	<b>-8</b>	<b>161</b>	<b>23</b>	<b>45</b>	<b>45</b>	<b>1</b>	<b>-17</b>	<b>-54</b>	<b>32</b>
Minimum number of Midwives required (WISN)	43	10	30	30	58	58	10	10	43	28
Number of Midwives available	24	10	37	69	45	59	6	2	15	15
<b>Variance</b>	<b>-19</b>	<b>0</b>	<b>07</b>	<b>39</b>	<b>-13</b>	<b>1</b>	<b>-4</b>	<b>-8</b>	<b>-28</b>	<b>13</b>
Minimum number of Pharmacists required (WISN)	6	2	4	4	8	8	2	2	6	2
Number of Pharmacists available	13	1	2	3	11	7	1	1	15	1
<b>Variance</b>	<b>7</b>	<b>-1</b>	<b>-2</b>	<b>-1</b>	<b>3</b>	<b>-1</b>	<b>-1</b>	<b>-1</b>	<b>9</b>	<b>-1</b>

Source: Ghana Human Resources for Health Report 2016

#### 4.3.1.2 Credentialed Hospitals-Staff Availability Matrix

Further assessment of the staff adequacy in the credentialed hospital (Table 4.4A) showed that 8 out of 10 hospitals had adequate Doctors (80.0%) 6 out of 10 hospitals had adequate Nurses (60.0%), 4 out of 10 hospitals had adequate Midwives (40.0%) and 3 out of 10 hospitals had adequate Pharmacists (30.0%). It was also observed that inadequate staffing was more prominent in private hospitals (Table 4.4B).

**Table 4.3B: Credentialed Hospitals-Staff Availability Matrix according to WISN from**

**Table 4.3A**

Hospital	Doctors	Nurses	Midwives	Pharmacists
Pentecost Hospital	Adequate	Adequate	Inadequate	Adequate
Faith Mission Hospital	Adequate	Inadequate	Adequate	Inadequate
Ga West Municipal Hospital	Adequate	Adequate	Adequate	Inadequate
La General Hospital	Adequate	Adequate	Adequate	Inadequate
Achimota Hospital	Inadequate	Adequate	Inadequate	Adequate
Kaneshie Polyclinic	Inadequate	Adequate	Adequate	Inadequate
Ashongman Community Hospital	Adequate	Adequate	Inadequate	Inadequate
The Rock Hospital	Adequate	Inadequate	Inadequate	Inadequate
Darbem Hospital	Adequate	Inadequate	Inadequate	Adequate
New Crystal Hospital-Tema	Adequate	Inadequate	Inadequate	Adequate

*Source: Ghana Human Resources for Health Report 2016*

#### 4.3.2 Availability Human Resource

The availability of human resources has a direct impact on the quality of care provided in healthcare settings. When there is an abundance of human resources, it allows health professionals to better focus on providing quality care to those in need. This means that there are more staff members available to provide timely and appropriate care to patients, and they can provide more personalized attention to each individual.

The qualitative narrative on the availability of human resources at credentialed facilities shows that facilities, particularly government facilities, are adequately staffed, although private facilities reported staffing inadequacies.

*“.... Okay, I will say yes, we do but not adequate numbers. We have all the various categories of staff that I think we need as a hospital. The general practitioners are there. We don't have all the specialties okay, but the basic ones; we have a physician specialist, an obstetrician-gynecologist, a pediatrician, a surgeon and we have two ophthalmic nurses who work and do the general aspects, so when there's a need; you know the ophthalmologist is a specialist, so when there's a need for specialist care in that area then they refer because there's a limit to what the ophthalmic nurses can do. Some hospitals also seek the services of locum staff to help them when they have large patient attendance or shortage of staff because of maternity leave, sick leave or when staff has to be absent for other reasons....” (IDI, Government hospital).*

*“.... I think we have virtually all the complement of staff that we need but sometimes the dynamics change, maybe there are situations where you have a lot of your staff*

*going on maternity leave or something, then it creates some few gaps or when the demand of the work becomes so high, then you wish you'll get additional hands that will complement what you do. In situations where there are these gaps, we quickly arrange to get locum or people who don't work here but we engage them temporarily to fill these gaps...." (IDI, Mission hospital).*

### **4.3.3 Availability of Hospital Infrastructure**

#### ***Medical equipment***

Medical equipment has a significant impact on the quality of care provided to patients. Modern medical equipment allows doctors and other healthcare providers to diagnose and treat patients more accurately and efficiently. The use of medical equipment also helps healthcare providers to reduce treatment costs and to improve the accuracy and consistency of care provided. By providing more accurate diagnoses and treatments, medical equipment helps health care providers to reduce the risk of errors, which can result in improved patient outcomes.

#### ***Building space for hospital services***

Good healthcare is an important part of a healthy and productive society. Unfortunately, access to quality care can be limited by a lack of resources and infrastructure. Building infrastructure is essential for improving the quality of care.

A lack of infrastructure can severely limit the quality of care available to a population. Without adequate buildings, staff, and equipment, medical facilities may be unable to provide even basic care. Poor roads, lack of electricity, and inadequate water supply can also limit access to medical centers and make it difficult for patients to receive timely care

### **Consumables**

Healthcare consumables play an important role in the credentialing process. The use of medical supplies and equipment is essential for diagnosing, treating, and monitoring patients. Medical supplies and equipment can be used to assess a patient's condition, diagnose a disease or disorder, and monitor a patient's progress over time. As such, a healthcare provider must demonstrate a knowledge of the appropriate use of these items in order to be credentialed.

The qualitative narrative demonstrates the lack of medical infrastructure in credentialed facilities.

*".... No, we don't. Our hospital is a big hospital with a small physical infrastructure. We don't have a lot of land space. We still have challenges with small consulting rooms, wards, etc. for the level of care we can provide so there is still a lot more we can do when it comes to infrastructure so it's not enough. We wish we had bigger wards, and more units to provide more services...." (IDI, Government hospital).*

*".... Yes. At the moment, when you look at the volume of clients that visit our hospital vis a vis the space available to our work in or the space and offices that are available at the moment to work with it creates a lot of congestion; yes so at the moment we have some limitations when it comes to infrastructure...." (IDI, Mission hospital).*

*".... So, NHIS has helped us to get more clients just to add more staff to what we already have and then also add some more equipment. For instance, because of the NHIS patients, and the clientele that comes from there, we used to do a lot of laboratory work and NHIS made more people come, and sometimes there is*

*pressure on the lab. And so because of that, we've bought hematology analyzer semi-auto...." (IDI, Private hospital).*

*".... we don't have adequate infrastructure, we need expansion. Infrastructure should have been done by the government. You know medical equipment is usually very expensive, so if we were to be getting those things, then it would have been okay because that is what the tariffs are based on. It is presumed that these things are provided by the government, but for some time now, I mean years, we hardly get anything, so we still use the meager resources that we have to buy everything ourselves...." (IDI, Government hospital).*

#### **4.3.4 Availability of Financial Resources**

The availability of financial resources is a major factor in determining the quality of care and credentialing of health care providers. When financial resources are limited, it may be difficult for health care providers to receive the necessary training and certifications to provide the highest quality of care. Without the necessary funding, health care providers may not be able to complete the necessary educational requirements to become certified in their field. This includes taking classes, completing internships and residencies, and passing state and national examinations. Without these certifications, health care providers may not be able to provide the most up-to-date care.

A qualitative investigation of the financial resources' accessibility reveals that, except from the NHIS, which has slow payments that result in subpar care, especially in government hospitals, very few financial resources are available to credentialed facilities.

*“.... We do not have adequate financial resources, but we have enough to provide the minimum quality of care that is required by clients. Being a government hospital, our charges are very low at times, half of what the private sector is charging. So, that affects us although the quality of care we provide matches or is better than what the private hospitals provide so that affects our revenue greatly....” (IDI, Government hospital).*

*“.... If we know that this month we are being paid or we will get this money from NHIS, we will pay this or that but it's not like that so you can't plan....” (IDI, Private hospital).*

*“.... I don't think so. We don't have adequate resources, okay. We try to manage with what we have so as much as possible we render the services, okay but it's not the way we would have wanted it to be because we have delays in payments and all that. Financially, when there are delays in payments, it restricts you in what you can do....” (IDI, Public hospital).*

#### **4.3.5 Reasons Affecting Quality of Healthcare in the Credentialed Hospitals**

##### **Confidentiality**

Confidentiality is an essential element of healthcare that ensures the protection of a patient's rights, safety, and wellbeing. It is a critical factor in the credentialing process, as well as the quality of care that is provided. The quality of care provided by a healthcare provider is also affected by their commitment to confidentiality. When a patient has trust in their provider that their information will remain private, they are more likely to feel comfortable and secure in disclosing information

that is essential to their care. This allows the provider to provide the best possible care and accurately diagnose and treatment.

*“..... the space alone that we provide our services within can cause some level of dissatisfaction and therefore borders on quality issues.... If you have limited space then, sometimes privacy becomes an issue which is an issue of quality.... (IDI, Mission hospital).*

### ***Staff attitude***

The quality of care provided by healthcare providers is heavily dependent on the attitudes and behaviors of the staff that make up the organization. Staff attitudes have a direct impact on the credentialing process, which is the process of verifying a healthcare provider’s qualifications to practice in a certain field or area of medicine. Staff attitudes can also affect the quality of care provided by healthcare organizations. Staff members who are motivated and have a positive attitude are more likely to provide higher quality care than those who are not. This is because motivated and positive staff members are more likely to go above and beyond to ensure that patients receive the best possible care.

*.....You know, in a setting like this where space is limited and the number of clients keeps on increasing, sometimes staff get overwhelmed, and they are not able to maintain their composure or they are not able to maintain the kind of language or attitude that they are supposed to use or show” .... (IDI, Mission hospital).*

*“.....So I feel that we should start with the human resource first.... Attitude is number one.... If we can change people’s attitudes towards our service to the clients, we can*

*achieve a lot.... So we have to build capacity to make sure that we tune the minds of the people who are working....” (IDI, Government hospital).*

### **Staff Turnover**

Staff turnover has a tremendous impact on the quality of care, especially when it comes to the credentialing process.

Staff turnover in the healthcare industry has a profound effect on the quality of care that patients receive. When a healthcare facility experiences high staff turnover, it can lead to decreased morale among existing staff, decreased continuity of care, and reduced quality of care. High staff turnover can also lead to decreased continuity of care. When staff are constantly rotating in and out, it may be difficult for the existing staff to stay up to date with each patient’s history, treatments, and other important information. This can lead to a disruption in the care of individual patients, as well as a decrease in the overall quality of care at the facility.

*“.... There is a high turnover rate of staff... We always get new staff coming .... They need to be retrained and retrained and those are some of the challenges we keep getting.... You know, we keep moving trained staff to other units and bringing in new staff who have to be now trained again so it leaves gaps and those are areas we need to address...”. (IDI, Government hospital).*

*“..... NHIS is increasing the numbers, and you know when numbers excessively increase beyond the staffing availability, that can also compromise the care that we give to our patients.... Also, because of the small space and sometimes the heavy workload, patient waiting time has to increase all because the people are more, and staff has not been increased; patients waiting time has increased..... That is an*

*issue of quality. Sometimes confidentiality becomes a little bit breached because of the space and the numbers that we have here” ..... (IDI, Mission hospital).*

### ***Level of Prescribing Barrier***

This practice affects the credentialing and quality of care provided by health care providers. When a physician is limited in the types of medications they can prescribe, it can affect their ability to provide the best possible care for their patients. This can lead to delays in care and decreased patient satisfaction. In addition, the restrictions can prevent prescribers from prescribing medications that are best suited for a patient’s condition, or even from prescribing a medication that is necessary for the patient’s health.

*“... Sometimes, NHIS requires that you keep certain basic drugs, basic according to your rating.... They give everybody a rate; a prescribing level okay.... Now, sometimes the medical doctors here, there are cases here they could have sorted them out themselves but because NHIS has given us a prescribing level, you can’t go beyond and you need to send the patient away....” (IDI, Private hospital).*

*“... The tariffs are low so if you don’t have money to improve on these aspects.... Space, infrastructure, you need to improve on infrastructure, you need to maintain equipment, you need to buy equipment and all other logistics so the logistics that we buy to provide the services are bought at high prices.... Aside from the fact that the tariffs are low, there is also delay in payment....” (IDI, Government hospital).*

### ***Financial accessibility***

Financial accessibility is an important factor in determining the quality of care that individuals receive. When financial resources are limited, individuals may have difficulty accessing the health care services they need. This can lead to delays in treatment, lower quality of care, and even reduced access to medical professionals. Financial accessibility can affect the quality of care through access to medical professionals. When resources are limited, individuals may not be able to afford to seek care from proper medical professionals.

*“... The NHIS is increasing patients’ access to hospitals, and it is also reducing the financial burden that is associated with health care for individuals.... Even as a hospital, it is also helping us to reduce the amount that we spend on our staff medical care because virtually all our staff are on NHIS.... I think a huge quantum of the medical needs of our staff is being absorbed by NHIS....” (IDI, Mission hospital).*

*“... My only concern is on finance ... NHIS should release finance early so that we would also receive our monies to be able to also render our services.... If you keep us cash trapped, we won’t be able to attend to the people that genuinely we are to attend to....” (IDI, Private hospital).*

*“... Apart from that the challenge with the current tariffs in terms of the medicine pricing is also a very important issue that is affecting us because when you look at the price of medicines on the market vis-a-vis the NHIS prices, you’ll realize that hospitals find it very difficult even breaking even. Because most of the prices of medicines on*

*the market are higher than that of prices that NHIS is suggesting or that has come out that it should be used for the reimbursements or the claims ....” (IDI, Mission hospital).*

### ***Customer satisfaction surveys***

Customer satisfaction surveys are effective tool for assessing quality of care and services provided by health care providers. They provide valuable insight into patient experience, allowing health care providers to identify and address areas where improvements are needed. Surveys also play an important role in the credentialing process for medical professionals. By collecting data from customer satisfaction surveys, health care providers can evaluate the quality of care and services they are providing. Surveys can provide insight into patient experience, including how well health care providers communicate with patients and how satisfied patients are with the care they receive. This data can be used to identify areas of improvement and develop solutions to address any issues that may arise.

*“... At least once in a year, we want to visit the community around us in the catchment area to open ourselves to them to assess the kind of service that we provide for them.... We also conduct patient satisfactory survey and a complaint desk to find out the quality of services that we do.... If we realize that we fall short in any of the indicators that we’ve set for ourselves then quickly we try to make some interventions by way of training, and education ... (IDI, Government hospital).*

#### 4.4 Assessment of Process Factors

Process factor was measured in the hospitals by comparing treatment in the patients' medical records/folders with standard treatment guidelines (Ministry of Health) and with patients' responses in an exit interview for waiting time assessment.

##### 4.4.1 Characteristics of Patients whose Records were examined for the Standard of Treatment

The medical records of 270 out of 630 patient respondents were randomly picked and reviewed. Out of the 270 patient whose medical records were reviewed, 167 (61.9%) were females. A slightly higher proportion of those patients whose records were reviewed 97 (35.9%) were married than those who were never married 92 (34.1%).

Out of the 270 medical records examined, 204 (75.6%) were for insured respondents and 66 (24.4%) were for uninsured. A total of 162 of these records (60.0%) were from Government hospitals, 54 (20.0%) were from Mission hospitals and 54 (20%) were also from Private hospitals. Further data can be found in (Table 4.6) below.

**Table 4.4: Characteristics of Patients Medical Records Review**

Variable	Frequency	Percentage (%)
<b>Sex</b>		
Female	167	61.9
Male	103	38.1
<b>Total</b>	270	100
<b>Marital Status</b>		
Never married	92	34.1
Married	97	35.9
Widowed	17	6.3
Cohabiting	50	18.5
Divorced /separated	7	2.6

Other	7	2.6
<b>Total</b>	270	100
<b>Level of education</b>		
None	45	16.7
Primary/JHS	96	35.6
Secondary/SHS	77	28.5
Tertiary	40	14.8
Others	12	4.4
<b>Total</b>	270	100
<b>Religion</b>		
Christianity	215	79.6
Islam	21	7.8
Traditionalist	30	11.1
Other religions	4	1.5
<b>Total</b>	270	100
<b>Ethnic group</b>		
Akan	119	44.1
Ewe	63	23.3
Ga/Dangbe	50	18.5
Dagomba	27	10
Other ethnic groups	11	4.1
<b>Total</b>	270	100
<b>Employment status</b>		
No employment	89	33.0
Casuals	46	17.0
Permanent employment	122	45.2
Others (contract)	13	4.8
<b>Total</b>	270	100
<b>Occupation</b>		
Clerical/secretariat	1	0.4
Professional/Technical/Managerial	38	14.1
Sales and services	65	24.1
Skilled manual craftsmanship	26	9.6
Unskilled manual labour	134	49.6
Agricultural (farming/fishing)	2	0.7
Others	4	1.5
<b>Total</b>	270	100
<b>Average monthly income</b>		
Below Ghc200	60	22.2
Ghc 200 - Ghc 500	58	21.5
Ghc 500 - Ghc 1000	18	6.7
Ghc 1000 – Ghc 2000	122	45.2
Above Ghc 2000	12	4.4

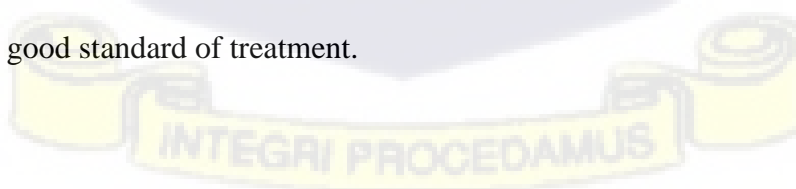
Total	270	100
<b>NHIS status</b>		
Non-insured	66	24.4
Insured	204	75.6
<b>Total</b>	270	100
<b>Type of Hospital</b>		
Government	162	60.0
Mission	54	20.0
Private	54	20.0
<b>Total</b>	270	100

*Source: Field Data*

#### 4.4.2 Standard Treatment for Patients

Standard of treatment is an important concept in healthcare. It refers to the level of care that a healthcare provider is expected to provide to a patient. It is based on the accepted standards of medical practice in the field, and the provider's professional judgment. Standard of treatment is based on the expected outcome of the patient's care, and the accepted standard of care for a particular medical condition. It includes the use of evidence-based practices, diagnostic tests, and treatments. It also includes the provider's ability to identify potential risks and complications, and to provide timely interventions when necessary.

Table 4.6A lists of the five (5) parameters used in measuring the standard of treatment given to a patient. If a credentialed facility achieves a score of 50% or more on each of the indicators, it is regarded to offer good standard of treatment.



**Table 4.5A: Standard Treatment for Patients**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b><i>Investigations</i></b>		
Done	145	53.7
Not done	125	46.3
Total	270	100
<b><i>Investigations in line with protocol</i></b>		
In-line	130	48.1
Not in-line	140	51.9
Total	270	100
<b><i>Medicines prescribed</i></b>		
Prescribed	268	99.3
Not prescribed	2	0.7
Total	270	100
<b><i>Medications in line with protocol</i></b>		
In-line	257	95.9
Not in-line	11	4.1
Total	270	100
<b><i>Post-treatment care</i></b>		
Indicated	91	33.7
Not indicated	179	66.3
Total	270	100

<i>Standard of treatment</i>		
Good standard	137	50.7
Poor standard	133	49.3
Total	270	100

*Source: Field Data*

From Table 4.6A, 145 (53.7%) of the records reviewed, laboratory investigations were requested and 140 (51.9%) of the laboratory investigations requested were in line with treatment protocol. Medication prescriptions were accurate in 268 of the patients whose records were examined (99.3%).

The standard of treatment was established by combining these observations, and it was evaluated as a composite variable. A little more than half of the patients whose records were examined, 137 (50.7%), had good standard treatment whereas 133 (49.3%), received poor standard of treatment.

#### **4.4.3 Clinical Assessment of Treatment among Patients (Exit Interview)**

Clinical evaluation of the treatment that respondents received in the hospitals was done as part of evaluating the process in the credentialed facilities to ascertain if the treatment was in line with standards (Ministry of Health-standard treatment guideline (STG)). The assessments covered continuity of care, adherence to treatment regimens, common diseases/conditions identified, investigations carried out, medications prescribed, top 10 diagnoses found among patients, and top 10 diseases diagnosed, and investigations carried out. Most patients reported with upper respiratory tract infections, malaria and hypertension and malaria plus-co-morbidity (Table 4.6B)

**Table 4.5B: Top 10 Diagnoses Found Among Patients in the Health Facility Exit Survey**

Diagnoses	Number of cases	Percentage (%)
Upper respiratory tract infections	41	11.5
Malaria	39	10.9
Hypertension	36	10.0
Malaria plus co-morbidity	25	7.0
Typhoid fever	21	5.9
Gastroenteritis	20	5.6
Urinary tract infection	19	5.3
Sepsis/infection	12	3.4
Anaemia	11	3.1
Musculoskeletal pains	10	2.8
All other conditions	123	34.5

*Source: Field Data*

Investigations were requested for illnesses such malaria, hypertension, diabetes, urinary tract infections, and anaemia in Table 4.7B. Malaria (39) 10.9% and upper respiratory tract infections (41) 11.5% were the two most common diagnoses.

#### **4.4.4 Assessment of Patients Waiting Time**

By the Institute of Medicine (IOM, (O'malley et al, 1983), assessment criterion, 90% of patients should have been attended to within the first 30 minutes of scheduled appointment time (O'malley et al, 1983). In this study, the review of the 630 exit interview participants showed the average patient waiting time was 31.13 minutes (Mean  $\pm$  standard deviation: 31.13 $\pm$ 9.9 minutes).

However, a higher proportion (67.8%) 427 of exit interview respondents perceived the waiting time as acceptable.

Process based on the perceived waiting time from the exit interview participants of 545 (86.5%) reported process as good while 85 (13.5%) reported poor process based on the perceived waiting time (Table 4.7).

**Table 4.6: Assessment of Waiting Time (Process Quality) in the Credentialed Hospitals.**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<i>Patient waiting time</i>		
Too long	203	32.2
Acceptable	427	67.8
Total	630	100
<i>Mean ± standard deviation (minutes)</i>	31.13±9.9	
<i>Acceptable patient waiting time (perceived)</i>		
Poor	85	13.5
Good	545	86.5
Total	630	100

*Source: Field Data*



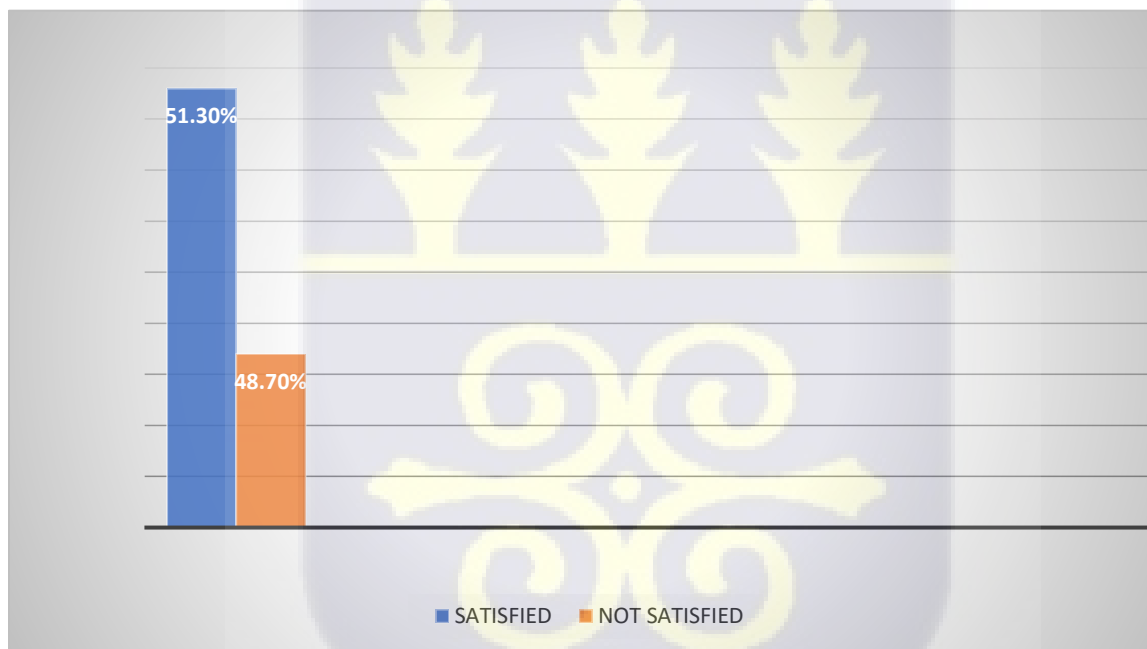
#### 4.5 Assessment of Patient Satisfaction with Quality Care

Results in this section assesses outcome quality, which was measured through responses to quality satisfaction questions from patients.

##### 4.5.1 Patients' Satisfaction with the Quality of Healthcare

The result revealed that a little over 50% 323 (51.3%) of the respondents were satisfied with the quality of care received in the hospitals.

Of respondents who indicated satisfaction with quality of care, 213 (65.9%) were insured while 110(34.4%) There were also more insured customers who indicated dissatisfaction with quality of care, 187 (60.9%) than the uninsured 120 (39.1%) Figure 4.2.



**FIGURE.4.2: - Patients' Satisfaction with Quality of Healthcare**

#### 4.5.2. Proportion of standard of care among the credentialed hospital.

Standard of care in the hospitals was analyzed on five (5) main variables (conduct of diagnostic investigations, investigations in line with treatment protocols, supply of medicines, medicines in line with treatment protocols, and continuity of care) using the patient’s medical records.

Analysis of the request for investigations in patients’ medical records indicated that 39.9% of respondents in NHIS credentialed government hospitals, 73.6% in private, and 84.4% in the mission had investigations done (Table 4.11). For the supply of medicines, 95.5% of those who attended government NHIS credentialed hospitals received their medication, while 100% in private, and 82.8% in mission NHIS credentialed facilities received medicines. On the continuity of care, 46.8% were in government hospitals, 56.6% were in private, and 35.9% of those in the mission had continuity of care (Table 4.11)

**Table 4.10: Distribution of responses on the standard of care among the credentialed hospital**

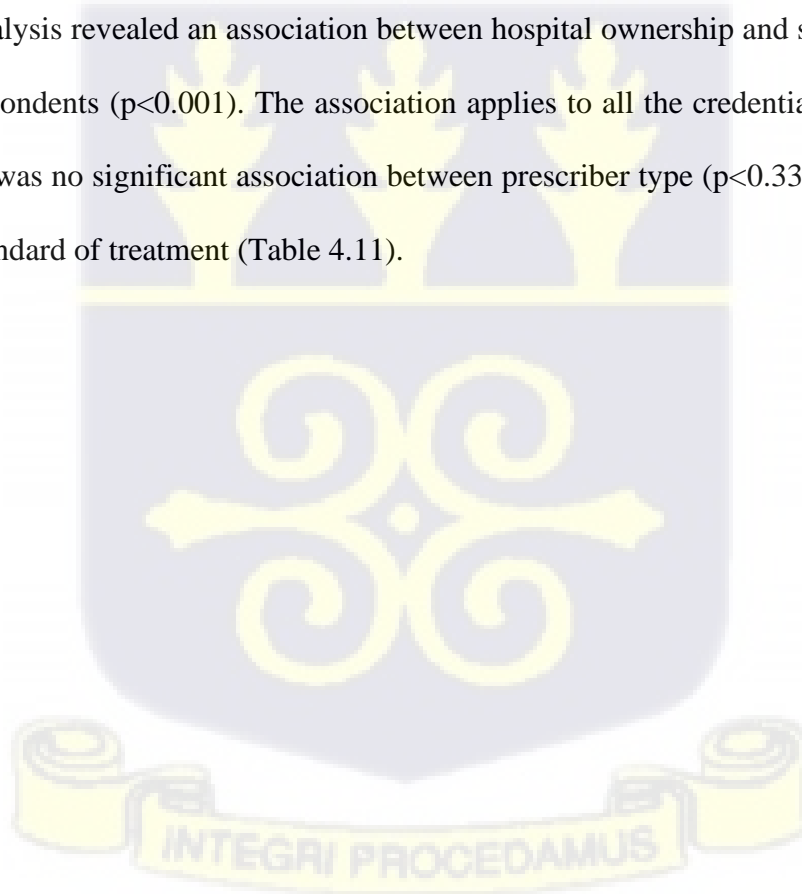
Medical records												
Facility Type	Investigations				Medicines				Continuity of care			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
<b>Government</b>	82	66.1	42	33.9	119	95.6	3	4.4	58	46.8	63	53.2
<b>Private</b>	39	73.6	14	26.4	53	100	0	0	30	56.6	23	43.4
<b>Mission</b>	35	84.4	19	15.6	53	100	0	0	23	35.9	35	64.1

#### **4.5.3 Distribution of standard of treatment (record review) in the credentialed hospitals**

The study assessed a good standard of care in the credentialed hospitals through a review of patient medical records (case audit). Results indicated that, out of the total number of two hundred and seventy (270) records, 66 (40.7%) of the records from government hospitals, showed good standard treatment with 96 (59.3%) showing poor standard treatment as indicated in Table 4.10 above.

#### **4.5.4 Chi-square analysis: Association between facility characteristics (ownership, prescriber type and insurance status) and standard of treatment**

A chi-square analysis revealed an association between hospital ownership and standard treatment received by respondents ( $p < 0.001$ ). The association applies to all the credentialed facility types. However, there was no significant association between prescriber type ( $p < 0.33$ ), insurance status ( $p < 0.48$ ), and standard of treatment (Table 4.11).



**Table 4.11: Chi-square analysis: Association between facility characteristics (ownership, prescriber type, and insurance status) and standard of treatment in the credentialed hospitals**

Variables	Frequency	Percentage (%)	Standard of treatment				Chi-square	p value
			Poor	(%)	Good	(%)		
<i>Credentialed hospitals</i>							18.02	<0.001
Government	162	60.0	96	59.3	66	40.7		
Mission	54	20.0	22	40.7	32	59.3		
Private	54	20.0	15	27.8	39	72.2		
Total	270	100	133		137			
<i>Prescriber type</i>							0.96	0.33
PA/ Nurse	4	1.5	1	25.0	3	75.0		
Doctor	266	98.5	132	49.6	134	50.4		
Total	270	100	133		137			
<i>Insurance status</i>							0.51	0.48
Uninsured	66	24.4	30	45.4	36	54.6		
Insured	204	75.6	103	50.5	101	49.5		
Total	270	100	133		137			

PA: Physician Assistant

#### 4.6 Summary of the Chapter

The chapter gave a summary of the study's main findings, including both qualitative and quantitative data. Health care professionals and patients who responded to the survey had their sociodemographic and socioeconomic factors descriptively analysed.

The structure assessment of areas like financial, human, and infrastructural resources of credentialed facilities was one of the key findings of the studies. Results on structure show that

credentialed facilities have adequate human resources according to WHO's WISN scores but insufficient financial and infrastructure resources.

Regarding process quality, it was shown that factors such patient confidentiality, staff attitudes, staff turnover, and prescribing restrictions had a significant impact on the standard of care provided in the credentialed facilities.

The study used chi-square and logistic regression analysis to determine the relationship between dependent (satisfaction with quality) and some independent variables (sociodemographic, socioeconomic characteristics, and NHIS status) for patients and health workers.



## CHAPTER FIVE

### DISCUSSION OF FINDINGS

#### 5.0 Introduction

This chapter presents a discussion on the data analysis concerning the study objectives. The discussions are broadly held along Donabedian quality assessment models of structure, process, and outcome and are also aligned with individual objectives.

#### General overview

The findings of this study indicate that the NHIS has improved access to healthcare, particularly in credentialed facilities, demonstrating high structural factors with no noticeable difference between government and non-governmental health facilities.

The majority of respondents (62.0%) expressed satisfaction with the quality of the infrastructure, attitudes of the staff, and availability of medical supplies and prescription medications.

Though there is improvement in doctor/population and nurses/population ratios, the same cannot be said for pharmacists and midwives/population ratios as observed in this study.

The study also found that understaffing was more noticeable at private hospitals, which affected the quality of care rendered to patients.

These findings are supported by other research, including those by Mogre, Johnson, Tzelepis, and Paul (2019) and Pallangyo, Mbekenga, Källestl, Rubertsson, & Olsson (2017), that focus on the accessibility of medical equipment and supplies in hospitals.

Furthermore, Alhassan et al. (2013) have reaffirmed that the lack of motivation among the skilled workers who are now employed in government hospitals may be a factor in the low quality of care they provide.

## **5.1 Structure Quality**

Assessment of the availability of medicines, staff and availability of resources informed structure of care.

### **5.1.1 Availability of Medicines**

The availability of essential medicines in the right quality and price are core in service delivery.

According to the study, mission and private credentialed facilities have improved the availability of essential medicines and as such rarely run out of necessary medications, whereas government hospitals face difficulties when this happens because of the NHIA's lower drug pricing. The other factor is that government hospitals are required to buy all of their supplies and medications from district, regional, and local medical supply stores.

Similar studies in Ghana have echoed these findings, showing that while the utilization and availability of medicines have increased, low reimbursement rates often force providers to ask patients for supplementary fees. Additionally, the intermittent supply of medicines has led to disruptions in the quality of service delivered (Amissah C. et al., 2016).

### **5.1.2 Infrastructure**

Infrastructure is made up of physical structures including buildings, the outside world, roads, and equipment, among others, and is typically graded based on the quality of the construction. The majority of hospital administrators/heads reported that their facilities are adequate, particularly in

the case of government hospitals, which rely solely on the government to supply them with all of the necessary resources, including medical supplies, staff, and an expansion of their current facilities to accommodate the growing patient population.

Research has highlighted significant issues with healthcare infrastructure affecting service delivery within Ghana's National Health Insurance Scheme (NHIS). One study emphasized that insufficient healthcare infrastructure, alongside challenges such as limited government funding significantly impacts the quality of healthcare delivery (Wiredu et al., 2023). Additionally, the Oxford Business Group reports that this inadequate infrastructure includes a shortage of medical equipment and poorly maintained facilities which collectively hinder the effectiveness of healthcare services provided under the NHIS.

The statistical reports on inadequate infrastructure are corroborated by qualitative insights from hospital heads who acknowledge having basic equipment but stress the need for more to cope with rising patient numbers.

### **5.1.3 Availability of Medical Equipment and Consumables**

Nearly all hospital in-charges and heads interviewed stated that they had the necessary medical equipment to perform their jobs effectively, emphasizing its importance in delivering high-quality care. They also mentioned that the NHIS had helped them acquire more efficient equipment but highlighted the need for additional laboratory equipment to accommodate the increase in hospital attendance.

Research underscores the significant impact that the lack of medical equipment and consumables has on healthcare delivery under Ghana's National Health Insurance Scheme (NHIS). For instance,

Wiredu et al. (2023) identified insufficient medical infrastructure and equipment as major challenges impeding the NHIS's effectiveness. Despite some improvements, the inconsistent availability of essential medical supplies continues to disrupt service delivery.

The quantitative data on the adequacy of resources and the qualitative feedback from hospital in-charges align to paint a comprehensive picture of the inadequacies. While the survey findings suggest some level of adequacy in resources, the qualitative interviews highlight specific areas (like laboratory equipment) where improvements are needed to meet increasing demands.

#### **5.1.4 Availability of staff/Human resource**

If an organization has all the necessary resources but lacks the requisite human staff, it is bound to fail because it cannot function effectively to produce results. The Ministry of Health (MOH) in their 2013 annual report explained that the NHIS has increased outpatient and inpatient attendance by the insured. Yawson et al. reported mean outpatient attendance to be between 1.0-2.48 for the insured and 0.39-1.18 for the uninsured. This increase in outpatient attendance could imply an increased workload on staff.

Hospital in-charges and heads observed that while they had the necessary staff and specialists, they could not keep up with the increasing patient numbers. They also mentioned having specialists who visit their hospitals as needed and referring patients to other hospitals when necessary.

In reports of adequate staffing by facility heads, an analysis using the Workload Indicators of Staffing Need (WISN) assessment tool (WHO, 2016) indicated that there were adequate numbers of nurses and doctors but inadequate numbers of midwives and pharmacists. Differences in assessment outcomes may result from the methods used in the assessments.

Similarly, Wiredu et al. (2023) highlighted that inadequate healthcare infrastructure, including human resources, poses major challenges to the effectiveness of the NHIS. Insufficient numbers of healthcare workers and the demoralization of existing staff due to poor working conditions and limited support further exacerbate these issues.

The quantitative increase in outpatient (OPD) attendance is supported by qualitative reports of staff being overwhelmed, illustrating the growing strain on healthcare providers despite having an adequate number of certain staff categories.

#### **5.1.5 Availability of Financial Resources**

The lack of financial resources significantly impacts healthcare delivery under Ghana's National Health Insurance Scheme (NHIS). A major issue is the scheme's financial sustainability. Critics argue that the high percentage of premium-exempt members, combined with rising healthcare costs, strains the NHIS's finances and raises concerns about its long-term viability (Alhassan et al., 2016).

Hospital in-charges and heads interviewed in this study reported insufficient funds to operate their facilities largely due to NHIS reimbursement delays and low tariffs. They mentioned that despite these financial constraints, they strive to provide basic treatment using internally generated funds (IGF).

Additionally, a study by Aikins et al. (2021) found similar issues, noting that the increased utilization of healthcare services due to the NHIS has led to longer waiting times, illegal fee charges, and non-adherence to professional standards by health workers. These problems are

exacerbated by insufficient government funding, limiting the scheme's ability to meet its financial obligations and affecting the overall quality of healthcare deliver.

The quantitative data on financial shortfalls and delays in reimbursement are echoed in qualitative statements from hospital heads, who describe the direct impact of these financial issues on their ability to deliver quality care to the patients at these credentialed facilities.

### **5.1.6 Factors Influencing Quality**

The hospital in-charges/heads went into great detail on a variety of issues that might have imperiled the standard of care provided by their facilities under the NHIS. These include limitations on the prescribing of specific medications in some hospitals, insufficient infrastructure, insufficient resources, excessive patient attendance (increased use), and delayed claims reimbursement, among others. All parties involved in the health sector will need to routinely convene to discuss and decide on the best course of action for dealing with issues that jeopardise the quality of healthcare provided in the facilities in order to be able to solve these concerns.

Hospital in-charges also mentioned that poor employee morale, the high staff turnover rate at Government hospitals, and hospitals' remote locations were among other issues that affected the quality of care. All of these, they reasoned, make it difficult for them to provide patients with the level of care they require.

In Ghana, research has shown that while there have been improvements in some areas, challenges persist due to insufficient medical supplies and equipment, impacting the effectiveness of the NHIS. For instance, a study by Wiredu et al. (2023) highlights the ongoing struggle with medical infrastructure and equipment shortages, which disrupts service delivery and overall healthcare quality (Erku, D. et al., 2023). Furthermore, the availability of medical equipment and

infrastructure plays a crucial role in healthcare delivery. Inadequate infrastructure, such as a lack of medical equipment and poorly maintained facilities, directly affects the quality of services provided. This is a common issue in various healthcare systems, including those under national health insurance schemes like Ghana's NHIS (Darzi et al., 2023).

### **5.1.7 Quality of care under the NHIS**

The implementation of the NHIS has been beneficial for the poor, improving their access to healthcare and boosting outpatient attendance. However, this increase in patient load has strained the limited infrastructure and increased the burden on the few available employees, particularly in government institutions where the government provides human resources. As a result, patient wait times have increased, and patient privacy has decreased during treatment.

The study indicates that NHIS regulations limit drug pricing and prescription levels with their tariffs and guidelines. This restriction prevents hospitals from treating cases beyond the NHIS prescription levels, leading to patient referrals to other hospitals. Patients who could pay in cash might receive treatment immediately.

The study also notes no discrimination in care for insured patients, though NHIS clients may spend more time at the hospital due to documentation issues. NHIS clients are not given special drugs; sometimes, they are asked to buy some drugs outside the hospital due to the drug rates paid by NHIS. Despite these challenges, NHIS has reduced the financial burden of healthcare, especially for staff in credentialed hospitals who must be registered with NHIS. Some hospitals pay the renewal fees and invite NHIS staff to register new employees, ensuring that all hospital staff have current NHIS cards. This practice is more common in private and mission hospitals, whereas government hospitals encourage patients to register and pay for themselves. Formal sector

workers, whose contributions include a 2.5 percent monthly deduction for Social Security and National Insurance Trust (SSNIT), do not pay a premium.

The establishment of a complaint desk, satisfaction surveys, and occasional community visits to address challenges faced by patients can improve care quality. Some hospitals conduct frequent capacity-building programs for staff to improve customer service, maintain quality improvement teams, and hold monthly clinical meetings to ensure patients receive quality care.

However, timely reimbursement by NHIS remains a significant issue. Delays in reimbursement prevent hospitals from restocking supplies, affecting the quality of care provided. Hospitals suggested that quarterly reimbursements by NHIA could enable better service provision.

Hospital in-charges have identified several challenges affecting quality healthcare in accredited hospitals, including lack of space, high staff turnover, increased attendance, service restrictions (prescribing levels and tariffs), and delays in claim reimbursements.

Additional studies align with these findings, indicating that the quality of care under Ghana's National Health Insurance Scheme (NHIS) is influenced by several factors. Wiredu et al. (2023) highlight ongoing challenges with medical infrastructure and equipment shortages, which significantly impact the effectiveness and quality of healthcare services provided under the NHIS. Despite improvements in some areas, the inconsistent availability of essential medical supplies continues to disrupt service delivery.

In another study, Dalinjong et al. (2016) found differing perceptions between NHIS beneficiaries and implementers. Beneficiaries prioritize medical consultations, diagnostic services, and drug

supplies, suggesting that while NHIS has improved access to certain healthcare services, delayed reimbursements and insufficient medical equipment still affect the overall quality of care.

Furthermore, Aikins et al. (2021) reviewed the NHIS and concluded that although the scheme increased healthcare utilization, it did not necessarily improve the quality of care in NHIS-accredited facilities. Issues such as longer waiting times, staff attitudes, and differential treatment between NHIS-insured and non-insured patients contribute to low patient satisfaction and overall service quality.

Overall, these studies suggest that while the NHIS has made strides in increasing healthcare access, ongoing issues with infrastructure, equipment, and service quality need to be addressed to enhance health delivery under the scheme.

## **5.2 Process Factor**

Process in credentialed hospitals was assessed by examining both the standard of treatment and patient waiting time. The standard of treatment was evaluated using five composite variables: conducting investigations before diagnosing, alignment of investigations with treatment protocols, prescribed medicines, alignment of prescribed medicines with treatment protocols, and indications for continuity of healthcare.

The assessment compared the standard of treatment across three types of facility ownership: government, private, and mission hospitals. Kumi (2007) emphasized that maintaining a high standard of treatment is crucial for achieving universal health coverage under the NHIS in Ghana.

The study revealed that insured patients in mission hospitals and uninsured patients in government hospitals received better treatment. However, insurance status did not influence the standard of treatment in the private hospitals assessed. Overall, 50.7% of respondents reported receiving good standard treatment, with the highest satisfaction in private hospitals (72.2%), followed by mission hospitals (59.3%), and the lowest in government hospitals (40.7%).

Regarding patient waiting time, 67.8% of participants perceived it as acceptable. However, healthcare providers and clients had differing perceptions. Providers noted that increased subscriptions had lengthened waiting times and reduced patient privacy during treatment, while patients found the waiting times acceptable. This discrepancy might be due to improved hospital efficiency, as many hospitals had procured better medical equipment with NHIS support, especially for laboratories. NHIS regulations also required hospitals to increase staff numbers to match patient attendance.

In other related studies, a study by Abuosi and Braimah (2019) found that long waiting times are a major source of patient dissatisfaction in Ghana's healthcare facilities, a persistent issue that challenges the NHIS and calls for innovative solutions. Similarly, Dalinjong and Laar (2012) reported that long waiting times negatively affect the perceived quality of healthcare services under the NHIS, leading to overcrowded facilities, increased patient frustration, and reduced effectiveness of healthcare delivery. In Nigeria, a study by Oche and Adamu (2013) also found discouraging patient waiting times due to the large number of patients, recommending the urgent need for additional healthcare workers to improve patient satisfaction.

Overall, while the NHIS has improved access to healthcare services in Ghana, the ongoing issue of long waiting times continues to hinder the quality of care. Targeted interventions are needed to streamline service delivery and enhance patient satisfaction.

### **5.2.1 Standard of treatment in the credentialed government, private and mission hospitals**

Results of the assessment of the standard of treatment in the credentialed hospital showed that private hospitals offer good standard treatment (72.2%) compared with 59.3% and 40.7% respectively for mission and government based on patients' responses. This was found to be consistent with findings from other studies.

Keesara, Juma, and Harper, (2015) reported that most patients preferred a private hospital to a government hospital since, private health care providers offered great opportunities for convenience, efficiency, and privacy. Similar findings found in Bangladesh also indicated that patients visiting private hospitals were more satisfied with health delivery or the standard of treatment offered (Adhikary et al, 2018).

Systematic research conducted in Africa found that faith-based health organizations (Mission hospitals) delivered a better quality of care than government hospitals (Widmer, Betran, Merialdi, Requejo, & Karpf, 2011).

Owusu, Lum, and Acheampong, (2009) also reported that the standard of treatment was better in Ghanaian private hospitals compared to government hospitals.

Shayo et al, (2016) also indicated that non-government hospitals (Private and Mission) have been described as better in terms of availability of adequate medicine, skilled personnel, and the patient-provider relationship.

Chi-square assessment to determine the association type of hospital attended and the standard of treatment in this study also showed that the type of hospital visited was associated with a standard of treatment received ( $p > 0.001$ ). However, neither the insurance status of respondents nor the type of health professional that prescribed their medication affected the standard of treatment patients received.

However, Basu et al, (2012) hold a different view when they found no evidence to support the assertion that the private sector was more medically effective than the government sector. In addition to what Basu et al, (2012), established, a systematic finding also showed that the quality of health care provided in both government and private hospitals was incomparable, as to which was superior to the other (Tynkkynen & Vrangbæk, 2018).

### **5.2.3 Outcome**

Outcome was assessed in this study through quality satisfaction. Quality satisfaction was assessed from the two groups of respondents i.e. patients and health workers as presented below.

#### **5.2.3.1 Health workers' perception of quality of health care in the credentialed hospitals**

Overall, 54.0 percent of healthcare workers rated the quality of healthcare as good. Among different hospital types, those working in private hospitals rated patient treatment more favorably compared to those in accredited government facilities. This aligns with other research showing

that healthcare providers generally view care quality positively and that hospital workers are more likely to hold this view compared to those in lower-tier facilities (Andoh-Adjei et al., 2013; 2018).

Studies have also highlighted a correlation between patient satisfaction and health workers' perceptions of care quality in NHIS-accredited facilities. For example, Asibi (2015) found that both clients and providers rated the care as high quality. This agreement may stem from a better understanding of healthcare quality issues and effective communication between clients and providers, which help bridge the gap between client expectations and provider perceptions (Alhassan et al., 2015; Andoh-Adjei et al., 2018; Parasuraman, Zeithaml, & Berry, 1994).

Zhao and colleagues (2009) found general agreement between patients and health workers on care quality, though they observed differing opinions on what constitutes excellent nursing care. This study uncovered a discrepancy in perceptions of high-quality care between nurses and patients.

In contrast, a cross-sectional study in Ghana, which evaluated patient and nurse perceptions of care quality across 17 hospitals, found a significant difference. Nurses rated the quality of care more positively than patients (Abuosi, 2015).

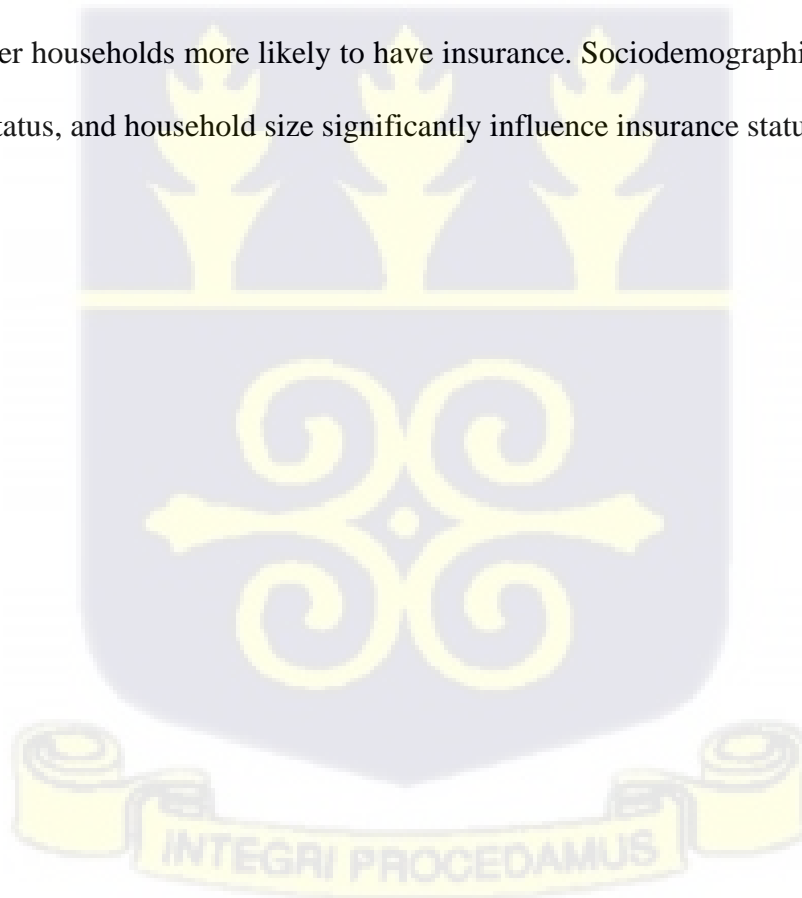
The study also examined providers' views on NHIS's role in improving care quality. While some providers commended the scheme for enhancing financial access to healthcare, they reported challenges with inadequate funding due to NHIS reimbursement delays. Many suggested that more timely reimbursements, such as quarterly, would help them provide better services. Delays in NHIS reimbursement have been identified as a major disincentive to delivering quality care (Dalinjong & Laar, 2012; Fenenga et al., 2014). This underscores the urgent need for the National Health Insurance Authority (NHIA) to improve NHIS sustainability and increase universal coverage (Dalinjong & Laar, 2012).

### 5.3 Summary of the Chapter

This summarizes the findings from the previous analysis, focusing on key elements affecting healthcare quality provided by credentialed facilities under the NHIS. It covers the impact of essential medicines, infrastructure, medical equipment, human resources, financial resources, and patient characteristics. The chapter aligns these findings with the study's objectives and compares them to results from other research in the field, discussing reasons for any similarities or discrepancies in outcomes.

- Mission and private credentialed facilities generally have better access to essential medicines and face fewer shortages than government hospitals. Government hospitals encounter challenges due to NHIA's lower drug pricing and mandatory procurement restrictions affecting the quality of the care given to patients.
- Government hospitals rely heavily on government-provided resources and face inadequate infrastructure, impacting healthcare quality. Private and mission hospitals report better infrastructure and fewer limitations.
- Most hospitals have sufficient medical equipment, with NHIS support improving efficiency. However, there is still a need for more laboratory equipment to meet increasing patient demands.
- While hospitals have the necessary personnel, they struggle with increased workloads and staff shortages, especially for midwives and pharmacists.
- NHIS credentialed facilities faces financial sustainability issues due to reimbursement delays and low tariffs, affecting hospital finances and service provision. With some facilities resorting to internally generated funds to sustain operations.

- Medication restrictions, infrastructure limitations, and NHIS reimbursement delays impact healthcare quality. Poor employee morale and high staff turnover also affect care standards.
- Private hospitals generally provide higher treatment standards compared to mission and government hospitals. Increased patient numbers have led to longer waiting periods and reduced privacy.
- Patient satisfaction with healthcare quality is generally higher in non-government hospitals. Insured and uninsured patients show similar satisfaction levels, with factors like waiting times, staff friendliness, and service efficiency being key influences.
- Most insured respondents have more children and dependents, with older patients and those with larger households more likely to have insurance. Sociodemographic factors like age, marital status, and household size significantly influence insurance status.



## CHAPTER SIX

### STUDY SUMMARY, CONCLUSION, AND RECOMMENDATIONS

#### 6.1 Study summary

This study assessed the quality of healthcare in the NHIS credentialed hospitals in the Greater Accra Region. Quality assessment was done using the Donabedian quality assessment model (structure, process, and outcome).

The study was conducted in ten (10) hospitals in the Greater Accra Region of which four (4) each were for government and private hospitals and two (2) for the mission. There were eight hundred and eighty-seven (887) respondents comprising six hundred and thirty (630) patients and two hundred and fifty-seven (257) health workers. Eight hundred and eighty (880) of the respondents were used in the quantitative study while seven (7) took part in the qualitative.

The study used a combination of qualitative and quantitative methodologies (mixed methods). For quantitative data, questionnaires, documentary review (case audit), and interviews were used, while for qualitative data, key informant interviews were used.

Sampling methods used in the selection of the respondents for the study include cluster, purposive, sequential and convenience.

#### 6.1.2 Major findings concerning the objectives

The study had the objective to assess the quality of health care in the National Health Insurance Scheme's Credentialed hospitals (government, private, and mission) for the insured and uninsured in the Greater Accra Region. The key conclusions drawn based on the specific objectives have been presented below.

### **6.1.3 Structural Factors**

The assessment of structural factors in credentialed hospitals (government, private, and mission) in the Greater Accra Region revealed several key findings. A significant number of respondents (62.0%) received medicines in the hospitals, indicating a relatively high availability of essential medications. The study also found that a substantial proportion of respondents (67.8%) reported acceptable waiting times, with a mean and standard deviation of  $31.13 \pm 9.9$  minutes. Additionally, a large majority of the respondents (86.5%) reported good structural quality in the hospitals, suggesting a generally positive perception of the physical infrastructure and resources.

With regard to staff availability, the facility in-charges interviewed through key informant interviews indicated that there was adequate staff in the hospitals. However, an assessment conducted using the World Health Organization's Workload Indicators of Staffing Need (WISN) revealed inadequacies in the number of Midwives and Pharmacists. Despite reports from facility heads/in-charges of adequate medicines, infrastructure, medical equipment, and consumables, there were concerns about inadequate financial resources, which were attributed to delays in claims paid by the National Health Insurance Authority (NHIA). These findings highlight the need for targeted interventions to address specific gaps in staffing and financial resource allocation to improve the overall quality of healthcare in the Greater Accra Region.

### **6.1.4 Process Factors**

Process (conducting investigations, prescribing of medicines, and continuity of care) in the credentialed hospitals in the Greater Accra Region.

Process was assessed by reviewing treatment received by the patients in the facilities and waiting time. The method applied here was a review of medical records to determine whether

investigations were conducted before diagnosing/diagnosis, whether investigations conducted were in line with treatment protocols (Standard Treatment Guidelines), whether medicines were prescribed and whether they were also in line with treatment protocols and finally, whether there was follow-up care (review or referral).

In addition, patients' waiting time was also assessed, two hundred and seventy (270) medical records were reviewed. In all, (53.7%) of the records had investigations requested of which (51.9%) were in-line with standard treatment protocols (STG). (99.3%) had medicines prescribed with (95.2%) of the prescriptions in line with treatment protocols. Finally, (66.6%) received post-treatment follow-up.

### **6.1.5 Outcome Factors**

Outcome was assessed through quality satisfaction as reported by patients and perceived by health workers in the hospitals. Some of the major findings observed in the assessment of outcome in the study were that the majority of patients (51.3%) were satisfied with the quality of healthcare, and (54%) of health workers perceived the quality of healthcare in the credentialed hospitals to be good.

The study also assessed the difference between the sociodemographic characteristics of both satisfied and unsatisfied respondents with regards to healthcare quality. It was observed that there were younger respondents among the satisfied respondents than unsatisfied respondents. In all, (66.6%) of satisfied respondents were females. (42.0%) of satisfied respondents were married. For the unsatisfied group, (47.9%) were married and (36.4%) were never married. There were fewer children and dependents among the satisfied group than unsatisfied respondents.

### **6.1.6 Reimbursement of claims**

In the qualitative analysis, it came out clearly that the major concern of all the facility heads' interviews was delayed claims reimbursement. This is seriously affecting all aspects of their operations and appealed for reforms in the way claims are reimbursed. They are proposing 3 months payment schedule. This calls for stakeholders' consultation to look at the way forward to bring a system that will favor all.

### **6.1.7 Comparing standard of treatment in the credentialed government, private and mission hospitals in the Greater Accra Region**

The distribution of respondents across credentialed hospitals revealed that 50% of patients and 48% of health workers were from government hospitals, 32.1% of patients and 32.4% of health workers were from private hospitals, and 17.9% of patients and 19.6% of health workers were from mission hospitals; additionally, standard treatment was assessed to be highest in private hospitals at 72.2%.

Assessment of the standard of treatment in the credentialed hospital for the insured and uninsured indicated that both the insured and uninsured in the private hospitals received good standard treatment. In the government hospitals, the uninsured received good standard treatment compared with the insured while in the mission hospitals, the uninsured received good standard treatment compared with the insured.

### **6.2 Conclusion**

Structural factors: 62% of respondents received medicines; 67.8% found the average waiting time of 31.13 minutes acceptable; 86.5% reported good overall structure quality; staff availability was

adequate but there were shortages in midwives and pharmacists; medicines, infrastructure, equipment, and consumables were adequate, but financial resources were inadequate due to NHIA payment delays.

**Process Factors:**

Investigations and Prescriptions: 53.7% of medical records included requested investigations, with 51.9% adhering to standard protocols. Additionally, 99.3% had prescribed medicines, with 95.2% following protocols. Follow-up care was provided to 66.6% of patients' post-treatment. Furthermore, 67.8% of respondents found the waiting time acceptable.

**Outcome Factors:**

The study identified significant associations between age, number of children or dependents, and insurance status with the perception of healthcare quality. While 51.3% of patients were satisfied with their care, dissatisfaction was more prevalent among insured patients (60.9%) compared to uninsured patients (39.1%) in credentialed facilities. Additionally, 42.9% of insured patients made out-of-pocket payments, with 72.9% of these patients expressing dissatisfaction. Chi-square analysis revealed that hospital type, NHIS registration, and out-of-pocket payments were related to satisfaction, and logistic analysis showed higher satisfaction odds at mission and private hospitals compared to government credentialed hospitals. In terms of treatment standards, private hospitals offered the highest care quality at 72.2%, followed by mission hospitals at 59.3% and government hospitals at 40.7%. Overall patient satisfaction was 51.3% and health worker perception of good quality healthcare was 54%.

### **6.3 Recommendations**

Recommendations are presented according to the organizations responsible for their implementation, linked to the subsequent objectives.

#### **Ministry of Health:**

In improving the quality of care in health facilities, health worker training and recruiting should be increased, particularly for pharmacists and midwives. This aligns with aims of the study by addressing one of the structural factors that influence the level and quality of care provided in credentialed hospitals which is availability of human resource.

#### **Ministry of Finance:**

To consider implementing a system of quarterly reimbursements, as suggested by healthcare providers, to ensure a more predictable and stable cash flow for healthcare facilities. This would help in budgeting and planning for operational expenses, ultimately leading to better quality healthcare services.

#### **NHIA:**

- To ensure that claims from healthcare providers are vetted in time and payment promptly made. This recommendation directly addresses the concerns raised in Objective 2 regarding the timely processing of claims and its effects on healthcare quality.
- To intensify its campaign on a membership drive and improve upon enrollment initiatives such as mobile phone renewals, workplace renewals, schools, and church renewals. This

recommendation “supports Objective 1 by enhancing the accessibility of healthcare services, thereby improving the overall level of care provided.

- To deal with the issue of out-of-pocket payment by the insured, especially for services and medicines covered in the NHIS benefit package, in conjunction with all stakeholders, as this can affect the sustainability of the scheme. This recommendation aligns with Objective 3 by ensuring that patients' satisfaction with healthcare quality is not compromised by unexpected out-of-pocket expenses.
- To improve upon its claims payment to its providers to ensure the availability of resources and to improve the quality of healthcare in the facilities. Healthcare providers complained that delays in claims payments have resulted in inadequate funds available to run their hospitals. Thus, they proposed quarterly reimbursement to ensure the availability of funds for optimum service delivery to their clients. This recommendation directly addresses the concerns raised in Objective 2 regarding the timely and adequate reimbursement of claims, which is crucial for maintaining high-quality healthcare services.

#### **6.4 Study limitation**

This research focused solely on credentialed hospitals in the Greater Accra Region, which may be better equipped and positioned to provide quality healthcare compared to lower-tier facilities like CHPS compounds, health centers, and clinics outside the region. Consequently, the findings may not be generalizable to other regions in the country.

Additionally, potential bias in patient satisfaction surveys due to respondents' reluctance to provide negative “feedback.

The uneven number of hospitals per ownership may have affected the results of the quality assessment.

### **6.5 Further research**

This research could be expanded to compare health care quality among insured and uninsured in lower-tier health facilities, including the CHPS, health centers, and clinics in Ghana.

Similarly, a study can be done to evaluate the public perceptions and trust in NHIS and its credentialed hospitals.

Existing literature on the quality of health care and satisfaction among the insured and uninsured in Ghana presents inconclusive findings as some studies report that there is a variation in the quality of care offered in different type of credentialed health facilities (Turkson, (2009), Alatinga & Fielmua (2011), Fenny et al, (2014)). Therefore, a systematic review with a meta-analysis of existing evidence is recommended to throw more light on the subject.

### **6.6 Study's Contribution to Knowledge.**

The study contributes to knowledge on the quality of care provided to NHIS members in the credentialed hospitals from the perspectives of patients, health workers, and care.

The study shows that Donabedian's (1988) framework and its assessment model (structure, process, and outcome) can be used to assess the credentialing process to measure quality of care and patient outcomes. This contributes to a deeper understanding of the strengths and weaknesses in the current healthcare system, offering evidence-based insights for policymakers and stakeholders.

The identification of gaps in the availability of key health workers (such as midwives and pharmacists) and other resources underscores the need for focused efforts in workforce planning and resource allocation.

Additionally, incorporating the views of both patients and healthcare providers, the study offers a holistic perspective on healthcare quality. This dual viewpoint helps in identifying discrepancies and commonalities in perceptions of healthcare quality, which is critical for designing interventions that address both patient and provider concerns.



## REFERENCES

- Abebrese. J. (2011). Social Protection in Ghana. An overview of existing programs and their prospects and challenges. Fredrich Erbert Stiftung
- Abel, A. O. (2018). Level and Correlates of Health Insurance Coverage in Nigeria: Evidence from 2013 Nigeria Demographic and Health Survey. *African Journal of Health Economics*, Volume 7 Issue 1, 16–27.
- Abuosi, Aaron A. (2015). Patients versus health care providers' perceptions of quality of care. *Clinical Governance: An International Journal*, 20(4), 170–182.
- Abuosi, Aaron A., Domfeh, K. A., Abor, J. Y., & Nketiah-Amponsah, E. (2016). Health insurance and quality of care: Comparing perceptions of quality between insured and uninsured patients in Ghana's hospitals. *International Journal for Equity in Health*, 15(1), 76.
- Abuosi, A. A. (2015). Patients versus health care providers' perceptions of quality of care: Establishing the gaps for policy action. *Clinical Governance: An International Journal*, 20(4), 170-182.
- Abuosi, A.A., Domfeh, K.A., Abor, J.Y. *et al.* Health insurance and quality of care: Comparing perceptions of quality between insured and uninsured patients in Ghana's hospitals. *Int J Equity Health* **15**, 76 (2016). <https://doi.org/10.1186/s12939-016-0365-1>

Acharya. S. A., Prakash. A., Saxena. P., Nigam. A. (2013). "Sampling: why and how of it". *Indian Journal of Medical Specialties*. 4(2), 330-333.

Adhikary, G., Shawon, Md. S. R., Ali, Md. W., Shamsuzzaman, Md., Ahmed, S., Shackelford, K. A., ... Uddin, Md. J. (2018). Factors influencing patients' satisfaction at different levels of health hospitals in Bangladesh: Results from patient exit interviews. *PLoS ONE*, 13(5).

Agyepong I. A., Adjei S. (2008). Public Social Policy Development and Implementation; A case of the Ghana's NHIS. *Health Policy Plan*, 23(2); 150.

Agyapong, A., Afi, J. D., & Kwateng, K. O. (2018). Examining the effect of perceived service quality of health care delivery in Ghana on behavioural intentions of patients: The mediating role of customer satisfaction. *International Journal of Health care Management*, 11(4), 276–288.

Akachi, Y., & Kruk, M. E. (2017). Quality of care: measuring a neglected driver of improved health. *Bulletin of the World Health Organization*, 95(6), 465.

Akazili, J., Gyapong, J., & McIntyre, D. (2011). Who pays for health care in Ghana? *International journal for equity in health*, 10(1), 1.

Akin, J. S., Dow, W. H., Lance, P. M., & Loh, C.-P. A. (2005). Changes in access to health care in China, 1989–1997. *Health Policy and Planning*, 20(2), 80-89.

Akum, A. (2014). Health care financing in Ghana: Health care providers, clients' perceptions and experiences in the Upper East Region of Ghana. *Journal of Scientific Research and Studies, 1*(2), 29-38.-

Akweongo P, Chatio ST, Owusu R, Salari P, Tedisio F, Aikins M (2021) How does it affect service delivery under the National Health Insurance Scheme in Ghana? Health providers and insurance managers perspective on submission and reimbursement of claims. *PLoS ONE 16*(3): e0247397

Alatinga, K., & Fielmua, N. (2011). The impact of mutual health insurance scheme on access and quality of health care in Northern Ghana: The case of Kassena-Nankana east scheme. *Journal of Sustainable Development, 4*(5), p125.

Aldana, M. J., Piechulek, H., & Sabir, A. A. (2001). Client satisfaction and quality of health care in rural Bangladesh. *Bulletin of World Health Organization, 79*, 512-6.

Al-Harajin, R. S., Al-Subaie, S. A., & Elzubair, A. G. (2019). The association between waiting time and patient satisfaction in outpatient clinics: Findings from a tertiary care hospital in Saudi Arabia. *Journal of Family & Community Medicine, 26*(1), 17-22.

Alhassan, R. K., Duku, S. O., Janssens, W., Nketiah-Amponsah, E., Spieker, N., van Ostenberg, P., Rinke de Wit, T. F. (2015). Comparison of Perceived and Technical Health care Quality

in Primary Health Hospitals: Implications for a Sustainable National Health Insurance Scheme in Ghana. *PLOS ONE*, 10(10).

Alhassan, R. K., Spieker, N., van Ostenberg, P., Ogink, A., Nketiah-Amponsah, E., & de Wit, T. F. R. (2013). Association between health worker motivation and health care quality efforts in Ghana. *Human Resources for Health*, 11(1), 37.

Allcock, S. H., Young, E. H., & Sandhu, M. S. (2019). Sociodemographic patterns of health insurance coverage in Namibia. *International Journal for Equity in Health*, 1

Anabila, P. (2019). Service quality: A subliminal pathway to service differentiation and competitive advantage in private health care marketing in Ghana. *Health Marketing Quarterly*, 36(2), 136–151.

Andaleeb, S. S. (2000). Government and private hospitals in Bangladesh: service quality and predictors of hospital choice. *Health Policy and Planning*, 15(1), 95-102.

Andaleeb, S. S. (2001). Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Social Science & Medicine*, 52(9), 1359-1370.

Andoh-Adjei, F.-X., Nsiah-Boateng, E., Asante, F. A., Spaan, E., & van der Velden, K. (2018). Perception of quality health care delivery under capitation payment: A cross-sectional

survey of health insurance subscribers and providers in Ghana. *BMC Family Practice*, 19(1), 37.

Anyangwe, S. C., & Mtonga, C. (2007). Inequities in the global health workforce: the greatest impediment to health in sub-Saharan Africa. *International journal of environmental research and government health*, 4(2), 93-100.

Ama P. Fenny, Ulrika Enemark, Felix A. Asante & Kristian S. Hansen (2014). Patient Satisfaction with Primary Health Care – A Comparison between the Insured and Non-Insured under the National Health Insurance Policy in Ghana. *Global Journal of Health Science*; Vol. 6, No. 4; 2014. <http://dx.doi.org/10.5539/gjhs.v6n4p9>

Aryeetey, G.C., Nonvignon, J., Amissah, C. *et al.* The effect of the National Health Insurance Scheme (NHIS) on health service delivery in mission facilities in Ghana: a retrospective study. *Global Health* 12, 32 (2016). <https://doi.org/10.1186/s12992-016-0171-y>

Asante, F., Arhinful, D. K., Fenny, A. P., Kusi, A., Williams, G., & Parmar, D. (2014). *Who is excluded in Ghana's National Health Insurance Scheme and why*. Paper presented at the Third International Conference of the African Health Economics and Policy Association.

Asch, S. M., Kerr, E. A., Keeseey, J., Adams, J. L., Setodji, C. M., Malik, S., & McGlynn, E. A. (2006). Who is at greatest risk for receiving poor-quality health care? *New England Journal of Medicine*, 354(11), 1147-1156.

- Asibi, A. A. (2015). Patients versus health care providers' perceptions of quality of care. *Clinical Governance: An International Journal*, 20(4), 170–182.
- Asuming, P. O. (2013). Getting the Poor to Enroll in Health Insurance, and its effects on their health: Evidence from a Field Experiment in Ghana. *Job Market Paper–Columbia University*.
- Atinga, R. A., Abekah-Nkrumah, G., & Domfeh, K. A. (2011). Managing healthcare quality in Ghana: a necessity of patient satisfaction. *International Journal of Health Care Quality Assurance*, 24(7), 548-563. <http://dx.doi.org/10.1108/09526861111160580>
- Awoonor-Williams, J.K., Tindana, P., Dalinjong, P.A. *et al.* Does the operations of the National Health Insurance Scheme (NHIS) in Ghana align with the goals of Primary Health Care? Perspectives of key stakeholders in northern Ghana. *BMC Int Health Hum Rights* 16, 21 (2016). <https://doi.org/10.1186/s12914-016-0096-9>
- Ayimbillah Atinga, R. (2012). Health care quality under the National Health Insurance Scheme in Ghana: Perspectives from premium holders. *International Journal of Quality & Reliability Management*, 29(2), 144-161.
- Ayimbillah Atinga, R., Abekah-Nkrumah, G., & Ameyaw Domfeh, K. (2011). Managing health care quality in Ghana: a necessity of patient satisfaction. *International Journal of Health Care Quality Assurance*, 24(7), 548-563.

- Ayo-Yusuf, I. J., Ayo-Yusuf, O. A., & Olutola, B. G. (2013). Health Insurance, Socio-Economic Position and Racial Disparities in Preventive Dental Visits in South Africa. *International Journal of Environmental Research and Government Health*, 10(1), 178–191.
- Badu, E., Agyei-Baffour, P., Ofori Acheampong, I., Opoku, M. P., & Addai-Donkor, K. (2019). Perceived satisfaction with health services under National Health Insurance Scheme: Clients' perspectives. *The International Journal of Health Planning and Management*, 34(1), e964–e975.
- Baeza, C., Crocco, P., Nunez, M., & Shaffer, M. (2001). Towards Decent Work: Social Protection in Health for all Workers and their Families. *The ILO/STEP Framework for the Extension in Social Protection in Health*.
- Bajari, P., Hong, H., & Khwaja, A. (2006). Moral hazard, adverse selection and health expenditures: A semiparametric analysis: National Bureau of Economic Research.
- Bakar, C., Seval Akgün, H., & Al Assaf, A. (2008). The role of expectations in patient assessments of hospital care: an example from a university hospital network, Turkey. *International Journal of Health Care Quality Assurance*, 21(4), 343-355.
- Baltussen, R., Bruce, E., Rhodes, G., Narh-Bana, S., & Agyepong, I. (2006). Management of mutual health organizations in Ghana. *Tropical Medicine & International Health*, 11(5), 654-659.

- Baltussen, R., Yé, Y., Haddad, S., & Sauerborn, R. S. (2002). Perceived quality of care of primary health care services in Burkina Faso. *Health Policy and Planning*, 17(1), 42-48.
- Basu, S., Andrews, J., Kishore, S., Panjabi, R., & Stuckler, D. (2012). Comparative performance of private and government health care systems in low-and middle-income countries: a systematic review. *PLoS med*, 9(6), e1001244.
- Bikker, A.P., Fitzpatrick, B., Murphy, D. *et al.* Measuring empathic, person-centred communication in primary care nurses: validity and reliability of the Consultation and Relational Empathy (CARE) Measure. *BMC Fam Pract* 16, 149 (2015). <https://doi.org/10.1186/s12875-015-0374-y>
- Blanchet, N., & Acheampong, O. (2013). Building on community-based health insurance to expand national coverage: the case of Ghana.
- Blanchet, N., Fink, G., & Osei-Akoto, I. (2012). The effect of Ghana's National Health Insurance Scheme on health care utilisation. *Ghana medical journal*, 46(2), 76-84.
- Boateng, D., & Awunyor-Vitor, D. (2013). Health insurance in Ghana: evaluation of policy holders' perceptions and factors influencing policy renewal in the Volta region. *Int J Equity Health*, 12, 1-10.

- Bourne, P. A., Eldemire-Shearer, D., Paul, T.J., Lagrenade, J., Charles, C. A. D. (2010). Public and Private health care utilization and differences between socioeconomic strata in Jamaica; Patient related outcome measure, 1: 81-91
- Brogowicz, A. A., Delene, L. M., & Lyth, D. M. (1990). A synthesised service quality model with managerial implications. *International Journal of Service Industry Management*, 1(1), 27-44.
- Brook, R. H., McGlynn, E. A., & Shekelle, P. G. (2000). Defining and measuring quality of care: a perspective from US researchers. *International Journal for Quality in Health Care*, 12(4), 281-295.
- Brown, S. W., & Swartz, T. A. (1989). A gap analysis of professional service quality. *the Journal of Marketing*, 92-98.
- Brownson, R. C., & Petitti, D. B. (1998). *Applied epidemiology: theory to practice*: Oxford University Press.
- Brugiavini, A., & Pace, N. (2011). Extending health insurance: effects of the national health insurance scheme in Ghana.
- Buttell, P., Hendler, R., & Daley, J. (2008). Quality in health care: concepts and practice. *The business of health care*. Westport (CT): Praeger.

- Carayon, P., Hundt, A. S., Karsh, B., Gurses, A., Alvarado, C., Smith, M., & Brennan, P. F. (2006). Work system design for patient safety: the SEIPS model. *Quality and Safety in Health Care, 15*(suppl 1), i50-i58.
- Campbell, Amy, Diana Layne, and Elaine Scott. 2021. "Relational Quality of Registered Nurses and Nursing Assistants: Influence on Patient Safety Culture" *Healthcare* 9, no. 2: 189. <https://doi.org/10.3390/healthcare9020189>
- Casalino, L., Gillies, R. R., Shortell, S. M., Schmittiel, J. A., Bodenheimer, T., Robinson, J. C., . . . Wang, M. C. (2003). External incentives, information technology, and organized processes to improve health care quality for patients with chronic diseases. *Jama, 289*(4), 434-441.
- Chahal, H., & Kumari, N. (2012). Service Quality and Performance in the Government Health-Care Sector. *Health Marketing Quarterly, 29*(3), 181–205.
- Chehab, E. L., Panicker, N., Alper, P. R., Baker, L. C., Wilson, S. R., & Raffin, T. A. (2001). The impact of practice setting on physician perceptions of the quality of practice and patient care in the managed care era. *Archives of internal medicine, 161*(2), 202-211.
- Clement, O. N. (2009). Asymmetry information problem of moral hazard and adverse selection in a national health insurance: The case of Ghana national health insurance. *Management Science and Engineering, 3*(3), 101-106.

Cohen, R. A., & Martinez, M. E. (2009). *Health insurance coverage: Early release of estimates from the National Health Interview Survey, 2008: (565212009-001)* [Data set].

Cooperberg, M. R., Birkmeyer, J. D., & Litwin, M. S. (2009). Defining high quality health care. *Urologic Oncology: Seminars and Original Investigations*, 27(4), 411–416.

COOPER, W. W., SEIFORD, L. M., & TONE, K. DATA ENVELOPMENT ANALYSIS A Comprehensive Text with Models, Applications, References and DEA-Solver Software.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage government actions.

Criel, B., & Waelkens, M. P. (2003). Declining subscriptions to the maliando mutual health organisation in Guinea-Conakry (West Africa): What is going wrong? *Social Science & Medicine*, 57(7), 1205-1219.

Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: a reexamination and extension. *Journal of Marketing*, 6(July), 55-68.

Cutler. M. D., Zeckhauser. R. (2000). Handbook of Health Economics; Vol 1, part A, pg 871-884

- Dake, F. A. A. (2018). Examining equity in health insurance coverage: An analysis of Ghana's National Health Insurance Scheme. *International Journal for Equity in Health*, 17(1), 1–10.
- Dalinjong, P. A., & Laar, A. S. (2012). The national health insurance scheme: Perceptions and experiences of health care providers and clients in two districts of Ghana. *Health Economics Review*, 2(1), 1–13.
- Dalinjong, P. A., Wang, A. Y., & Homer, C. S. E. (2018). The implementation of the free maternal health policy in rural Northern Ghana: Synthesised results and lessons learnt. *BMC Research Notes*, 11(1), 341.
- Darzi, M.A., Islam, S.B., Khurshed, S.O. and Bhat, S.A. (2023), "Service quality in the healthcare sector: a systematic review and meta-analysis", *LBS Journal of Management & Research*, Vol. 21 No. 1, pp. 13-29. <https://doi.org/10.1108/LBSJMR-06-2022-0025>
- De Allegri, M., Sanon, M., Sauerborn, R. (2006)."To enroll or not to enroll?" A qualitative investigation research demand for health insurance in rural West Africa; *Soc. Med*, 62(6); 1520-1527.
- Debebe, Z., van Kempen, L., & de Hoop, T. (2012). A perverse 'net' effect? Health insurance and ex-ante moral hazard in Ghana. *Social Science & Medicine*, 75(1 (July 2012)), 138-147.

Delali A. Wuaku, Patience Aniteye, Augustine Adomah-Afari (2022). Assessment of quality of healthcare among the elderly patients utilizing the Korle-Bu Teaching Hospital, Accra.

OSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 11, Issue 1 Ser. V (Jan. – Feb. 2022), PP 40-50.

<http://www.iosrjournals.org>

Dixon, J., Tenkorang, E. Y., & Luginaah, I. (2013). Ghana's National Health Insurance Scheme: a national level investigation of members' perceptions of service provision. *BMC international health and human rights*, 13(1), 35.

Donabedian, A. (1980). The definition of quality and approaches to its assessment.

Donabedian, A. (1988). The quality of care: How can it be assessed? *Jama*, 260(12), 1743-1748.

Donabedian, A. (1990). The seven pillars of quality. *Archives of pathology & laboratory medicine*, 114(11), 1115-1118.

Duku, S. K. O., Nketiah-Amponsah, E., Janssens, W., & Pradhan, M. (2018). Perceptions of health care quality in Ghana: Does health insurance status matter? *PLOS ONE*, 13(1), e0190911.

Durairaj, V. D'Almeida, S, Kirigia, J. (2010).Obstacles in the process of establishing a sustainable National Health Insurance Scheme; Insight from Ghana, Technical Brief for policy makers; WHO, 2010.

- Dwumoh, D., Essuman, E. E., & Afagbedzi, S. K. (2014). Determinant of factors associated with child health outcomes and service utilization in Ghana: multiple indicator cluster survey conducted in 2011. *Archives of Government Health*, 72(1), 42.
- Erlangga, D., Suhrcke, M., Ali, S., & Bloor, K. (2019). The impact of government health insurance on health care utilisation, financial protection and health status in low- and middle-income countries: A systematic review. *PLoS ONE*, 14(8).
- Endalamaw, A., Khatri, R.B., Erku, D. *et al.* Successes and challenges towards improving quality of primary health care services: a scoping review. *BMC Health Serv Res* 23, 893 (2023). <https://doi.org/10.1186/s12913-023-09917-3>
- Etikan, L., Baka, K. (2017). Sampling and Sampling Methods. *Biometric and Biostatistics Journal*, 5(6), 00149.
- Farr, M., & Cressey, P. (2015). Understanding staff perspectives of quality in practice in healthcare. *BMC health services research*, 15(1), 1-11.
- Filed, S. (2012). What is the definition of Quality Medical Care.online: <http://stanleyfeldmdmace>
- Fenny, A. P., Hansen, K. S., Enemark, U., & Asante, F. A. (2014). Quality of uncomplicated malaria case management in Ghana among insured and uninsured patients. *International journal for equity in health*, 13(1), 1-12.

- Ferlie, E. B., & Shortell, S. M. (2001). Improving the quality of health care in the United Kingdom and the United States: a framework for change. *Milbank Quarterly*, 79(2), 281-315.
- Fenenga, C. J., Boahene, K., Arhinful, D., de Wit, T. R., & Hutter, I. (2014). Do prevailing theories sufficiently explain perceptions and health-seeking behavior of Ghanaians? *The International Journal of Health Planning and Management*, 29(1), 26–42.
- Filby, A., McConville, F., & Portela, A. (2016). What Prevents Quality Midwifery Care? A Systematic Mapping of Barriers in Low and Middle Income Countries from the Provider Perspective. *PLOS ONE*, 11(5), e0153391.
- Flottorp, A. S., Jamtvedt, G., Gibis, B., & McKee, M. (2010). Using audit and feedback to health professionals to improve quality and safety of health care.
- Freeman, J. D., Kadiyala, S., Bell, J. F., & Martin, D. P. (2008). The Causal Effect of Health Insurance on Utilization and Outcomes in Adults: A Systematic Review of US Studies. *Medical Care*, 46(10), 1023–1032. Retrieved from JSTOR.
- Frimpong, J. A., Helleringer, S., Awoonor-Williams, J. K., Aguilar, T., Phillips, J. F., & Yeji, F. (2014). The complex association of health insurance and maternal health services in the context of a premium exemption for pregnant women: A case study in Northern Ghana. *Health Policy and Planning*, 29(8), 1043–1053.

Fu, A. Z. & Wang N. (2008). Health expenditures and patient satisfaction: cost and quality from consumer perspective in the US. *Current Medical Research and Opinion*, 24(5) 1385-1394

Gajate-Garrido, G., & Ahiadeke, C. (2013). "The Effect of Parents' Insurance Enrolment on Health care Utilization: Evidence from Ghana". . *Working Paper*.

Gbolu, S. (2019). Performance of Ghana's National Health Insurance Scheme; Access, Quality or outcome?

Ghana Statistical Service. (2012). Ghana Multiple Cluster Survey with an enhanced Malaria Module and Biomarker, 2011, Final Report, Accra, Ghana.

GhanaWeb. (2019, April 15). Ghana has exceeded WHO's recommended 1 nurse to 1,000 ratio. Retrieved November 20, 2019,

Ghana Health Services. (2017). 2016 Annual Report.

Gilson, L., & McIntyre, D. (2005). Removing user fees for primary care in Africa: the need for careful action. *BmJ*, 331(7519), 762-765.

Gnawali, D. P., Pokhrel, S., Sié, A., Sanon, M., De Allegri, M., Souares, A., . . . Sauerborn, R. (2009). The effect of community-based health insurance on the utilization of modern health care services: evidence from Burkina Faso. *Health Policy*, 90(2), 214-222.

- Gobah, F. K., & Zhang, L. (2011). The National Health Insurance Scheme in Ghana: prospects and challenges: a cross-sectional evidence. *Global journal of health science*, 3(2), p90.
- Gottret, P. Schieber, G. (2006). Health Financing Revisited, World Bank. Washington D.C.
- Gotsadze, G., Bennett, S., Ranson, K., & Gzirishvili, D. (2005). Health care-seeking behaviour and out-of-pocket payments in Tbilisi, Georgia. *Health Policy and Planning*, 20(4), 232-242.
- Grazier, K. L., Richardson, W. C., Martin, D. P., & Diehr, P. (1986). Factors affecting choice of health care plans. *Health services research*, 20(6 Pt 1), 659.
- Grönroos, C. (1982). Strategic Management and Marketing in the Service Sector. *Research Reports*(8).
- Grönroos, C. (1984). A service quality model and its marketing implications. *European Journal of marketing*, 18(4), 36-44.
- Gu, L., Feng, H., & Jin, J. (2017). Effects of Medical Insurance on the Health Status and Life Satisfaction of the Elderly. *Iranian Journal of Government Health*, 46(9), 1193–1203.

Gusmano, M. K., Fairbrother, G., & Park, H. (2002). Exploring the limits of the safety net: community health centers and care for the uninsured. *Health affairs*, 21(6), 188-194.

Haddad, S., & Fournier, P. (1995). Quality, cost and utilization of health services in developing countries. A longitudinal study in Zaire. *Social Science & Medicine*, 40(6), 743-753.

Haddad, S., Potvin, L., Roberge, D., Pineault, R., & Remondin, M. (2000). Patient perception of quality following a visit to a doctor in a primary care unit. *Family practice*, 17(1), 21-29.

Ibn El Haj, H., Lamrini, M., & Rais, N. (2013). Quality of care between Donabedian model and ISO9001V2008. *International Journal for Quality Research*, 7(1) 17-36.

Haque, M. (2010). Sampling in Social Research; *Global Research Methodology*, 1-6

Haruna, U., Dandeebo, G., & Galaa, S. Z. (2019). Improving Access and Utilization of Maternal Health care Services through Focused Antenatal Care in Rural Ghana: A Qualitative Study. *Advances in Government Health*, 2019, 11.

Hasumi, T., & Jacobsen, K. H. (2014). Health care service problems reported in a national survey of South Africans. *International Journal for Quality in Health Care*, 26(4), 482-489.

Haywood-Farmer, J. (1988). A conceptual model of service quality. *International journal of Operations & Production Management*, 8(6), 19-29.

Hoffman, C., & Paradise, J. (2008). Health insurance and access to health care in the United States.

*Annals of the New York Academy of Sciences*, 1136(1), 149-160.

Horodnic, A. V., Apetrei, A., Luca, F.-A., & Ciobanu, C.-I. (2018). Rating health care services:

Consumer satisfaction vs. Health system performance. *The Service Industries Journal*, 38(13–14), 974–994.

Hsiao, W. C. (2007). Why is a systemic view of health financing necessary? *Health affairs*, 26(4),

950-961.

HSIAO, W. C., & LIU, Y. Health Care Financing: Assessing Its Relationship to Health Equity.

Institute of Medicine (2001). Crossing quality chasm: A new health system for the 21st century.

James, C. D., Hanson, K., BaMcPake. B., Balabanova, D., Gwatkin, D., Hopwood, I., Kirunga,

C., R., Meessen, B., Morris, S. S., Preker, A., Soutegrand, Y., Tibouti, A., Villeneuve,

P., X u, K. (2006). To retain or remove user fees? Reflections on current debate in low-and-middle-income countries: *Applied Health Economics; Health Policy* 5, 137-153

Jehu-Appiah, C., Aryeetey, G., Agyepong, I., Spaan, E., & Baltussen, R. (2012). Household

perceptions and their implications for enrolment in the National Health Insurance Scheme in Ghana. *Health Policy and Planning*, 27(3), 222-233.

- Jencks, S. F. (1995). Measuring quality of care under Medicare and Medicaid. *Health care financing review, 16*(3), 39-54.
- Jowett, M., Deolalikar, A., & Martinsson, P. (2004). Health insurance and treatment seeking behaviour: Evidence from a low-income country. *Health Economics, 13*(9), 845–857.
- Juma, D., & Manongi, R. (2009). Users’ perceptions of outpatient quality of care in Kilosa District Hospital in central Tanzania. *Tanzania journal of health research, 11*(4).
- Kamuzora, P., & Gilson, L. (2007). Factors influencing implementation of the Community Health Fund in Tanzania. *Health Policy and Planning, 22*(2), 95-102.
- Kanchebe Derbile, E., & van der Geest, S. (2013). Repackaging exemptions under National Health Insurance in Ghana: How can access to care for the poor be improved? *Health Policy and Planning, 28*(6), 586–595.
- Kazungu, J. S., & Barasa, E. W. (2017). Examining levels, distribution and correlates of health insurance coverage in Kenya. *Tropical Medicine & International Health : TM & IH, 22*(9), 1175–1185.
- Keesara, S. R., Juma, P. A., & Harper, C. C. (2015). Why do women choose private over government hospitals for family planning services? A qualitative study of post-partum

women in an informal urban settlement in Kenya. *BMC Health Services Research*, 15(1), 335.

Kelley, E., & Hurst, J. (2006). Health care quality indicators project.

Kempe, A., Beaty, B. L., Crane, L. A., Stokstad, J., Barrow, J., Belman, S., & Steiner, J. F. (2005). Changes in access, utilization, and quality of care after enrollment into a state child health insurance plan. *Pediatrics*, 115(2), 364-371.

Kiguli, J., Ekirapa-Kiracho, E., Okui, O., Mutebi, A., MacGregor, H., & Pariyo, G. W. (2009). Increasing access to quality health care for the poor: Community perceptions on quality care in Uganda. *Patient Prefer Adherence*, 3, 77-85.

Kodom, M., Owusu, A. Y., & Kodom, P. N. B. (2019). Quality Health care Service Assessment under Ghana's National Health Insurance Scheme. *Journal of Asian and African Studies*, 54(4), 569-587.

Kong, J. (2010). The Effects of Marital Status & Gender on Health Care Insurance Coverage in the United States. *Honors Projects*.

Kumah, E. (2019). Patient experience and satisfaction with a health care system: Connecting the dots. *International Journal of Health care Management*, 12(3), 173-179.

Kumi, F. (2017, October 5). New Standard Treatment Guidelines-Pharmaceutical Society of Ghana. Retrieved November 12, 2019, from <https://psgh.org/news/368956/MoH-Launches-New-Standard-Treatment-Guidelines.htm>

Knaul, F. M., González-Pier, E., Gómez-Dantés, O., García-Junco, D., Arreola-Ornelas, H., Barraza-Lloréns, M. Juan, M. (2012). The quest for universal health coverage: achieving social protection for all in Mexico. *The Lancet*, 380(9849), 1259-1279.

Kunkel, S., Rosenqvist, U., & Westerling, R. (2007). The structure of quality systems is important to the process and outcome, an empirical study of 386 hospital departments in Sweden. *BMC Health Services Research*, 7(1), 1–8.

Kutzin, J. (2001). A descriptive framework for country-level analysis of health care financing arrangements. *Health Policy*, 56(3), 171-204.

Lai, D.W.L., Ou, X., Daoust, G.D. (2019). Quality of Care. In: Gu, D., Dupre, M. (eds) *Encyclopedia of Gerontology and Population Aging*. Springer, Cham. [https://doi.org/10.1007/978-3-319-69892-2\\_852-1](https://doi.org/10.1007/978-3-319-69892-2_852-1)

Lave, J. R., & Peele, P. B. (2005). Health Care Financing. *Encyclopedia of Biostatistics*.

Lehtinen, U., & Lehtinen, J. R. (1982). *Service quality: a study of quality dimensions*: Service Management Institute.

- Le, N., Groot, W., Tomini, S., & Tomini, F. (2018). *Health insurance and patient satisfaction: Evidence from the poorest regions of Vietnam* (No. 040). Retrieved from United Nations University - Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT).
- Lim, M.-K., Yang, H., Zhang, T., Feng, W., & Zhou, Z. (2004). Government perceptions of private health care in socialist China. *Health affairs*, 23(6), 222-234.
- Lu, J.-F. R., & Hsiao, W. C. (2003). Does universal health insurance make health care unaffordable? Lessons from Taiwan. *Health affairs*, 22(3), 77-88.
- Lu, S.J., Kao, H.O., Chang, B.L. *et al.* Identification of quality gaps in healthcare services using the SERVQUAL instrument and importance-performance analysis in medical intensive care: a prospective study at a medical center in Taiwan. *BMC Health Serv Res* 20, 908 (2020). <https://doi.org/10.1186/s12913-020-05764-8>
- Manzoor, F., Wei, L., Hussain, A., Asif, M., & Shah, S. I. A. (2019). Patient Satisfaction with Health Care Services; An Application of Physician's Behavior as a Moderator. *International Journal of Environmental Research and Government Health*, 16(18).
- Masiye, F., Kirigia, J. M., Emrouznejad, A., Sambo, L. G., Mounkaila, A., Chimfwembe, D., & Okello, D. (2006). Efficient management of health centres human resources in Zambia. *Journal of Medical Systems*, 30(6), 473-481.

Maxwell, R. J. (1984). Quality assessment in health. *British medical journal (Clinical research ed.)*, 288(6428), 1470-1472.

McGlynn, E. A. (1997). Six challenges in measuring the quality of health care. *Health affairs*, 16(3), 7-21.

McIntyre, D. (2007). *Learning from experience: Health care financing in low-and middle-income countries*.

Mogre, V., Johnson, N. A., Tzelepis, F., & Paul, C. (2019). Attitudes towards, facilitators and barriers to the provision of diabetes self-care support: A qualitative study among health care providers in Ghana. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 13(3), 1745–1751.

Mossialos, E., Dixon, A., Figueras, J., & Kutzin, J. (2002). *Funding health care: options for Europe*: Open University Press Maidenhead.

Ministry of Health (MOH). 2014. *Wholistic assessment of the health sector programme of work*. Accra, Ghana.

National Development Planning Commission, (2009). *2008 Citizens' Assessment of the National Health Insurance Scheme*.

National Health Insurance Authority, (2012). Annual Report.

National Health Insurance Authority, (2013). Annual Report.

National Health Insurance Authority, (2012). National Health Insurance Act, (Act 852).

Nelson, K. M., Chapko, M. K., Reiber, G., & Boyko, E. J. (2005). The association between health insurance coverage and diabetes care; data from the 2000 Behavioral Risk Factor Surveillance System. *Health services research, 40*(2), 361-372.

Newacheck, P. W., Stoddard, J. J., Hughes, D. C., & Pearl, M. (1998). Health insurance and access to primary care for children. *New England Journal of Medicine, 338*(8), 513-519.

Nguyen, H., Rajkotia, Y., & Wang, H. (2011). The financial protection effect of Ghana National Health Insurance Scheme: evidence from a study in two rural districts. *Int J Equity Health, 10*(4), 9-10.

Normand, C., & Weber, A. (1994). *Social health insurance: a guidebook for planning*: World Health Organization Geneva.

Nsiah-Boateng, E., & Aikins, M. (2018). Trends and characteristics of enrolment in the National Health Insurance Scheme in Ghana: A quantitative analysis of longitudinal data. *Global Health Research and Policy, 3*.

Nketiah-Amponsah, E., Alhassan, R.K., Ampaw, S. *et al.* Subscribers' perception of quality of services provided by Ghana's National Health Insurance Scheme - what are the correlates?. *BMC Health Serv Res* **19**, 196 (2019). <https://doi.org/10.1186/s12913-019-4023-3>

Oche, M. O., & Adamu, H. (2013). Determinants of Patient Waiting Time in the General Outpatient Department of a Tertiary Health Institution in North Western Nigeria. *Annals of Medical and Health Sciences Research*, 3(4), 588.

Odonkor, T.S., Frimpog, C., Duncan, E., Odonkor, C. (2019). Trends in the overall satisfaction with health delivery in Accra, Ghana: African Journal of Primary Health Care and Family Medicine

Okebukola, P. O., & Brieger, W. R. (2016). Providing Universal Health Insurance Coverage in Nigeria. *International Quarterly of Community Health Education*, 36(4), 241–246.

Okoroh, J., Essoun, S., Seddoh, A., Harris, H., Weissman, J. S., Dsane-Selby, L., & Riviello, R. (2018). Evaluating the impact of the national health insurance scheme of Ghana on out of pocket expenditures: A systematic review. *BMC Health Services Research*, 18(1), 1–14.

Onah, N. M., Govinder, V., (2014). Out-of-pocket payment; Health care access and utilization in South East Nigeria; A gender Perspective. *PLOS ONE*, 9(4); e9388.

Oredola, A., & Odusanya, O. (2017). A survey of the perception of the quality of and preference of health care services amongst residents of Abeokuta South Local Government, Ogun State, Nigeria. *Nigerian Journal of Clinical Practice*, 20(9), 1088.

Orem, J. N., & Zikusooka, C. M. (2010). Health financing reform in Uganda: How equitable is the proposed National Health Insurance scheme?. *International journal for equity in health*, 9(1), 1-8.

Orosz, É., Kaló, Z., & Nagy, B. (2011). Week 4 Health care financing.

Osei, D., d'Almeida, S., George, M. O., Kirigia, J. M., Mensah, A. O., & Kainyu, L. H. (2005). Technical efficiency of government district hospitals and health centres in Ghana: a pilot study. *Cost Effectiveness and Resource Allocation*, 3(1), 9.

Otoo, P., Haojie, S., Wiredu, J., & Agyapong, E. (2024). The influencing factors of quality health care delivery and NHIS accessibility: A fresh empirical evidence from the Greater Accra Metropolis, Ghana. Received 14th October, 2023; revised 03rd November, 2023; accepted 25th December, 2023; published online 30th January, 2024.

Øvretveit, J. (1992). *Health Service Quality. An introduction to quality methods for health services*: Blackwell Scientific Government ations.

- Owoo, N. S., & Lambon-Quayefio, M. P. (2013). National health insurance, social influence and antenatal care use in Ghana. *Health Economics Review*, 3(1), 19.
- Owusu Kwateng, K., Lumor, R., & Acheampong, F. O. (2019). Service quality in government and private hospitals: A comparative study on patient satisfaction. *International Journal of Health care Management*, 12(4), 251–258.
- Pallangyo, E. N., Mbekenga, C., Källestål, C., Rubertsson, C., & Olsson, P. (2017). “If really we are committed things can change, starting from us ”: Health care providers’ perceptions of postpartum care and its potential for improvement in low-income suburbs in Dar es Salaam, Tanzania. *Sexual & Reproductive Health care*, 11(2017), 7–12.
- Palmer, N., Mueller, D. H., Gilson, L., Mills, A., & Haines, A. (2004). Health financing to promote access in low income settings—how much do we know? *The Lancet*, 364(9442), 1365-1370.
- Palmer, R. H., Donabedian, A., & Povar, G. J. (1991). *Striving for quality in health care: an inquiry into policy and practice*: Health Administration Pr.
- Panchapakesan, P., Sai, L. P., & Rajendran, C. (2015). Customer Satisfaction in Indian Hospitals: Moderators and Mediators. *Quality Management Journal*, 22(1), 10–29.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Reassessment of expectations as a comparison standard in measuring service quality: Implications for further research. *Journal of Marketing*, 58(1), 111–124.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*, 41-50.

Paul G. Ashigbie, Devine Azameti & Veronika J. Wirtz (2016). Challenges of medicines management in the public and private sector under Ghana's National Health Insurance Scheme – A qualitative study. *Journal of Pharmaceutical Policy and Practice* Volume 9, Article number: 6

Pérotin, V., Zamora, B., Reeves, R., Bartlett, W., & Allen, P. (2013). Does hospital ownership affect patient experience? An investigation into government –private sector differences in England. *Journal of health economics*, 32(3), 633-646.

Rashad, A. S., Sharaf, M. F., & Mansour, E. I. (2016). *Does government health insurance increase maternal health care utilization in Egypt?* (Working Paper No. 223).

Rauchhaus, R. W. (2009). Principal-agent problems in humanitarian intervention: Moral hazards, adverse selection, and the commitment dilemma. *International Studies Quarterly*, 53(4), 871-884.

Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (2013). *Qualitative research practice: A guide for social science students and researchers*: Sage.

Robyn, P. J., Bärnighausen, T., Souares, A., Savadogo, G., Sié, A., & Sauerborn, R. (2013). *Does Enrollment Status in Community-based Insurance Lead to Poorer Quality of Care?: Evidence from Burkina Faso*: BioMed Central.

Ros, C. C., Groenewegen, P. P., & Delnoij, D. M. (2000). All rights reserved, or can we just copy? Cost sharing arrangements and characteristics of health care systems. *Health Policy*, 52(1), 1-13.

Rosenbaum, S. (2017). Health Insurance and Coverage of Evidence-Based Care. *Government Health Reports*, 132(2), 260–263.

Rubin, H. R., Pronovost, P., & Diette, G. B. (2001). The advantages and disadvantages of process-based measures of health care quality. *International Journal for Quality in Health Care*, 13(6), 469-474.

Sakyi, E. K., Atinga, R. A., & Adzei, F. A. (2012). Managerial problems of hospitals under Ghana's national health insurance scheme. *Clinical Governance: An International Journal*.

Sapelli, C., & Vial, B. (2003). Self-selection and moral hazard in Chilean health insurance. *Journal of health economics*, 22(3), 459-476.

- Scheffler, R. M., Mahoney, C. B., Fulton, B. D., Dal Poz, M. R., & Preker, A. S. (2009). Estimates of health care professional shortages in sub-Saharan Africa by 2015. *Health affairs*, 28(5), w849-w862.
- Schieber, G., Cashin, C., Saleh, K., & Lavado, R. (2012). *Health financing in Ghana*: World Bank, Washington DC.
- Schmidt, C. M., Mensah, J. H., & Oppong, J. R. (2009). Ghana's national health insurance scheme in the context of the health MDGs—an empirical evaluation using propensity score matching. *Ruhr Economic Paper*(157).
- Schneider, P., & Hanson, K. (2007). The impact of micro health insurance on Rwandan health centre costs. *Health Policy and Planning*, 22(1), 40-48.
- Seth, N., Deshmukh, S., & Vrat, P. (2005). Service quality models: a review. *International Journal of Quality & Reliability Management*, 22(9), 913-949.
- Shayo, E. H., Senkoro, K. P., Momburi, R., Olsen, Ø. E., Byskov, J., Makundi, E. A., ... Mboera, L. E. G. (2016). Access and utilisation of health care services in rural Tanzania: A comparison of government and non-government hospitals using quality, equity, and trust dimensions. *Global Government Health*, 11(4), 407–422.

Shenoy, A., Revere, L., Begley, C., Daiser, S. (2017). Providing Quality Healthcare is one of the topmost priorities in the care delivery system; *International Journal of Healthcare Management*, Vol.12, Issue2, pg 165-172

Shi, L. (2000). Type of health insurance and the quality of primary care experience. *American Journal of Government Health*, 90(12), 1848.

Stark Casagrande, S., & Cowie, C. C. (2012). Health Insurance Coverage Among People With and Without Diabetes in the U.S. Adult Population. *Diabetes Care*, 35(11), 2243–2249.

Steffen, G. E. (1988). Quality medical care: a definition. *Jama*, 260(1), 56-61.

Sieverding M, Onyango C, Suchman L (2018) Private healthcare provider experiences with social health insurance schemes: Findings from a qualitative study in Ghana and Kenya. *PLOS ONE* 13(2): e0192973. <https://doi.org/10.1371/journal.pone.0192973>

Systems20/20, H. (2010). An evaluation of the effect of National Health Insurance. 9.

Szilagyi, P. G., Dick, A. W., Klein, J. D., Shone, L. P., Zwanziger, J., & McNerny, T. (2004). Improved access and quality of care after enrollment in the New York State Children's Health Insurance Program (SCHIP). *Pediatrics*, 113(5).

- Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *How to Choose a Sampling Technique for Research*.
- Tangcharoensathien, V., Patcharanarumol, W., Ir, P., Aljunid, S. M., Mukti, A. G., Akkhavong, K. Mills, A. (2011). Health in Southeast Asia 6 Health-financing reforms in southeast Asia: challenges in achieving universal coverage.
- Tenkorang, E. Y. (2016). Health Provider Characteristics and Choice of Health Care Hospital among Ghanaian Health Seekers. *Health Systems & Reform*, 2(2), 160–170.
- Tuan, T., Dung, V., Neu, I., & Dibley, M. J. (2005). Comparative quality of private and government health services in rural Vietnam| NOVA. The University of Newcastle's Digital Repository.
- Turkson, P. (2009). Perceived quality of health care delivery in a rural district of Ghana. *Ghana medical journal*, 43(2).
- Tynkkyne, L.-K., & Vrangbæk, K. (2018). Comparing government and private providers: A scoping review of hospital services in Europe. *BMC Health Services Research*, 18(1), 141.
- Uzochukwu, B. S. C., Ughasoro, M. D., Etiaba, E., Okwuosa, C., Envuladu, E., & Onwujekwe, O. E. (2015). Health care financing in Nigeria: Implications for achieving universal health coverage. *Nigerian journal of clinical practice*, 18(4), 437-444.

- Vera, H. (1993). The client's view of high-quality care in Santiago, Chile. *Studies in family planning*, 40-49.
- Vialle-Valentin, C. E., Ross-Degnan, D., Ntaganira, J., & Wagner, A. K. (2008). Medicines coverage and community-based health insurance in low-income countries. *Health Research Policy and Systems*, 6(1), 11.
- Wang, H., Otoo, N., & Dsane-Selby, L. (2017). *Ghana National Health Insurance Scheme* [World Bank Government Group] <https://econpapers.repec.org/bookchap/wbkwbpubs/27658.htm>
- Weech-Maldonado, R., Shea, D., & Mor, V. (2006). The relationship between quality of care and costs in nursing homes. *American Journal of Medical Quality*, 21(1), 40–48.
- Whitehead, M., Dahlgren, G., & Evans, T. (2001). Equity and health sector reforms: can low-income countries escape the medical poverty trap? *The Lancet*, 358(9284), 833-836.
- World Health Assembly, (WHA). Sustainable Health Financing, Universal Health Coverage and Social Health Insurance; WHA 58, 33.
- World Health Organization, (2000). *The world health report 2000: health systems: improving performance:*

World Health Organization, (2003). The selection and use of essential medicines: report of the WHO Expert Committee, 2000. (including the 12th model list of essential medicines).

World Health Organization, (2005). Designing health financing systems to reduce catastrophic health expenditure.

World Health Organization, (2006). The world health report: 2006: working together for health.

World Health Organization, (2007). Everybody's business-strengthening health systems to improve health outcomes: WHO's framework for action.

World Health Organization, (2013). Service availability and readiness assessment (SARA): an annual monitoring system for service delivery: reference manual.

World Health Organization, (2016). Workload Indicators of Staff Need selected country implementation experiences. *Human Resources for Health Observer Series, 15*, 27-28.

World Health Organization, (2018, February 5). Ageing and health. Retrieved November 12, 2019, from <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>

(WHO, 2012: [www.int/features/factfile/](http://www.int/features/factfile/) Universal Health Coverage: 10 facts on universal health coverage-sourced 23/11/16)

[www.oecd.ilibrary.org](http://www.oecd.ilibrary.org): Reviews of Health care quality-sourced 24/11/2016

[www.who.int/whr/2010](http://www.who.int/whr/2010): Health systems financing-sourced 24/11/16

[www.worldbank.org](http://www.worldbank.org): Education and Health delivery indicators, 2004:-sourced 25/11/16

[www.who.int/topics/health\\_system](http://www.who.int/topics/health_system):- sourced 25/11/16

Widmer, M., Betran, A. P., Merialdi, M., Requejo, J., & Karpf, T. (2011). The role of faith-based organizations in maternal and newborn health care in Africa. *International Journal of Gynecology & Obstetrics*, 114(3), 218–222.

Wood, G. R., Goesling, B., & Avellar, S. (2016, April 11). The Effects of Marriage on Health: A Synthesis of Recent Research Evidence. Research Brief. Retrieved November 12, 2019, from ASPE website: <https://aspe.hhs.gov/report/effects-marriage-health-synthesis-recent-research-evidence-research-brief>

Xu, X., Patel, D. A., Vahratian, A., & Ransom, S. B. (2006). Insurance coverage and health care use among near-elderly women. *Women's Health Issues*, 16(3), 139-148.

Yawson, A., Nimo, K., & Biritwum, R. (2013). Challenges of health care delivery at a Municipal Hospital under Ghana's National Health Insurance Scheme.



**APPENDIX: I DATA COLLECTION TOOLS**

“Assessing quality of health care in the National Health Insurance Scheme credentialed hospitals in Greater Accra Region”

**A. TECHNICAL QUALITY ASSESSMENT (CASE AUDIT)**

HOSPITAL NAME:

HOSPITAL OWNERSHIP:

Public

Mission

Private

TYPE OF PRESCRIBER

Doctor  Physician Assistant  Nurse  Midwife  Health Assistant

Other  Specify.....

INSURED

UNINSURED

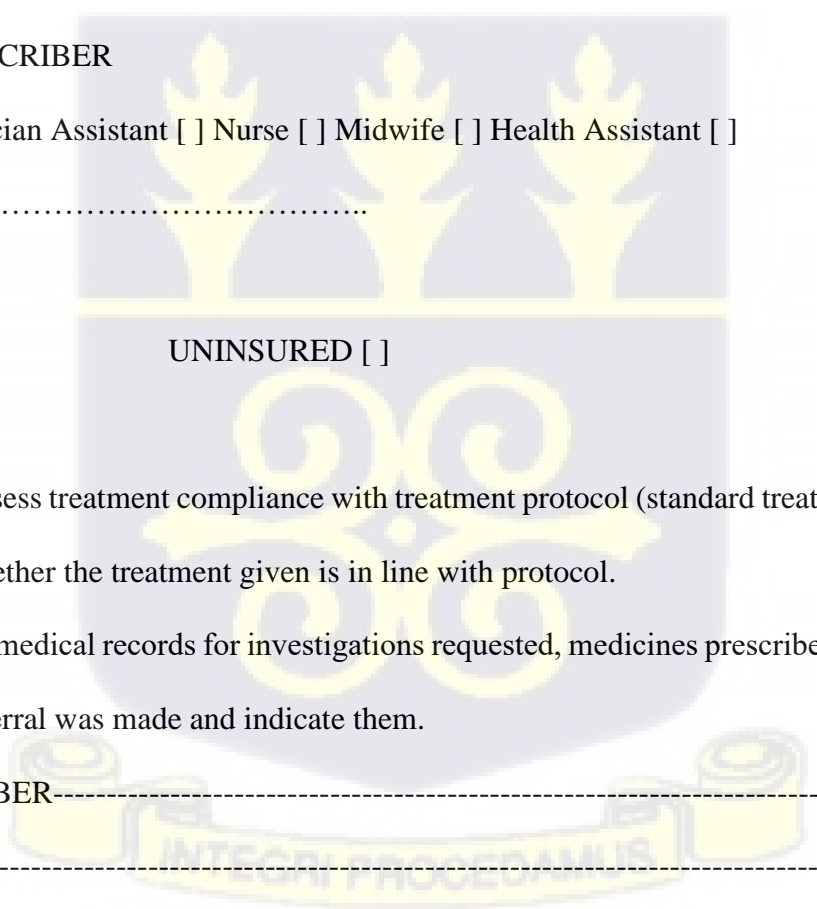
Instructions

This tool is to assess treatment compliance with treatment protocol (standard treatment guidelines) to determine whether the treatment given is in line with protocol.

Assess patients’ medical records for investigations requested, medicines prescribed in and whether follow-up or referral was made and indicate them.

FOLDER NUMBER-----

DIAGNOSIS-----



ASSESSMENT;

INVESTIGATION(S) REQUESTED

Full blood count [ ] Blood film for malaria parasite [ ] Blood C/S [ ]

Reticulocytes count [ ] Sickling [ ] Haemoglobin [ ] Hb electrophoresis [ ]

Serum Lipids [ ] Blood sugar [ ] Uric Acid [ ] BUE & Cr [ ]

Blood sugar [ ] Glucose tolerant test [ ] Glycated haemoglobin [ ]

Blood Culture [ ] HIV test [ ] Widal test [ ]

Stool R/E [ ] Stool C/S [ ] Stool for hookworm ova [ ] Urine R/E [ ]

Urine for schistoma ova [ ] Urine C/S [ ] Swab for C/S [ ]

X-ray [ ] ECG [ ] Ultrasound [ ]

Others.....

.....

.....

MEDICINES PRESCRIBED.

ORS [ ] Ciprofloxacin [ ] Co- trimoxazole [ ] Metronidazole [ ]

Ferrous sulphate [ ] Ferrous fumerate [ ] Folic acid [ ] Iron III polymaltose [ ]

Bendroflumathiazide [ ] Atenolol [ ] Bisoprolol [ ] Carvedilol [ ]

Lisinopril [ ] Ramipril [ ] Lorsartan [ ] Candesartan [ ] Valsartan [ ]

Nifedipine [ ] Amlodipine [ ] Prazosin [ ] Methyldopa [ ] Hydralazine [ ]

Amoxycillin [ ] Azythomycin [ ] Amoxicillin + Clavulanic Acid [ ]

Erythromycin [ ] Flucloxacillin [ ] Ciprofloxacin [ ] Cefuroxime [ ]

Paracetamol [ ] Glibenclamide [ ] Gliclazide [ ] Glimeperide [ ] Tolbutamide [ ]

Pioglitazone [ ] Rosiglitazone [ ] Insulin [ ] Metformin [ ]

Artesunate-Amodiaquine [ ] Artemether +Lumefantrine [ ] Albendazole [ ]

Dihydroartemisinin-Piperquine [ ] Mebendazole [ ] Thiabendazole [ ]

Praziquantel [ ] Nicrosamide [ ] Tetracycline eye ointment [ ]

Chloramphenicol eye-drop/ointment [ ] Ciprofloxacin eye-drop [ ]

Mupirocin ointment [ ] Sexagliptin [ ] Sitagliptin [ ] Vitamin A [ ]

Naproxen [ ] Celecoxib [ ] Diclofenac [ ] Ibuprofen [ ]

Others.....

.....  
.....

**CONTINUITY OF CARE**

Follow up visit (review) schedule or case Referred

Yes [ ]

No [ ]

**B. TOOLS FOR STAFF ASSESSMENT**

HOSPITAL NAME.....

HOSPITAL TYPE: PUBLIC [ ] PRIVATE [ ] MISSION [ ]

Number of Doctors.....

Number of Nurses.....

Number of Midwives.....

Number of Pharmacists.....

## C. QUESTIONNAIRE 2: HEALTH CARE WORKERS (HOSPITAL HEADS)

### INFORMED CONSENT

Interviewer: Hello, my name is Nicholas Afram Osei, a Doctor of Philosophy (PhD) candidate of School of Public Health, University of Ghana. I am conducting a study on “*Assessing quality of care in the National Health Insurance Scheme credentialed hospitals in Greater Accra Region*” the purpose of finding out whether health hospitals credentialed under NHIS in Greater Accra Region are providing quality of care to the insured and uninsured and whether there is any difference in quality of care received by the insured and uninsured. The study also intend to determine health workers views on quality of care under NHIS. You have been selected to participate in the study.

I will ask few questions about yourself, on health insurance and on quality of care in this hospital.

I would like to assure you that your participation in this interview will have no effect on you or your hospital. There is no compensation for your participation, however, the study may contribute to the improvement in quality of care which is going to benefit you and your hospital.

It will take about 1 hour to complete the interview. Participation is however voluntary and you are liberty to stop when it becomes necessary. I however hope you will participate fully in the study because your views are very important. Any information provided will be kept strictly confidential and will be used for the final report of the study.

Do you have any question before we start? (*take few minutes to answer questions from respondents*).



Interviewer: do you agree to participate in this interview?

Respondent agrees to be interviewed	Signature or Thumbprint of respondent  Date: ( / /20 )
Respondent do not agree to be interviewed	Reschedule interview? Yes/No  If yes, date ( / /20 )  Time: -----

Signature of interviewer:-----

Date: ( / /20 )

Time started-----

Time ended-----

**KEY INFORMANT INTERVIEW-HOSPITAL IN-CHARGES**

Name of hospital: .....

Type of hospital                      [1] Private                      [2] Government                      [3]

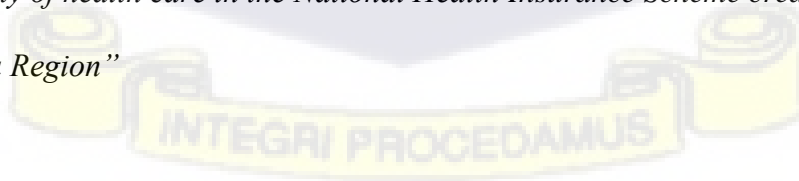
Mission

No.	SOCIO-DEMOGRAPHIC FACTORS	RESPONSES
1	Job description	[1] Medical Doctor [2] Physician Assistant [3] Nurse [4] Midwife

		[5] Pharmacist [6] Other.....
2	Age in completed years:	.....(years)
3	Sex:	Female Male
4	Marital status:	Never Married Married Widowed Cohabiting Divorced/ Separated
5	What religion are you affiliated to?	Christianity Islam Traditionalist Others (specify).....
6	Years of work experience	.....
7	What ethnic group do you belong to?	Akan Ewe Ga/Dangbe Dagomba Others (specify) .....
	<b>HEALTH INSURANCE STATUS</b>	
8	Are you registered with NHIS?	No, <i>skip to 12</i> Yes

9	If yes to Q8, Is your NHIS card currently active?	No, Yes, <i>skip to 11</i>
10	If no to Q9, why is it not active?	Waiting for my employer to renew Don't have enough time to renew Don't think I need it I have private health insurance Others (specify).....
11	If yes to Q9 do you use your NHIS card for medical care?	No Yes
12	If no to Q8, why?	[1] My employer is refusing to register me [2] Don't have enough time to register [3] Don't think it is I need it [4] I have private insurance [4] Others (specify).....

*“Assessing quality of health care in the National Health Insurance Scheme credentialed hospitals in Greater Accra Region”*



## **KEY INFORMANT INTERVIEW GUIDE FOR LEAD CLINICIAN/ HOSPITAL IN-CHARGE**

1. Do you have all the complement staff needed for patient care? If no, find out which complement of staff are not available and why?
2. Do you have adequate resources (financial, infrastructure, equipment/tools, medicines and medical supplies) to work with? \*probe further if answer is no.
3. To what extent do you think NHIS has contributed to staffing and logistics situation?
4. How would you rate quality of care in your hospital- probe further on the answer.
5. What are the factors are accounting for your rating?
6. What is the contribution of National Health Insurance Scheme (NHIS) to this quality rating?
7. What do you think can be done to improve quality care in your hospital?
8. Do you experience stock out of medicines and medical consumables? If yes probe to find out how often in a year, which items and why?
9. What can you say about care received by insured and uninsured in you hospital (same, different- if different who receive better quality and why).
10. Have you ever encountered a situation where a patient has complain that he/she has received poor service because of NHIS? Probe further if yes
11. Are all your staff on NHIS? If no, probe further to find out why and if yes who paid for their registration?

## **D. QUESTIONNAIRE 1: PATIENTS**

### **INFORMED CONSENT**

Hello, my name is Nicholas Afram Osei, a Doctor of Philosophy (PhD) candidate of School of Public Health, University of Ghana. I am conducting a study on “*Assessing quality of health care in the National Health Insurance Scheme credentialed hospitals in Greater Accra Region*” the purpose of finding out whether health hospitals credentialed under NHIS in Greater Accra Region are providing quality of care to the insured and uninsured and whether there is any difference in quality of care received by the insured and uninsured.

I would like to assure you that your participation in this interview will not affect the care you will receive in the hospital. There is no compensation for your participation, however, the study may contribute to the improvement in quality of care which is going to benefit you.

It will take about 1 hour to complete the interview. Participation is however voluntary and you are at liberty to stop when it becomes necessary. I however hope you will participate fully in the study because your views are very important. I would like to also request that you grant me permission to gather some data from your folder. Any information provided will be kept strictly confidential and will be used for the final report of the study.

Do you have any question before we start? (*take few minutes to answer questions from respondents*).



**Interviewer: do you agree to participate in this interview?**

Respondent agrees to be interviewed	Signature or Thumbprint of respondent  Date: ( / /20 )
Respondent do not agree to be interviewed	Reschedule interview? Yes/No  If yes, date ( / /20 )  Time: -----

Signature of interviewer:-----

Date: ( / /20 )

Time started-----

Time ended-----



Name of hospital: .....

Type of hospital                      [1] Private                      [2] Government                      [3] Mission

Hospital Record number.....

No.	SOCIO-DEMOGRAPHIC FACTORS	RESPONSES
1	Age in completed years:	.....(years)
2	Sex:	Female Male
3	Marital status:	Never Married Married Widowed Cohabiting Divorced/ Separated
4	Highest level of Education completed	None Primary/JHS Secondary/SHS Tertiary
5	What religion are you affiliated to?	Christianity Islam Traditionalist Others (please specify).....
6	What ethnic group do you belong to?	Akan

		Ewe Ga/Dangbe Dagomba Others (specify) .....
7	Employment status:	No employment , <i>skip to Q10</i> Temporary employment Permanent employment
8	Occupation:	Clerical/ Secretariat Professional/Technical/Managerial Sales and services Skilled manual craftsmanship Unskilled manual labour Agricultural (farming/ fishing)
9	How much do you earn monthly from your main occupation?	Below Gh¢ 200 Gh¢ 200 to Gh¢ 500 Gh¢ 500 to Gh¢ 1000 Above Gh¢ 1000
10	How many children do you have if any?	.....
11	How many of the people you live with depend on you for daily survival?	.....
12	Are you in any form disabled? <i>(Based on interviewers observation)</i>	No Yes

	HEALTH INSURANCE POLICY	
13	Are you registered for NHIS?	No, <i>skip to 17</i> Yes
14	If yes to Q13, Is your NHIS card currently active?	No, Yes, <i>skip to 16</i>
15	If no to Q14, why is it not active?	Don't have enough money to renew Don't have enough time to renew Don't need it any longer Will not receive quality care Others (specify).....
16	Did you use your NHIS card for today's visit?	No Yes, <i>skip Q 18</i>
17	If no to Q13, why have you not registered for NHIS?	Don't have enough money to register Don't have enough time to register Don't need it Will not receive quality care Others (specify) .....
18	Are you on any other Health insurance policy?	No, <i>skip Q20</i> Yes
19	If yes to Q18, which of the following type of Insurance policy are you on?	Personal health Insurance policy Workplace insurance policy

		Others (specify) .....
	HEALTH HOSPITAL VISIT	
20	How many times have you visited this hospital in the past 6 months?	.....
21	Were you referred to this hospital?	No Yes
22	What are some of the symptoms you showed up with to the health hospital today?	Headache Vomiting/Nausea Dizziness Fever Others (specify).....
23	How long have you been in this health hospital today?	.....(hours)
24	What would you say about time spent in the hospital today?	No Yes
25	If yes to Q 24, what do you think might have caused your delay in the hospital	.....
26	How will you describe the distance from your home to this health hospital?	Not far Far Too Far

27	How long does it take you to get to this hospital from your home?	.....(minutes) .....(hours)
28	What was your means of transport from your home to this health hospital?	By foot By Vehicle Others (specify).....
TREATMENT PROCEDURE		
29	What did the Doctor said you are suffering from?	Malaria, Hypertension, Diabetes, HIV/AIDs, Others (specify).....
30	How long have you been with this sickness?	.....(days)
31	Where you tested before being diagnosed with disease?	No Yes
32	Is this your first visit to the health hospital since the onset of your sickness?	No Yes
33	Were medicines prescribed for you?	[0] No [1] Yes
34.	If yes to Q33, did you get all your medicines?	[0] No [1] Yes
35.	If no to Q34, how many were prescribed? (check prescription and medicines supplied)	.....

36.	How many were supplied?	.....
	EXTRA PAYMENT	
37.	Did you pay for some or all of the medication and services?	No, Yes
38.	If yes, how much did it cost you?	GHC.....
39.	Did you pay for all the bill by yourself?	No Yes
40.	If no to Q39, who helped you to pay for the bill?	Family member(s) Friends Others (specify) .....

**E. QUESTIONNAIRE 2: HEALTH CARE WORKERS**

**INFORMED CONSENT**

Interviewer: Hello, my name is Nicholas Afram Osei, a Doctor of Philosophy (PhD) candidate of School of Public Health, University of Ghana. I am conducting a study on “*Assessing quality of health care in the National Health Insurance Scheme credentialed hospitals in Greater Accra Region*” the purpose of finding out whether health hospitals credentialed under NHIS in Greater Accra Region are providing quality of care to the insured and uninsured and whether there is any difference in quality of care received by the insured and uninsured. The study also intend to determine health workers views on quality of care under NHIS.

You have been selected to participate in the study. I will ask few questions about yourself, on health insurance and on quality of care in this hospital. I would like to assure you that your participation in this interview will have no effect on you or your hospital. There is no compensation for your participation, however, the study may contribute to the improvement in quality of care which is going to benefit you and your hospital.

It will take about 1 hour to complete the interview. Participation is however voluntary and you are liberty to stop when it becomes necessary. I however hope you will participate fully in the study because your views are very important. Any information provided will be kept strictly confidential and will be used for the final report of the study.

Do you have any question before we start? (*take few minutes to answer questions from respondents*).

Interviewer: do you agree to participate in this interview?

Respondent agrees to be interviewed	Signature or Thumbprint of respondent Date: ( / /20 )
Respondent do not agree to be interviewed	Reschedule interview? Yes/No If yes, date ( / /20 ) Time: -----

Signature of interviewer:-----

Date: ( / /20 )

Time started-----

Time ended-----

PROVIDERS' PERCEPTION ON QUALITY OF CARE

Name of hospital: .....

Type of hospital                      [1] Private                      [2] Government                      [3]

Mission

No.	SOCIO-DEMOGRAPHIC FACTORS	RESPONSES
1	Job description	[1] Medical Doctor [2] Physician Assistant [3] Nurse [4] Midwife [5] Pharmacist [6] Lab technician [7] Other.....
2	Age in completed years:	.....(years)
3	Sex:	Female Male
4	Marital status:	Never Married Married Widowed Cohabiting Divorced/ Separated
5	Highest level of Education completed	None

		Primary Secondary Tertiary
6	What religion are you affiliated to?	Christianity Islam Traditionalist Others (please specify).....
7	Years of working experience	
8	What ethnic group do you belong to?	Akan Ewe Ga/Dangbe Dagomba Others (specify) .....
9	How much do you earn monthly from your main occupation?	Below GhC 2000 GhC 2000 to GhC 5000 [3] Above GhC 5000
10	How many children do you have if any?	.....
11	How many of the people you live with depend on you for daily survival?	.....
HEALTH INSURANCE POLICY		
12	Are you registered for the NHIS?	No, <i>skip to 16</i> Yes

13	If yes to Q12, Is your NHIS card currently active?	No, Yes, <i>skip to 15</i>
14	If no to Q13, why is it not active?	Waiting for my employer to renew Don't have enough time to renew Don't need it Have private health insurance Others (specify).....
15	If yes to Q13 do you use your NHIS card for medical care?	No Yes
16	If no to Q12, why?	[1] my employer has refused to register me [2] Don't have enough time to register [3] Don't need it [4] Have private insurance [5] Others (specify).....



Professional Satisfaction: Present satisfaction with regard to	very dissatisfied	Moderately dissatisfied	neutral	moderately satisfied	very satisfied
Quality of medical-surgical consult done at your request					
Your ability to provide care that the patient need					
Your ability to provide care that the patient want					
Overall quality of care you are able to offer					
Overall quality of care offered in the hospital					
Manage care tools	Decrease	No effect	Increase		
How do treatment guidelines affect the quality of care you offer patients?					
How do availability of drugs and medical consumables affect quality of care you offer to patients?					
Providers perceptions of the quality of patient care	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
General perception: I believe that NHIS has:					

Reduce quality of care					
Improve quality of care for sick patients					
Reduce patients satisfaction with their care					
Increase access to medical care for patients					
Decrease access to specialist for patients					
Improve preventive medical care for patients					
Ensured that I have the required resources for my work					
Improved my working conditions					
Decreased my workload					
Increased my workload					
Make patients better cared for today than before NHIS					
Ensured that Uninsured receive quality care than insured					
Ensured that Insured and uninsured receive equal quality of care					
Ensured that Insured receive better quality of care than uninsured					

**F: PROPORTION OF ATTENDANCES IN THE FACILITIES USED IN THE STUDY**

REGION	NAME OF FACILITY	AVERAGE MONTHLY SUBMISSION	PROPORTIONS %	NO. PARTICIPANTS
GAR	PENTECOST HOSPITAL (ALPHA MEDICAL)	5,576	13.41	85
GAR	FAITH EVANGELICAL MISSION HOSPITAL	2,146	5.16	35
GAR	GA WEST MUNICIPAL HOSPITAL, AMASAMAN	4,807	11.56	73
GAR	LA GENERAL HOSPITAL	5,978	14.38	87
GAR	DARBEM CLINIC	2,126	5.11	32
GAR	NEW CRYSTAL HEALTH SERVICES-TEMA	4,550	10.94	69
GAR	ASHONGMAN COMMUNITY HOSPITAL	4,706	11.32	71
GAR	ACHIMOTA HOSPITAL	5,879	14.14	89
GAR	KANESHIE POLYCLINIC	3,556	8.55	54
GAR	THE ROCK HOSPITAL	2,259	5.43	34
		<b>41,583</b>	<b>100</b>	<b>630</b>

	<b>AVERAGE MONTHLY SUBMISSION</b>	<b>3,780</b>		
--	-----------------------------------	--------------	--	--



**APPENDIX II: ETHICAL APPROVAL LETTER**

