UNIVERSITY OF GHANA

THE ROLE OF POOLED PROCUREMENT PROGRAMME IN THE QUALITY IMPROVEMENT OF MEDICINES OF THE NATIONAL CATHOLIC HEALTH SERVICES (NCHS) IN GHANA.

BY

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DECLARATION

I, Kofi Ameyaw Domfeh, hereby declare that this thesis is the result of my own research and it has never been presented for any academic award in this or any other University. All references used in the work have been duly acknowledged.

I bear sole responsibility for any limitations in this document

12/08/2020

KOFI AMEYAW DOMFEH DATE

CERTIFICATION

I hereby certify that this research was supervised in accordance with procedures laid down by the University.

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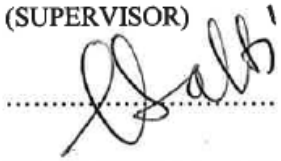

12/8/2020

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DEDICATION

I dedicate this piece of work to the Almighty God, the source of my knowledge and strength. I also dedicate this work to my parents, Prof. Kwame Ameyaw Domfeh and Dora Kyeremah, who always believed in me. This work is also dedicated to my siblings, Afia and Akua, and my nephews Papa Yaw and Nana Kwadjo. I say, thank you for your love, support and encouragement.

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LIST OF ABREVIATIONS

AMCs	Advanced Market Commitments
ARV	Antiretroviral
CEO	Chief Executive Officer
CFO	Chief Finance Officer
CHAG	Christian Health Association Of Ghana
CIF	Cost, Insurance and Freight
CPU	Central Procurement Unit
CSG	Civil Society Group
DDP	Delivered Duty Paid
DTCs	Drug and Therapeutic Committees
ECH	Ethics Committee for Humanities
EML	Essential Medicines List
EPN	Ecumenical Pharmaceutical Network
FAS	Free Along-Side Ship
FBO	Faith-Based Organization
FOB	Free on board
GCBC	Ghana Catholic Bishops Conference
GDF	Global Drug Facility
INN	international nonproprietary name
IARC	International Agency for Research on Cancer
LMICs	Low and middle-income countries
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
NCHS	National Catholic Health Services/ Secretariat

NGO	nongovernmental organization
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
PO	Purchase Order
RDFs	Revolving Drug funds
RFT	Request for tender
RFP	Request for Proposal
SDGs	Sustainable Development Goals
SIAPS	Systems for Improved Access to Pharmaceuticals and Services [Program]
SOW	Scope Of Work
TA	Technical Assistance
TB	Tuberculosis
TOR	Terms of Reference
TWG	Technical Working Group
WHO	World Health Organization

ABSTRACT

The inaccessibility, high prices, and poor quality medicines in low and middle- income countries contribute considerably to the rate of mortalities yearly, including those resulting from communicable and non-communicable diseases, such as, malaria and hypertension which could be treated with existing medicines. One innovative way to effectively deal with the high prices and be able to have economies of scale is through 'bulk buying' from a number of procurers and to ensure the constant quality improvement greatly desired to retain customer loyalty.

This thesis focused on the role of pooled procurement programme (PPP) in the National Catholic Health Secretariat (NCHS) to examine the policy framework, and the level of cost-effectiveness of the PPP implementation, determine the strategies of the NCHS for the PPP, identify the systems and structures used to determine quality of medicines procured through the PPP, and identify challenges confronting managers in the implementation of the PPP. The study used a qualitative research approach with a case study design and adopted a four-stage primary data collection procedure using an interview guide through face-to-face interviews. Twenty respondents were interviewed. The data collected were analyzed qualitatively using framework analysis by Pope and Ziebland.

The establishment of the PPP was mandated by the Ghana Catholic Bishop Conference (GCBC) through a Board (Pooled Procurement Task Force) which is supported by the Directorate of Health of the NCHS. It was also established that after the initial three years of the programme inception, it realized 30% reduction in the average cost of medicines from the open market. The strategy of PPP practiced by the NCHS is the group contracting. In ensuring quality of medicines, suppliers are supposed to be registered, have their tax clearance, Pharmacy Council Certificate, and Food and Drug Authority Certificate which is subject for renewal every other year. The PPP faces some major challenges among them is the long delay of the NHIA reimbursements to the various health facilities.

CHAPTER ONE

Introduction to the Study

1.0 Introduction

This chapter covers the background of the study, the problem statement, the research objectives and the research questions respectively. Subsequently, the significance, the scope and limitation, and the organisation of the study are also presented.

In this era of Sustainable Development Goals (SDGs), healthcare spending continues to increase more rapidly than the economy (World Health Organization (WHO), 2019). The increase in healthcare spending has also increased the general out-of-pocket expenditure in low- and middle income countries (LMICs) from 2000 to 2017 than high income countries (WHO, 2019). The pharmaceutical financial plans have also seen great increase in recent times, due to increase in prices of new therapies and price increases in generic medicines (for example, in the United States, it was estimated that the entire annual medicine expenditure on invoice was $424.8 billion in 2015, up 12.2% from 2014 (Leopold, Morgan, & Wagner, 2017).

One innovative way to effectively deal with the high prices and be able to have economies of scale is through ‘bulk buying’ for a number of procurers and to ensure the constant quality improvement greatly desired to retain customer loyalty. In other words, collaboration and/or partnership is the prudent way organisations can come together to build their relationship and also have strong negotiation position to ensure that quality is constantly improved to meet customer’s expectation (Ferrario, Kanavos, Humbert, Iwamoto & Bak Pedersen, 2016). The required policy framework, a vibrant cooperation amongst members, and prudent strategies ensure that quality medicines are used responsibly for clinical outcomes and cost-effectiveness (Ferrario et al., 2016).

The study of the relationships between partners in a collaborative process contributes to show how resources and structures are shared among non-governmental or missionary and private networks to contribute and/or delay the organisational competitive advantage (Arya & Lin, 2007). Additionally, it has been established that, service quality leads to repeat purchase, customer loyalty and retention (Jones & Farquhar, 2003).

1.1 Background of the Study

The inaccessibility, high prices, and poor quality of medicines in LMICs contribute considerably to the rate of mortalities yearly, including those resulting from communicable and non-communicable diseases, such as, malaria and hypertension which could be treated with existing medicines (WHO, 2007). The ineffective procurement and supply structures, insufficient quality regulation instruments, weak controlling and exorbitant medicine expenditure remain to be the key stumbling blocks to consistent access to quality essential medicines in African and Pacific regions (WHO, 2007).

It is projected that in Africa, 270 million people nearly half of the population do not have access to most essential medicines (WHO, 2007). Even though through collaboration, most countries have improved the availability and affordability of their quality medicines. As WHO (2007) reports, access to essential medicines persist as a major community health problem. The cost of medicines in the private sector is also exorbitant for most of the population in these countries. Therefore, when affordable and quality medicines are not accessed in the public health facilities people could resort to out-of-pocket expenditure which could lead to impoverishment and the government's aim of achieving universal health care coverage will remain a mirage.

In order to achieve accessibility, affordability and equity, partnership has become more imperative because social problems are becoming more complex (Bryson, Crosby, & Stone, 2006;

O'Leary & Vij, 2012). The government needs the collaboration of private, missionary and other society groups to partake in the production of health services. Selsky and Parker (2005: 849) identified these platforms as 'private-non-profit, private-government, government-missionary, and trisector'.

As Nachtman and Pohl (2009) ably point out, cooperation from healthcare partners can ensure that there is cost-effectiveness and consistent processes in healthcare delivery services. The absence of collaborative framework and consistent processes in the healthcare delivery services cost unnecessary waste (Dooner, 2014). To ensure sustainability in the health sector, organisations are pressured to streamline procuring processes in an attempt to lower costs and inventory, and improve product quality (Johnson, 1999).

As Xiridou, Geskus, De Wit, Coutinho, and Kretzschmar (2004) aptly questioned, is it valuable to participate in enduring cooperative relationships with other healthcare services or to keep their distance and relate to each other in transactional way? There are two (2) key advantages to partnership; these are increased efficiency through learning from each other and prudent use of resources (Jost, Dawson & Shaw, 2005). As procuring is progressing into a strategic function, it demands more calculated skills, and partnership as the solution to utilising the skills and resources to develop them (Reck & Long, 1988). Additionally, studies have shown that pooled procurement programme (PPP) has increased coordination between countries and the capabilities of personnel and the quality of medicines in many countries.

The second key advantage is when large quantities are procured by a great number of people, there is improvement in effectiveness and efficiency which leads to discounts in transaction costs (cf. Leenders & Fearon, 1997; Johnson, 1999). In Organization of Eastern Caribbean States (OECS), PPP cut the cost of procurement by 25% compared to individual countries (Burnett 2001).

Schotamus and Telgen (2007), define horizontal cooperate procuring as the functioning, strategic collaboration between two or more organisations in one or more steps in the procuring process by pooling procuring volumes, information, and resources to form symbiosis. For example, symbiotic relationships include mutualism and parasitism (Johnson, Graham & Smith, 1997). The relationship is assumed to be mutual when there is mutual respect and trust between the parties and both parties experience some positive effect.

Thus, when participants profit in a reasonable way, then it may encourage them to engage in a group-oriented behaviour and thus being beneficial of cooperation (Tyler, 1999). In addition, due to the modern medical practice of a greater emphasis on a patient-centered approach to health care service delivery, it is essential that all stakeholders are provided with the quality medicines desired.

In addition, the importance of total quality management (TQM) principles and the significant role the procuring function plays in the quality process cannot be underestimated (Carter, Smeltzer & Narasimhan, 1998). In view of that, Tweneboa, Bannerman, Offei and Acquah (2005), assert that Ghana Health Service (GHS) with the support of Ministry of Health (MOH) developed a Quality Assurance (QA) manual to improve the standardisation of QA training and implementation in Ghana in 2002. The initiative was extended to the other agencies of MOH like Christian Health Association of Ghana (CHAG) with GHS supervising the programme. However, there are worrying performance gaps which mandate the need to incorporate Continuous Quality Improvement methods into the daily healthcare activities to develop the health delivery system and raise standards of quality (Dey, Hariharan & Brookes, 2006; Bannerman, Tweneboa, Wumbee, Akufo, Sodzi-Tetteh, Asiedu & Kanyoke, 2013).

The model of group procuring exists in different businesses under many different names, e.g., group buying, collaborative purchasing, cooperative purchasing, group purchasing organisation, or

pooled procurement programme (PPP). Pooled procurement involves procuring medicines in wholesale for various procurers, to decrease the cost of the medicines and is based on the values of economies of scale (Waning, Kaplan, King, Lawrence, Leufkens & Fox, 2009). Huff-Rousselle (2012) defines pooled procurement as a type of collaboration between procurers and suppliers using the procuring power that procurers have.

This study defines PPP as pooling of all resources (technical, financial, information) in the interest of all stakeholders to achieve the organisational objectives and also meet the customer's expectation by procuring medicines and medical consumables in large volumes to reduce costs and enhance investment in other productive sectors. In the remainder of this study, PPP would be used.

1.2 Problem Statement

The rigid procurement policy, the lack of qualified personnel, the difficulty in establishing a buyer-supplier relationship, the poor negotiating skills of many procurement managers demand that urgent and innovative ways are brought to the procurement field (Qiu, 2016). The above stated problems may only add to the poor services rendered and compromise the quality improvement that should be the objective of any organization including healthcare institutions. The WHO began the PPP of medicines to make sure that quality and affordable medicines are accessible to the poorest (Roy Chaudhury et al., 2005).

In Southern and Eastern Africa, Arney, Yadav, Miller and Wilkerson (2014) and Syam (2014) used qualitative approaches in healthcare settings relying on questionnaires, interviews, consultation and meetings to study the pooled procurement of quality medicines and African Traditional medicines in the various countries. The study revealed that in Southern part of Africa, the countries involved in the PPP were Angola, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Swaziland, United Republic of Tanzania, Botswana, South Africa, Democratic Republic of Congo, Lesotho,

Zambia and Zimbabwe. In East Africa, the countries that were studied in the PPP were, Rwanda, Uganda, Burundi, Kenya, United Republic of Tanzania and Zanzibar.

Even though extensive work was done in the above studies, the scope of the study was too broad and involved about twenty (20) countries. This situation makes the appreciation of the entire policy framework and strategy implementation challenging to adopt due to the heterogeneity of the various cultures and worldviews of the various countries. The studies also did not include any PPP in West Africa and Ghana in particular and those studies did not focus on faith-based organisation. This study intends to study the PPP of the National Catholic Health Service (NCHS) in Ghana which is a missionary, faith-based and more homogenous organisation.

In 2008, the NCHS in collaboration with the Institute for Healthcare Improvement (IHI) from Canada, launched Project Fives Alive, with nine pilot hospitals to accelerate Ghana's efforts to achieve the Millennium Development Goal Four (MDG 4), now Sustainable Development Goals (SDGs 3). The project was carried out by the NCHS in collaboration with GHS with support from Bill and Melinda Gates foundation. That study indicated that the under-5 mortality (U5M) reduced by two-thirds from 1990 starting position of 110 deaths per 1,000 live births to less than 40 deaths per 1,000 live births by 2015 (Sodzi-Tetteh et al., 2015). This thesis intends to study three out of the nine piloted hospitals focusing on the worse, average and best performing hospitals.

In addition, Kumah (2016), looked at the effect of quality improvement effort in strengthening healthcare delivery in Ghana: a focus on NCHS Initiative on under-five mortality reduction. In his study, the focus was on the worse, average and best performing hospitals in the Project Fives Alive.

The NCHS also started the PPP in 2012 by the Directorate of Health and was approved by the Ghana Catholic Bishops Conference (GCBC). The main objective of the programme was to prevent

counterfeit and fake medicines and non-medicine inputs from entering the NCHS system; and to reduce the cost at which medicines and medical consumables were procured by the institutions. This study also aims to explore the role PPP had played in the quality improvement of medicines in those healthcare institutions.

Evidence shows that extensive study has been done on PPP across the globe, for example, Pan American Health Organization (PAHO), Strategic Fund for Essential Public Health Supplies, African Association of Central Medical Stores (ACAME), Gulf Cooperation Council Group Purchasing Programme, Pacific Island Countries, and the WHO Global Drug Facility for TB, Southern African Development Community (SADC) and the East African Community (EAC). However, to the knowledge of this study the research community has not paid much attention to the PPP of NCHS in the Ghanaian context. This thesis builds on the knowledge gained in NCHS's Project Fives Alive and Kumah's (2016) work by relying on the three health facilities studied which were included in the previous study, focusing on the worse, average and the best performing hospitals. This study aims to explore the role of PPP in the quality improvement of medicines of the NCHS in Ghana.

1.3 Research Objectives

1.3.1 General Objective

The foremost aim of the study is to explore the role of the PPP in the quality improvement of medicines of the NCHS in Ghana. The study aims to analyse the PPP in NCHS, and to identify the systems and structures used to determine quality of medicines, cost-effectiveness through the level of collaboration from the partners involved in the transaction and the use of resources. In order to achieve these objectives, the cost-effectiveness of the organisation is a critical area for the study.

1.3.2 Specific Objectives

The specific objectives of the study were:

i. To examine the policy framework for the NCHS PPP.

ii. To examine the level of cost-effectiveness of the PPP implementation.

iii. To determine the strategies of the NCHS for the PPP.

iv. To identify the systems and structures used to determine quality of medicines procured under the PPP.

v. To identify challenges confronting managers in the implementation of the PPP

1.4 Research Questions

i. What policy framework guides the NCHS PPP?

ii. Is the PPP of the NCHS cost-effectiveness?

iii. What strategies have been adopted by the NCHS for the PPP?

iv. What are the systems and structures used to determine quality of medicines procured under the PPP?

v. What challenges confront managers in the implementation of the PPP?

1.5 Significance of the Study

The outcome of the study would help to identify the key pooled procurement processes that provide policy directions and contribute to health services administration by improving upon the inefficiencies in the NCHS PPP. Additionally, it is also hoped that the study would bring to the fore clarity on the quality of medicines that NCHS procures and the extent to which procurement managers are suitably qualified to administer the PPP.

Esper, Defee and Mentzer (2010) asserted that in supply chain administration the calculation of published research that is theoretical in form is estimated to be 53 percent and Chicksand, Watson,

Walker, Radnor and Johnston (2012) estimated 37 percent. However, pooled procurement is under-theorised and it is therefore pertinent that research focuses on it to gain some parity with other supply chain management principles and concepts.

In its contribution to knowledge, the study would be useful as a source of reference for students and other researchers who may conduct future research into PPP and its quality of medicines, cost-effectiveness and challenges. It is hoped that the results would bring to the fore new knowledge which policy makers, procurement practitioners and scholars would find useful in enhancing procurement practice in healthcare delivery in Ghana.

1.6 Scope and limitation of the Study

The key focus of the study is to explore role of the PPP in the quality improvement of medicines in the NCHS. This study used three out of the nine piloted hospitals used in the NCHS to test the quality improvement programme implemented to reduce under-5 mortality by two-thirds from its 1990 starting point (from 110 deaths per 1,000 live births to less than 40 deaths per 1,000 live births) by 2015 as reported by Kumah (2016). The nine hospitals were selected for the quality improvement implementation because they were the worst performing hospitals in under-5 mortality according to the NCHS. This study builds on the knowledge gained in Kumah (2016), by using the health facilities the study relied on. The three piloted hospitals were St. Francis Xavier Hospital, Assin Foso; Our Lady of Grace Hospital, Breman Asikuma; and Holy Family Hospital, Techiman.

The major challenge encountered was transportation cost due to the long distances between the various hospitals. However, the cooperation and support of study participants from the various hospitals was appreciably good. The study participants created an environment conducive for interview without any interruption and also gave sufficient time in providing the necessary data. In

selecting these health service organisations, the study considered those with a key mandate for implementing pooled procurement in the various NCHS facilities in Ghana.

Under such circumstances, it might not be apt to make generalisations from the empirical results as developing countries, apart from their common economic structures might have diverse cultures which might affect their individual implementation processes. However, results from this study might be cherished in the process of building knowledge.

1.7 Organisation of the Study

This work is organised into five chapters. Chapter one introduces the study by giving the background information on the research objectives, the research problem, and significance of the study and the scope and limitations of the study.

This introductory chapter is followed by chapter two which deals with literature review and focuses on concepts and theories of PPP and its effectiveness in the NCHS. The chapter further touches on the theoretical framework as well as empirical literature in the area of PPP in Ghana and elsewhere.

The research methodology adopted for this study, the research design and approaches, the sampling techniques as well as the research instrument and the mode of data analysis used for the study are in Chapter three. It also contains the ethical considerations.

Chapter four deals with the analysis of the data whilst Chapter five discusses the findings of the study.

Finally, Chapter six deals with a summary of the key findings, conclusion, recommendations and avenues for future studies.

1.8 Conclusion

In a nutshell, this first chapter sets the background to the research that seeks answers to how PPP has improved quality of medicines in the NCHS.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a conceptual summary of this study. It discusses a wide-ranging literature on key concepts in pooled procurement from different perspectives and on relevant issues in order to position this study.

The chapter is in two main parts specifically theoretical literature review and empirical review. The theoretical review clarifies diverse theories inscribed by various academics on the study variables. The explanation and discussion of the main terminologies had also been presented, whilst empirical literature tries to describe the gaps recognized from different studies done on related matters and therefore attempt to tie those gaps.

2.1 The Pooled Procurement Cycle

The procurement cycle functions as a quality tool for all organization to guarantee efficiency and awareness of any procurement service. The effectiveness of the health system mainly hinges on knowledgeable workers in politically dedicated setting, with the right monitoring systems in place and up-to-date communication system to guarantee consistent data on medicine and its rational use (Ghoneim et al., 2016). Therefore, MSH (2011) proposed the model procurement cycle each organization can rely on to guarantee quality is sustained in its procurement processes. Nevertheless, this study builds on the knowledge gained from MSH (2011) and proposes a more inclusive procurement cycle that guaranteed quality in any organization.

Procurement is a significant measure of effectual medicine administration and supply and is a significant method for every healthcare organisation (Ombaka, 2009). In view of that, operational procurement practice ensures the accessibility of the right medicines in the right quantities,

accessible at the right time, for the right patient and at reasonable prices, and at identifiable criteria of quality. In a study by Huff-Roussell and Burnet (1996), an estimated cost-effectiveness of over 50% of prescription medicines for public hospitals was achieved during their foremost procurement cycle. The pooled procurement cycle (Figure 1) comprises the planning stage (need recognition of vital, essential and non-essential medicines), determination of quantities needed, reconciliation of needs and funds, choosing the right procurement method, selecting suppliers, invitation to tender, adjudication of tender, contract award, reception of first consignment and reporting, monitoring, and evaluation (Ombaka, 2009; MSH, 2011; Ghoneim et al., 2016).

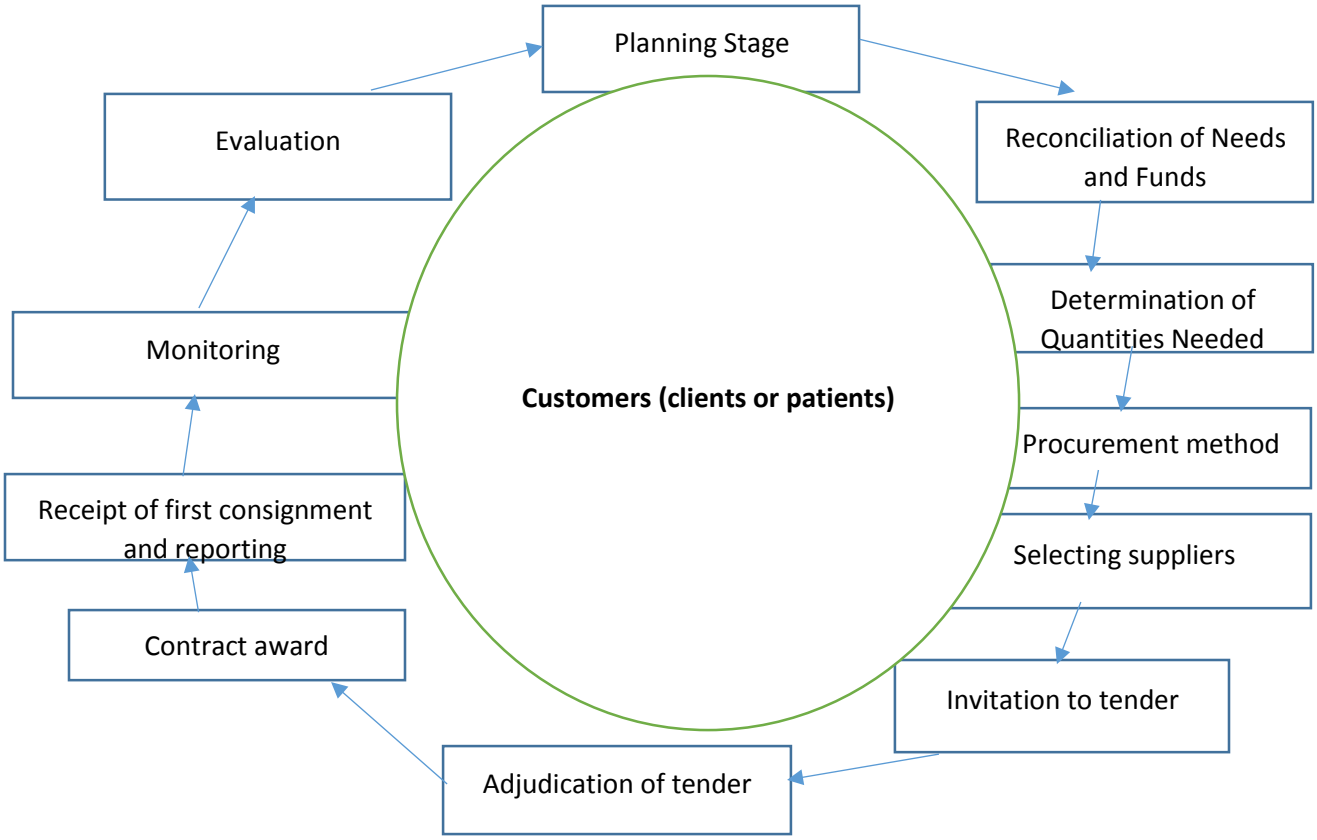

Fig. 1 Pooled Procurement Cycle of Medicines

Source: Author's Own Construct (2020).

2.1.1 Planning Stage (Product Selection: Need Recognition of Vital, Essential and Non-Essential Medicines (VEN))

The dispensary and therapeutics team must categorize the medicines to be procured by making decisions established by the utmost informed data (Ombaka, 2009). The decision to procure should involve the patient's safety as a priority for the healthcare organisations. Therefore, Technical Working Group (TWG)/ Central Procurement Unit (CPU) should have adequate data on the cost-effective needed medicines to treat generally encountered ailments in the various communities. The various medicines specification requires developing specific criteria for inclusion and exclusion. The planning stage involves selecting pharmaceutical products that meet safety, efficacy, and quality.

The choice of medicines has a multifactorial effect including rational usage and the cost of medicines and the quality of care (Ghoneim et al., 2016). A shorter list of essential medicines, with clear specifications and correct dosages and formulations, addresses the health needs of the populations that the organisations serve. There are advantages associated with providing the limited list of essential medicines for the supplier such as: easier procurement, storage, and distribution; lower stocks; better quality assurance; and easier dispensing.

In prescribing the medicines, there are advantages associated with providing the limited list of essential medicines which include: Training more focused and simpler; added understanding with fewer medicines; non-availability of inappropriate cure options; decrease of antimicrobial resistance; dedicated medicine information; and better appreciation of adverse medicine reactions.

As regards cost, the advantages are lower prices and more competition while in terms of patient use they are focused education efforts, less confusion and increased adherence to treatment and improved medicine availability.

In establishing a PPP, the essential medicine list is used as a supply list. In the direction of selecting the best essential medicines, the criteria should include: Significance to the pattern of predominant ailments; recognized efficiency and safety; suitable systematic data and proof of performance in a variety of situations; acceptable quality; encouraging cost-effectiveness; required pharmacokinetic properties; possibilities for indigenous production; and accessibility of single compounds. All medicines ought to be known via the International Nonproprietary Name (INN), or the generic name.

It is also established that the criteria for quality and efficacy of medicines is difficult for organisations to prove, and it is advisable to follow what has been selected at the national level, which should have gone through stringent quality and efficacy testing or verification. The organisations may also decide to use medicines that are already on the WHO Model Essential Medicines List (Ghoneim et al. 2016). There are some tools and types of analysis for reducing a procurement or essential medicines list. These include VEN examination (categorizes medicines according to how they treat generally encountered ailments in the residents. The vital medicines should always be the priority; therapeutic classification examination (relates to cost-effective analysis of therapeutic choices); and ABC examination (allowing managers to focus on ways to reduce procurement costs).

2.1.2 Reconciliation of Needs and Funds

In pooled procurement of medicines, adequate funds are needed to ensure a successful implementation of the programme. The medicine funding instruments comprise user fees, community financing (for example, government financial plan), health insurance, donor funding, and development loans. Each of the above has its weakness and, contingent on how the clinic is funded, will distress pharmacological procurement (Ombaka, 2009). It is essential that medicine

administrators are conversant with funding instruments. The Revolving Drug Funds (RDFs) or chosen funds have been used in medicine procurement but there are shortcomings which include inadequate retrieval of funds to refill the supplies, difficulty in choosing a particular method, making disbursement, choosing suppliers, monitoring order and inspecting medicines, distribution of medicines, stipulating contract terms and conditions, collecting consumption information, and revising the medicine choice (Ombaka, 2009).

2.1.3 Determination of Quantities Needed

The quantities needed to be procured should be based on commonly encountered diseases in the various communities and the relevance to the pattern of prevalent diseases based on adequate scientific data. In a developing country like Ghana, the pattern of disease profile commonly encountered are communicable diseases. This was indicative in the high incidence of malaria cases in the outpatient morbidity patterns in the NCHS.

In 2019, the NCHS recorded four hundred ninety-four thousand nine-hundred and twenty (494, 920) malaria cases out of a total number of one million five-hundred and ninety-three thousand three hundred and forty-five (1,593,345) cases in the outpatient attendance. The diseases generally prevalent in the NCHS outpatient visits were malaria, rheumatism and joint pains, upper respiratory infection (U.R.T.I), anaema, urinary tract infection (UTI), diarrhoea diseases, skin diseases and ulcers, acute eye infection, gynaecological conditions, pregnancy and related complications in 2019. This also confirms malaria as the leading cause of mortality and morbidity in Ghana.

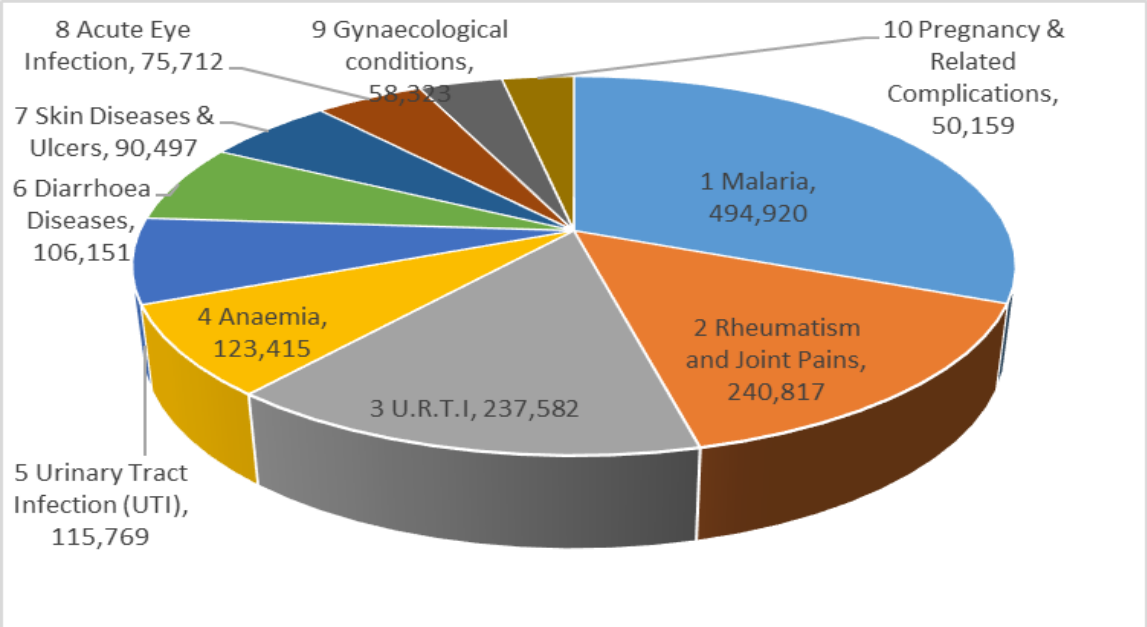

Fig. 2 Percent distribution of OPD attendance by disease in NCHS: ten leading causes in 2019.

Source: Author's Construct (2020).

2.1.4 Procurement method

Choosing the right procurement method also ensures that the principles of procurement is adhered to. The World Bank procurement methods are cost-based selection, quality-based selection, limited budget selection, international competitive bidding, national competitive bidding, limited international bidding, international or local shopping, and direct procurement (sole sourcing). In Ghana, the Public Procurement Act 914 in 2016 also provides the procurement methods to guide organizations in the public sector. The Act provides for Single Source Procurement (sections 4041); Request for Quotation (RFQ) (sections 42-43); Request for Proposal (RFP) for Consultancy Services (sections 66-77); Competitive Tendering; Restricted Tendering (sections 38-39); and Two-Stage Tendering (sections 36-37). The type of method chosen is dependent on the threshold of transaction and the circumstances involved.

The choice of procurement method depends on threshold or circumstances driven in all public sector according to Public Procurement (Amendment) Act, 2016. ACT 914. The thresholds are issued periodically in a schedule to the Act and the circumstances are defined in the Act and Regulations. However, the NCHS as a faith-based organization is not obliged to abide by the Act 914, (2016). The NCHS common procurement method practiced is the national competitive tendering. In situation whereby suppliers cannot supply from the registered lists from the NCHS. The health facilities can procure their medicines and medical consumables from their own registered suppliers using national competitive tendering.

2.1.5 Selecting Suppliers

The study also provides that the procurement unit is faced with the option of restricted tender and then the Request for Tender (RFT), is subsequently released to suppliers to submit tenders based on a stipulated criteria or an open tender. The advantage of a restricted tender is that it is confined to only suppliers who have been prequalified. The prequalification includes being judged on performance and being registered as prequalified suppliers based on references from former customers and credentials of quality-assured medicines. Additionally, the WHO also has a prequalification programme that producers can apply for; however, applicants must show extensive information on their product to enable effective evaluation of its quality, safety, and efficacy.

The right suppliers should be selected for the pooled procurement since their impact on the financial consequences have their own hidden cost and fees, for example, late deliveries or completely defaulted, losses, inadequate packaging, expired medicines and increase costs.

Additionally, the TWG or CPU can also procure from among the types of pharmaceuticals suppliers and services which include the following: Pharmaceutical producers (suppliers can be either research-based or non-research based); international procurement services (services can be

provided by non-profit corporations or international organisations); independent international wholesale exporters (wholesale exporters procure medicines from various producers for resale. When procuring from a wholesale exporter, it is important to know the original producer and that the distributor protects the quality of medicines in transport); and indigenous wholesalers and distributors (suppliers are also known as wholesalers; it may also be useful to apply the WHO supplier prequalification standards when qualifying this type of supplier).

2.1.6 Invitation to Tender

In order to prepare the tender package or the invitation to tender, the TWG and CPU would have now carefully chosen the essential medicines to procure, be certain about the standards for supplier selection, and conducted the quantification exercise to appreciate the estimated requirement for the patients within the organisations' catchment regions. Depending on the nature of tender process selected (open or restricted tender), the tender packages either go directly to prequalified tenderers under a restricted tender or to all interested tenderers in an open tender. The documents that must be prepared for a specified tender package should include; an invitation to tender (defines the scope of the procurement and any standards under which the tender will be acknowledged. The invitation also comprises essential information such as the time, date tenders are payable and address to ship the tender to, and the dates in the agreement); instruction to tenderers (procurement unit can state: how tenders should be structured; how to specify prices; whether there is a local preference; the standards for the tender assessment; and the processes contained in adjudication); and conditions of contract (the document outlines any conditions in relation to the existing procurement to which the effective tenderer must approve and sign).

2.1.7 Adjudication of Tender

The adjudication processes involves the assessment or evaluation of suppliers performance to find the best qualified supplier for the award of the contract. The adjudication processes must be transparent and fair for all tendering parties. In order to avoid any corruption-prone procedures, the tenders are not opened until after the closing date for submission, when all offers are received. A planned time and date is specified for the opening of the tenders, which requires that at least one member of the procurement unit and at least one of the tenderers' representatives are present. Each organisation participating in the pooled procurement should be represented when the adjudication process is being conducted by the TWG. As the processes ensure that there is transparency.

Each open tender should be recorded into the procurement information management system or in the procurement ledgers. The main information from all offers should be collated, either manually with a table or electronically using procurement software. The tenderers who do not meet the requirements are disqualified, and a clear record of reasons for disqualification should be noted and communicated transparently. Subsequently, evaluate the collated tenders based on lowest prices for each product and other criteria outlined, which is done by the procurement unit or agency or the tender board. When the tender awards are determined, a contract is established with the winning tenderers.

2.1.8 Contract Award

The contractual terms must match the framework in the tender document on which suppliers based their tenders. The ultimate attention to detail must be taken in writing the contractual agreement, since this document will also outline essential information such as: labeling and nomenclature; quality criteria and shelf life; proper packaging (pack size, type of container, outer packaging);

shipment and delivery dates; trade terms and indemnity (including patent rights); fiscal sureties and disbursement terms; and payment exchange and validity of prices (Ghoneim et al., 2016).

The agreement must take account whether the prices are for fixed or estimated quantities; when it is estimated, it is advantageous to deliberate whether or not there is a certain minimum. As this enables suppliers to appropriately estimate the price fluctuations and arrangements reliant on the confidence of the amount and the period in which medicines are supplied. It is important that the financial competences of the suppliers being awarded agreements are understood. The payment currency must similarly be stated, and this must match the terms of the tender earlier. In order to avoid problems associated with currencies with high inflation and conversion rate fluctuations, use of an international trade currency is recommended. Several international suppliers do not receive disbursement in indigenous legal tender or have "contingency factors" associated with the prices (Ghoneim et al., 2016).

The payment terms must guarantee suitable payment to ensure attaining the best prices. It is essential to take into contemplation that when suppliers build their prices, they conduct risk analyses to take into consideration delays in payment if the buyer has been continually late in payments. It will make a difference in the efficient process of receiving medicines at the best prices for the pooled procurement team to ensure that the bank accounts have been set up and are ready and available to pay suppliers in a timely fashion (Ghoneim et al., 2016).

In the agreement, the TWG or the procurement unit must also state that all pharmaceutical products should conform to established pharmacopoeia standards of quality by the producer. As such, each distinct product, the suppliers should be able to provide batch certificates of quality manufacturing, as well as the WHO certificate of a pharmaceutical product. In furtherance, contract terms must

require that there is standard labelling for the products to be procured and that the language of the labeling include a list of the required specifications. Labels on every ampoule or vial ought to include: Producer name; directions for use; and instructions for reconstitution, the generic name of active ingredients; batch number; expiry date; and quantity of active ingredients.

In order to reduce conflict, confusion, or delays, other requirements should also be stated in the contract: information on proper packaging; shelf life and expiry date requirements; security deposits such as bid bonds and performance bonds; proof of experience in pharmaceutical sales; freight date; any patent provisions in countries that recognise patent laws; and any penalties on the supplier for default. Stakeholders have a responsibility to decide on who will sign the supply contract and follow up with the shipment on behalf of the organisations, for example, in Cameroon, the TWG decided to have a rotating system where a different organisations took the lead for each order (Ghoneim et al., 2016).

2.1.9 Receipt of First Consignment

With arrival of the first consignment at the port, the entity responsible or contracted for clearing the products at the port must be ready. A checklist must be prepared and established to ensure that there is conformity, accurateness, and quality of the orders as recommended. At this stage, the TWG has indicated the storage facility either at a central location or warehouse or distributed directly to other destinations on behalf of the participating organisations. The situations where the capabilities of the organisation cannot meet the transportation needs the process must be outsourced to private distributors.

Dependent on the agreement between the suppliers contracted, the supplier may be responsible for delivering commodities directly to the organisations respectively. In addition, Ghoneim et al. (2016), assert that in situations where the most appropriate alternative is to specify on FAS (free

along-side ship) or FOB (free on board) terms in the contractual agreement with the supplier, it should have a distinct provider ship, transport, and the products insured.

The most extensive planning must include the TWG and the stakeholders to have the right schedules, storage and the right distribution arrangements.

2.1.10 Reporting, Monitoring, and Evaluation

The stakeholders must choose the one responsible for constant reporting, monitoring performance and evaluating the pooled procurement system. For example, the CPU can be in charge of gathering information on the quality of medicines received, supplier lead times, and monitoring the stock at the various organisations. The use of modern tools like dashboards will enhance visibility of stock levels at facilities and provide an Early Warning System of a looming stock-out at a precise facility. In addition, the contractual terms agreed upon between the organisations and the suppliers, the CPU can also be tracking delivery status, compliance with pricing and terms, shelf life, and packaging of the medicines according to the study.

The reason behind PPP is to improve methods, decrease prices, and improved procurement for the contributing organisations. Therefore, it is imperative to evaluate the many parts of the established instrument, comprising key performance indicators related to areas of measurement. The study establishes that it is also useful for the pooled procurement team or stakeholders to record all the processes to review the programme in its totality, including the situational analysis approach; establishing the CPU and TWG; selection of medicines; quantification processes across the participating organisations, and how results are gathered and standards and method for selecting suppliers. The rest are the tender process; developing the contract award; ordering processes and follow-up; receipt of orders and quality of medicines; distribution; handling funds; and accessibility and availability of medicines to patients.

It is also important to have procurement information system that tracks and regularly reports the performance around these enumerated processes. Furthermore, it is also established that computerised reports and use of dashboards make it easier to track functions such as pharmaceutical and supplier selection, quantification, tender ordering and adjudication, and status reports on expenditures. There should be a constant and continuous process of evaluating the CPU performance and all of the enumerated functional areas will allow stakeholders to make evidence-based decisions to improve the processes and results of their PPP.

2.2. Health Care Service Quality and Customer Satisfaction

In 2001, the Institute of Medicine offered a strategy for reinventing the health system to advance the country's (USA) health in a report, "Crossing the Quality Chasm: A New Health System for the 21st Century". The study identified that a major component in achieving quality health care was "patient-centeredness" (Baker, 2001). Lam (1997) asserts that a record number of patients believe that the caring performance and the curing performance of medical care providers run in tandem. The choice of medicines has a multi-factorial effect on the quality of care, rational use of medicines, and the cost of medicine (Ferrario et al., 2016; Ghoneim et al., 2016). The rational customer expects that the price associated with the medicine to be lower, improved medicine availability and increased adherence to treatment to meet the healthcare outcome. As such, Jones and Farquhar (2003) postulated that in the midst of the innumerable behavioral intents, substantial stress should be positioned on the effect of service quality in decisive repeat procurement, customer loyalty and retention. In addition, Wilson, Zeithaml, Bitner and Cremier (2008) posit that a factor that can aid surge demand for service is customer satisfaction, since customer satisfaction leads to customer loyalty, endorsement/recommendation and repeat procurement. In accordance, Fatima, Malik and Shabbir (2018), assert that loyalty is one essential factor for corporate success which can

be shaped and sustained through establishment of healthier service quality leading to an enhanced fulfilment and it requires cost-effectiveness and administrative strategies.

In the era of assessment and accountability, Tomes and Chee Peng (1995), defined quality as meeting the requirements of the client in a consistent and synchronized way. The best way to find out the level of satisfaction from customers (patients) are through the feedback provided so that services can be enhanced. The feedback can be confidently given when there are measurement guidelines which will permit the patients to evaluate the quality of care.

Leadership is also vital aimed at safe and in effect health care a certainty. Wysocka and Lewandowski (2017), assert that it is essential for refining the quality and safety in healthcare service delivery and supporting systems for developments to happen. In addition, administrators are also noted as important for executing plans and strategies to stay on course. So, effective leaders create a workstation culture in which the safe and great quality care of patients is a precedence, a culture that encourages inter-professional collaboration, sets strategic objectives for patient safety, backs efforts inside the union to realize development objectives, make available resources for supporting systems, eliminates hurdles for clinicians and healthcare workforce that impede with safe care, and requires and upholds high performance of healthcare suppliers (Wysocka & Lewandowski, 2017).

Studies, directives, and news have endorsed clinician commitment and clinical leadership as precarious to realising and supporting developments to care quality and patient safety (Daly, Jackson, Mannix, Davidson, & Hutchinson, 2014). Daly et al. (2014), discussed clinical leadership in healthcare, considered available descriptions of clinical leadership, joined the literature to define the features, merits, or traits requisite to be an actual clinical leader, in view of clinical leadership relative to healthcare, and discussed the originators and obstacles to active clinical leadership in

the health sector. Their findings revealed that there were substantial obstacles to contribution in clinical leadership. The obstacles were absence of self-confidence, clinician skepticism, poor communication, nonexistence of incentives, role conflict, curriculum insufficiencies, inadequacies of health practiced courses, poor training for leadership roles, inadequate resourcing of expansion programs, poor leadership, absence of vision and commitment at the management level, perceptions of leadership as not core to a clinical training role, poor interdisciplinary associations, and denial of the "leader's" role as objectionable impost and resistance to change (Daly et al., 2014).

2.3 The Theories

2.3.1 Stakeholder Theory

The most prominent theory underlining this study is the stakeholder theory since external and internal stakeholders have a critical role to play in the implementation and initiative of any organisation especially in healthcare delivery. The main task in the process of implementation is to manage and integrate the relationships and interests of shareholders, employees, suppliers, communities, customers and other groups in a way that promises a lasting success of the organization (Fontaine, Haarman & Schmid, 2006).

Freeman (1984: 46) well-defines stakeholder as "any group of individuals who can affect or is affected by the achievements of the organisation's objectives". The elementary principle is that partnerships, which are managed for optimum contentment of stakeholders, flourish better than those which only exploit profit or benefit the shareholders (Kusnanto, 2001). Mitchell, Agle and Wood (1997) also define stakeholders as individuals with valid claims, irrespective of their authority to influence the union or the impartiality of their rapport to the organisation.

Upon successive appreciation, the proponent of the theory, Freeman (2004) redefined stakeholders as individuals or groups whose efforts are necessary to the success or survival of an organization.

There are three theoretical characteristics of stakeholder approach (Jones & Wicks, 1999). They are: Normative (organisations would behave in definite traditions); instrumental (definite behaviors of the organisations lead into definite outcomes); and descriptive or empirical (there is evidence that organisations behave in definite traditions).

The normative approach examines the functions of the institutions and identifies the ethical procedures for the operation and administration of the institution whilst the instrumental method uses pragmatic data to explain the connection that occurs between administration of the stakeholder sets and attainment of institutional objectives (Donaldson & Preston, 1995). As regard the descriptive approach, it is used to explain the features and behaviours of the institutions for instance the management of the various hospital and the nature of the hospital.

The normative approach is the core philosophy of stakeholder theory (Donaldson & Preston, 1995). Notwithstanding the numerous criticisms, many scholars have also contributed to the stakeholder theory basically focusing on the normative approach. The normative approach ensures that the vision of the organisation and the role of managers whose objective is mostly to maximize profits for the organisation (Fontaine et al., 2006).

Additionally, in this context the key stakeholders are the patients (customers), the NCHS, the physicians, procurement officers, nurses and hospital administrators, the communities, distributors and shareholders. As such, the stakeholders of the hospital can be classified as the primary (nurses, patients, procurement officers, doctors and hospital administrators) and secondary (society, government, creditors and suppliers, Food and Drugs Authority (FDA)) stakeholders.

In addition, the effect of stakeholder theory is that participants must be recognized through the authentic or possible problems and profits they are undergoing as a result of the organization's actions or inactions. The administrators must contemplate that it is a moral duty to reply to the varied shareholder benefits in a reciprocally compassionate framework (Kusnanto, 2001). Shareholder examination is a required phase to appreciate the people, interactions and benefits of an organisation's participants, and how they impact the strategic decision making procedures of an organization (Kusnanto, 2001). Stakeholder theory fits the PPP since various managers from different hospitals and other government agencies (for example, Food and Drugs Authority) have to come together to reach a consensus to forge ahead to meet stakeholders interests. The various managers too need to align their interest to the goals of the hospitals by sharing information, risk and resources amongst the various managers to build a common front to procure the quality medicines desired.

The crux of pooled procurement is about bringing together different hospitals, organisation and/or entities (for example, religious groups), resources and participants to optimise value and efficiency in the PPP. It is imperative that stakeholders meet, engage often and on regular basis, building the camaraderie and trust to continuously improve processes and systems in a coordinated and transparent manner.

In this context, various NCHS facilities in this study have the same or similar characteristics such as geographically isolated, limited negotiating power or capability and being part of a unified network or organisation makes decision-making processes and financial issues more efficient and rationalised.

The study considers NCHS as an organisation which seeks to improve its quality of medicines at lower cost by adapting PPP in providing quality medicines to all stakeholders. The stakeholder theory has largely been used to examine the relationships between an organisation and its internal and external environments (Figure 2), and how these relationships influence the conduct of the activities of the organisation (Mainardes, Raposo, & Alves, 2012; Ackermann & Eden 2010). In relating the stakeholder theory to this study, the objective is to address the issues of policy framework, strategies and challenges. In a nutshell, the theory will be useful in explaining how the PPP was established. The modules above are pertinent to the quality of medicines expected by all stakeholders, for example, customers (patients), employee and NCHS board.

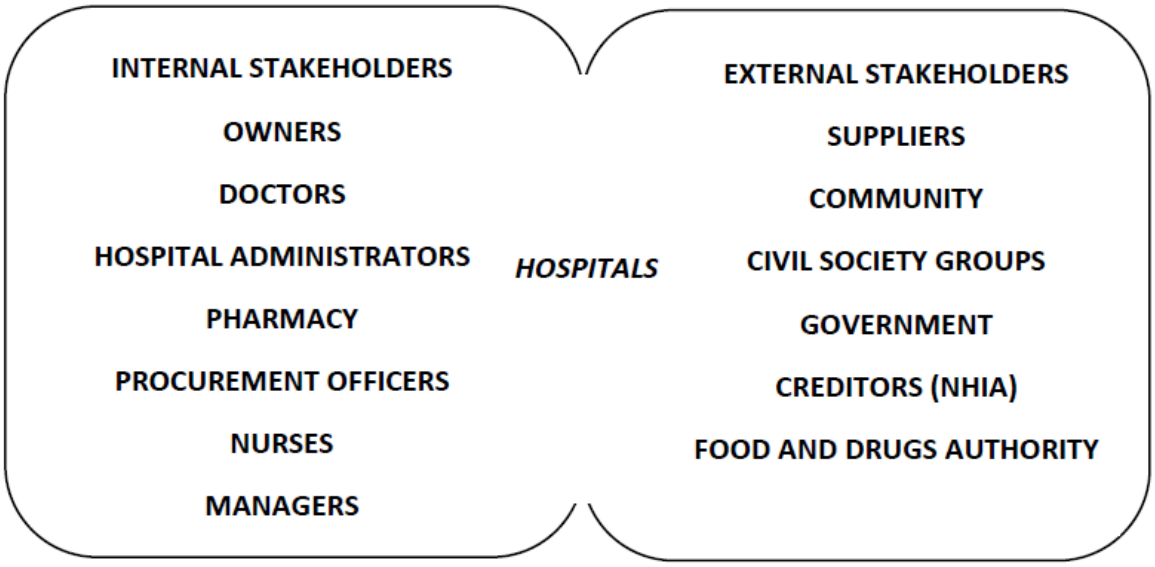

Fig.3 Stakeholders in the NCHS.

Source: Author's Construct (2020).

The various stakeholders also have their own unique interest that they seek to achieve in the hospital setting. In the instance of the suppliers, their primary objective will be to have their payment on

time whilst the community on the other hand will expect transparency in conduct of the hospitals' operations, equity, and conducive environment from the hospitals in the communities. Civil Society Groups (CSG) too will expect the hospital officials to be accountable to the communities they are located in. The government as a major stakeholder is also expected to put in legal, address health needs of the population and regulate professional bodies that are in charge of these hospitals. The NHIA also provides insurance cover for most end users (patients) and it is in their interest that providers provide the quality services for payment.

The owners of the NCHS would expect the various hospitals to be more efficient and effective. The pharmacist expects that medicines are of high quality and continuously available. The nurses will reasonably expect their medicines to be easily administered and patients' interest will center on the usage such as ease of use of medicines, positive health outcome and the price of medicines. A positive clinical outcome is also expected to be in the interest of all clinicians and the provision of quality medicines to patients. The managers in the various hospitals play a major role by putting the right teams together, making funds available and putting in the right strategies to achieve the objective of the organisations. They ensure that the right technical, financial and the right information is shared to achieve the desired objective of providing quality medicine for the various hospitals. It is also important that at every stage of the procurement processes information is shared to optimise the procedures. The lifeblood of procurement which is information should be accurate and timely among team and trading associates. Consequently, sustaining an up-to-date inventory and management information system and guaranteeing the use of the statistics are critical for production, efficiency, and proficiency in the organisation (Ombaka, 2009). The PPP is a multifaceted procedure which involves many stakeholders who should work together to address issues such as equity, quality, and efficiency.

2.4 Principal-Agent Theory

The organization of the institutes of contemporary governments in which decision makers ('principals') have to delegate obligation for the execution of their policies to their administrators (e.g. civil servants in the missionary health facilities) and other 'agents' (e.g. administrators, procurement officers, doctors and all clinicians in the health sector or private hospitals) whom they only circuitously and moderately control are problematic to observe (Buse & Mays, 2005).

When people agree to work together within a chain of command they invoke a kind of contractual association (Kusnanto, 2001). Kusnanto (2001), reiterated that in chain of command, such as between a supplier and a procurer, the supplier carries out a task assigned by the procurer. In this case, the supplier is named agent, while the procurer is recognised as principal. The principal is largely concerned about the attainment of the duty consigned to the agent. Whilst the agent is predominantly fascinated in acceptance payment in return to the achievement of the duty.

Agency relationships are all predetermined arrangements (Eisenhardt, 1988), for example, a relation among a manager and member of staff or the state-run and the ruled, attorney and the customer, procurer and supplier and others. Caers, Du Bois, Jegers, Gieter, Schepers and Pepermans (2006) define the assumption of principal-agent relations as one that will always be categorised by conflict between the principal's interests and that of the agent; and the agent is interested in following their own goals. The agents seek to maximize their profit, focus on the restraints and inducements presented by the principal. The principal, equally, try to organize the association with the agent so that the consequences formed through the agent's efforts are the greatest the principal can attain (McCubbins & Kiewiet, 1991).

The discretionary powers of these agents in their operation may tilt their professional interest to their own idiosyncratic personal interest than that of the principals. For example, the missionary

employed procurement officers are more inclined to other benefits from the suppliers rather than the NCHS of Ghana. These discretionary powers eventually opens up the probable ineffectiveness or unproductiveness of services rendered as these agents have their own biases, cultural and/or political inclinations, up-bringing, interpretations, motivations, trustworthiness and funds which can hamper such strategy execution.

Thus, the volume of preference and the complication of the principal– agent relations are affected by, nature of the policy problem, context or circumstances surrounding the problem and the organisation of the machinery required to implement the policy (Buse et al., 2005).

Keil (2005), also outlined the theory assumptions as, the principal and agent have rational behaviour and rational expectations and interact on freedom of contract and private property, and the agent actions are exterior to the principal's earnings and achievement, the agent has discretionary autonomy due to imperfect and asymmetric information and monitoring costs. Finally, a discrepancy of interests exists, for example, the agent expresses opportunistic behaviour to exploit their own estimated profit instead of acting in line with the objectives of the principal.

Additionally, Keil (2005), enumerated the opportunistic comportments and their hidden features (the capabilities and expertise of the agent are not 'common knowledge'), hidden intention (agent has objectives and benefits not identified by the principal) and hidden action (principal cannot entirely regulate the principal's actions).

Eisenhardt (1988) defines the agency problem in two parts, moral hazard which denotes the absence of determination on the part of the agent and adverse selection, which is the misrepresentation of the agents' capability. There is also information asymmetry, which is also based on the assumption that the principal and agent do not have the same amount of information and that the agent who is

armed with more information is in advantageous position than the principal (McCue & Prier, 2008). Therefore, information asymmetry refers to incapability of the principal to accurately quantify the amount to which the agent makes decisions that concur with the principal's paramount interest (McCue & Prier, 2008).

In the context of NCHS, the Ghana Catholic Bishops Conference (GCBC, principal) objective of providing quality medicines relate to cost-effectiveness and the usefulness with which the procurement structure works. The stakeholders would expect procurement officials (agents) to act as the agents of accountability, integrity, transparency and fairness. As such, procurement officials are expected to be accountable when they are able to explain or defend their engagements or judgements, particularly when confronted by disgruntled tenderers or other shareholders. The principal expects the agent to suppress all forms of nepotism, subdue enticement, favoritism, conflicts of interest, and other unscrupulous conduct. Since, sustaining integrity in procurement is one of the greatest pillars of contemporary national procurement classifications (Arrowsmith, Lineralli & Wallace, 2000; Schooner, 2002).

The agent is expected to supply accurate information, refrain from inappropriately influencing procurement officials and refrain from collusion and fraud (Thiankolu, 2010). The absence of responsibility on behalf of procurement administrators may lead to added costs, when contracting authorities cut deals that are not on the best possible terms (Soudry, 2007).

Additionally, the objective of the principal requires that procuring units allow all prepared and qualified tenderers to participate in a tender and to treat comparable tenders objectively and in agreement with assessable objectives. GCBC also expects procurement officers to make information timeously available to all stakeholders in relation to precise procurement prospects, the appropriate guidelines and tender assessment standards.

The assumption of this study is that, the procurement officers in the hospitals are the agents for the NCHS. The theory will be used to explain how the PPP was adopted and how procurement officers helped achieve its cost-effectiveness in implementation.

2.5 Empirical Literature

2.5.1 Policy Framework in PPP

The WHO initiated the pooled procurement. It is pertinent that the necessary attention is given to the various studies and reports concerning the procurement of medicines. This study also in effect, takes great inspiration from the various studies and reports such as WHO Medicines Strategy.

The WHO (2004) offers the medicinal basis for enhanced health outcomes and durable health systems by centering on increasing access to quality essential medicines predominantly increasing access to antiretrovirals (ARVs) to meet the WHO target of guaranteeing that three (3) million people in developing countries have access to handling HIV/AIDS by 2005. The organisation also recognises that, in LMICs, the price, quality and safety of medicines differ significantly. Even though most countries have medicines governing power and official requirements for registering medicines, one-third of its members have either no regulatory power or have inadequate capability to regulate the medicines marketplace. Valuations carried out by WHO, 50%–90% of samples of antimalarial medicines failed quality control assessments and more than 50% of ARVs calculated did not meet international criteria (WHO, 2004; Iqbal, Geer

& Dar, 2017).

The successes chalked by WHO is also linked to its recognized functioning, systematic and deliberate cooperation in medicines including public, non-governmental organisations, missionary and private dealings and research institutions, UN organisations and international organisations. It also boasts of scientific partnership of over forty (40) WHO Pool resources Centres and a setup of

over seventy (70) Medicine Safety or National Pharmacovigilance Centres which screen medicines safety (WHO, 2004).

In a study by Ferrario et al. (2016), they recorded diverse approaches used by some European countries to conduct a well-organised procurement and to increase access to medicines. The report adopted a nation-wide discussion to analyze the procurement capabilities and discover prospects for partnership between nations to address main challenges encountered when new medicines are introduced. However, Cuomo and Mackey (2018), looked into the policy outline to empower International Agency for Research on Cancer (IARC) to find the missing link in comprehensive solution to cancer medicines especially, in LMICs. That study employed rating statistics from a database and went further by promoting policy instruments that can advance the transparency, accessibility and visibility of cancer medicine pricing universally. Accordingly, Nguyen et al. (2014), used reviews on available articles on medical pricing and procuring policies. The study reviewed some of the existing medical pricing and procuring policies used throughout the biosphere to explain exactly how governments or insurers create a reasonable price and manage medical funds to classify concerns for LMICs to increase their medical pricing and procuring structures.

The above studies in Europe and LMICs came to a conclusion that widening of the study area to embrace breakdown of medicine pricing, quality and access, is necessary. While making an allowance for inter-country partnership on procurement for medications, nations should evaluate the regulatory regimes, legitimate structures, functioning design and financial laws that can have control over its viability (Ferrario et al., 2016; Cuomo & Mackey, 2018). Ferrario et al. (2016), also suggest that sustaining, consolidating and administering the lawful structures is essential for pricing and procurement policies. There should be competition, medical sector regulation, and punitive laws to ensure transparency and value for money are achieved through a competitive market by the

establishment of pooled procurement by IARC in LMICs (Nguyen et al., 2014; Cuomo & Mackey, 2018).

Additionally, in Brazil, Seidman and Atun (2017), used systematic reviews to reveal a sequence of guidelines by the sector ministry to support how medicines can be procured from various producers and/or suppliers for the growth of the country's medicinal production and price negotiation for top quality medicines, for example, antiretroviral cure (ARVs), in the TRIPS contract.

The studies covered an extensive geographical location (Europe and LMICs) and with different legal frameworks for each member country due to sovereignty issues. The scope was also too broad to ensure a detailed account from a particular country. This study intends to study NCHS within a country (Ghana) and it is focused on a faith-based organisation which is assumed to have one belief system and hence a detailed and uniformed policy regulation may guide the pooled procurement by this organisation. As improvements in the procurement and supply of health products are context-specific requiring different types of intervention in different countries, it is further challenging to cope pooling many different organisations than individual organisations (Millington & Bhardwaj, 2017; Hoffman & Schlosser, 2001 cited in Schotanus, 2007).

2.5.2 Cost-Effectiveness of the PPP

In Finland, two out of four studies conducted by Karjalainen (2009), employed the principal-agent theory to look at how employees going through the change process in establishing centralisation and also looked at the integral challenges of the procurement function. The study employed qualitative approach through systematic literature review and interviews. In the conclusion, the study revealed that the number of pooling units need not to be high before economies of scale is manifested. The study also revealed that the mean time of a devolved tendering method run by an

agency is about 167 hours, whilst the mean time of a national tendering method (for example, tendering agreement for agencies) is about 1030 hours. In line with the above, Seidman and Atun conducted a systematic review to investigate if changes to pooled procurement procedures can realise cost-effectiveness and/or advance the accessibility of medicines in LMICs (Seidman and Atun, 2017). The findings revealed that centralized pooled procurement and tendering can attain cost-effectiveness. In addition, Batson, Meheus and Brooke (2006), agree that the establishment of Advanced Market Commitments (AMCs) for developing countries will lessen the threat that the international health structures would face, since these countries lack the required funds to procure the desired vaccines on regular basis on their own. The increased predictability of the AMCs members, largely due to their numbers, will also help create demand for the Human papilloma virus (HPV) vaccines.

Millington and Bhardwaj (2017), provided brief summaries of current research, evidence, and lessons learned from Ghana, Uganda, Bangladesh, India, and Brazil revealed that centralised procurement and/or tendering can attain cost-effectiveness across multiple contexts by generating economies of scale and enhanced procuring control. In USA, studies by Taylor and Bjornsson (1999), and Huff-Rousselle (2012), used literature reviews and interviews to investigate a new commerce model for Internet-based pooled procurement in building and partnership of procuring control across boundaries, plus within nations through organisational entities to addressing the disparity in current pooled procurement models. The studies revealed that organisations that cooperate and share information have the benefits of reduced material costs, elimination of corruption, reduction of functional costs and managerial liability, enhanced quality guarantee, improved equity, better regulation and improved access to needed medical products in each contributing country (Taylor & Bjornsson, 1999; Huff-Rousselle, 2012).

In New Zealand, Tordoff, Norris and Reith, (2005), studied chief pharmacists in eleven (11) government hospitals by calculating the estimated cost-effectiveness for the fiscal year July 2003 to June 2004 using the quantitative approach. Whilst in Australia, Soosay, Hyland, and Ferrer (2008), employing qualitative approach collected data using semi-structured interviews with 23 managers in ten case studies. In both studies, cost-effectiveness was achieved as depicted in their respective findings. The revelation was that a year after the inception of pooled procurement under the national strategy, modest cost-effectiveness was attained and managers across the firms examined, supported the importance of collaboration and efficient allocation of resources (Tordoff et al. 2005; Soosay, Hyland & Ferrer, 2008).

In other sectors such as Maintenance, Repair and Operations (MRO) procurement and in defense (for example, NATO, Finland and Estonia purchase of self-propelled K9 howitzers in 2017, Czech and Slovakia purchase of transport aircraft in 2006), it was realised that efficacious and consistent rules to govern the centralisation of MRO procurement as the greatest model, as it reduces prices. It further revealed that in shared negotiating, the collaborative procurement shared the extra fervor in the interest of the procurers whilst an individual negotiation has less power compared to the supplier since the supplier is able to seize a considerable stake of the available surplus (Hoang, 2016; Kanniainen & Lehtonen 2018).

Even though cost-effectiveness has been achieved in the various sectors, none of the above studies used a case study design in a missionary health facility. The various studies did not pay much attention to the structures, processes involved in the eventual outcome of the quality of medicine.

2.5.3 Strategies in the PPP

In some European countries including Switzerland, Norway, North and South of Ireland, and USA, all the researchers employed qualitative approach to study the pooled procurement of medicines

(Ferrario et al., 2016; Kumaresan, Smith, Arnold and Evans, 2004; Krogh et al., 2013; Creamer & Driscoll, 2013; Arney et al., 2014; Huff-Rousselle, 2012). The data collection were mainly through literature reviews, semi-structured interviews and national conference was organised to analyse countrywide procurement practices to explore prospects for partnership between nations to address main trials confronted in presenting new medicines. However, in UK, Kim and Skordis-Worrall (2017), used quantitative approach by relying on WHO Global price report mechanism (GPRM) data from 2004 to 2013. The study was focused on procuring ARV through the voluntary pooled procurement scheme.

The findings indicated that the scheme offers a potentially effective strategy for the reduction in HIV medicine prices and the improvement of technical efficiency in HIV programming and through bulk procurement and supportive operating environment. Such as a supportive partnership environment is key to mobilising technical support to countries, donor support and strategic guidance to the Global TB Drug Facility (GDF) needs (Kim & Skordis-Worrall, 2017; Kumaresan et al., 2004). The study also indicated that procuring synergy happens when two or more corporate units, or relationships within one corporate unit, link their services and/or segment useful resources, information and data and when procurement structures are usually described by centralized intervention and contract administration with decentralized procuring and/or ordering authority (Krogh et al., 2013; Arney, Yadav et al., 2014). According to Huff-Rousselle (2012), pooled procuring control was the reason the national health insurance organisations that kept reduced medicinal prices in Canada and Western Europe than in the US and hence a prudent strategy for any health organisation to adopt.

The above studies provided little knowledge in the steps involved in the collaborative processes for the procurement of medicines. There is great geographical gap in the study since most of the studies

took place in western countries and none in the LMICs. The various studies also did not clearly state the strategies set out explicitly by WHO (2007) models apart from Ferrario et al. (2016), study in Europe. This study intends to adopt the WHO model of central contracting as the standard for the research.

2.5.4 Quality Improvement in PPP

In a record number of Delhi hospitals and dispensaries continuous absences of essential medicines was predominant before 1994. The situation resulted in irregular prescribing of costly branded medicines, regular grumbles about pitiable medicine quality and little patient fulfilment (Roy Chaudhury, Parameswar, Gupta, Sharma, Tekur & Bapna, 2005). The state seized the opportunity in developing an all-inclusive Medicine Policy and the objective was to enhance the accessibility and availability of quality essential medicines for everyone (Roy Chaudhury et al., 2005). They indicated that collaboration between a non-governmental organisation, government and with the universities helped to implement innumerable modules of the policy. The set-up of a centralised pooled procurement structure, saw the development of the first Essential Medicines List (EML) and events encouraging sensible use of medicines (Roy Chaudhury et al., 2005).

In USA and Canada, Carter, Smeltzer and Narasimhan (2000), and Kahneman, and Knetsch (1992), used quantitative approach whilst using surveys and questionnaires for data collection. The studies analysed the human resource practices within the procuring procedure to define their link to the accomplishment of total quality management plans whilst another scrutinised the important part quality in e-procurement promises to cut functioning costs across all networks. The findings indicated that, organisations with more prosperous TQM programmes were more probable to stress formal routine evaluations of procuring employees. Secondly, procuring employees at prosperous TQM companies were more involved in main decision making procedures that had positive

outcomes. Thirdly, procuring employees in corporations with more prosperous TQM programmes had a better support system, for example, career safety and development. Fourthly, procuring employees in more prosperous TQM companies had more TQM-linked training. Finally, procuring employees in more prosperous TQM corporations were probable to be compensated for their objective achievement than procuring employees in less prosperous TQM corporations and there is always a resilient backing for the associations between information stream route quality, logistics success quality procedures, and e-procurement successful output (Carter et al., 2000; Kahneman & Knetsch, 1992).

Additionally, in sub-Saharan Africa, Ait-Khaled, Enarson, Bissell and Billo (2007), and Quick, Boohene, Rankin, and Mbwasi (2005), reviewed articles revealed that most people living with asthma were in the LMICs which had inadequate availability of essential medicines. The study revealed that organizations inside nations can procure reasonably priced, worthy quality essential medicines for asthma through the Asthma Drug Facility (ADF). Also in Tanzania, a system of accredited shops have been developed called "duka la dawa muhimu" (indispensable medicines shops), where staff were educated in dispensing and professional skills, the shops were frequently checked and consistently provided with listed medicines. Dispensing commendations and the accessibility and quality of medicines have enhanced further in the official shops than in casual shops (Ait-Khaled et al., 2007; Quick et al., 2005).

The study in Delhi hospitals provide the ideal situation in which centralised PPP was implemented. However, the type of collaboration implemented, whether public to public, public-private, private to private and missionary to missionary was not clearly stated. The study in USA and Canada also focused on human resources and e-procurement and provided nothing on procurement of medicines. The above studies also looked at TQM related activities to that of the Donebedian

model, which clearly outlined all the necessary processes to follow to achieve the quality of product or services needed. With regard to the study in sub-Saharan Africa, it confirmed that training of the employees is very essential from the procurement department to the final personnel involved in dispensing the quality medicine to patient (customer). This study examines the structures used to determine quality medicines procured under in the PPP.

2.5.5 Challenges in the PPP

In Africa, Brazil, and United Kingdom, Gallien, Rashkova, Atun, and Yadav (2017); Barbosa and Fiuza (2012); Sharpe, Scott and Gross (2013); studied stock outs of life-saving medicines linked to widespread communicable ailments, procurement of pharmaceuticals and medical supplies in Africa and brazil respectively. The studies employed quantitative approach by leveraging past fund expenditure and medicine procurement statistics from 2002 to 2013, using established Brazilian municipal procurement businesses between 2004 and 2009 and using a standardized questionnaire. The study indicated that pooled procurement must remain prudently planned to shun that expenses paid are increased for its participants. It was noted that the strategy may surge the expense paid by its participants, because procurers with good reputation can pay greater prices when they collaborate with procurers with bad reputations in a pooled program (Barbosa & Fiuza, 2012). The study also showed the presence of substantial basic stock out possibilities in record in African countries, with predominantly tall list in East Africa, owing to the irregularity of fund outflows and the incidence of grant act checking implemented by the Global Fund (Gallien et al., 2016).

In the United Kingdom, Netherlands and Germany, Schotanus, Bakker, Walker and Essig (2011), studied multiple cases for comparison using qualitative approach. In Finland, Karjalainen (2009), used qualitative approach through systematic literature review and interviews to study maverick buying (MB) or non-complaint work behaviour. Network (2008), also using a descriptive approach,

a comparative multi-country study on sixteen (16) Ecumenical Pharmaceutical Network (EPN) faith-based drug supply organisations (DSOs) and their role to medicines supply in eleven (11) African nations. In Western Pacific Region, Region and Liability (2010), examined the capability and prospective of pooled procurement in the region, using Nancy Fraser's strands of social justice and conceptual tools as theoretical foundations employing the qualitative approach. The results indicated that there were several challenges, for example, managerial costs, absence of political commitment, and political restrictions outweighed the profits related to this strategy. Therefore, the feasibility of the strategy in the region appeared to be impractical at that moment and that the participants of young procuring clusters need some understanding in cooperative procuring and must identify and trust another before multifaceted tenders can be implemented (Region & Liability, 2010; Schotanus et al., 2011). Accordingly, Karjalainen's (2009), study revealed five different types of MB which includes unintentional MB, forced MB, casual MB, well-intentioned MB and ill-intentioned MB. The unintentional MB was described as when staff do not know there is a contract guideline for procurement practices (for example, indulging in off-contract procurement without recognising it, lack of information on negotiated contracts for staff and lack of information on standardised procedures or methods). The forced MB arises when staff are familiar with the ideal method, but meet hurdles to observe that ideal method (for example, emergency situation, a new system adoption such as e-procurement and inadequate training for employees to undertake such activities). The casual MB ensues when staff are conscious of the ideal procedure, but continue to do what gratify them (for example, the employee may not change behaviour to the trend, due to old habits). The well-intentioned MB transpires when staff are mindful of the desired practice, the element is obtainable from a contracted supplier, but they ignore the ideal method in the interest of the corporation (cf. Lonsdale & Watson, 2005 cited in

Karjalainen (2009; p.11). ill-intentioned MB happens when staff are cognisant of the ideal method and capable to practice it, but energetically oppose the original procedure (for example, resistance to change, opportunism or self-interest) (Karjalainen, 2009). The study went ahead to provide a conceptual framework as a form and reasons.

Though extensive work has been done on the challenges in procurement, these studies revealed little knowledge on the challenges of pooled procurement in Ghana. The study conducted by Region and Liability (2010) relied heavily on Nancy Fraser's strands of social justice. The theory claim has been an increase in demands for recognition of differences based on nationality, ethnicity, race, gender, and sexual orientation at the expense of claims for economic redistribution (Fraser, 1995; Robeyns, 2003). However, this study relies on the stakeholder's and principal agent theories to provide a comprehensive understanding of the pooled procurement of the NCHS.

2.6 Conceptual framework

This study uses a conceptual framework to explain the phenomenon under investigation **(See Figure 4)**. The conceptual framework offers networks and interactions between conceptions, which must be appropriately particular to responding to the study enquiries (Fisher, 2010). Conceptual framework is a definite depiction of an occurrence in a research complemented by a graphical representation of the main variables of the research (Mugenda & Mugenda, 2003). That assertion was reinforced by Mbogo at al. (2012) that conceptual framework can be described as a fundamental construction of study involving definite theoretical philosophies and models that a researcher wants to notice, test or investigate. In furtherance, Barasa (2014), emphasised that it is a demonstration in graphical structure of the association between the recognised variables in the study. It includes the dependent and independent variables. Saunders et al. (2009) posited that dependent variable is altered by the purpose of variations in other variables and an independent

variable is that which causes alteration in a dependent variable. Extraneous variables are independent variables that are not directly connected to the objective of the study, nonetheless may have an effect on the dependent variable (Kothari, 2004).

In the context of this study the independent variables are collaborative processes of pooling resources, technical and information together through the implementation of the PPP and its impact on the quality improvement of medicines. The study of PPP is assembled on the foundation of some elements which add to effective and quality delivery of medicines in monitoring the implementation from the theoretical and empirical studies. The variables which build the conceptual model of this study include the external stakeholders (suppliers, the community, civil society groups, government, creditors [NHIA] and internal stakeholders (Owners (NCHS), Hospital Administrators, Pharmacy, Procurement officers, Nurses, Managers).

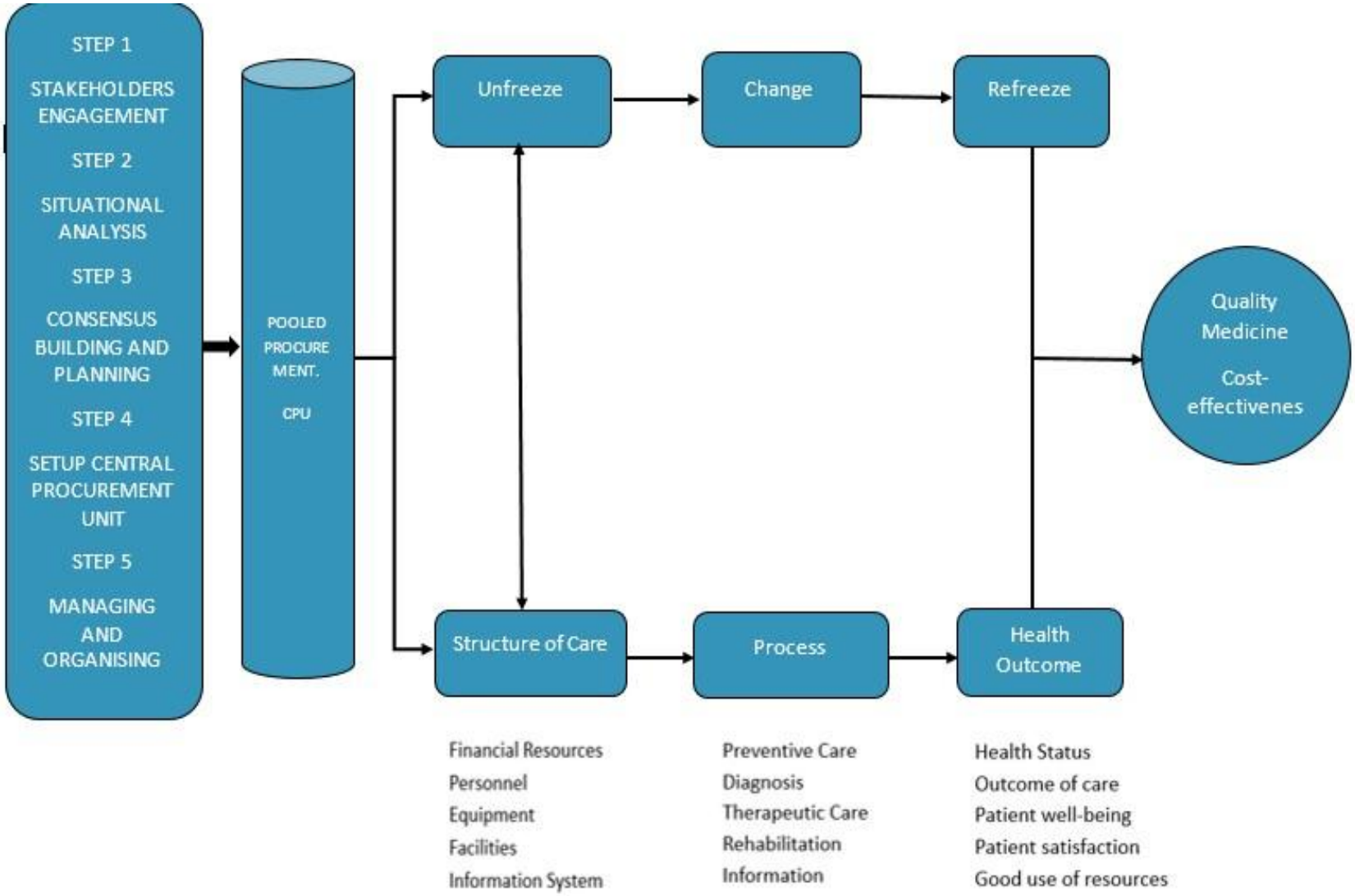

Fig. 4 Conceptual Framework (Pooled Procurement of Quality Medicines).
Source: Author's Own Construct, (2020).

The five steps involved in the establishment of the PPP are stakeholder engagement, conducting a situational analysis, consensus building and implementation planning, setting up a central procurement unit (CPU), and managing and organising procurement (Ghoneim et al., 2016). Whilst establishing the CPU, managers must ensure that employees embrace the change through commitment to achieve their objective.

The healthcare services must meet the desires of its patient by being thoughtful to their wants and needs. Therefore, it is essential that the system embraces the culture of measurement and executes an assessment procedure in order to increase the quality of care and the services provided to the patients. The right collaboration of financial resources, personnel, equipment, facilities and information systems in place will ensure that there are solid foundation for quality improvement. The process of preventive care, diagnosis, therapeutic care, rehabilitation, information and instruction of the patient should effectively and efficiently lead to improved health status and customer satisfaction.

Finally, in order to achieve the organisational change that is needed, the management should create the change needed through education, training, and ensuring that employees know the benefits and the challenges of the system then moving toward the new, desired level of behavior, and finally, solidifying that new behaviour of the PPP as the standard.

2.7 Summary and Conclusion

The reviewed literature strongly indicates that there is extensive work done on PPP on regional basis by countries and the practice is also common among the faith-based organisations (for example, in Cameroun). The reviewed literature also revealed that most of the studies involved international organizations in collaboration with their regional and local partners to make the

initiative a success. The initiative may increase availability and accessibility to the medicines (for example, cancer and AVR medicines) that are exorbitant to procure and this will ensure cost-effectiveness through negotiated prices. The low prices also allows the hospitals to procure in larger quantities, thereby saving money to invest in other productive sectors of the healthcare services.

Even though the benefits seem to outweigh the challenges in pooled procurement, the initial cost of establishing or putting together a competent team (for example, TWG and CPU) may require some huge investment. Additionally, pooling resources (technical, information and financial) in Ghana and other African countries is not common due to the lack of qualified personnel, the difficulty in establishing a buyer-supplier relationship, the poor negotiating skills of many hospitals, organisations and/or entities. However, when the lifecycle cost is clearly quantified in the short-run or time it may be prudent to indulge in PPP. The lifecycle cost of constantly having to look for competent procurement professionals to employ, the lack of quality or inadequate procurement of medicines due to high prices and eventually losing customers' (patients') precious life due to counterfeit medicines is not the sort of quality healthcare services provided in the 21st century where quality services is patient centered.

The pooled procurement collaboration may be the most efficient model for collaboration in the European and in the African contexts especially, but the legal frameworks vary considerably and may become barriers to closer collaboration. In order to curtail these barriers, Ferrario et al. (2016), assert that developing common goals and value definition related to introduction of new medicines, ensuring a lean structure and operation and the importance of abiding by agreed frameworks may be a panacea to these barriers. The initiative also demonstrates how trust and working together,

through sharing of information and political commitment on the part of the various stakeholders can address the concern of availability and accessibility of medicines to patients.

The conceptual framework was conceived as a result of the extensive literature review on the subject matter at stake. The framework seeks to convey the structures used to determine the quality of medicines. It also embraces change through the gradual education, training and encouragement to eventually making the PPP the standard operating procedure.

The over fifty (50) articles, journals, thesis and the searches on the internet, there was a little information on the PPP in Ghana. The only health services organisation that has taken advantage of this modest initiative was the NCHS. It is, therefore, important that studies are conducted to understand the policy framework, cost-effectiveness, the strategies, systems and structures put in place to ensure the quality of medicines, and the challenges of the NCHS.

This study adopts the central contracting and purchasing model as espoused by WHO, which is the most widely integrated type of system among stakeholders and involved parties, and represents the highest level of commitment. In view of that, Ghoneim et al. (2016), have provided a comprehensive study which involves the steps and processes for successful implementation of PPP among Faith-Based Organisations which involves all the major stakeholders.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology used to sample, collect and analyse data for this study. The chapter entails the research approach, design, study population, sample size and the sampling technique. Additionally, it comprises data sources, and data collection instruments used, data collection procedures, data analysis technique, limitations and ethical considerations.

3.1 Research Approach

This study used qualitative research approach to address the research problem. In the view of the interpretivist, social scientists deal with the actions, feelings and attitudes of characters thus using qualitative methods of data collection and analysis (Tashakkori & Teddlie, 2003; Tashakkori & Taddlie, 2009). The qualitative research approach was used by the researcher to increase his understanding of the social relations, quick social change and the assessment of social dimensions of nature (Adjei-Bamfo, 2017; Flick, 2018). In view of that, in exploring the public views, experiences, new areas of interest to researchers, looking at policies which must be executed, sensitive topics where the study needs some elasticity to avert grief, it was suitable to adopt qualitative methodology (Flick, 2018). In addition, qualitative methods helped portray how respondents felt as well as their motives and desire for the PPP policy (Kothari, 2004). The qualitative approach provided the researcher an exceptional occasion to explore and enhance his understanding of a complex, multifaceted occurrences that were not possibly useful with quantitative approach (Anderson et al., 2014). In this qualitative study, the researcher included respondents in the data collection method, and guaranteed that data were collected in a naturalistic setting with the researcher and participants interacting in a face-to-face manner. The researcher

was also identified as the main data collection instruments and embraced many sources of data in the analysis. The research procedures were also evolving and hence data analysis were conducted inductively. The concerns participants held concerning the matter in the study were easily interpreted for them to understand. These steps improved the multifaceted picture of the subject matter (Anderson et al., 2014). The reviewed literature involving several countries and studies employed the quantitative approach to address the research problem (Barbosa & Fiuza, 2012; Sharpe, Scott & Gross, 2013; Gallien et al., 2017; Kim & Skordis-Worrall, 2017). However, to the best knowledge of the author, none applied the qualitative approach to the Ghanaian context with respect to the issue under study. Thus, this study adopts qualitative approach to assess the practice of PPP in the NCHS.

3.2 Research Design

This study used a multiple case study design and made use of selected health facilities in NCHS. According to Anderson et al. (2014), case studies can be well-defined as graphic, investigative or descriptive studies of an individual, assembly, incident, policy, task, decision, or organisations. Additionally, Stake (1995), defines a case as an occurrence happening in a bounded, or detailed context and is the element of investigation. The study also revealed that case studies examine a bounded system and conduct an in-depth data collection, comprising many sources of evidence, and reporting the picture of subjects (Anderson et al., 2014).

In addition, Creswell (2013) posits that a case study examines a real-life, existing bounded system (a case) or multiple bounded systems (cases) over a period of time, through a comprehensive, in-depth data collection containing many sources of information, and then reports a case explanation and case themes. The current study used three cases in order to appreciate the subject under study. The multiple case study design permitted reproduction to independently check evolving concepts

and identify corresponding characteristics of the phenomenon under study by examining the settings to understand the issues under study (Anderson et al., 2014). The multiple case design improved representativeness and strength of the study, even though, it involved a wide resources search and time. The design fortified the results by reproducing the patterns or themes thus enhancing the strength of the findings (Yin, 1994). As such, a multiple-case design refers to case study research in which a number of contributory bounded cases are carefully chosen to improve upon a more in-depth understanding of the incidents than a solo case can provide (Chmiliar, 2010).

Vohra's (2014) study also emphasises the literal replication (whereby cases are considered to support one another) and theoretical replication (whereby cases are planned to defend different theoretical conditions). There are two (2) approaches to institute replication logic which relies more on analytical instead of statistical generalisations. In order to understand the PPP from the various perspective to enrich the findings, the author triangulated interview data from the various health facilities with relevant reports and documents.

3.3 Target Population

This study seeks to explore the role of the PPP in the quality improvement of medicines of the NCHS in Ghana. This study builds on the knowledge gained on the established Project Fives Alive launched in 2008. The programme was conducted by the NCHS in collaboration with GHS with support from Bill and Melinda Gates foundations. This study used three out of the nine piloted hospitals used in the NCHS to test the quality improvement programme implemented to hasten Ghana's determinations to realise the MDG 4, now SDGs 3 to decrease under-5 mortality by two-thirds from its 1990 baseline (from 110 deaths per 1,000 live births to less than 40 deaths per 1,000 live births) by 2015 (Kumah, 2016). Kumah (2016), looked at the impact of quality improvement effort in the NCHS Initiative on under-five mortality reduction. This study builds on the knowledge

gained in Kumah's (2016) work by focusing on pooled procurement. The nine hospitals were selected for the quality improvement implementation because they were the worst performing hospitals in under-5 mortality according to the NCHS. This study focused on the under listed hospitals to explore how quality improvement in the adoption of the PPP has improved upon the quality of medicines. The selected hospitals were; St. Francis Xavier Hospital, Assin Foso; Our Lady of Grace Hospital, Breman Asikuma; and Holy Family Hospital, Techiman.

3.3 Research Setting

3.3.1 Our Lady of Grace Hospital, Breman Asikuma

In 1940s, Our Lady of Grace Hospital was established as a clinic at Breman Asikuma in Central Region and subsequently transformed into a hospital in 1953. The Spanish congregation "Sisters of charity of St. Anne" took over the management of the hospital in 1972. The Catholic Archbishop of Cape Coast, His eminence Peter Cardinal K. Appiah Turkson, inaugurated the hospital "Our Lady of Grace Hospital" on the 8th day of February 2002. The hospital has a bed capacity of One Hundred and Four (104) and serves one hundred and eighty three (183) villages with a population of 93,554 in the Asikuma district since it is the only hospital facility in the district. In addition, it serves additional localities for example, Ajumako with a population of ninety three thousand three hundred (93,300), portion of Agona and Assin neighborhoods giving it an entire area of about sixty-five square kilometre (65 sq. kilometres). Thus giving it an entire catchment population of two hundred and twenty five thousand (225,000) (Kumah, 2016). The hospital also serves as a referral center to eight (8) government health centres: two (2) mission clinics; four (4) maternity homes; and fourteen (14) community clinics.

3.3.2 The Holy Family Hospital (HFH), Techiman

The Holy Family Hospital (HFH) sits on twenty (20) acre land area in Bono East Region, which was given out by the Techiman Traditional Council with Nana Akumfi Ameyaw III as the chief. The Hospital has full-grown and advanced to the position of Municipal Hospital for the Techiman Municipality serving as the referral health facility for Techiman Municipality and additional portions of the region and elsewhere. According to the hospital's website, the hospital has a present bed capacity of three hundred and thirty (330) beds. The Techiman Municipality has a projected population of 206,856 and serves on the average annually Out Patient Department (OPD) attendance of 200,000, 21,000 admissions and 5,500 deliveries (Kumah, 2016).

The hospital is also designated by the Medical and Dental Council for training of doctors, anesthetists, and physician assistants (housemen). The Ghana College of Surgeon and Physicians has also designated the hospital for the training of Residents in Family Medicine. Many other universities and colleges in Ghana and abroad have adopted the hospital as affiliates in training of various health professionals

3.3.3 Francis Xavier Hospital, Assin Foso

The Francis Xavier facility is a District Hospital for both Assin North and/or South Districts is a referral center for smaller clinics within the catchment area with a bed capacity of one hundred and thirty-five (135) beds in Central Region (Kumah, 2016). It has an average annual OPD attendance of 110,000, 11,000 admissions and 3,000 deliveries. It serves a population of over 230,000 (Kumah, 2016).

3.3.4 National Catholic Health Service (NCHS)

In 1950's, the NCHS began its activities to provide health facilities for countryside inhabitants who had practically no accessibility to modern mainstream healthcare and repeatedly wished for

them. The established health facilities were greatly supported by expatriate missionary skilled workforce. There were also indigenous supporting employees who helped to run these organisations at the time. The health centres of the NCHS began as little clinics and primary health care facilities.

The Directorate of Health controls and directs the activities of the health facilities supported by a committed Secretariat for the Program. The Secretariat manages and monitors the relationship between suppliers and organisations respectively.

3.3.5 Inclusion criteria

The best, worst and average performing piloted hospitals used in the NCHS to test the quality improvement programme implemented to quicken Ghana's efforts to attain the MDG 4, to decrease under-5 mortality by two-thirds of the worst performing hospitals.

3.4 Sampling Technique

The study used a purposive sampling technique which is a non-probability sampling technique to identify study participants. Saunder (2011) theorises that a purposive sampling technique allows researchers to use their own judgments to select cases which best answer the research questions and meet the research objectives. Consequently, this study samples NCHS institutions whose activities are consistent with the PPP.

In selecting the hospitals for the study, the three worst, average and best piloted hospitals for the quality improvement programme implemented to hasten Ghana's determination to attain the MDG 4 now SDGs 3 by Kumah (2016) were selected for the study. Purposive sampling technique was used because the PPP is being practised by only the NCHS. Purposive sampling was used because it helped exclude people who were not fit for this study and involved people who were capable and competent with the situation understudy (Cresswell & Plano Clark, 2011). In accordance with

knowledge and capability, the availability and readiness to contribute, and the capacity to communicate the skills and thoughts in a coherent, sensitive, and insightful manner was also important (Spradley, 1979; Bernard, 2002; Palinkas et al., 2015). The sampling frame in this study was limited to top and middle level managers who were directly involved in the PPP. The purposive sampling method was used because it is effective due to the limited numbers of the study participants who serve as primary data sources and the nature of research design and objectives. Additionally, the use of purposive sampling was adopted because it was not time consuming.

3.5 Sample Size

Considering the procurement entities within the health services of NCHS, three (3) hospitals were sampled. The respondents were sampled through an arrangement of convenience and snowballing sampling procedures. This is as result of after the initial contact with the hospital, respondents indicated people who they believed had enough knowledge in the area of the investigation. Thus, principal officers including those working within the procurement department, stores, pharmacy, accounts, finance and administrators were interviewed in the various hospitals. The procurement officer and other management members at the National Catholic Health Secretariat (NCHS) were also interviewed in the research. Sampling ended at the 20th respondent after saturation was reached.

3.6 Sources of Data

The study made use of primary and secondary sources of data. The primary data source were collected directly by the investigator for the study objectives (Salkind, 2012). The most shared techniques used are interviews, experiments and field observation and the term primary source refers to the originality of the data source which are published, unpublished, past and present

materials (Salkind, 2012). As a result, Salkind provides some useful examples of primary sources as uninterrupted information such as birth records, music, legislation, autobiographies, letters and court records. The primary sources of data were gathered through interviews with procurement officials, store keepers, pharmacist and health administrators in the hospitals and in-depth interviews were conducted with the procurement officers at the NCHS.

On the other hand, secondary data refers to a data sources that are already in existence, for example, national registers, which a study intends to adopt and/or adapt for an intended study which are not the study's original collected data (Salkind, 2012). The secondary data was from various sources including past theses, the internet, text books, reports and other relevant documents. In accord with Hansen-Thompson (2007), secondary sources have the benefits of delivering bases for comparison and providing a valuable context for recognising main problems and matters necessary to be solved by main investigation. Nonetheless, to improve data validity and reliability, primary data are supplemented with secondary data for the study (Adjei-Bamfo, 2017).

3.7 Data Collection Instruments

The primary data was gathered through interviews with procurement officials, store keepers, pharmacists and health administrators in the hospitals and also in-depth interviews were conducted with the procurement officers at the NCHS. This study relied on interview guide to collect data from the selected respondents within procurement, stores and other administrative staff of the hospitals to solicit information on the PPP in the NCHS (see Appendix A). Interviews were held at the offices of respondents and lasted between 10 and 30 minutes. Interviews were recorded, transcribed and later signed by respondents before analysis.

Therefore, Cohen et al (2007), posits that interviewing is a valued method for discovering the structure and mediation of meanings in a natural situation. In that vain, it empowers interviewees

to "speak in their own voice and express their own thoughts and feelings" (Berg, 2007: 96). Interview guide allows comparability of results while leaving room for respondents to provide personal explanations of the topics under study (Yin, 2003).

Dörnyei (2007) maintains that with the company of the interviewer, shared understanding can be guaranteed, for example, the interviewer can rearticulate or streamline enquiries that were not assumed by their interviewees. Consequently, a suitable answer would be provided by the respondent to ensure a more precise data is obtained (Alshenqeeti, 2014). Accordingly, the presence of numerous inexpensive tape-recorders can enable researchers record the data and review the data when needed to produce an exact interview report (Hermanowicz, 2002; Berg, 2007).

3.8 Validity and Reliability of Data

Validity refers to the extent to which a test measures what one actually wishes to measure (Kothari, 2004). To ensure validity, the study used purposive sampling to ensure that research instruments were only administered to individuals who were involved in PPP. The study ensured that information the respondents received were clear, precise, and concise from the interview guide. The interview guide was tested and questions which were not clear were reviewed and corrected. This ensured that the validity was fundamental of the method of assessment that was steadfast and accurate (Bond, 2004).

To ensure the reliability of the study, this thesis ensured that the study can be replicated by different scientists in constant conditions, with constant outcomes and the outcomes not erratic or variable (Taherdoost, 2016).

3.9 Data Analysis

A thematic content analysis approach was used to analyse the data. Qualitative data from the in-depth interviews were transcribed from audio recordings into words and subsequently edited to detect and eliminate typographical errors. The transcribed data were coded into themes under the five objectives of the study.

The data were analysed to explain the primary data collected from the field in agreement with the research objectives. Pope and Ziebland (2000), recognized five main stages of data analysis framework which were familiarization, identifying the thematic frameworks, indexing, charting, mapping and interpretation. The familiarization enabled the author to examine the raw data by listening to audio recordings, transcribing the audio, taking field notes, reading reports and relevant documents. The main issues and concepts were also indexed and/or coded. The data were then rearranged according to the applicable portion of the thematic framework in tune with the research objectives. The mapping and interpretation were influenced by the primary research objectives in addition to the themes that appeared from the data. Thus, the data collected were analysed qualitatively using framework analysis (Pope & Ziebland, 2000).

3.9.1 Ethical Considerations

Ethical consideration in research refers to the moral ideologies and beliefs that influence the way a researcher conducts a research (Ghauri & Grønhaug, 2005). It is the moral responsibility of researchers to explain and find responses to their questions honestly and accurately. Yin (2014), postulates that a good research should be devoid of bias and deception. The study must ensure high professional capability and ensure truthfulness and credibility of the research while recognising the limitations of the research. Walliman (2011) also highlights that there is a risk when transcribing data from interviews. Accordingly, ethics of the research can be compromised when

the researcher attempts to impose his/her own understandings when writing down answers from respondents.

Therefore, ethical approval for the study was obtained from the Institute Of Statistical, Social and Economic Research (ISSER). The issues reviewed by the Ethics Committee for Humanities (ECH) covered informed consent processes, anonymity, compensation, confidentiality and full disclosure to study participants. The implications and utilisation of research findings, possible risks, discomforts and rights of participants were also reviewed. The study was thus covered by Ethical clearance reference numbers ECH 087/18-19. The study was also reviewed by the NCHS and the Health facilities which then granted permission to involve its personnel, facilities and programs in the study.

In order to conduct the research in a cordial manner, permission was sought from the various heads of each hospital (see Appendix B). This was done to assure the respondents that the research was purely for academic purposes and had no ulterior motives. Finally, to ensure mutual trust and sincerity, the respondents are accordingly assured of anonymity and the confidentiality of every bit of information provided for the study.

CHAPTER FOUR

DATA PRESENTATION

4.0 Introduction

The main findings of the study are presented and discussed in this chapter. The findings are from a thematic content analysis of qualitative data in the form of in-depth interviews obtained from respondents who were purposively selected from three NCHS hospitals and the NCHS. The findings from Holy Family Hospital, Techiman, Our Lady of Grace, Breman Asikuma and St. Francis Xavier, Assin Fosu were complemented with those from the N NCHS respectively. Thus, the primary data were triangulated with secondary data in the form of internal publications such as procurement policy documents and evaluation reports as well as peer reviewed journal articles from credible databases on pooled procurement, cooperative procurement, and collaborative procuring from which extrapolations were made. The main responses that were acquired from the interviewees that strengthened the findings of the study are also presented subsequently to deepen and contextualize the discussions.

4.1 Demographic features of respondents

From the primary data, twenty (20) respondents whose duties are related to pooled procurement in the three hospitals and NCHS were purposively sampled for this study, largely comprised males (14 out of 20) respondents. These respondents included heads of the various institutions and of specific units as well as Chief Executive Officers/Sister in Charge, Senior Coordinator of PPP, Acting Manager of PPP, Pharmacists, Finance Officers, Accountants and Health Service Administrators, Supply Officers, Store Keepers and Procurement Officers. Most of these people have been in their position for averagely the past five (5) years. Table 1 provides a comprehensive demographic features of all respondents.

4.1 Table.1 Demographic Features of Respondents

Level	Designation	Number
NCHS	**Senior Coordinator of PPP**	**1**
	Acting Manager of PPP	**1**
	Procurement Officer	**1**
Health Facilities	**Chief Executive Officer/ Sister in Charge**	**1**
	Health Service Administrators	**2**
	Procurement Officer	**1**
	Accountant	**1**
	Pharmacists	**3**
	Finance Officers	**2**
	Supply Officers	**5**
	Pharmacy technician	**1**
	Store keeper	**1**
Total		**20**

Source: Author's Construct (2020).

4.2 Awareness of Existing PPP Practice

The respondents were asked about the existence of the PPP to solicit their views on the role their various hospitals play in the implementation of PPP. The respondents largely had sufficient knowledge on the existence of the PPP, and were generally aware that the PPP was responsible for contracting and negotiating with suppliers. Thus, the hospitals responsibility was to procure their medicines from the list of suppliers produced by the NCHS which is in-charge of the PPP. These were the answers they provided to the question, "What role does your organisation play in the PPP?" Answer from one respondent was:

"*We receive the supplier list and we order from them. We do not enter into contract with suppliers, NCHS does the negotiation and we are furnished with the suppliers."* (R6, Male, Pharmacist)

Another respondent also gave this answer:

"Ours is to purchase from the suppliers on the pooled programme" (R1, Male, Procurement Officer)

In order to collaborate the responses given, the NCHS was also interviewed to clarify the exact role the hospitals played in the PPP and their responsibilities concerning the programme. The following three respondents gave these explicit responses:

"*The Directorate of Health is actually responsible for the operations of the PPP, in terms of servicing the Board and supervising the secretariat that handle the programme activities and also ensuring that all the policies, programmes and activities of the PPP are performed to required standards within the National Catholic Health Services."* (R20, Male, Senior Coordinator)

"We invite tenders from suppliers and we make competitive bidding for the suppliers, and suppliers will supply to our hospitals through our framework agreement." (R19, Male, Acting Manager)

"The organisation (NCHS) pool together Catholic Health Facilities and suppliers for essential medicines and medical input." (R18, Male, Procurement Officer)

4.3 Policy or Regulatory and Legal framework for PPP

The provision of a policy or regulatory and legal framework for employees in any healthcare setting ensures that confidence is instilled in them. It also ensures that there is understanding in the various roles the employees are supposed to play in the organization. The importance of the policy also goes a long way to ensure that customers and stakeholders are adequately informed and this also encourages investment in the venture undertaken.

With this in mind, this thesis solicited the views of the following respondents, the general view of respondents from the various hospitals was that there was no guideline or no legal or regulatory

framework to guide the program or memoranda of understanding (MOU) amongst the various participants in the PPP. Some of the respondents relied on the Public Procurement Act 663, 2003.

However, at the NCHS, the various respondents all affirmed that there existed a binding legal document on all the participants on the programme, for example, responses to the question "can you identify existing legal documents governing pooled procurement of medicines?" The first respondent gave this response:

> "*There is MOU among the health facilities. The Ghana Catholic Bishop Conference has mandated the Health Directorate to ensure that medicines that are supplied to Catholic Health Facilities are of good quality at a relatively affordable cost so the Directorate has the mandate on behalf of the Bishops to go into contractual agreement on behalf of all Catholic Facilities, so yes there is."* (R19, Male, Acting Manager)

The second respondent confirmed the assertion that there was MOU amongst member health facilities:

> *"Yes, the policy was approved by the Ghana Catholic Bishop Conference which is the highest decision authority in the church, which can be referred to as the conference, gave their official approval 2011/2012 for the Catholic Health Services to proceed with the implementation of the PPP."* (R20, Male, Senior Coordinator)

The situation revealed that there was a clear dichotomy between the policy makers and the implementers of the programme. The dichotomy could be as a result of the various hospitals not been part of the objectives setting and the decision making processes. The finding strongly indicated that the various hospitals had little knowledge on the MOU and it was pertinent for the NCHS to intensify its education and training.

4.4 Cost-Effectiveness in PPP

In order to ensure the objective of cost-effectiveness is achieved through the collaborative process of pooling resources, especially technical, information and financial resources together, this thesis explored how effective and efficient the process of driving down cost due to the bulk procuring also ensured value-for-money and cost-effectiveness. In addition, in order to ensure transparency and fairness, the procurement method used was very essential to be discussed in this thesis. It is common knowledge that where favoritism and nepotism is eschewed and everyone is given a fair opportunity to compete, it encourages transparent environment, it lowers cost, and encourages safety and improves quality.

This thesis also went a step further to explore whether there were internal and external check and balances to ensure that the procurement unit performed its function as established in the various hospitals. This was done to realise whether there was an independent assessment of the procurement unit to ensure that they work according to the dictates of the official procedures or went contrary to management or stakeholders' interest.

Additionally, how suppliers were monitored and their performance assessed was also crucial to this study. The financial stability, reliability, commitment, lead time and delivery time of suppliers is essential for health services, and any health institution should pay more attention to these activities and bring them to management's attention as well as all interested parties to encourage investment in the healthcare setting. It is critical that suppliers are also paid on time to have a quick turnaround to sustain the strategic collaboration or partnership to ensure quality services are rendered to all customers or patients.

Hence, the cost-effectiveness of the programme was also given keen interest in this study, the respondents were asked whether the medicines procured were received in the right quantities, in

the correct amounts, at the right time and in the correct packaging? Most of the respondents responded in the affirmative but were quick to point out that there are also quantity shortages and delays with delivery of medicines. One respondent accurately illustrated that:

> *"Yes, but the timing for supplies usually delay by two (2) weeks or a month"* (R2, Male, Health Service Administrator) and

Another pointed out that;

> ***"****The problem we have is the delivery time sometimes it takes two (2) weeks apart from that everything is in order," (R14, Male, Supply Officer)*

The NCHS was also aware of the delays of supplies to the various facilities, as one retorted

> *"For some of them, yes, others I can say no"* (R18, Male, Procurement Officer)

In the various hospitals and the NCHS, the most common procurement method practiced was the national competitive tendering which most respondents affirmed ensured the use of transparent and explicit procedures for procurement of medicines. However, some management members had some reservation on the question of transparency, some explained by saying:

> "*Yeah, we trust they do and that every December we receive the contract for the ensuing year."*
>
> (R4, Male, Pharmacist)

Another believed that the processes were transparent enough:

> *"Under PPP yes, we work with the procurement committee a lot but when it comes to the selection processes itself, even when a contract is awarded under PPP, a lot of room is left for us the pharmacists because we know better in that regard. There may be something supplied under PPP but if we feel the quality is not good or the cost is higher than the same or similar quality, then it can be bought from elsewhere."* (R5, Male, Pharmacist)

The following two respondents had some reservation on the issue of transparency, one respondent was quite reserved in her response;

*"Locally what we do here is transparent" (*R8, Female, Supply Officer)

The point was strongly emphasised by this respondent:

"*That is a bit dicey, those suppliers we get them to supply outside the pooled procurement, and we meet them at beginning of the year. They are quite a number, we meet them and present to them our needs and they also listen to them. The challenges they have supplying to us and have extensive meeting with them to share with them what we expect from them and they also tell us what they want. But when it comes to the real business that is where I say that it is not fully transparent, because I will be expecting that any time we are going to place an order or make requisition for supplies, I think that the procurement committee should meet and all the drugs and the commodities that we are expecting a supply for, need to be discussed at the meeting and then all the members at the meeting become aware of them. But we don't often meet as a procurement committee, so that one can also tell me that it is not fully transparent. Where you leave things to go that way, I don't see the credibility to be hundred percent (100%)."* (R2, Male, Health Services Administrator)

The NCHS was emphatic that it uses transparent and explicit procedures for its procurement of medicines.

In terms of quantification method to determine the quantity of medicines to be procured, the respondents from all the hospitals emphasised that the quantity is determined by the consumption pattern, trend analysis and the prevalence of diseases over the previous weeks, month or year.

For example, a number of respondents indicated that:

"*Yes, we do, what we do is we look at consumption patterns for the various medication and then we come up with the drug formulary and that is updated from time to time. Usually it is done half yearly."* (R8, Female, Pharmacist)

"So we have our monthly consumption, but we normally purchase quarterly. We have our minimum stock and maximum stock levels, but we buy quarterly." (R9, Male, Supply Officer)

"The software we use helps us to know the consumption we know. So we don't just order anything. So we order over quarterly or half yearly." (R3, Male, Supply Officer)

"We use the Inventory cards, the computer data and store data." (R4, Male, Procurement Officer)

> *"Stores together with pharmacy unit, they furnish the management with the information as the quantity of medicines we may need for a year usually in December. But we buy quarterly based on the management of the inventory."* (R5, Male, Pharmacist)

The NCHS based its negotiation on the quantities received from the various health facilities, for instance, an explanation was made that:

> "*Before we compound or estimate the medicines we write to all the health facilities to give us their usage or consumption for certain periods and we ensure that it is almost 90-100% of all facilities; based on that we use it to estimate the quantities*." "*We ask for consumption patterns from our facilities*" (R19, Male, Procurement Officer)

This study inquired about whether the procurement unit undergoes regular audit and majority of the respondents responded in the affirmative. However, some management members were concerned that only stocking taking was taken place at the procurement unit and not auditing.

For instance, a management member emphasised that:

> *"Yes, we do! we have quarterly stocking taking and external auditors come around to take stock." (R11, Male, Supply Officer)*

Meanwhile, another respondent said;

> *"We do stocking taking but I don't know about auditing and for the past two years, I can't remember any auditing."* (R12, Male, Health Services Administrator)

The NCHS also confirmed the auditing of the various procurement units on a regular basis.

This study was also interested in finding out whether there was an efficient post tender system in place to monitor and report on suppliers′ performance to the tender committee. The responses from respondents also varied, while some of the hospitals had complaint unit to report suppliers, others filed their complaints to the NCHS whilst some had no reporting system in place to management.

A respondent said:

> *"Yes, we do report on suppliers, we have a complaint unit established in the hospital, for example, if company Y failed to bring a certain drug we report them." (R18, Male, Procurement Officer)*

Another respondent also said:

> *"Yes we do, the PPP brings us a document to fill*" (R15, Male, Accountant)

Meanwhile, another respondent said;

> "*We have the audit unit that help in receiving, but they don't give report on the items to management."* (R2, Male, Health Service Administrator)

Again, the NCHS confirmed the post tender system in place to monitor and report on suppliers′ performance to the Directorate.

In terms of relationship of hospitals with their suppliers as well, this study wanted to know how long it took suppliers to get paid. The responses from respondents also varied in terms of duration of payment but the common denominator was the absence of the National Health Insurance Authority (NHIA) payment to providers of the healthcare institution. For example, one respondent explained that:

> "*They are supposed to be paid every 3 months but you will agree with me that the health insurance hasn't paid us so we pay them when and as we receive them. But when it is taking too long, they are also reluctant to supply so we fall on our internal generated fund (IGF) we have in the coffers"* (R4, Male, Pharmacist)

Another respondent asserted in these words:

"*That's a huge problem, on the case of medicines it doesn't take too long but non-drug consumables take too long, sometimes it takes about 6 months to 1 year*." (R16, Male, Finance Officer)

At the NCHS, the question "how long does it take suppliers to get paid?" was always met with amidst shock and some level of frustrations and a tone of disappointment. The following were some of the responses given:

> *"Per the contract, we are supposed to pay at most six months or I mean 120 days, 90-120 days but I must say that sometimes it goes beyond. It can go beyond a year. On the average, let's say a year" (*R20, Male, Senior Coordinator)

Another respondent confirmed the enormity of the challenge by saying;

> "*That's the challenge now, it takes 3 months to 1 year*" (R18, Male, Procurement Officer)

In order to understand the cost-effectiveness of the programme, the Director of Health's assertion in the 2015 report of 30% reduction on the cost of medicine was put to the respondents. One of them whose response seems to sum up the sentiments of the others was:

> "*Yes 30% was achieved by comparing the average prices quoted under the PPP and price of similar product on the open market and it was realised that the prices on the PPP were lower than the one on the open market for the same medicines. Yes, there has been recent update, now it is between 15-20%. Generally, the reason is prices have increased, and the Ministry of Health (MOH) also reduced the prices of, and the Ministry of Health (MOH) also reduced the prices of about 56 medicines on the health insurance list by 30%. Therefore it affected the general prices on the market that can be quoted by these big suppliers. Hence, the prices on the market also fell a little bit and thus reduced the margin*." (R20, Male, Senior Coordinator)

Notwithstanding the shortcomings enumerated by the various respondents, the general consensus was that the programme was beneficial to participating hospitals and there was modest savings made from procuring from the open market.

4.5 Strategies in the PPP

The strategy employed by NHCS for its PPP was inquired from the respondents, the various respondents in the hospitals believed the pooled programme was largely a centralised unit. According to some officers;

"*They do everything*" (R13, Female, Chief Executive Officer)

"*It is a centralised system, yours is to order" (*R2, Male, Health Service Administrator)

The NCHS brought some clarity into the strategy that was employed by the NCHS, by explaining that,

"*The PPP by NCHS is basically a centrally contracted type of pooled procurement, where the centre, that is, the secretariat at the Directorate of Health, NCHS in Accra openly advertises and selects suppliers for predetermined list of medicines and other consumables. It also negotiates the prices for these items, contract suppliers and then informs the facilities about the suppliers that have been selected to the competitive tendering process. Therefore, facilities are required to place their orders from these selected suppliers at the negotiated price and facilities arrange to pay for items that are ordered*". (R20, Male, Senior Coordinator)

Asked the type of model of pooled procurement procedure practiced by the NCHS, the response was:

"*This is group contracting, the only thing we don't do here is hold inventory and contracts are signed at the secretariat on behalf of all the facilities*." (R20, Male, Senior Coordinator)

This also revealed that there was a clear contradiction in the views of the implementers of the programme and the policy makers, that is, the policy direction and the strategy employed by the NCHS and the health facilities was not in tandem. The apparent lack of strategy could lead to health practitioners and administrators lack of morale and eventually to the risk of low patronage of the programme, which will counter the objectives of the programme.

The names of medicines procured through the pooled procurement of NCHS is listed (Appendix C). There are over hundred different types of medicines that are procured through the PPP of the NCHS. It is worth noting that the general names of the medicines are provided here without recourse to the strength or dosage form.

4.6 Quality of medicines in the PPP

This study's objective was also to determine the systems and structures put in place to ensure the quality of medicines procured. In order to ensure that, the source of medicines was asked, most respondents confirmed positively to medicines procured from the WHO Model Essential Medicines List and those medicines on the NHIA medicines list. Accordingly, respondents also affirmed that medicines were delivered by suppliers largely conformed to established pharmacopoeia standards of quality by the manufacturer and they provided the batch certificates of quality manufacturing, as well as the WHO certificate of medicines. In this regard, a respondent affirmed that:

> *"Apart from the procurement office coming up with a list, we normally register our suppliers so at the beginning of the year, you are supposed to come with all your documentation, your tax clearance, pharmacy council certificate, Food and Drug Authority certificate and everything. We have created a file for all of them and so all these documents are there and you are supposed to renew them every year, so if it is not up to date then you would not be able to supply."* (R4, Male, Pharmacist)

Another respondent said;

> *"When the medicines are delivered, it goes to the procurement unit so I cannot tell whether it comes with their batch certificate but the medicines have their batch numbers on them."* (R2, Male, Health Services Administrator)

The hospitals have Drug and Therapeutic Committee (DTC) which is very functional. This committee is responsible for medicine selection processes in the various hospitals. As some respondents briefly captured their activities:

> "*Our Drug and Therapeutic Committee (DTC) is functional, we meet every quarter so what we do is we update our medicines list twice a year. So the new ones to be introduced is dependent on the request from the prescribers. Normally we do prescription monitoring here so we monitor it for some time and when we see that they are writing a new medicine we get it*

onboard. Whatever we select here must be on the WHO Essential List." (R7, female, Pharmacist)

Another respondent intimated that:

"*We have this committee in place called Drug and Therapeutic Committee (DTC), now it very functional and we meet every quarter and normally towards the end of the year we ask prescribers to come up with the list of medicines they want us to procure and from other specialist as well. Based on that list, we meet as a committee and decide whether the medicines should really be procured for the institution. It is always based on the diseases that are presented to us and of course consumption pattern*." (R4, Male, Pharmacist)

In affirmation, further response prevailed:

"*We have our own internal formulary. Our selection process is based on our locality and the kinds of diseases and sicknesses we see. We have also developed a list of medicine we feel are needed for us. Then we look out for quality and affordability. The procurement committee is big but when it comes to no-drug use I'm not part of the selection process. The selection of medicines comprises the nurses, doctors, pharmacist and other users." (*R2, Male, Health Services Administrator)

At the NCHS, there was a confirmation of the various DTCs at the facilities which ensured that medicines had conformed to WHO Model Essential Medicines List, and they come with their batch certificates of quality manufacturing. A respondent had this to say:

"*Yes, there is at the facilities level DTC that informs selection of medicines and at the PPP governance level, we have a procurement committee which involves pharmacists and other professionals who think through the medicines to be procured*." (R19, Male, Acting Manager)

Additionally, to ensure the quality of medicines procured, respondent were also asked about the shelf life of medicines during a defined period of time. The following responses were given:

"*They get to us in a very good time and they come in without any damage to them*." (R11, Male, Supply officer)

Another also pointed out that:

"Sometimes they come undamaged but with adequate shelf life. We usually ensure that medicines that have at least six months expiry date are not taken even though we don't expect it to finish." (R9, Male, Store Keeper)

Meanwhile, a respondent said:

"*That would not be 100% due to transportation some may be damaged but mostly in good condition. That is why we inspect before we receive*." (R13, Female, Chief Executive Officer)

At the NCHS, respondents were asked about the shelf life of medicines during a defined period of time, the response was:

"*From our reports from the hospitals, medicines arrive in good condition*" (R18, Male, Procurement Officer)

How medicines were also tested to ensure their quality in the various hospitals was inquired from respondents. The responses from respondents varied across those within and between the hospitals.

"*We procure from accredited pharmaceutical companies and in that way we can vouch for the quality of medicines. Outside that you might not be able to tell. I might add that if along the line we have any challenges, for example, we have patients complaining about or reporting any adverse effect. What we do is to report it to Food and Drug Authority (FDA) and they come in for the sample and do their analysis and they give us the feedback."* (R19, Male, Acting Manager)

Another respondent said:

"Some of the companies are tried and tested, for example, Kinapharma and Ernest chemist and suppliers are required to provide the Food and Drug Authority Certificate." (R1, Male, Procurement Officer)

Meanwhile, a respondent said:

"As for the testing we don't have analyzers to test but physical examination is done." (R7, Female, Pharmacist)

Another respondent from the health facilities also said;

> *"Normally when it comes to testing, we open the package and check the expiry date. WHO also has a website and if you are not too sure about the medicine, you can find out from there. Before we accept any product, accounts and user department would be there to check the quality and if it doesn't meet the standard it will be rejected."* (R4, Male, Pharmacist)

The NCHS provided more light in this direction with these responses which confirmed the various responses from the hospitals:

> "*Before you become eligible to tender for medicines you should have registered with Food and Drugs Authority and during the tendering and opening process, we have officials from the Food and Drugs Authority as part of the panel for evaluation (evaluation panel) and samples of medicines are submitted and tested as part of the tendering processes. And after the award, we have a mini-lab that we use to conduct random testing of all medicines that are supplied to all our facilities and the results are forwarded to the Food and Drugs Authority for the necessary processes. Where items are counterfeit or sub-standard medicines are detected or are found, immediately, all those supplies are quarantined until such time that the investigation is concluded and then a new supplier is found to supply*." (R20, Male, Senior Coordinator)
>
> "*We have a laboratory (a rapid response laboratory) that we use to analyse or to test medicines samples that we have purposely pick from various facilities and we subject it to the testing protocol and those that we find to be suspicious or substandard are referred to a full-fledged laboratory like food and Drugs Authority or Ghana Standard Authority for confirmatory test."* (R19, Male, Acting Manager)
>
> *"We have a mini-lab and train pharmacists to train others. The facilities rely on us to give them the report. We take samples from them to check in our mini-lab and when there is a need we send them to FDA*." (R18, Male, Procurement Officer)

The general outlook of the systems and structures put in place to ensure the quality of medicines procured were generally impressive, even though the health facilities could not ensure that medicines procured are tested at their facilities to ensure their safety, quality and efficacy. In order to ensure the quality of medicines, there should be constant quality improvement even at the facilities level.

4.7 Challenges in the PPP

The challenges encountered by the various hospitals also had to be revealed by this study. The challenges enumerated also shows the extent of how the agents' motivations were not associated with the principles objectives. Thus, the objectives set by the stakeholders were not met because of lack of proper communication or lack of management commitment to the change processes by the health facilities amongst its members. These challenges were largely also encountered probably because the various practitioners did not have adequate knowledge in their area of expertise or simply did not understand the right avenues to address these challenges.

The dominant challenge of the hospitals that runs through-out all of the institutions is the delay of the NHIA payment, as aptly captured from some of the respondents.

> "*When it comes to the challenges of PPP, delay in reimbursement by the NHIA because government is always in arrears over a year.*" (R18, Male, Procurement Officer)

> "*The delay in payment for suppliers is one of the major challenges of the PPP. And because of that suppliers are sometimes unwilling to supply because of delay in payment"* (R19, Male, Acting Manager)

> *"The first challenge is finance, finance is a critical success factor of pooled procurement in terms of prompt payment to suppliers so that they can also have a good turn around get their stock at all times. When we place the orders, we can get them because 85-90% of our clientele are on the NHIA, and so 90% of our income comes from the national health insurance, therefore, any undue delays from health insurance affect the financial chain of our ability to pay suppliers on time and because of that sometimes the suppliers are not willing to meet our demands or supply to the facilities. Thus creates some shortages."* (R20, Male, Senior Coordinator)

The respondents also provided other challenges that were also very revealing. Among the key ones are the following:

4.7.1 Lack of Commitment of Managers

The leadership commitment of some managers was a serious concern; management supervision of ensuring that the due processes were followed was often neglected in the various hospitals. Additionally, managers also lacked the capacity to manage the change needed in the various hospitals as well. These observations were made by respondents:

> "*I can say that it is due to lack of commitment because the booklets are always available and so it is up to management supervision to ensure that officers follow the due process. So I can say that lack of the will on the part of managers of the facilities to ensuring that officers do the right things*." *"Sometimes the hostile nature of our institution for change, sometimes you need to sit back and observe*" (R19, Male, Acting Manager)

4.7.2 Poor inventory management

The poor nature of the inventory management was a key factor in provision of inadequate medicines to the facilities. The lack of expertise in calculating and forecasting demand and supply of medicine also created artificial shortages in the hospitals with the following explanation made by some of the respondents:

> "*The other challenge is poor inventory in the facilities making; their forecasting and demand is not very effective to the extent that they do not place adequate orders from the suppliers so sometimes they can have artificial shortages and interim shortages. Sometimes, their ordering levels become a greater cost to suppliers because they order in smaller quantities or emergency and they need to rush to fill the orders and sometimes it can create misunderstanding between the facilities and the suppliers."* (R20, Male, Senior Coordinator)
>
> *"Some of the reasons that can be assigned to it is improper reorder level put in place by procurement officers."* (R19, Male, Acting Manager)
>
> *"Storage space, some of them have inadequate pellets, shelves, stores and it's a whole challenge for some of them and the more government delays their money from coming, the more they may have challenge to expand their facilities." (*R18, Male, Procurement Officer)

4.7.3 Supply of Substandard Medicines

The challenge faced by the hospitals included the supply of substandard or expired medicines because suppliers are not paid on time. The various hospitals also lacked the capacity to test the efficacy of medicines since there were no analysers and mini-labs to attest to the safety and quality of medicines. The hospitals relied solely on the certification of various vendors, the expertise of their DTC, and the registration from the FDA and cannot guarantee the efficacy of medicines on their own. Respondents illustrated thus:

> **"***The suppliers present high quality samples and may make some medicines available without value for money since the efficacy can't be guaranteed"* (R2, Male, Health Services Administrator)
>
> *"Sub-standard products can be supplied to hospitals because there are no analyzers in the various hospitals or at the institutional level. There are no systems in place to check the potency of medicines."* (R7, Female, Pharmacist)

4.7.4 Delays and Shortages of Supplies

The long absence of payment also reduces the capacity of suppliers to furnish hospitals with adequate medicines. This situation was largely pronounced in all the hospitals visited, some respondents said:

> "*Yes, but the timing for supplies usually delay by 2 weeks or a month."* (R10,
>
> Male, Store keeper)

Another respondent said:

> *"The problem we have is the delivery time apart from that, everything is in order, and sometimes it takes 2 weeks."* (R14, Male, Supply Officer)

Another respondent also confirmed that:

"Hmmm as in …we always order or know what we need or want but, sometimes they may not be available, sometimes too there are delays." (R12 Male, Health Service Administrator)

These responses were received:

"They are received in the right quantities, in the correct amounts but timing is a problem. There are delays." (R8 female supply officer)

"There are a lot of shortages, the problems are numerous if the supplier promised to deliver within the lead time and due to constraints they could not do that, then there will be shortages." (R17, Female, Finance)

Sometimes the shortages and delays with delivery of medicines were also as a result of "*the debt overdue by health facilities and/or out of stock by suppliers." (*R11, Male, Supply officer)

In addition, the following responses were also received;

"Suppliers are also supplying in bits due to payment and so medicines of high value are not been supplied by suppliers." (R13, Female, Chief Executive Officer)

"Sometimes suppliers do not pick their calls, some suppliers are not ready to deliver." (R15, Male, Accountant)

"Someone takes the contract and can't supply the needed demand" (R2, Male, Health Services Administrator)

4.7.5 Lack of Qualified Personnel

The requisite knowledge and skills of personnel was also a concern to respondents. Qualified personnel, procurement officers, to man the various hospitals was inadequate and also personnel with the required knowledge and training to enable hospitals to adequately forecast the demand

and supply of medicines was also inadequate. However, the respondents had a varied responses, for instance, a respondent said:

> *"Personnel should also conform to the PPP guideline." (*R17, Female, Finance)

Another respondent suggested that:

"*There should be in- service training, officers should have the right qualification"* (R5, Male, Pharmacist)

Meanwhile, a respondent suggested monitoring by the NCHS

"Monitoring by PPP should also be regular and the institution should also buy from the PPP list." (R12, Male, Health Services Administrator)

At the NCHS, the respondents emphasised the concerns from the health facilities. These comments were made by respondents:

> *"Again, at the facilities level most of our procurement officers do not follow the procedures in placing orders, that is, the local purchasing order forms, which is becoming a difficulty for us and we have been trying to impress upon them to stick to that*."(R19, Male, Acting Manager)

> *"Sometimes their ordering levels become a greater cost to suppliers because they order in smaller quantities or emergency and they need to rush to fill the orders and sometimes it can create misunderstanding between the facilities and the suppliers."* (R20, Male, Senior Coordinator)

4.7.6 Exchange Rate Fluctuations and/or Higher Prices on PPP than Open Market

The constant fluctuation of the cedi to dollar exchange rate also has great impact on the prices of medicines on the various hospitals. The hospitals realised that sometimes the prices of medicines

supplied by suppliers was higher than the negotiated prices under the PPP with some respondents explaining that:

> *"Pricing is sometimes higher on the pooled programme than the open market,"* (R1, Male, Procurement Officer)

> *"Suppliers quote a certain price up there and they would tell you that due to the dollar rate the price has gone up."* (R5, Male, Pharmacist)

4.7.7 Poor Condition of Transportation of Medicines

Inadequate storage facilities in commercial vehicles under the right temperature to convey medicines is also a great challenge. This situation is also as a result of inadequate capacity of some of the suppliers. Some responses from respondents include the following:

> *"The proper storage should be done by suppliers but most suppliers don't have delivery vans for medicines to be conveyed at certain temperatures."* (R3, Female, Pharmacy Technician)

> *"Transportation of medicines by commercial vehicles, we don't know the storage facilities of suppliers."* (R13, Female, Chief Executive Officer)

> *"Again, the medium of transportation because we have certain medicines transported that needs certain conditions and so the mode of transport is not conducive in order to ensure the quality of such product. Hence, quality may be affected."* (R12, Male, Health Service Administrator)

4.7.8 Institutional Politics and Resistance to Change

Some management members revealed that the hostile nature of staff for change and institutional politic was a great disservice for the hospitals. The institutional politics makes it difficult to intervene in the procurement practices. Hence, there was the need to gain the trust of staff before certain initiatives could be undertaken; a significant response in this regard was thus;

> *"In this system, people have already taken entrenched positions, so sometimes you ask them to do certain or vary their activities. Somehow, it is not easy and you meet opposition. We*

complain about the activities of the procurement office and stores sometimes." (R2, Male, Health Services Administrator)

4.7.9 Inadequate Communication between Health Facilities and NCHS

The health facilities visited enumerated the apparent inadequate of communication between the health facilities and the NCHS. The facilities seem quite distant from the practices in the NCHS and saw it as an isolated island on its own. The following are some responses:

"Centralised nature of the pooled procurement programme is a challenge, it doesn't allow for consultation" (R2, Male, Health Services Administrator)

"I think they have to widen their tender committee so that at least they can add few pharmacists from the local hospitals so they can go there and help them. As for them (NCHS), they don't know what goes on here. They just determine what we need, it is not helping us." (R14, Male, Supply Officer)

4.7.10 Inadequate Physical Structures

Inadequate physical structures of the various hospitals is also a major challenge to the institutions. The old structures do not enable expansion in the health facilities and when coupled with delay in payment it stifles growth to deliver the quality care needed. The respondents were quite worried about this situation as well, as such, one responded that:

"*Infrastructure i.e. at the most of facilities, they have been put up years ago so expanding it has become a problem and inadequate storage facility is one. You see, some of the facilities are bigger than some, and so where there is a smaller facility and they are growing numbers but they don't have the finances to expand their infrastructure and then get more storage space. Some of them have inadequate pellets, shelves, models, stores and is a whole challenge for some of them and more government delays their money from coming, the more they may have challenge to expand their facilities." (*R18, Male, Procurement Officer*)*

4.7.11 Lack of Monitoring of Suppliers by Health Providers

The health facilities are not able to monitor the suppliers who supply their various hospital facilities. Due to lack of funds, the absence of required information and apparent centralised nature of the PPP. The facilities rely on the registration of suppliers solely and neglect the role of checking the supply chain to see whether suppliers are using the adequate storage facilities, using the right procedure in manufacturing of medicines and not employing minors. A respondent revealed the inadequacy at this point as well:

> *"We don't know the storage facilities of suppliers, we need resources to monitor suppliers' facilities, we only check medicines at the point of dispensing."* (R13, Female, Chief Executive Officer)

4.7.12 Poor Internet Accessibility

The poor internet accessibility makes reporting and communication with NCHS very difficult. A respondent narrated that:

> "*Another challenge is, the report that we are supposed to send because of our location it makes internet connection very difficult and reports to be sent to the NCHS are usually sent out of the hospital. Which is not very appropriate. They should help with the internet accessibility."* (R11, Male, Supply officer)

Another respondent reiterated that:

> *"Again, we have a problem with submission of data, currently the secretariat does not have system whereby we are able to determine in real time the demand and supply between facilities and suppliers and ability to track payment as and when they are due and as and when payment is effected, so we rely on facilities and suppliers alike to send data in order for the programme to appraise itself of what is happening. But most of the time, the data either would not come or would be delayed in being submitted."* (R20, Male, Senior Coordinator)

4.7.13 Inadequate Coverage of the PPP

The various hospitals revealed that currently the PPP is covering only 70% of medicine procured to the hospitals but it should be extended to the 100% coverage. This implicitly means the hospitals realise the modest gain made on the PPP platform. Here are some responses:

> *"Currently the PPP is covering only 70% but if they can extend the programme to about 100%."* (R4, Male, Pharmacist)

Another respondent said:

> *"I can say that PPP by and large, is a very good innovation or intervention and it has come to stay and over the years, facilities have been able to achieve at least 30% in the cost of reduction of medicine and medical consumables and this is very appreciable success and a lot more can be achieved if facilities patronise the programme holistically."* (R2, Male, Health Services Administrator)

Meanwhile, a respondent pointed out that:

> *"The tendency for facilities themselves to go out to procure from the open market instead of procuring from the PPP."* (R1, Male, Procurement Officer)

4.7.14 Discrepancy between Samples and Supplied Medicines to Hospitals

The quality of some medicines could not be vouched for by some management members since they had no way of verifying the safety, efficacy and the quality of medicines. Some management members believed that suppliers may supply quality samples to the NCHS and present substandard medicines to the hospitals. The following are some responses:

> "*The suppliers present high quality samples and may make some medicines available without value for money since the efficacy cannot be guaranteed."* (R7, Female, Pharmacist)

> "*When they are presenting their sample, suppliers or manufacturers present a very high quality sample and because we do not have the wherewithal to check the quality of medicines, the quality can be compromised. The compromise come because we do not have the structures to test what they supply to us."* (R12 Male, Health Services Administrator)

4.7.15 Hospitals Owing Suppliers after NHIA Reimbursement

In order to maintain a cordial and strategic partnership between suppliers and the facilities, suppliers are to be paid promptly to ensure quick turnaround for their businesses. However, respondents revealed that even after NHIA has reimbursed the various hospitals, some facilities still refuse to pay their arrears to the detriment of the supplier. Here is a response in this regard:

> "*Again, some of the facilities owe the suppliers of the programme beyond the period the insurance does not owe any of the facilities. And because of that suppliers are sometimes unwilling to supply because of delay in payment. Suppliers are also supplying in bits due to payment and medicines of high value are not been supplied by suppliers. Some suppliers have even threaten to stop supplying the NCHS."* (R20, Male, Senior Coordinator)

4. 7.16 Graphical Representation of Objectives as Captured in the Health Facilities

The diagram below describes the similarities and differences between the views of respondents in the various hospitals. The findings revealed the themes that were common to all hospitals was cost-effectiveness, quality of medicines and the challenges encountered. The policy framework was vaguely explained by some respondents from Holy Family Hospital (HFH) and St. Francis Xavier Hospital (St. Fr.). In the same vain was the strategy explained by some respondents in Our Lady of Grace Hospital (OLG) and St. Fr respectively. The cost-effectiveness, quality of medicines and challenges of the PPP were recognised by all health facilities. In HFH and St. Fr. some respondents indicated their awareness of the policy framework, meanwhile, in OLG and St. Fr the strategy adopted by NCHS was vaguely explained.

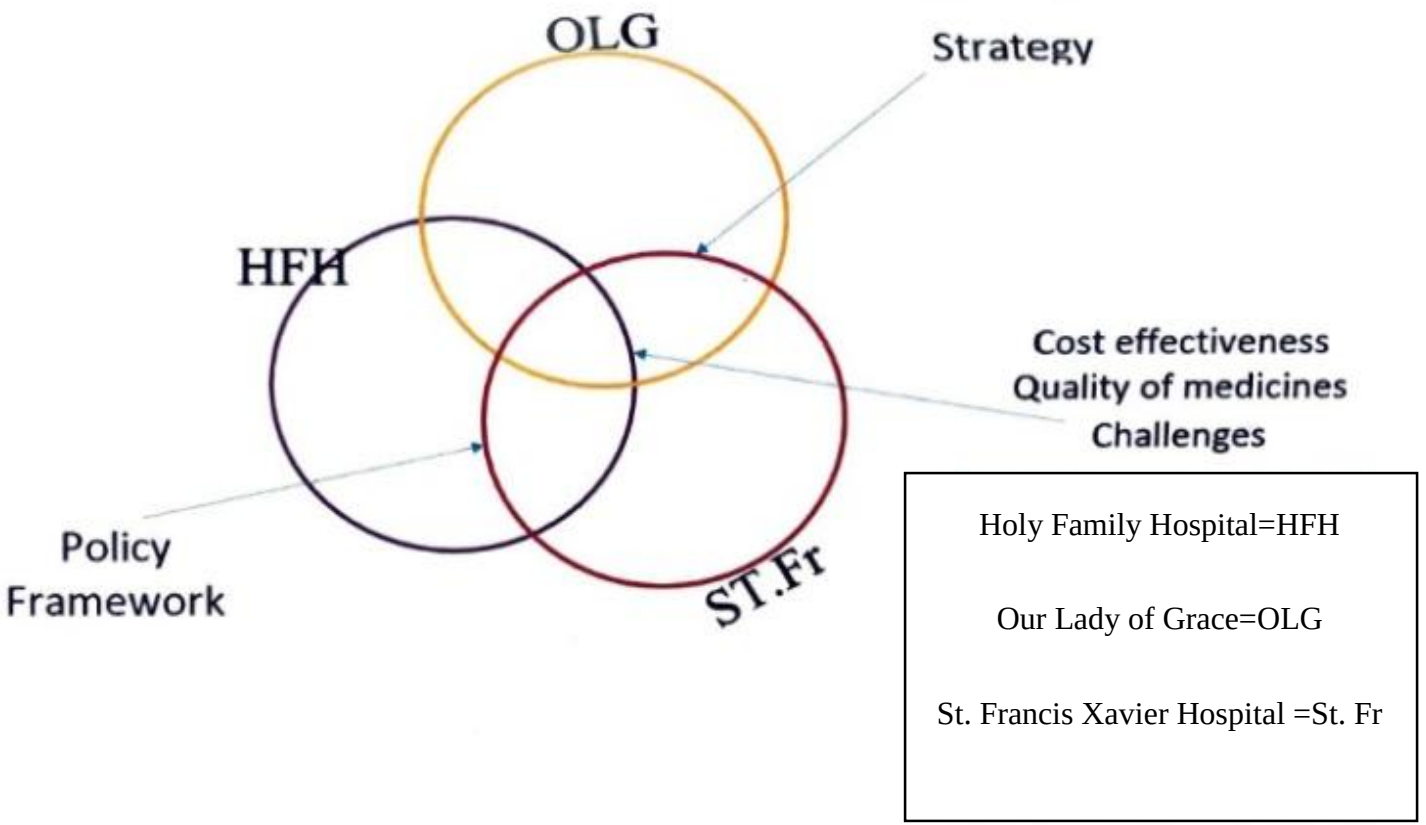

Fig. 5 Similarities and Differences in the Objectives at the Health Facilities

4.7.17 Graphical Representation of Challenges in the Health Facilities

The diagram depicts the challenges that are common to all hospitals and those that were peculiar to some health facilities.

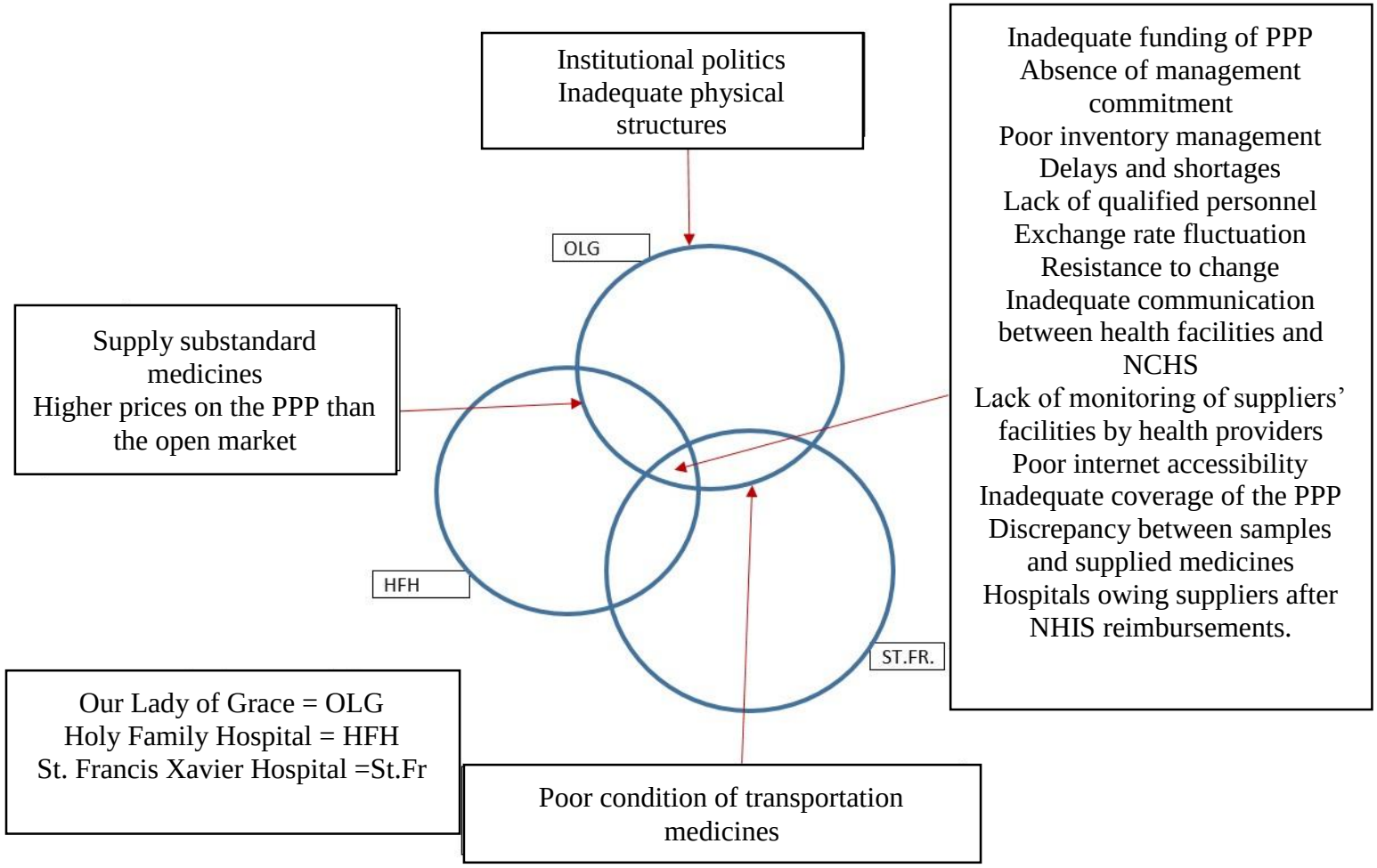

Fig. 6 Similarities and Differences of Challenges between Health Facilities

4.8 Summary of Findings

The data collection involved respondents from heads of the various institutions and of specific units in addition to Chief Executive Officers/Sisters in Charge, Senior Coordinator of PPP, Acting Manager of PPP, Pharmacists, Finance Officers, Accountants and Health Service Administrators, Supply Officers, Store Keepers and Procurement Officers. These respondents exhibited their awareness of the PPP.

In terms of policy or regulatory framework or legal document covering the programme only few respondents knew the existence of policy document which the GCBC has mandated the Health Directorate to ensure that medicines that are supplied to Catholic Health facilities are of good quality at a relatively affordable cost. Therefore, the policy is binding on all Catholic Health facilities to procure their medicines from the PPP list.

Notwithstanding the delays and shortages in some health facilities, the programme has made modest gains in terms of reducing the averages prices of medicines on the PPP compared to the open market. The major challenge which could have a negative impact on the programme was long absence of payment by NHIA. It was observed that when prompt payment are made to suppliers discounts can even go further down to attain the cost-effectiveness desired.

The strategy or model of practiced by the NCHS is the group contracting. This model of PPP was also not very known by the respondents in the facilities. In this group contracting, the NCHS solicits for tenders from suppliers, contracts and negotiate with suppliers and the health facilities procure on their own.

In ensuring quality of medicines, suppliers are supposed to be registered, have their tax clearance,

Pharmacy Council Certificate, and FDA Certificate which is subject for renewal every other year. The NCHS also has a mini-lab, where samples of medicines are subject to testing and when a sample is found to be suspicious, they are forwarded to FDA for further test. There are also DTCs in the various health facilities, however, the facilities lack analysers and mini-labs to test the authenticity of medicines they are supplied.

The numerous challenges the programme faced was also inquired from respondents, the challenges ranged from inadequate funding of the PPP, absence of management commitment, poor inventory management, supply of substandard medicines, delays and quantity shortages of supplies, lack of qualified personnel, exchange rate fluctuation and/or higher prices on the PPP than the open market, poor condition of transportation of medicines, institutional politics and resistance to change, inadequate communication between health facilities and NCHS, inadequate physical structures, lack of monitoring of suppliers facilities by health providers, poor internet accessibility, inadequate coverage of the PPP, discrepancy between samples and supplied medicines, and hospitals owing suppliers after NHIA reimbursements.

CHAPTER 5

DISCUSSION OF FINDINGS

5.0 Discussion of Findings

This section discusses the main findings in tune with the objectives of the study. The objectives of this thesis were five-fold. Firstly, to examine the policy framework for the NCHS PPP. Secondly, to examine the level of cost-effectiveness of the PPP implementation. Thirdly, to determine the strategies of the NCHS for the PPP. Fourthly, to identify the systems and structures used to determine quality of medicines procured through the PPP. Fifthly, to identify the challenges confronting managers in the implementation of the PPP.

The chapter also discusses the main themes of the study, which includes the policy framework regulating the PPP, cost-effectiveness of the PPP, strategy of the PPP, the systems and structures used to determine quality of medicines and challenges of PPP especially looking at management commitment, institutional politics and resistance to change, and poor inventory management. In addition, the discussion centres on the various theoretical perspectives with stakeholder theory as the prominent theory behind this thesis with regards to establishment of the PPP. The systems and structures used to determine the quality of medicines are discussed, looking at the infrastructure NCHS. The principal-agent theory also focuses on the Health Service Administrators, procurement officers and other civil servants in the NCHS. The challenge such as resistance to change will also be discussed to have a comprehensive understanding of the subject understudy.

5.1 Policy or Regulatory and Legal framework for PPP

The establishment of the PPP was mandated by the Ghana Catholic Bishop Conference (GCBC) through a Board (Pooled Procurement Task Force) which is supported by the Directorate of Health of the NCHS. The GCBC as the principal stakeholders of the PPP seeks to promote its interest by

assisting health facilities by procuring high quality medicines and non-medicine products at affordable prices. Therefore, in order to achieve the objective of this noble initiative, it is pertinent that there is guiding policy that regulate all the activities of the PPP.

In view of that, in 2011/2012 all the Catholic Health Services signed a Memorandum of Understanding (MOU) which is binding on all the health services to procure their medicines from a list of suppliers provided by the NCHS. The MOU is an agreement that expresses mutual accord on the issues between two or more parties. It is a formal agreement that conveys significance, seriousness, and mutual respect between parties. The MOU usually recognizes the contracting parties, puts out the issues of the agreement and its objectives, recaps the important positions of the contract, and is sign up by the contracting parties.

In addition, Ghoneim et al. (2016) assert that the MOU should classically cover areas such as the descriptions and background on the specific organisations and parties participating in the pooled procurement. The MOU should also establish the scope of work (SOW) and provide details on how to set up a pooled procurement mechanism through a CPU or Agency to coordinate the functions of the pooled procurement. The SOW outlines roles and responsibilities of the system's participants and facilitators. The MOU lists the responsibilities of the organisations, including such activities as establishing the TWG or CPU, and to agree on the procurement cycle processes. The financial accountability should be specified in the MOU. The mechanisms for proper records and documentation of spending and reporting can also be discussed in the MOU. The organisations would also agree on the payment schedule and payment processes. The deliverables from the listed partners, stakeholders, and organizations should be listed in the MOU as well. Therefore, MOU established and entrenched in any organisation helps to ensure access to safe, affordable, and quality medicines through a PPP.

However, the finding in the various hospitals or health facilities indicated that there was little knowledge in this area of inquiry. In order to ensure that Health Services Administrators, procurement officers and other staff members work efficiently to promote the interest of the organisation, it is very important to ensure that their roles are clearly defined. The knowledge of the existence of policy guiding the PPP will clearly define the roles of the various actors. The one in-charge of procurement will ensure that the right procurement method is practiced to ensure competition, transparency and fairness which in effect will ensure competition and value for money are realised through a competitive market by the establishment of the pooled procurement which is in support of Cuomo and Mackay (2018) finding. Additionally, the apparent neglect of procuring from the programme and procuring from the open market was as a result of practitioners' lack of understanding that there are punitive laws that they can face (Nguyen et al., 2014). Where people are aware of punitive laws that prohibit certain behaviours, those behaviours are also curtailed.

Supporting, combining and managing the lawful structures is essential for pricing and procurement policies (Ferrario et al. 2016). In order to ensure that the programme is successful, the policy also assists in the planning and implementation of the programme. It also instils in the various personnel the confidence to go about their duties without any fear or favour. In effect, the existence of a policy document encourages stakeholders, donors, suppliers to invest in such programmes initiated; it also creates an enabling environment for all stakeholders, and assist in informing stakeholders.

The stakeholders' theory and principal-agent theory are also applicable here. It is essential that a policy for any initiative is made known to the practitioners so that they work in the interest of stakeholders. The policy sets the objectives of the programme which is in the interest of the

stakeholders and expects that the staff or employees work in accord to achieve the objectives set by the stakeholders. The collaborative processes of the health facilities coming to together to build a consensus and developing MOU is also relevant to the stakeholders' theory. Again, the principal-agent theory is applicable here, in relation to the NCHS and the personnel in the various health facilities, there is a gap in the knowledge of a policy guideline for the PPP. In this event, it is more likely that the agents (procurement officers in the various health facilities) will procure medicines outside the PPP list for personal gratification.

5.2 Cost-Effectiveness in PPP

The GCBC objective of procuring high quality medicines and ensuring cost-effectiveness was through the establishment of the PPP. The respondents interviewed generally admitted the establishment of a form of centralised PPP. As already indicated by Seidman and Atun (2017), who employed systemic review and asserted that centralized pooled procurement and competitive tendering ensures cost-effectiveness. Additionally, Millington and Bhardwaj (2017), confirmed that centralised procurement and/or tendering can attain cost-effectiveness through several contexts by generating economies of scale and improved procuring control. They employed systemic review as well.

The increase in the number of health facilities also enables the organisation to create demand for medicines required for them. In support of this finding is Karjalainen (2009), who posited that the number of pooling units need not to be high before economies of scale is revealed. The methodology he used was systemic review and interviews. In addition, Taylor and Bjornsson (1999), and Huff-Rousselle (2012), used literature reviews and interviews to reveal that organisations that cooperate and share information have the benefits of reduced material costs, elimination of corruption, reduction of functional costs and managerial liability, enhanced quality

guarantee, improved equity, better regulation and improved access to needed medical products in each contributing health facility.

In 2015 annual report of the NCHS, it was indicated that 30% reduction in cost of medicine was achieved in the first three (3) years of the programme's inception. In support of this finding, Tordoff et al. (2005), using quantitative approach and Soosay, Hyland and Ferrer (2008), employing qualitative approach revealed that a year after the commencement of pooled procurement under the national strategy, modest cost-effectiveness was accomplished and managers across the various health facilities examined, supported the importance of partnership and efficient allocation of resources.

Additionally, respondents indicated the solidarity within the PPP since health facilities with weaker financial muscles are able to take advantage of the pooled system to acquire the medicines required. This situation arises since prices are reduced and the shared negotiation and the cooperative procurement shared the extra fervor in the interest of the procurers whilst a health facility negotiating has less power compared to the supplier since the supplier is able to seize a substantial stake of the available surplus (Hoang, 2016; Kanniainen & Lehtonen 2018).

Theoretically, the stakeholders' theory is applicable in this situation. The stakeholders expect that the health facilities conduct their operations of procuring safe and quality medicines through a collaborative environment in order to drive down cost and ensure value for money and costeffectiveness.

5.3 Strategies in the PPP

An institutions' strategy can consist of the competitive changes and methods that administrators are hiring to develop their organisations to attract and satisfy customers, contest effectively, find

processes to attain the organisational objectives (Tapera, 2014). Hence, strategy is simply the plan or model for conducting the PPP. In effect, strategy planning and implementation have a considerably encouraging control on profit growth, incomes, and yield on asset. In effect, it is very important that employees in any organisation have the requisite knowledge of the strategy of the organisation. However, the majority of the respondents showed little knowledge in this area of inquiry as well. This situation could be as a result of poor change management or resistance to change by the management of the various hospitals or the various officers working within these hospitals.

Management commitment as literature suggests permit workers to have improved job autonomy, motivates workers to successfully participate in tasks, and ensures adequate resources are assigned to projects, and guarantees the appropriate physical infrastructures are put in place for efficient outcome (Pinion et al., 2017; Banaeianjahromi, 2018). In this regard, the NCHS needs to prepare for change, through preparing and supporting the various health facilities through education and motivation. With the current reform initiative, it is up to the NCHS to intensify its training and education for the professionals in the hospitals to know the benefits of making the PPP the standard operating procedure in the hospitals. There should be a continuous strengthening of the prominence of the change.

The WHO (2007) reports that the model of pooled procurement is built on four models, which reveals the level of partnership and incorporation between the members, and it involves information sharing, coordinated buying to group procuring through a decentralised or centralised instruments. The models are: Informed buying – countries or procurers share information on prices and suppliers but individual country or procurer procures; and coordinated informed buying – countries or procurers share information, share information on supplier performance and prices,

conduct combined market research, but one procures individually. The rest of the models are: Group contracting – negotiation is done collectively by countries or procurers and suppliers are selected based on a contract that selected suppliers will procure on behalf of the group, whilst procurement is done by the country or procurer; and central contracting and procurement – this is when a technical working group or central procurement unit is established to oversee all tendering and awarding of contracts (WHO, 2004; Nguyen et al., 2014).

Inferring from the responses of the respondents in the hospitals and NCHS, the NCHS is actually practicing group contracting. The NCHS singularly and openly advertises for the supply of medicines; suppliers tender for medicines supply; suppliers are selected for the predetermined list of medicines; negotiates the price for those medicines; and finally contracts suppliers and informs the health facilities about the suppliers. The procurement method commonly used is the national competitive tendering process. The health facilities are required to place their orders from these selected suppliers at the negotiated price and facilities organise to pay for the medicines that are ordered. In events whereby agents of any health facility are not aware of the strategy of the organisation is likely to go contrary to the objective of the organisation and abuse the processes they are employed to do.

The PPP was also seen as an effective strategy by respondents as it has achieved modest reduction in the cost of medicines by 30%. This assertion also validates the findings by Kim and Skordis-Worrall (2017) using quantitative approach and Ferrario et al. (2016), Arney et al. (2014), using the qualitative approach to reveal that the system presents a potentially effective strategy for the reduction in HIV medicine prices and the improvement of technical efficiency in HIV programming and through bulk procurement and supportive operating environment. The respondents also indicated that most of the customers (patients), about ninety percent of the (90%)

of them are on the national health insurance scheme and this also validates the finding of Huff-Rousselle (2012), that pooled procuring control was the reason the national health insurance organisations kept more reduced medicinal prices in Canada and Western Europe than in the US hence a prudent strategy for any health organisation to adopt. Even though in this context reduced medicines price cannot be attributed to the pooled national health insurance, the adoption of the programme has seen more significant improvement in cost-saving for the NCHS than procuring from the open market. In addition, the general perception is that if insurance claims are paid promptly by the NHIA then further savings could be made ensuring that the pooled procurement remain a viable option for deprived societies.

In the formulation of the strategy, it is essential that the institution put together the Bishops, Chief Executive Officer/ Sisters in Charged from different hospitals, resources and other healthcare professionals to optimise value and efficiency in the PPP. It is vital that stakeholders meet, engage often and on consistent basis, building the comradeship and trust to constantly improve processes and systems in a coordinated and transparent manner. Hence, the stakeholders' theory is predominant area of inquiry in the strategy formulation. However, the respondents from the various hospitals indicated that such an important aspect of building trust through stakeholders' engagement leaves much to be desired. It is pertinent that the ongoing training also includes a comprehensive education on the PPP.

5.4 Quality of medicines in the PPP

The objective to identify the systems and structures used to determine quality of medicines procured under the PPP also required some attention. It well noted that one part of a system can affect the behaviour of the whole, the whole has one or more defining purposes, and one part is essential but when unaided is inadequate to carry out the crucial purpose of the whole and that

behaviour of one part of the system is contingent on the behaviour of at least one additional part of the system.

In order to ensure quality medicines are constantly sustained in the various hospitals, the structures within the NCHS were examined. The structures comprise the personnel, funding, equipment, information system, and the infrastructure of the health facilities and the NCHS. These components are essential to the change processes and therefore management commitment is necessary in an environment where care is delivered; the competence of staff, safety, organisational strategies and safe equipment are required to ensure that quality of care is delivered. Rjeb (2003) postulates that the events (the processes) taking place in the provision of care to the patients (for example, procuring of medicines, diagnosis, prescription, etc.) should also maximise the control between profits and threats.

Effective leaders create a workplace culture in which the safe and great quality care of patients is a priority, a culture that emboldens inter-professional collaboration, sets strategic objectives for patient safety, backs efforts inside the union to realise development objectives, make available resources for supporting systems, eliminates hurdles for clinicians and healthcare workforce that impede safe care, and requires and maintains high performance of healthcare providers (Wysocka & Lewandowski, 2017). In a situation whereby these components are not open to change, it is difficult for any substantial progress to be made. There should be continuous strengthening of the prominence of the change to ensure that the PPP is followed by all personnel.

In addition, Roy Chaudhury et al. (2005), reports validate this thesis finding that quality medicines were obtained with the set-up of a centralised pooled procurement structure which enabled India to see the development of the first Essential Medicines List (EML). The respondents from the NCHS to the health facilities all confirmed the vigorous processes of the scrutiny of medicines.

This finding is also validated by Ait-Khaled, Enarson, Bissell and Billo (2007), and Quick et al. (2005), whose reviewed articles revealed that accessibility and quality of medicines have enhanced, and organisations inside nations can procure reasonably priced, worthy quality essential medicines for asthma through the Asthma Drug Facility (ADF).

The respondents in the health facilities and NCHS confirmed the processes of registration of suppliers, the requirement of having Pharmacy Council Certificate, FDA endorsement and renewing ones registration with the NCHS every other year as enough processes to ensure quality. In addition, samples are always tested and there is also post-tender surveillance on suppliers and post-market surveillance. The DTC ensured that medicines conformed to pharmacopoeia standards and medicines procured are on WHO Model Essential Medicines List or NHIA list. However, the health facilities lacked the mini-labs and analysers to test the quality of medicines.

5.5 Challenges in the PPP

The respondents also revealed numerous challenges which ranged from inadequate funding of the PPP, absence of management commitment, poor inventory management, supply of substandard medicines, delays and quantity shortages of supplies, lack of qualified personnel, exchange rate fluctuation and/or higher prices on the PPP than the open market, poor condition of transportation of medicines, institutional politics and resistance to change, inadequate communication between health facilities and NCHS, lack of infrastructure, lack of monitoring of suppliers facilities by health providers, poor internet accessibility, inadequate coverage of the PPP, discrepancy between samples and supplied medicines, and hospitals owing suppliers after NHIA reimbursements.

In terms of funding of the PPP, the various respondents' interview largely revealed that since the delays in the NHIA reimbursing the health facilities for them to pay the suppliers, there are constant delays and quantity shortages of supplies which is validated by a study by Gallien et al. (2017),

which asserts that due to irregularity of fund outflows there are substantial basic stock out in record in African countries. In terms of solidarity of the programme to sustain less financially endeavoured health facilities, Barbosa and Fiuza (2012), noted that the strategy can swell the expenditure paid by its members, because procurers with good reputation can pay greater prices when they cooperate with procurers with bad reputations in a pooled programme.

The absence of management commitment is also validated by Daly et al. (2014) study, which revealed that there were substantial obstacles to leadership commitment which are absence of self-confidence, skepticism, poor communication, absence of incentives, role conflict, curriculum insufficiencies, inadequacies of health practiced courses, poor training for leadership roles, inadequate resourcing of expansion programmes, poor leadership, absence of vision and commitment at the management level, poor interdisciplinary associations and resistance to change.

In addition, some respondents also indicated that institutional politics and resistance to change are the major challenges to adherence to the procurement guideline. This finding is also supported by Region and Liability (2010), who employed the qualitative approach to reveal several challenges, for example, absence of political commitment, managerial costs and political restrictions outweighed the profits related to the PPP.

In addition, MB was a major challenge as the literature review indicated. Thus, the practitioners within the health facilities could had exhibited some of these attributes for various reasons, for example, procurement officers may engage in off-contract procurement without recognising it, lack of information on negotiated contracts for staff and lack of information on standardised procedures or methods (unintentional MB). The procurement officer may be familiar with the ideal method, but meet hurdles to observe that ideal method (for example, in emergency situation, a new

system adoption such as e-procurement and inadequate training for employees to undertake such activities), which is known as forced MB. The procurement officer may be conscious of the ideal procedure, but continue to do what gratify him/her (for example, the employee may not change behavior to the trend, due to old habits), this is also known as casual MB. The procurement officer may be mindful of the desired practice, the element is obtainable from a contracted supplier, but they ignore the ideal method in the interest of the corporation (well-intentioned MB). The procurement officer may be cognisant of the ideal method and capable to practice it, but energetically oppose the original procedure (for example, resistance to change, opportunism or self-interest), this is also known as ill-intentioned MB. The various respondents interviewed in the various health facilities indicated that procurement of medicines outside of the pooled programme was largely due to higher prices on the PPP than the open market. However, it can also be inferred that due to the poor knowledge of respondents on the policy framework guiding the PPP, practitioners are more likely to go contrary to the established procedures.

In the process of ensuring that the objectives of any organisation is achieved, it is pertinent that challenges that confront practitioners is brought to smallest minimum to ensure that all stakeholders' interest is protected. In order to ensure sustaining interest, the change processes must be handled and managed by committed managers through the appropriate healthcare structures and through suitable processes to attain the desired health outcome.

5.6 Operationality of the Theoretical Framework

As regards the theoretical basis of this research, the most prominent theory underpinning the study is stakeholder theory in fusion with principal-agent theory (Kumah, 2016; Adjei-Bamfo, 2017). The GCBC as the major stakeholder has mandated a Board on its behalf to set the policy guideline and strategies in line with the objective of the NCHS. The objective aims at preventing counterfeit

and fake medicines and non-drug inputs from entering the NCHS system and to reduce the cost at which medicines and medical consumables are procured for the health facilities. The stakeholders' theory is applicable here because stakeholders are needed to implement such a huge initiative of the pooled programme and ensure the quality of medicines. There is the need to manage and incorporate the relationships and the numerous interests of all stakeholders, that is, employees, suppliers, communities, and FDA. It should also include the collaboration of the Pharmacy Council, Civil Society Groups, the government, customers and other groups in a way that promises a permanent success of the various hospitals.

It is important to take into account that GCBC has mandated a Board which controls and directs the activities of the PPP which is also supported by the Directorate of Health and a dedicated Secretariat (NCHS) for the PPP. The Secretariat manages and monitors the relationship between suppliers and the health facilities. In this complex network of various interest groups, there are bound to be competing interests which is likely to go against the principals' interest. For example, after a negotiation and contracting suppliers by NCHS, if procurement officers refuse to procure from such a list of suppliers due to their personal interests, these agents will be difficult to control since NCHS cannot observe their behaviours directly. Hence, the principal-agent theory's importance in this study.

The structures of the NCHS must guarantee quality improvement in the healthcare institution and must function efficiently as part of a comprehensive system, according to several studies. Therefore, in order to ensure that the quality of medicines are delivered in the NCHS, the structures of healthcare must be given the necessary attention and an equal attention should be given to the processes to deliver the desired health outcome for all stakeholders.

However, in the various health facilities the knowledge of employees on the policy and the strategy employed for the PPP was hugely inadequate. This situation could be as result of lack of management commitment and/or poor management of change processes or the lack and/or inadequate structures in place. It could also be inferred from the discussions that probably the practitioners were not following the processes as established by the NCHS.

Therefore, the findings indicate that stakeholders through communication with the Directorate of Health or NCHS must ensure that managers in the various health facilities are committed to initiative of the PPP. The commitment of management would ensure that the change desired is achieved in the health facilities by ensuring that the PPP guideline is adequately adhere to by all health practitioners.

In order for managers to function effectively, it is important that financial resources, personnel, physical structures, equipment and the appropriate information systems are appropriately situated. When the appropriate structures are established, the due processes of the health facilities would be followed since practitioners performance would be assessed, monitored and evaluated. Additionally, through education and training of health practitioners, the behaviour of following the due processes would become a standard operating procedure and as such an organisational culture.

The findings strongly indicate that stakeholders must articulately communicate the policy and strategy of the PPP to managers. This process would ensure commitment of managers to the programme which would have cascading effect on all health practitioners in the various hospitals. Hence, the stakeholder and the principal-agent theories are all pertinent to this study.

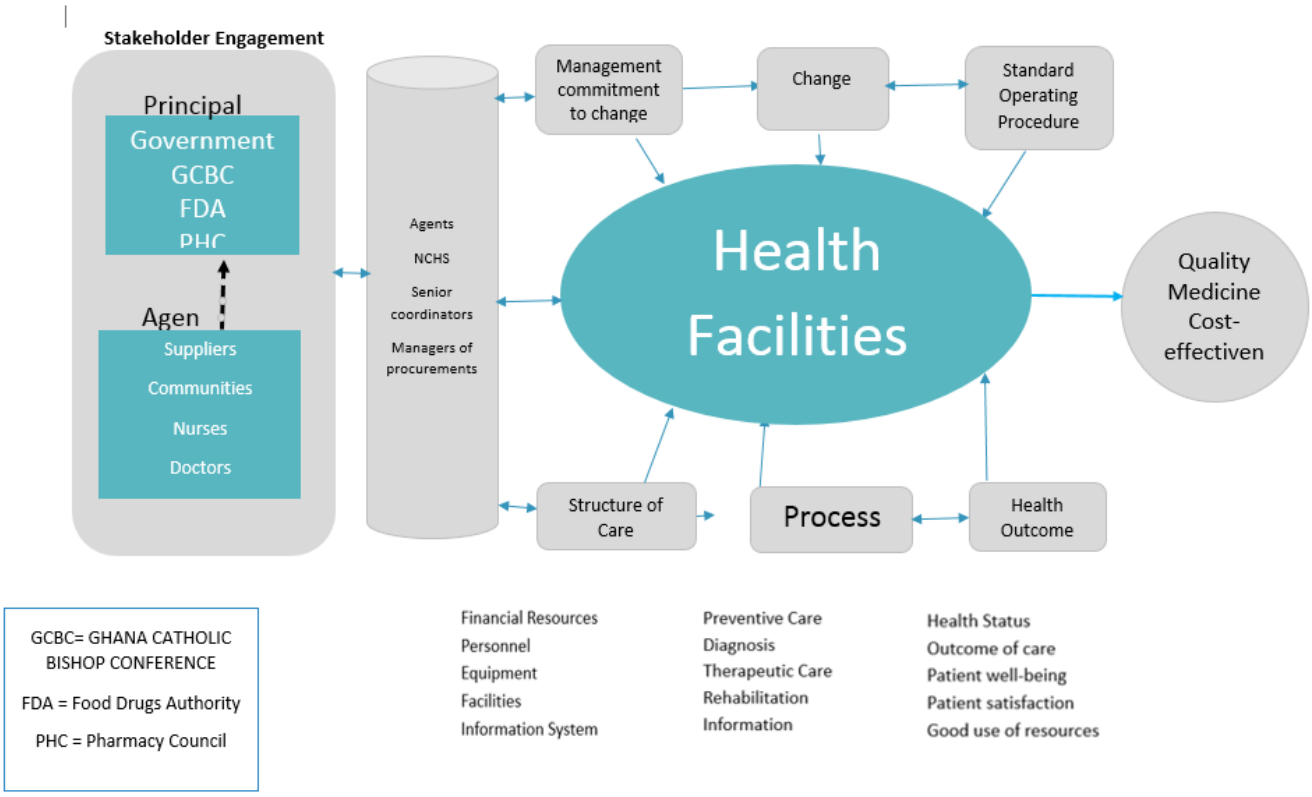

Fig. 8 Stakeholder-Agency Quality Improvement in PPP
Source: Author's Construct (2020).

5.7 Conclusion

In summary, the objectives of this thesis were five, the first objective examined the policy framework for the NCHS PPP. The second objective examined the level of cost-effectiveness of the PPP implementation. The third objective determined the strategies of the NCHS for the PPP. The forth objective sought to identify the systems and structures used to determine quality of medicines procured under the PPP. Objective five sought to identify the challenges confronting managers in the implementation of the PPP. The main themes examined include, the policy framework regulating the PPP, cost-effectiveness of the PPP, strategy of the PPP, the systems and

structures used to determine quality of medicines and challenges of PPP, especially looking at management commitment, institutional politics and resistance to change, and poor inventory management. The study relied on a couple of theories with stakeholder theory as the prominent theory underpinning this thesis with regard to establishment of the PPP and quality improvement of medicines.

The establishment of the PPP was mandated by the GCBC through a Board (Pooled Procurement Task Force) supported by the Directorate of Health of the NCHS. The GCBC as the principal stakeholders of the PPP seeks to promote its interest by assisting health facilities by procuring high quality medicines and non-medicine products at affordable prices. Therefore, in 2011/2012 all the Catholic Health Services signed MOU which is binding on all the health services to procure their medicines from a list of suppliers provided by the NCHS.

The NCHS is actually practicing group contracting. The NCHS single and openly advertises for the supply of medicines, suppliers tender for medicines to be supplied, and suppliers are selected for the predetermined list of medicines. The unit then negotiates the prices for those medicines, contract suppliers and inform the health facilities about the suppliers. The procurement method commonly used is the national competitive tendering process. For that reason, the health facilities are required to place their orders from these selected suppliers at the negotiated prices and health facilities organise to pay for the medicines that are ordered.

The study confirmed the processes of registration of suppliers, the requirement of having Pharmacy Council Certificate, FDA endorsement and renewing ones registration with the NCHS every other year as enough processes to ensure quality. In addition, samples are always tested and there also post-tender surveillance on suppliers and post-market surveillance. The DTC ensures

that medicines conform to pharmacopoeia standards and that medicines procured are on WHO Model Essential Medicines List or NHIA list.

The study identified challenges regarding PPP. These include inadequate funding of the PPP, absence of management commitment, poor inventory management, supply of substandard medicines, delays and shortages of supplies and lack of qualified personnel. In addition, these challenges were revealed, exchange rate fluctuation and/or higher prices on the PPP than the open market, poor condition of transportation of medicines, institutional politics and resistance to change. The challenges also comprise inadequate communication between health facilities and NCHS, inadequate physical structures, lack of monitoring of suppliers organisation by health providers, poor internet accessibility, inadequate coverage of the PPP, discrepancy between samples and supplied medicines, and hospitals owing suppliers after NHIA reimbursements.

The most prominent theory underpinning this study is the stakeholder theory in combination with the principal-agent theory.

In concluding, the PPP has made modest progress in terms of accessibility, affordability, solidarity related to the procurement of medicines and has improved the quality of medicines in the NHCS. However, the seemly long delay in the payment of the NHIS claims is the single most difficult challenge facing the organisation. The prompt payment by the NHIA may also help hospitals gain trust of suppliers which may have a cascading effect on the discounts of the NCHS.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter summarizes the whole study which explored the role of PPP in the quality improvement of medicines of the NCHS in Ghana. This thesis precisely focused on the role of PPP in NCHS to examine the policy framework, to examine the level of cost-effectiveness of the PPP implementation, to determine the strategies of the NCHS for the PPP to identify the systems and structures used to determine quality of medicines procured under the PPP and to identify challenges confronting managers in the implementation of the PPP.

The chapter also presents the effects of the research findings for the policymakers, governments, academia, managers and directors of health institutions, procurement officers, health service managers and the society at large. This thesis also contributes to the body of knowledge in the areas of health services management and pooled procurement whilst acknowledging the limitations of the study. The methodology used and the recommendations, limitations and avenues for the future studies are also outlined.

6.1 Summary

The section summarizes the research objectives and questions, method, data presentation, discussion, summary, conclusion, implications of the study, limitation of the study, recommendations and avenues for further studies.

6.2 Research Objectives

The objectives of this thesis focused on the role of PPP in NCHS to examine the policy framework, to examine the level of cost-effectiveness of the PPP implementation, to determine the strategies of the NCHS for the PPP, to identify the systems and structures used to determine quality of

medicines procured through the PPP and to identify challenges confronting managers in the implementation of the PPP.

6.3 Research Method

The findings attained were obtained using a qualitative research approach with a case study design. The study adopted a four-stage primary data collection procedure using an interview guide through face-to-face interviews with each respondent. The thematic analysis of the primary data were purposively sampled and the interview was conducted based on that. This thesis interviewed twenty (20) respondents from three (3) health facilities and the NCHS. The study revealed fascinating findings which are summarised below. In order to ensure validity, a wide-ranging multi-perspective view of findings were triangulated with secondary data in line with other pooled procurement policy documents, articles and evaluation reports. The main findings are presented below in conformity with the specific objectives.

6.4 Main Findings

6.4,1 Policy or Regulatory Framework of the PPP

The establishment of the PPP was mandated by the GCBC through a Board (Pooled Procurement Task Force) which is supported by the Directorate of Health of the NCHS.

In terms of policy or regulatory framework or legal document covering the programme only few respondents knew the existence of policy document which the GCBC has mandated the Health Directorate to ensure that medicines that are supplied to NCHS are of good quality at a relatively affordable cost. Therefore, the policy is binding on all NCHS to procure their medicines from the PPP list.

6.4.2 Cost-Effectiveness of the PPP

Notwithstanding, the delays and shortages in some health facilities, the programme has made modest gains in terms of reducing the averages prices of medicines on the PPP compared to the open market. The major challenge which could have a negative impact on the programme was long absence of payment by NHIA. It was observed that when prompt payment are made to suppliers discounts can even go further down to attain the cost-effectiveness desired.

6.4.3 Strategy of the PPP

The strategy of PPP practiced by the NCHS is the group contracting. This model of PPP was also not very known by the respondents in the facilities. In this group contracting, the NCHS solicits for tenders from suppliers, contracts and negotiate with suppliers and the health facilities procure on their own.

6.4.4 Quality of medicines in the PPP

In ensuring quality of medicines, suppliers are supposed to be registered, have their tax clearance, Pharmacy Council Certificate, and FDA Certificate which is subject for renewal every other year. The NCHS also has a mini-lab, where samples of medicines are subject to testing and when a sample is found to be suspicious, they are forwarded to FDA for further test. There are also DTCs in the various health facilities, however, the facilities lack analysers and mini-labs to test the authenticity of medicines they are supplied.

6.4.5 Challenges in the PPP

The several challenges the programme is confronted with ranged from inadequate funding of the PPP, absence of management commitment, poor inventory management, and supply of substandard medicines, delays and shortages of supplies. The challenges include lack of qualified personnel, exchange rate fluctuation and/or higher prices on the PPP than the open market, poor condition of

transportation of medicines, institutional politics and resistance to change. In addition, inadequate communication between health facilities and NCHS, inadequate physical structures, lack of monitoring of suppliers facilities by health providers, poor internet accessibility, and inadequate coverage of the PPP, discrepancy between samples and supplied medicines, and hospitals owing suppliers after NHIA reimbursements.

6.5 Limitations of the Study

The main challenges of this study were financial and time constraints, and dispersed geographical location of the various hospitals, as a result only three health facilities were selected for this study. The methodology used by this study also has its inherent limitation due to the fact the respondents were only twenty perhaps a mixed method approach could had taken care of such shortcoming. However, the qualitative approach help to provide a detailed accounts of the feelings and emotions of respondents.

6.6 Conclusion

The study presented the major subjects regarding the role of PPP in the quality improvement of medicines of the NCHS in Ghana. This was done through examining the policy framework, the level of cost-effectiveness, the strategies of the PPP, the systems and structures used to determine quality of medicines and the challenges that confronted managers in the implementation of the PPP were all discussed.

It was established that there was a policy document governing the PPP which was mandated by the GCBC supervised by a Board (Pooled Procurement Task Force) which is supported by the Directorate of Health of the NCHS.

It was also established that after the initial three years of the programme inception, it realised 30% reduction in the average cost of medicines from the open market. The benefits can be enhanced

when prompt payment are made to suppliers the discounts can even go further down to attain the cost-effectiveness desired.

It was recognised that strategy of PPP practiced by the NCHS was the group contracting. The quality of medicines were also ensured by the registration of suppliers with the Pharmacy Council and medicines adequately tested by FDA. There was also mini-lab at the NCHS to ensure that samples were tested. The various health facilities also had DTCs.

Several challenges include inadequate funding of the PPP, absence of management commitment, poor inventory management, supply of substandard medicines, delays and shortages of supplies, lack of qualified personnel and exchange rate fluctuation and/or higher prices on the PPP than the open market. The challenges include poor condition of transportation of medicines, institutional politics and resistance to change, inadequate communication between health facilities and NCHS, inadequate physical structures, and lack of monitoring of suppliers facilities by health providers. In addition, the challenges comprise poor internet accessibility, inadequate coverage of the PPP, discrepancy between samples and supplied medicines, and hospitals owing suppliers after NHIA reimbursements.

6.7 Implications of the Study

This thesis focused on the role of PPP in NCHS with the stated objectives extensively discussed above. It thus proffers some implications for policymakers, governments, academia, managers and directors of health institutions, procurement officers, health service managers and the society at large.

6.7.1 Policy Direction

In terms of policy, the NCHS could collaborate with CHAG in order to galvanise the funding needed since some of these health facilities have insufficient budget. The establishment of the PPP is a novel initiative which ensures effective and efficient cost-effectiveness since economies of scale is achieved through procuring in large volumes. Therefore, through partnership and collaboration stakeholders can gain substantial reduction in prices of quality medicines for the communities these hospitals serve.

6.7.2 Management Practice

There is also the need to regularly monitor and evaluate the procurement processes in the health facilities to ensure that the rules and procedures are adequately followed. The supervision of the procurement processes will ensure that officers are adequately trained and are competent enough for the duties they are assigned to perform. The results of the monitoring and evaluation may serve as a pointer to reforming the implementation of the procurement processes.

6.7.3 Contribution to Knowledge

This thesis also contributes to the body of knowledge in the areas of procurement of medicines and health services management. In addition, this study has contributed to the body of knowledge on the subject matter especially in Ghana, where the practice of PPP is uncommon.

6.8 Recommendations

This thesis contributes to Sustainable Development Goals 3 (SDGs) in ensuring that everyone has health coverage and access to safe and effective medicines and vaccines. In view of the findings acknowledged by this study, the following recommendations are made:

6.8.1 Leadership and Management Commitment

Leadership commitment is key to success of the PPP. To sustain the high level management commitment, at every forum the pooled procurement should be discussed thoroughly. The benefits and challenges about the PPP should be addressed adequately to strengthen the monitoring systems. There should also be regular supervision on the health facilities to ensure on the spot couching, mentoring, explanation and checking of medicines.

6.8.2 Inventory Management

The importance of inventory management as a guard against shortages and economically prudent avenue to drive down cost. This study recommend that procurement and store keepers are trained in the areas of handling and inventory system in the facilities and in ordering medicines. The pharmacists in the various hospitals should also need be trained in terms of quality, efficacy and storage, which is the technical storage aspect; and then the list of medicine or combination of medicine that go under PPP. The premises of suppliers should be regularly visited to see whether their storage is in good condition and whatever is supplied in the system is stored in right condition.

6.8.3 Collaboration and Communication

The importance of collaboration cannot be underestimated, it is pertinent that NCHS collaborates with international (for example, WHO), local, private and other governmental agencies to provide mini-labs and training for the pharmacists in the various health facilities. It is also essential that suppliers who cannot meet the demands of the facilities also collaborate to meet such demands.

The PPP relies on communication and resources as a life blood of the programme and such facilities and the secretariat should see themselves as partners in providing the quality care needed. A huge PPP relies on trust and collaboration and so the secretariat and the facilities should always work hand in hand. In order to ensure that, communication is greatly improved to forge this

collaboration through the adoption of state of art e-procurement infrastructure for the secretariat to be able to monitor the real time interaction of the procurement processes of the various hospitals.

6.8.4 Training and Education

To take full advantage of the PPP, it is also important that procurement officers and other officers in the various hospitals are constantly trained and educated to ensure that they follow the policy guidelines for good practices. The training programme should involve procurement offices and supply officers on how to manage to calculate health logistics commodities, procurement processes and the testing of medicines.

6.9 Avenue for Future Studies

Considering the limited studies on the role of PPP in the quality improvement of medicines of developing countries, especially Ghana, further empirical studies should focus on examining the benefits and challenges of suppliers in the supply of medicines on the PPP. This would inform policy makers about the capabilities of suppliers towards improving their involvement in the PPP in the country.

Future studies should also focus on examining the governance structure of the PPP in the NCHS, in order to inform policy makers and practitioners about the order and authority of decision-making processes and their source of power.

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APPENDIXES

APPENDIX A: INTERVIEW GUIDE FOR HEALTH FACILITIES

INTERVIEW GUIDE

This Interview Guide is from a student pursuing an MPhil. Health Services Management from University of Ghana Business School (UGBS). It is intended to collect data to conduct a study on the topic: The Role of Pooled Procurement Program in the quality improvement of medicines in the National Catholic Health Services (NCHS) in Ghana. Please assist by responding to these questions. All information provided will strictly be used for research purposes only. Your consent to participate in this study is voluntary and you can withdraw from this study at any time.

You are assured of strict anonymity and confidentiality on any information. Any questions concerning this study may be addressed to the principal investigator, Kofi Ameyaw Domfeh (Tel: 0277833600/0237352431 or nanaameyaw84@yahoo.com). You may also contact my supervisor Dr. Theophilus Maloreh-Nyamekye (0243306624 or tnyamekye@yahoo.com) Thank you.

A. Bio data

1. What is the name of your institution?
2. What is your position in the organization?
3. How long have you been performing procurement related responsibilities?
4. What role does your organization play in the pooled procurement program?

B. Policy or Regulatory and Legal framework for Pooled Procurement Program

5. Please can you identify existing legal documents governing pooled procurement of medicines?
6. State and explain the Act, the policy or the regulation guiding the pooled procurement program by NCHS.

C. Cost-Effectiveness in Pooled Procurement Program

7. Are medicines procured received in the right quantities, in the correct amounts, at the correct time and in the correct packaging?
8. What procurement methods are commonly used to procure the medicines?
9. Please mention the specific medicines commonly procured through the pooled procurement program?
10. Does the pooled procurement program unit use transparent and explicit procedures for procurement of medicines?
11. Is procurement done with an objective quantification method to determine the quantity of medicines to be purchased?
12. Does the procurement office undergo regular audits?
13. Is there an efficient post- tender system in place to monitor and report on suppliers′ performance to the tender committee?

14. How long does it take suppliers to get paid?

D. Strategies in the Pooled Procurement

15. Is there a pooled procurement strategy?

16. What model of pooled procurement procedure is practiced by the NCHS?

E. Quality of medicines in the Pooled Procurement

17. Are medicines procured on the WHO Model Essential Medicines List?

18. Explain the National Catholic Health Service Association (NCHS) medicine selection process

19. Is there NCHS medicine usage data available? If yes, describe the process for NCHS quantification

20. Is there a functional NCHS medicine therapeutics committee? If yes, describe its role.

21. Do all suppliers conform to established pharmacopoeia standards of quality by the manufacturer and do they provide batch certificates of quality manufacturing, as well as the WHO certificate of medicines? If yes, explain.

22. Do medicines arrive undamaged with adequate shelf life remaining during a defined period of time?

23. How are medicines tested to ensure its quality by NCHS?

F. Challenges in the Pooled Procurement

24. What are the challenges in the pooled procurement of medicine?

25. What can compromise the quality of medicines in the pooled procurement?

26. What processes can help improve the pooled procurement processes?

APPENDIX A: INTERVIEW GUIDE FOR THE NCHS

INTERVIEW GUIDE

This Interview Guide is from a student pursuing an MPhil. Health Services Management from University of Ghana Business School (UGBS). It is intended to collect data to conduct a study on the topic: The Role of Pooled Procurement Program in the quality improvement of medicines in the National Catholic Health Services (NCHS) in Ghana. Please assist by responding to these questions. All information provided will strictly be used for research purposes only. Your consent to participate in this study is voluntary and you can withdraw from this study at any time.

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D. Bio data

14. What is the name of your institution?
15. What is your position in the organization?
16. How long have you been performing procurement related responsibilities?
17. What role does your organization play in the pooled procurement program?

E. Policy or Regulatory and Legal framework for Pooled Procurement Program

18. Please can you identify existing legal documents governing pooled procurement of medicines?
19. State and explain the Act, the policy or the regulation guiding the pooled procurement program by NCHS.

F. Cost-Effectiveness in Pooled Procurement Program

20. Are medicines procured received in the right quantities, in the correct amounts, at the correct time and in the correct packaging?
21. What procurement methods are commonly used to procure the medicines?

22. Please mention the specific medicines commonly procured through the pooled procurement program?
23. Does the pooled procurement program unit use transparent and explicit procedures for procurement of medicines?
24. Is procurement done with an objective quantification method to determine the quantity of medicines to be purchased?

25. Does the procurement office undergo regular audits?
26. Is there an efficient post- tender system in place to monitor and report on suppliers′ performance to the tender committee?
27. How long does it take suppliers to get paid?
28. How has PPP contributed to cost-effectiveness of the NCHA?

D. Strategies in the Pooled Procurement

16. Is there a pooled procurement strategy?
17. What model of pooled procurement procedure is practiced by the NCHS?

E. Quality of medicines in the Pooled Procurement

18. Are medicines procured on the WHO Model Essential Medicines List?
19. Explain the National Catholic Health Service Association (NCHS) medicine selection process
20. Is there a functional NCHS medicine therapeutics committee? If yes, describe its role.
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22. Do medicines arrive undamaged with adequate shelf life remaining during a defined period of time?
23. How are medicines tested to ensure its quality by NCHS?

F. Challenges in the Pooled Procurement

24. What are the challenges in the pooled procurement of medicine?

25. What can compromise the quality of medicines in the pooled procurement?

26. What processes can help improve the pooled procurement processes?

Questions from the hospitals

27. Is there a memoranda of understanding (MOU) amongst the various participants in the PPP?

28. Are you aware that there are also quantity shortages and delays with delivery of medicines? What can account for that?

29. Do you consider exchange rate fluctuations in your negotiation with suppliers?

30. How come the prices on the PPP sometimes higher than the open market?

31. Have you conducted any training for hospital staff on PPP?

32. What are the immediate plans to go e-procurement?

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

UGBS
University of Ghana Business School

Ref. No.: PAHS/26

14th January, 2019

The Chairman
Ethics Committee for Humanities
ISSER, University of Ghana
Legon

Dear Sir/Madam,

REQUEST FOR ETHICAL CLEARANCE
MR. KOFI AMEYAW DOMFEH

I write to support the request for Ethical Clearance by Mr. Kofi Ameyaw Domfeh, an MPhil Health Services year two student of the University of Ghana Business School, Legon. He is undertaking a research on the topic: ***"The role of pooled procurement program in the quality improvement of medicines of the National Catholic Health Services (NCHS) in Ghana"***

The Departmental Postgraduate Studies Committee has reviewed his proposal and has been approved for data collection.

I would be most grateful if he is given Ethical Clearance to facilitate his data collection.

Thank you.

Yours faithfully,

Dr. Theophilus Maloreh-Nyamekye
Lecturer/Supervisor

COLLEGE OF HUMANITIES
P. O. Box LG 78, Legon, Accra, Ghana.
• Telephone: +233 (0) 303 963 735 • Email: pahsm@ug.edu.gh • Website: ugbs.ug.edu.gh

UNIVERSITY OF GHANA
ETHICS COMMITTEE FOR THE HUMANITIES (ECH)

ECH 087/18-19
Ref. No.:.....

27th June, 2019

Mr. Kofi Ameyaw Domfeh
Department of Public Administration and Health Service Mgt.
University of Ghana
Legon.

Dear Mr. Domfeh,

ECH 087/18-19: THE ROLE OF POOLED PROCUREMENT PROGRAM IN THE QUALITY IMPROVEMENT OF MEDICINES OF THE NATIONAL CATHOLIC HEALTH SERVICES (NCHS) IN GHANA.

This is to advise you that the above reference study has been presented to the Ethics Committee for the Humanities for a full board review and the following actions taken subject to the conditions and explanation provided below:

Expiry Date:	27/06/20
On Agenda for:	Initial submission
Date of Submission:	23/01/19
ECH Action:	Approved
Reporting:	Bi-Annually

Please accept my congratulations.

Yours Sincerely,

Ethics Committee for Humanities
27 JUN 2020
Valid Until.....
University of Ghana

Prof. C. Charles Mate-Kole.
ECH Vice Chair

Cc: Dr. Theophilus Maloreh-Nyamekye, PAHSM, University of Ghana Business School.

COLLEGE OF HUMANITIES
• P. O. Box LG 74, Legon, Accra, Ghana. • Telephone: +233 (0) 303 933 866 • Email: ech@ug.edu.gh

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

UGBS
University of Ghana Business School

Ref. No.:..... *PAHS/26*

13th March, 2019

The Director
National Catholic Secretariat
Accra

Dear Sir/Madam,

LETTER OF INTRODUCTION
MR. KOFI AMEYAW DOMFEH

The bearer of this letter, Mr. Kofi Ameyaw Domfeh is a final year student of the University of Ghana Business School, Legon. He is undertaking a course of study leading to the award of Master of Philosophy (MPhil) in Health Services Management Degree. As part of the requirements of the programme, he has chosen to research on the topic: ***"The Role of Pooled Procurement Program in the Quality Improvement of Medicines in the National Catholic Health Services (NCHS)".***

I would be most grateful if you could give him the necessary assistance to facilitate his data collection.

Thanks for your cooperation.

Yours faithfully,

Dr. Theophilus Maloreh-Nyamekye
Lecturer/Supervisor

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P. O. Box LG 78, Legon, Accra, Ghana.
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APPENDIX B4

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

UGBS
University of Ghana Business School

Ref. No.: *PAHS/26*

13th March, 2019

The Administrator
St. Francis Xavier Hospital
Assin-Fosu

Dear Sir/Madam,

LETTER OF INTRODUCTION
MR. KOFI AMEYAW DOMFEH

The bearer of this letter, Mr. Kofi Ameyaw Domfeh is a final year student of the University of Ghana Business School, Legon. He is undertaking a course of study leading to the award of Master of Philosophy (MPhil) in Health Services Management Degree. As part of the requirements of the programme, he has chosen to research on the topic: ***"The Role of Pooled Procurement Program in the Quality Improvement of Medicines in the National Catholic Health Services (NCHS)".***

I would be most grateful if you could give him the necessary assistance to facilitate his data collection.

Thanks for your cooperation.

Yours faithfully,

Dr. Theophilus Maloreh-Nyamekye
Lecturer/Supervisor

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APPENDIX B5

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

UGBS
University of Ghana Business School

Ref. No.:.....

PAHS/26

13th March, 2019

The Administrator
Our Lady of Grace Hospital
Breman Asikuma

Dear Sir/Madam,

LETTER OF INTRODUCTION
MR. KOFI AMEYAW DOMFEH

The bearer of this letter, Mr. Kofi Ameyaw Domfeh is a final year student of the University of Ghana Business School, Legon. He is undertaking a course of study leading to the award of Master of Philosophy (MPhil) in Health Services Management Degree. As part of the requirements of the programme, he has chosen to research on the topic: ***"The Role of Pooled Procurement Program in the Quality Improvement of Medicines in the National Catholic Health Services (NCHS)".***

I would be most grateful if you could give him the necessary assistance to facilitate his data collection.

Thanks for your cooperation.

Yours faithfully,

Dr. Theophilus Maloreh-Nyamekye
Lecturer/Supervisor

25/3/19

HSA.

OUR LADY OF GRACE HOSPITAL
B.ASIKUMA C.R
RECEIVED

COLLEGE OF HUMANITIES
P.O. Box LG 78, Legon, Accra, Ghana
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APPENDIX B6

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

UGBS
University of Ghana Business School

Ref. No.:.....

PAHS/26

13th March, 2019

The Administrator
Techiman Family Hospital
Techiman

Dear Sir/Madam,

LETTER OF INTRODUCTION
MR. KOFI AMEYAW DOMFEH

The bearer of this letter, Mr. Kofi Ameyaw Domfeh is a final year student of the University of Ghana Business School, Legon. He is undertaking a course of study leading to the award of Master of Philosophy (MPhil) in Health Services Management Degree. As part of the requirements of the programme, he has chosen to research on the topic: ***"The Role of Pooled Procurement Program in the Quality Improvement of Medicines in the National Catholic Health Services (NCHS)".***

I would be most grateful if you could give him the necessary assistance to facilitate his data collection.

Thanks for your cooperation.

Yours faithfully,

Dr. Theophilus Maloreh-Nyamekye
Lecturer/Supervisor

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APPENDIX B7

UNIVERSITY OF GHANA
BUSINESS SCHOOL
DEPARTMENT OF PUBLIC ADMINISTRATION
AND HEALTH SERVICES MANAGEMENT

UGBS
University of Ghana Business School

Ref. No.: *PAHS/26*

29th January, 2018

The Medical Director
Battor Catholic Hospital
Battor

Dear Sir/Madam,

LETTER OF INTRODUCTION

The bearer of this letter, Mr. Kofi Ameyaw Domfeh is a final year student of the University of Ghana Business School, Legon. He is undertaking a course of study leading to the award of Master of Philosophy (MPhil) in Health Services Management Degree. As part of the requirements of the programme, he has chosen to research on the topic: ***"The role of pooled procurement program in the quality improvement of medicines of the National Catholic Health Services (NCHS) in Ghana".***

I would be most grateful if you could give him the necessary assistance to facilitate his data collection.

Thanks for your cooperation.

Yours faithfully,

Dr. Theopilus Maloreh-Nyamekye
Lecturer/Supervisor

COLLEGE OF HUMANITIES
P. O. Box LG 78, Legon, Accra, Ghana.
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APPENDIX C

Medicines Procured in NCHS

Acetylsalicylic Acid	Carbamazepine	Oxytocin
Albendazole	Carbocistein	Paracetamol
Amaryl	Ceftriazone	Pethidine
Amitryptilline	Cefuroxime	Phenobarbitone
Amlodipine	Ceterizine	Phytomenadione(Vit K1)
Amoxycilline	Chloramphenicol eye/ear	Pioglitazone
Amoxycilline+Clavulanic acid	Chlorhexidine/Cetrimide solution	Povidone Iodine
Ampicillin	Ciprofloxacin eye/ear	Promethazine Hydrochloride
Artemether	Ciprofloxacin+Tinidazole	Propofol 1%
Artemether Lumefantrine	Clexane	Quinine sulphate
Artesunate	Clindamycin	Ramipril
Artesuanate Amodiaquine	Clotrimazole	Ringers Lactate
Ascorbic Acid	Cloxacillin Sodium	Salbutamol Inhaler
Atenolol	Corticosteriod+Antibiotic+Antifungal	Salbutamol Nebules
Atorvastatin	Co-Trimoxazole	Simvastatin
Azithromycin	Daltiparin Sodium	Sodium cromoglycate
Bendrofluazide	Dextrose in Water	Spironolactone
Benzylpenicillin (Sodium Salt)	Dextrose Saline	Tetracycline
Bupuvacaine	Dexamethazone	Timolol
Calcium+Vitamin D	Daxemethazone eye drop	Tothema
Calamine lotion	Dexamethazone eye ointment	Tramadol
Doxycycline	Diclofenac	Tranexamic acid
Ephedrine	Diazepam	Vitamin B complex
Erythromycin	Iron Polymaltose	Water for Inj.
Ferrous Sulphate	Lactulose	Zinc oxide
Flucloxacillin	Lisinopril	Zinc tablet
Fluconazole	Losartan	
Folic acid	Magnesium sulphate	
Formalin	Magnesium trisilicate+Aluminium hydroxide	
Furosemide	Mebendazole	
Gentamicin eye/ear	Metformin	
Gentamicin Sulfate	Methyldopa	
Glucophage	Metronidazole	
Glucovance	Multivitamin	
Griseofulvin	Naloxone	
Hydrocortisone	Nifedipine Retard	
Hyoscine Butyl Bromide	Normal Saline	

Ibuprofen	Omeprazole	
Isoflurane	Oral Rehydration Salts	