

The  
University  
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**Evaluation of Integrated HIV/AIDS and Primary Health  
Care Services in Northern Nigeria**

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## **DECLARATION**

I, Muhammad Lawan Umar, hereby declare that no part or whole of the work referred to in this thesis has been submitted to any other University or institution of learning other than the University of Sheffield, for the purpose of award of an academic degree or any qualification of that sort.

Date:

**Muhammad Lawan Umar**

## **DEDICATION**

I dedicate this thesis to my entire family members.

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## **ABSTRACT**

### **Background**

This study assessed the performance of HIV/AIDS integrated care approach delivered as part of routine PHC service in Nigeria. The study further examined the factors that influence the service delivery, performance and impact.

### **Methods**

A concurrent mixed methods design involving quantitative and qualitative methods was adopted. The quantitative study used a retrospective cohort design to collect and analyse medical records of service users. This was followed by a survey conducted with 241 randomly selected HIV positive and HIV negative patients. The qualitative study used focus groups and key informant interviews to explore the views/perceptions of service users and their providers regarding why and how the integrated care worked or did not work. Quantitative data were analysed using IBM SPSS statistics 22. Regression analysis was performed to assess trend in uptake of HIV services, while interrupted time series analysis was used to assess the effect of the integrated care on non-HIV services. The normal approximation test for two proportions and confidence intervals were used to test the difference in proportions of satisfied respondents between the HIV positive and HIV negative patients. Qualitative data were transcribed and analysed using the framework approach.

### **Findings**

Medical records of 125,844 patients comprising 78,351 (62.3%) adults and 47,493 (37.7%) children (0-60 months old) were sampled and analysed. The mean age (SD) of the satisfaction survey respondents was 32.8 (9.1) years for the HIV positive patients and 26.5 (7.2) years for the HIV negative patients. Majority of the respondents were married (81.6%), females (78.8%) who have not had secondary level of education (72.0%). The qualitative participants were between 19 to 65 years old, and majority had at least secondary school level of education.

The study found that HIV counselling [Change/annum (95% C.I): 2.11 (1.19, 3.04), p = 0.0001], testing [Change/ annum (95% C.I): 1.89 (1.02, 2.76), p= 0.0001] and collection of test results [Change/ annum (95% C.I): 1.90 (1.03, 2.76), p = 0.0001] significantly increased over time. Uptake of ART on follow up increased over time [Change/ annum (95% C.I): 8.51 (6.95, 10.08), p = 0.0001]. ART enrolment decreased over time [Change/ annum (95% C.I): -0.02 (-0.28, 0.23, p = 0.855]. Fear of confidentiality and stigmatisation resulted in poor clinic attendance. HIV counselling and testing for pregnant mothers increased over time [Change/ annum (95% C.I): 24.32 (16.70, 31.95), p = 0.0001]. The number of HIV exposed babies decreased with time [Change/ annum (95% C.I): -0.09 (-0.19, 0.012), p = 0.08]. Use of maternal health services improved over time: antenatal care service [Effect/ month (95% C.I): 6.6 (4.55 to 8.65), p = 0.0001], family planning service (Effect/ month (95% C.I): 1.3 (0.26 to 2.26), p = 0.014] and delivery service [Effect/ month (95% C.I): 0.9 (0.39 to 1.45), p = 0.0009]. Child health services showed a moderate increase over time: BCG [Effect/ month (95% C.I): 1.8 (0.64 to 2.88), p = 0.002], and DPT1/ Penta 1 vaccinations [Effect/ month (95% C.I): 1.0 (0.20 to 1.73), p = 0.013]. Paediatric out-patient attendance improved [Effect/ month (95% C.I): -7.7 (-21.27 to 5.91), p = 0.264] but in-patient attendance decreased over time [Effect/ month (95% C.I): -0.04 (-0.17 to 0.08), p = 0.487]. Adult out-patient attendance improved [Effect/ month (95% C.I): 13.2 (9.88 to 16.44), p = 0.0001]. Majority of the HIV positive patients (98.4%) and HIV negative patients (99.2%) were satisfied with the quality of services they received. Qualitative participants reported improved access to health care, reduction of stigma and discrimination against HIV service users, maintenance of privacy and confidentiality of patients among providers, improved satisfaction with services, and knowledge of prevention of transmission of HIV from mother to an unborn baby. Barriers to integrated care reported included, inadequate funding, inadequate staffing, knowledge gap, and inadequate



infrastructure and facility. Facilitators of service delivery were identified as available infrastructure, facility and services, as well as efficiency of PHC facility management.

### **Conclusion**

The findings suggest that the integrated care improved access, outcomes and quality of both HIV and non-HIV services. However, poorly managed programme may affect desired quality negatively. A system wise approach to integrated care is therefore critical for ensuring success of the programme.

## LIST OF ABBREVIATIONS

ACTION	AIDS Care and Treatment in Nigeria project
aHR	Adjusted Health Risk
AKTH	Aminu Kano Teaching Hospital
AKTH ART	Aminu Kano Teaching Hospital Antiretroviral Treatment Clinic
ANC	Antenatal Care
AOR	Adjusted Odds Ratio
ART	Antiretroviral Treatment
ARV	Antiretroviral
AZT	Zidovudine
BCG	Bacillus Calmette Guerin
bPI	Boosted Protease Inhibitor
CD4	Cluster of Differentiation 4
CDC	Centers for Disease Control and Prevention
CHC	Comprehensive Health Centre
CHEWS	Community Health Extension Workers
CI	Confidence Interval
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CPT	Co-trimoxazole Preventive Treatment
DALYs	Disability Adjusted Life Years
DNA	Deoxy-Nucleic Acid
DOTS	Directly Observed Treatment Short course
DPT1	Diphtheria Pertussis and Tetanus vaccine first dose
DPT3	Diphtheria, Pertussis and Tetanus vaccine third dose
DRC	Democratic Republic of Congo

EIA	United States Energy Information Administration
EMBASE	Excerpta Medical dataBASE
EPOC	Effective Practice and Organisation of Care group
FCT	Federal Capital Territory
FGDs	Focus Group Discussions
FHI	Family Health International
FI	Fully Integrated
FMOH	Federal Ministry of Health
FP	Family Planning
FSWs	Female Sex Workers
GDP	Gross Domestic Product
GHAIN	Global HIV/AIDS Initiative, Nigeria
GOPD	General Out-Patient Department
HCT	HIV Counselling and Testing
HF	Health Facility
HIV	Human Immune Deficiency Virus
HIV/AIDS	Human Immune-Deficiency Virus/ Acquired Immune Deficiency Syndrome
HIV-1	Human Immune Deficiency Virus type 1
HIV-2	Human Immune Deficiency Virus type 2
HIV-PHC	Integrated delivery of HIV and PHC services
HR	Health Risk
HSR	Health Sector Response
HTC	HIV Testing and Counselling
HTLV-III	Human T-cell Lymphotropic Virus type III
IDUs	Injection Drug Users

IHV-N	Institute of Human Virology, Nigeria
IMR	Infant Mortality Rate
IQR	Inter-Quartile Range
IRB	Institutional Review Board
ITS	Interrupted Time Series
KCHC	Kumbotso Comprehensive Health Centre
KIIs	Key Informant Interviews
KSACA	Kano State Action Committee on AIDS
KSMOH	Kano State Ministry of Health
LAV	Lymphadenopathy Associated Virus
LGA	Local Government Area
LMICs	Low - and Middle - Income Countries
LNG	Liquefied Natural Gas
M&E	Monitoring and Evaluation
MAP	The World Bank's Multi-country HIV/AIDS Programme
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MEDLINE	Medical Literature Analysis and Retrieval System
MeSH	Medical Subject Headings
MEASURE	Monitoring and Evaluation to Assess and Use Result
NACA	National Action Committee on AIDS
NAIIS	Nigeria HIV/AIDS Indicator and Impact Survey
NBS	National Bureau of Statistics
NGOs	Non-Governmental Organisations
NI	Not Integrated

NIH	National Institute of Health
NIMART	Nurse-Initiated Management of ART
NPC	National Populations Commission
NPHCDA	National Primary Health Care Development Agency
NRTIs	Nucleoside Reverse Transcriptase Inhibitors
OIs	Opportunistic Infections
OND	Ordinary National Diploma
OPD	Out-Patient Department
OR	Odds Ratio
OSS	One Stop Shop
PCR	Polymerase Chain Reaction
PEPFAR	The U.S President's Emergency Plan for AIDS Relief
Ph.D	Doctor of Philosophy
PHC	Primary Health Care
PHCMB	Primary Health Care Management Board
PITC	Provided Initiated Testing and Counselling
PLHIV	People Living with HIV
PMTCT	Prevention of Mother-To-Child Transmission of HIV
PPTCT	Prevention of Parent-To-Child Transmission of HIV
RH	Reproductive Health
RR	Relative Risk
SACA	State Action Committee on AIDS
SASCP	State HIV/AIDS/ STIs Control Program
SchARR	School of Health and Related Research
SD	Standard Deviation

SDG	Sustainable Development Goal
STIs	Sexually Transmitted Infections
TB	Tuberculosis
TB-DOTS	Directly Observed Treatment Short course for treatment of Tuberculosis
TDF	Tenofovir Disoproxil Fumarate
TFR	Total Fertility Rate
UNAIDS	The Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organisation
USAID	United State Agency for International Development
USD	United States Dollar
USG	United States' Government
VCT	Voluntary Counselling and Testing
WHO	World Health Organization
3TC	Lamivudine

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## PREFACE

My interest in research on integration of HIV care and treatment services within routine PHC was inspired by my professional practice as a Public Health Physician where I observed in Nigeria that vertically run programmes like the HIV/AIDS antiretroviral treatment (ART) programmes do better in terms of funding, management and performance compared with horizontally managed programmes. Incidentally, the later serve the medical needs of the majority of the population in the country, and at the same time suffered neglect and deterioration from the effects of the vertical programmes especially in the resource-constrained countries of the sub-Saharan Africa (SSA).

My interest in this research was reawakened in 2005 when the National Action Committee on AIDS (NACA) of the Nigerian Ministry of Health declared interest on decentralising HIV care from tertiary and secondary level health facilities, and integrating the service within Primary Health Care (PHC), the structure upon which the Nigerian health system was built. The PHC structure is responsible for delivering essential health care to the majority of the underserved population, bringing health care to as close as possible to where people work and/or live. By the year 2010, there has not been any report on the effect of the integrated HIV and PHC care in Nigeria. My review of the empirical literature on this matter revealed the effectiveness of the integrated care as an intervention for achieving universal health coverage, but the impact of integrating HIV care and treatment services with routine PHC services was generally still unclear.

On one faithful day in the year 2010, a team of academics from the University of Sheffield, UK, comprising of Drs. Graham Jones and Abubakar Sadeeq visited the Department of Community Medicine, Bayero University, Kano, Nigeria in search of collaboration on postgraduate programmes in Public Health, and that opened the door for a lot of discussions and business relationship between Bayero University and The University of Sheffield. The

collaboration was to jointly develop, teach and certify Masters and Doctorate degree courses in Public Health. Although the collaboration did not progress on full scale as planned because of the insecurity from the insurgency that just erupted in the northern part of Nigeria, the two parties agreed to continue with the human resource development component of the collaboration which required the clinical lecturers in the Bayero University team to pursue Ph.D degree. As one of the clinical lecturers on the BUK team in this collaboration, I was given the golden opportunity to be part of this training.

My research assessed the impact of integrating HIV care and treatment with routine PHC services in Nigeria, and assessed the factors that influence the service performance and impact. The findings suggest that integrated care improved access, outcomes and quality of both HIV and non-HIV services, and the details would be useful for policy, practice and future research.

## **ORGANISATION OF THE THESIS REPORT**

This thesis is organised in seven (7) chapters as follows:

**CHAPTER ONE:** This starts with a background discussion of the burden of HIV/AIDS and the implications of it on the health system. The treatment and care for people living with HIV is also described, followed by a description of the integrated care approach, its dimensions and why the approach is important for a better HIV care and treatment outcomes. The final part presents the study rationale, and sets out the aims and objectives.

**CHAPTER TWO:** This presents results from a systematic scoping review of the literature to understand the extent and nature of the evidence available on the impact of integrating HIV care into PHC. The review was conducted primarily to scope the literature on the integrated care for HIV, and identify gaps that exist in the literature so that they can be addressed in the primary study of this Ph.D.

**CHAPTER THREE:** This describes the mixed methodological approach. The chapter starts with a description of the study setting and then a reminder of the research aim and objectives/questions that have been addressed. The philosophical underpinning of mixed methods approach is described next, followed by a justification for the choice of the mixed methods approach, and the mixed methods study design used to conduct the study.

**CHAPTER FOUR:** This describes the methods and results for the two studies under the quantitative arm of the study. The first study was based on analysis of secondary data that were collected following routine delivery of the HIV integrated care, while the second study was a survey of service users' satisfaction with the integrated care.

**CHAPTER FIVE:** This describes the methods of the qualitative study and presents the findings in two sections. The first section presents findings of participants' understanding, views/perceptions, and experiences about integrated care. The second section presents participants' perceptions of the barriers and facilitators of the integrated care service delivery.

CHAPTER SIX: In this chapter the key findings of the qualitative and the quantitative studies are integrated and discussed. The discussion compares the current findings with the wider global literature to gain a better understanding of what worked, and in what contexts to improve health outcomes, following the implementation of integrated care for HIV.

CHAPTER 7: In this chapter the conclusions are drawn, and recommendations made based on the study findings.



## **CHAPTER ONE: UNDERSTANDING HIV/AIDS AND INTEGRATED CARE**

### **1.1 INTRODUCTION**

This chapter introduces the research, and provides the rationale for this study. To provide some context, the chapter starts with a background discussion on the burden of HIV/AIDS and the implications of it on the health system. The treatment and care for people living with HIV is described, followed by a brief explanation of the integrated care approach, the dimensions of integrated care and the importance of this approach for better HIV care and treatment outcomes. Finally, the research rationale, aims, and objectives are stated.

### **1.2 BACKGROUND TO THE STUDY**

Primary health care (PHC)<sup>i</sup> is the cornerstone of the health system in many low - and middle - income countries (LMICs) including Nigeria (Bitton *et al*, 2017). The PHC approach is aimed at addressing the basic health challenges in communities, by delivering promotive, preventive, curative and rehabilitative services to the generality of the population. The PHC approach utilises maximum community and individual involvement and participation in the planning, implementation and evaluation of the above listed services, and making good use of local, national and other resources. Further, the PHC approach guarantees access to essential healthcare by bringing services to the door steps of individuals as enshrined in the World Health Organization's (WHO) Alma-Atta declaration of 1978 (WHO, 1978). The Alma-Atta declaration recognises PHC as the first level of contact of individuals and families in the communities with the country's health system. However, in Nigeria, the implementation of the PHC delivery system, as first point of contact, to address the country's health problems is challenged by underfunding, which is largely impacted by recent global economic recessions

(Alenoghena *et al*, 2014). As a result, the control of HIV/AIDS, other communicable, as well as non-communicable diseases in the country has remained a problem.

As a strategy to strengthen efforts to stop the spread of HIV/AIDS in Nigeria, its care and treatment activities have been decentralised from the tertiary and secondary healthcare facilities and integrated into the primary health care facilities. The theoretical basis for this integration is that, “IF HIV care and treatment are integrated into routine PHC there would be universal access to HIV/AIDS care and treatment to people living with the disease in Nigeria, and THEN this would lead to an improvement in the quality and treatment outcomes” (Okonkwo *et al*, 2014). The next section will advance our understanding of the HIV/AIDS disease, as well as the burden of it globally and specific to Nigeria.

### **1.3 THE HIV PANDEMIC**

Human immune-deficiency virus (HIV) is a retrovirus belonging to the genus Lentivirus and part of Retroviridae family. The virus is the cause of a spectrum of disease known as HIV/AIDS. Two types of HIV infections (HIV-1 and HIV-2) have been described (Nyamweya *et al*, 2013). HIV-1 was the first to be discovered, and was originally named Lymphadenopathy Associated Virus (LAV) or Human T-cell Lymphotropic Virus (HTLV-III). It is more infective, virulent and the cause of majority of HIV infection globally (Sharp and Hahn, 2011). HIV-2 has lesser infectivity than HIV-1 and is largely confined to West Africa (Sharp and Hahn, 2011).

HIV infection impairs the immune system of the human body, making it vulnerable to common infections like tuberculosis, other opportunistic infections and tumours (WHO, 2016). Acquired immune-deficiency syndrome is the advanced stage of the HIV infection (WHO, 2016), and is commonly alerted by pneumocystis pneumonia (40%), cachexia in the form of

HIV wasting syndrome (20%), oesophageal candidiasis and recurrent respiratory tract infections (Sahoo *et al*, 2017).

HIV infection is spread via contact with blood and blood products, during unprotected sexual intercourse (including anal and oral sex), contaminated blood transfusion, sharing of infected sharp objects like hypodermic needles, razor blades, or injury with such objects; and vertically from mother to child during pregnancy, and through childbirth and breast feeding (CDC, 2016a). According to the Centers for Disease Control and Prevention (CDC), the risk of contracting HIV is highest through blood transfusion with as high as 9,250 per 10,000 exposures (CDC, 2015a). The CDC further revealed that receptive anal intercourse with 138 risk per 10,000 exposures is the second highest exposure while the third highest risk is through needle sharing during injection drug use with 63 risk per 10,000 exposures (CDC, 2015a). However, HIV transmission through the sexual route is commoner worldwide, with the majority occurring through heterosexual contacts, although the pattern of transmission varies significantly among countries (Morison, 2001).

HIV infection affects people from all races, sexes and ages including foetuses that are still unborn (Morison, 2001). However, the infection is common among people within the active age group. Studies from Nigeria have shown that HIV prevalence was highest among the age group 20-39 years old (Nasidi and Harry; Abah, 2014). Young people, especially women in the developing world are at high risk of sexually transmitted infections (STIs) and HIV for a variety of reasons, including biological vulnerability, lack of awareness about diseases that are transmitted sexually including HIV/AIDS, and not perceiving themselves as belonging to a group at risk of HIV infection (Morison, 2001). Other reasons cited by different researchers include lack of access to condoms, erratic use of condoms, increased number of sexual partners, and economic factors (Lawan *et al*, 2012; Abah, 2014). Younger women may easily succumb

to a sexual relationship with older male partners for economic reasons; they lack the skills or power to negotiate condom use, and are usually the victims of cultural/religious norms regarding sexuality and fertility (Lawan *et al.*, 2012).

Effective interventions for reducing the risk of HIV infection include increasing awareness and information on HIV/AIDS and its prevention, correct and consistent use of condoms during sexual intercourse, limiting the number of sexual partners, and avoiding sharing drug injection equipment (Abah, 2014). HIV counselling and testing (HCT) has proven to be an effective medium for the delivery of these interventions (Lawan, 2009). HCT facilitates early diagnosis and treatment of HIV-infected persons and also decreases risky behaviours that could transmit HIV to uninfected persons (Lawan *et al.*, 2012). Furthermore, knowing HIV status encourages HIV negative persons to modify or reduce risky behaviours.

### **1.3.1 Global burden of HIV/AIDS**

Currently, HIV and AIDS are ranked fifth among all diseases with high burden globally (Ortblad *et al.*, 2013). Estimates from the Joint United Nations Program on HIV/AIDS (UNAIDS) show that HIV has infected averagely 38.0 million people from all ages globally (range: 31.6 to 44.5 million) by end of 2019 (UNAIDS, 2020). The WHO (2019) says the African region is the most hit by the HIV pandemic, with a current rate of 3.9% adults (nearly one in every 25) living with HIV. This figure, according to the WHO report, accounts for more than two-thirds of the people living with HIV globally. The UNAIDS factsheet (2020) show that there were approximately 1.7 million (Range: 1.2 to 2.2 million) new HIV infections globally in 2019, and eastern and southern Africa contributed the highest number of these new infections, with about 730000 (Range: 580000 to 940000) people infected with HIV in that year. The report further revealed that the number of new infections from western and central Africa accounted for 240000 (Range: 150000 to 350000) of the global figure for 2019. Of the

24.5 million people globally, that accessed antiretroviral treatment in 2019, eastern and southern Africa contributed the highest with 15.0 million accessing treatment in 2019, and up to 2.9 million (Range: 2.8 to 2.9 million) people from west and central Africa accessed the treatment (UNAIDS, 2020). This suggests that the majority of people worldwide who are living with HIV/AIDSs now have access to ART. However, despite this increased access to antiretrovirals, HIV deaths remain unacceptably high, and worst in the most affected African countries. Reports from the UNAIDS (2020) says of the 690000 (Range: 500000 to 970000) deaths from AIDS related illnesses globally in 2019, 300000 and 140000 deaths were registered in eastern and southern Africa, and western and central Africa respectively.

### **1.3.2 Economic implications of the HIV and AIDS epidemic**

HIV/AIDS epidemic has had a tremendous impact on individuals and the society. Since its discovery, it has exerted negative effects on people and the economic and social development of countries most affected by the disease (Sharp and Hahn, 2011). HIV affects the active and productive age group and negatively interferes with incomes and productivity of families (Maijama'a and Mohammed, 2013) and the overall economic resources of a country (Dominic *et al.*, 2014). The effects of illnesses and deaths from HIV and AIDSs can negatively affect growth and development of countries (Frank *et al.*, 2004). Studies from Nigeria show that HIV/AIDS has hurt the Real Gross Domestic Product (GDP) growth, standard of living of affected persons (Maijamaá and Mohammed, 2013), and schooling (Dominic *et al.*, 2014). As the disease in Nigeria is spread mainly through heterosexual intercourse involving high-risk groups like commercial sex workers who are already stigmatised by society, people living with HIV and AIDS may face a lot of psychological and social challenges (Stangl and Grossman, 2013), and this may also affect their income and productivity negatively.

The HIV epidemic imposed direct challenges on the already fragile health systems of countries most affected in different ways. The epidemic resulted in an increased burden of diseases and demand for health care from HIV and related opportunistic infections like TB, pneumocystic carinii pneumonia, malnutrition, and meningitis among others especially in areas where the epidemic was severe (Tawfik and Kinoto, 2006). This resulted in a massive increase in public health expenditure, which according to some reports exceeds the available resources for health in many LMICs (Amico *et al.*, 2010). Reports from the United Nations (2004) has revealed that the annual direct medical cost for treatment of AIDS patients in sub-Saharan Africa was US\$30 per person excluding the cost of antiretroviral treatment, while public health expenditure on health was less than US\$10 per capita. The HIV epidemic also led to loss of health workers to HIV infection, stress from excess workload and low morale of health workers (Tawfik and Kinoto, 2003). Furthermore, the quest to build-in quality and accountability into HIV programmes resulted in fragmentation of health care as well as attrition of health workers from general health service to HIV programmes for greener pastures. Beck *et al* (2007) argue that HIV pandemic has overburdened the already weak and underfunded primary health care systems especially in LMICs. However, alongside the sufferings, the health systems can be said to have recorded some achievements as a result of the pandemic. The epidemic attracted global partnership and increased funding for the health sector through some common global health initiatives: The U.S President's Emergency Plan for AIDS Relief (PEPFAR), The World Bank's Multi-country HIV/AIDS Programme (MAP), and the Global Fund to fight AIDS, TB and Malaria (Biesma *et al.*, 2009). Affected health systems had mobilised massive community awareness and promoted participation in health (UNAIDS, 1997; Ramirex-Valles, 2002). The HIV epidemic also provided opportunity for improving physical infrastructure, which were hitherto dilapidated in many facilities in affected countries, provision of specialised equipment and consumables, and training of human resource for health (PEPFAR, 2013).

Notwithstanding these arguments, HIV affected population need to be prioritised to receive treatment in order to improve their quality of life and reduce the spread of the virus to healthy population. Early antiretroviral treatment prevents AIDS-related and non-AIDS related diseases (NIH, 2015), and reduces the chances of transmission to others (CDC, 2015b). The next section discusses the treatment and care steps to support people living with HIV so as to improve their quality of life.

### **1.3.3 Global move towards tackling the HIV pandemic**

As a response to the HIV pandemic, the World Health Assembly formally approved the creation of the Special Programme on AIDS, within the WHO, at its 39<sup>th</sup> meeting held in May 1986 (Kim, 2015). The special programme, which is considered as the cornerstone of the global AIDS plan, had the following objectives: to prevent HIV transmission, take care of HIV-infected persons, i.e., reduce morbidity and mortality associated with HIV infection, and to unite national and international efforts for global AIDS control. The creation of the special programme paved a way for the establishment of national AIDS controls policies and programmes to achieve the global targets (Mann, 1987). By end of 1987, national AIDS committees had already been established in more than 150 countries (Mann, 1987). At the global level, the Special Programme taskforce designed the global HIV/AIDS plan and raised sufficient funds to implement the plan (Center for Global Development, 2021a; Kim, 2015; Mann, 1987). The Taskforce is also responsible for providing strategic leadership, developing consensus, coordinating scientific research, exchanging information, assuring technical cooperation, mobilising, and coordinating resources.

### **1.3.4 Global Actors and initiatives**

Following from the establishment of global special programme, the national HIV/AIDS control policies, programme, and the global plan of action on HIV and AIDS, and global health initiatives (GHIs) were created as emergency response to scale-up the control of the major communicable diseases across the globe (Mann, 1987, Kim, 2015). These initiatives are characterised by their focus on issues of international concern, ability to mobilise huge levels of financial resources, operation in several countries, linking inputs to performance; and by the channelling of resources directly to non-governmental civil society groups among others (Mwisongo *et al*, 2016; Mann, 1987). Furthermore, GHIs generally have their own governance structures operating through designated committees or other agencies (Mwisongo *et al*, 2016).

GHI support has been of different forms, ranging from monetary support for certain underfunded priority areas to technical support to improve health support systems for their better performance (WHO, 2009). At the broader level, beyond HIV and AIDS control, numerous GHIs have been created to support LMIC to achieve their health outcomes in line with the global goals (Carlson, 2004), and with these support many countries in Africa have made significant progress towards the achievement of the Millennium Development Goals (MDGs) 4, 5 and 6 (Biesma *et al*, 2009). The prominent GHIs in the African sub-region include the US President's Malaria Initiative (PMI), the US President's Emergency Plan for AIDS Relief (PEPFAR), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), World Bank's Multi-country HIV/AIDS Programme (MAP), the GAVI Alliance, the Roll Back Malaria partnership, UNITAID, Stop TB Partnership, the Global Leprosy Programme, Children's Investment Fund Foundation, and the Measles Initiative and the Global Polio Eradication Initiative (Chima and Homedes, 2015; Mwisongo *et al*, 2016). Among these, PEPFAR, MAP and the GFATM are contributing more than two-thirds of all direct external



funding to scale up the prevention and control of HIV and AIDS in resource poor countries (Mann, 1987).

PEPFAR is the commitment of the United States of America to combat the global HIV pandemic, announced in January 2003 during president George W. Bush's State of the Union and authorised by the Congress that same year through the leadership Act (US Department of Health and Human Services, 2016). The Congress re-authorised the programme on three occasions through the Lantos-Hyde Act of 2008, the PEPFAR Stewardship Act of 2013, and the PEPFAR Extension Act of 2018, which goes through FY 2023 (Kaiser Family Foundation, 2021). By the year 2020, PEPFAR's funding has reached more than \$90 billion, including funding for the Global Fund to Fight AIDS, Tuberculosis and Malaria, making it the largest commitment ever made by any nation towards global health initiative to address a single disease problem in the world (Kaiser Family Foundation, 2021).

PEPFAR is overseen by the U.S. Global AIDS Coordinator who coordinates all U.S global HIV activities and funding across its implementing agencies and departments: U.S Agency for International Development (USAID), the Department of Health and Human Services through CDC, Health Resources and Services Administration (HRSA), and National Institute of Health (NIH), the Departments of Labour, Commerce and Defence (DoD), and Peace Corps, thus leveraging the power of "the whole government" response by drawing on the competencies of the different sectors to provide innovative solutions to addressing the global HIV pandemic (US Department of Health and Human Services, 2016; Kaiser Family Foundation, 2021; US Department of Health and Human Services, 2021). PEPFAR activities focus on expanding access to HIV prevention, treatment and care interventions, and by the end of September 2020 the programme has supported antiretroviral treatment for nearly 18.2 million people, provided critical care and support for more than 6.7 million orphans, vulnerable children, and their

caregivers; and supported HIV testing services for nearly 50 million people in over 50 countries across the globe (US Department of Health and Human Services, 2021).

The Global Fund to Fight AIDS, Tuberculosis and Malaria, often called the Global Fund, was created in 2002 following the call by the G-8 Heads of State meeting in Okinawa Japan in 2000, the African leaders meeting in Abuja in 2001, and the endorsement of the United Nations Secretary General Kofi Annan at the United Nations Special Session on AIDS, in June 2001 (The Global Fund, 2021a). The calls were to innovate a financing mechanism that seeks to rapidly raise and disburse funding for programmes that reduce the impact of HIV/AIDS, tuberculosis and malaria in LMIC in the push to achieve the UN's Millennium Development Goals (Center for Global Development, 2021b). The Global Fund is structured as a partnership between developed countries, developing countries, the private sector, civil society and affected communities. Most of the funding for the Global Fund comes from the public sector with 92% of the total funding from the donor countries (The Global Fund, 2021b). The United State, France and United Kingdom are the highest public sector contributors while the Bill and Melinda Gates Foundation is the largest private sector supporter of the fund (Centre for Global Development, 2021b).

As an international organisation, the Global Fund mobilises and invests more than US\$4 billion a year to support programmes in LMIC (The Global Fund, 2021c). Since its inception, it has disbursed more than US\$44.9 billion as of April 2020 in the fight against HIV, TB and malaria and for programmes to strengthen systems for health across more than 155 countries (The Global Fund, 2021c). It is estimated that the Global Fund in 2019 has financed antiretroviral treatment for 18.9 million HIV positive patients, provided anti-tuberculosis treatment for 5.3

million people, financed the distribution of 131 million insecticide-treated mosquito nets to prevent malaria, and saved 32 million lives globally (The Global Fund, 2021d).

The Global Fund operates as a financier of credible cutting edge proposals on mitigating the spread and problems from AIDS, Tuberculosis and Malaria that have scaled the scrutiny of experts at country level. To facilitate the process therefore, the Global Fund has established a unique structure under which funds are administered (Center for Global Development, 2021b). It has a secretariat in Geneva where Global Fund operations are managed, which is headed by the Executive Director, a Board of Directors who are responsible for providing guidance to the secretariat, endorsing policy and strategic decisions including approving grant funding decisions; and the technical review panel that review funding proposals and rate them on technical merits. In recipient countries however, the Country Coordinating Mechanism (CCM), Principal Recipient (PR), and Local Fund Agents (LFAs) administer the grant and provide oversight in each recipient country. The CCM (the country level Management Board consisting of representatives of governments, donors, private sector, academic institutions, NGOs and people living with the disease) submits funding proposals and provide oversight; the PR (designated in-country organisation selected by the CCM to receive funding allocation from the Global Fund Secretariat) distribute funds to sub-recipients according to grant agreement; and the LFAs are local agents in recipient country to conduct routine monitoring and financial audit of allocate funds on behalf of Global Fund Secretariat (Center for Global Development, 2021b).

The World Bank's MAP otherwise known as the African MAP was the first donor initiative on HIV/AIDS which aimed to offer long term support (10-15 years) to combat HIV/AIDS and mitigate its impact in Africa (World Bank, 2007). The MAP for Africa has committed more than \$1.2 billion since its inception in the year 2000 to increase national HIV/AIDS efforts and

to support sub-regional (multi-country) HIV/AIDS programmes on the African continent (Center for Global Development, 2021a).

The World Bank has established a structure for coordinating the African MAP where the Global HIV/AIDS Programme and AIDS Campaign Team for Africa (ACT Africa) manage all HIV/AIDS related activities at its headquarters in Washington, DC (Center for Global Development, 2021a). At the regional level, the regional operations units together the corresponding country offices manage the bulk of the World Bank's grants and lending, analysis and policy discussions on HIV/AIDS. At the country level, individual country teams are responsible for specific country HIV/AIDS projects. The World Bank country-based staff, led by a Country Director, and in collaboration with host-country governments design and implement specific country projects based on priorities and aligned with the country's existing strategic documents (The World Bank, 2007, Center for Global Development, 2021a). The Africa MAP provides all funding directly to the National AIDS Councils, who are then responsible for disbursing the funds to government ministries, community organisations and/or service providers according to an agreed-upon plan (Center for Global Development, 2021a).

### **1.3.5 Treatment, care and support for people living with the disease**

Although there is presently no cure for HIV/AIDS, effective clinical intervention such as antiretroviral (ART) treatment are being implemented to ensure healthy and productive life for people living with HIV/AIDS (CDC, 2016b). Furthermore, across the globe, governments of affected countries have developed guidelines, facilitated by the WHO, for providing quality and comprehensive psychosocial therapy (care and support) for population living with the virus (WHO, 2016b).

Until recently, many sub-Saharan African countries have implemented a vertical approach to provide care and support for people living with HIV and AIDS (WHO, 2004a). A vertical approach means that the HIV control programme had a specific defined objective and separate management and administrative structure parallel to the existing health system (Caimcross *et al.*, 1997). The vertical approach to health care has had many advantages, including attracting funding for specialised training of HIV workers; the provision of free laboratory services; drugs for treatment of opportunistic infections; and better service delivery infrastructure and process leading to better efficiency and quality of services (Chevo and Bhatasara, 2012). However, vertical programmes are criticised as being value-driven, lead to service fragmentation, create barriers to access, breed inefficiency and lack sustainability (Atun *et al.*, 2008). Attrition of health workers from general health services to vertical HIV programmes also occurs as a result of better working conditions and remunerations (Odeny *et al.*, 2013). Furthermore, "verticalisation" of health services results in wastages from duplication of efforts and resources by the general health services, as well as the HIV programmes for support services like monitoring and evaluation, community mobilisation and other similar activities (Atun *et al.*, 2008). Treatment and care of AIDS patients is lifelong from a service delivery perspective, and patients may require to utilise the services of other diseases under the PHC structure. Thus, it has been argued that adopting an integrated treatment and care approach could be a better way to address the weaknesses of the vertical approach to health care (Criel, De Brouwere and Dugas, 1997). This integrated approach to HIV/AIDS treatment and care is discussed in detail in section 1.5.

## **1.4 HIV situation in Nigeria**

In Nigeria, HIV prevalence increased significantly from 1.8% in 1991 to 5.8% in 2001 (FMOH, 2010). But there was a decline thereafter; from 5.8% (2001) to 4.4% (2005) and then slightly increased again to 4.6% in 2008 (FMOH, 2010). The results from the 2010 sentinel survey of Nigeria estimated the national prevalence to be 4.1% with variability across states and local government areas (LGAs) (FMOH, 2010). The declining trend of HIV prevalence in Nigeria suggests that the epidemic was becoming stabilised (Abah, 2014). In 2015, there were on average 3.5 million people living with HIV in Nigeria, with 227518 new HIV infections reported (male 45.7% and female 54.3%). There were also around 180,000 AIDS related deaths and 1665403 (87.3% adults and 12.7% children) requiring anti-retroviral drugs (ARV) in the same year (UNAIDS, 2015). In 2016, a WHO report indicated that the HIV prevalence among adults 15-49 years old was 2.9% (Range: 2.1 to 4.0%), and 967 000 people (30% [Range: 19 to 42%]) were reported to be on ART (WHO, 2017). A joint press release of the UNAIDS and National Action Committee on Health (NACA) of the Federal Ministry of Health, Nigeria confirmed a significant reduction in the HIV prevalence among adults 15-49 years old from the 2.9% reported in 2016 to 1.4% by 2019 (UNAIDS/ FMOH, 2019).

### **1.4.1 The Nigerian health system and the HIV fight**

Primary Health Care (PHC) is the foundation and central focus of the health system in Nigeria (Federal Government of Nigeria, 2018). The Reach Every Ward (REW) approach, which uses the political ward as the functional unit for PHC service delivery, was adopted as a suitable strategy for attaining the goal of “Health for all Nigerians” as enshrined in the health policy document of the country (Federal Government of Nigeria, 2018; FMOH, 2016). In pursuance of this goal, Nigeria operates both the orthodox and traditional health care delivery systems operating alongside each other, with the orthodox health care been provided by the private and

public sectors. Out of the 40226 hospitals and clinics listed on the health facility registry in Nigeria in 2019, 85.2% were PHC facilities, 14.4% were secondary health care facilities, while 0.4% were tertiary health facilities. Furthermore, 73.1% of these facilities were public (government) owned and 26.9% were private health facilities (FMOH, 2019a). Interestingly, 80% of health services to Nigerians is provided by private health providers. (FMOH, 2007; Uzochukwu, 2014).

The public health service is organised into primary, secondary and tertiary levels in conformity with the three tiers of government in the country, and delivered through the respective ministries of health at the levels. Thus, the national health policy and national health Act prescribe responsibilities for the PHC to local governments through the local government health departments, secondary care to states through the State Ministry of Health (SMOH), and tertiary care to the federal level through the Federal Ministry of Health (FMOH) (FMOH, 2016; Federal Republic of Nigeria, 2014).

The FMOH comprises of a secretariat that houses eight departments, which specialise in different aspects of health care; five agencies, including the National Primary Health Care Development Agency (NPHCDA) and the National Agency for the control of AIDS (NACA); three research institutes; and professional regulatory councils and boards for the various professional health disciplines (Uzochukwu, 2014). These departments and agencies provide the overall stewardship, leadership and governance for health care delivery in the country, and the provision of tertiary health care through the network of teaching and specialist hospitals under the department of hospital services (FMOH, 2016; Federal Republic of Nigeria, 2014). The tertiary care is the highest level of health care in the country, and the health facilities at this level serve as the referral centres for patients from the primary and secondary health care facilities (FMOH, 2016).

A similar structure, as described above, exist at the states level, and is used to deliver the different aspects of the secondary health care to the population through the SMOH and its boards and agencies/ parastatals. The SMOH domesticates national policies or formulate state specific policies, and provide the leadership for all public health activities in the state including clinical services (FMOH, 2016; Federal Republic of Nigeria, 2014; Uzochukwu, 2014). The general hospitals provide the clinical services for this level of care, and serve as the referral centers for primary health care facilities. Each district, Local Government Area (LGA), or zone is expected to have at least one secondary-level facility (Uzochukwu, 2014).

The LGAs are mandated by the constitution of the Federal Republic of Nigeria to finance and manage primary health care under the supervisory oversight of the state government through the Primary Health Care Management Board (PHCMB) or Primary Health Care Management Agency (PHCMA) as the case may be (FMOH, 2016; Federal Republic of Nigeria, 2014; Uzochukwu, 2014). Health facilities at the primary level of care are the communities' entry point into the health care system. These facilities comprising of the health posts and clinics, health centres and comprehensive health centres provide promotive, preventive, and basic curative care to the populace (Uzochukwu, 2014).

The government is responsible for the provision of health services in Nigeria, and under the constitution of the federal republic of Nigeria, health is on the concurrent list implying that each level of government identifies its health priorities and pursues them with minimal intervention from the other levels (Federal Republic of Nigeria, 2014; FMOH, 2004). In addition, the development partners also provide resources to the Federal Ministry of Health through the Federal Ministry of Finance (Uzochukwu, 2014). However, out-of-pocket expenditure is the major source of health financing in Nigeria (Onwujekwe *et al*, 2014; Onoka *et al*, 2011). As a result, most primary health facilities across the country are poorly equipped



due to poor funding, especially at the state and local government levels. Furthermore, the availability of basic amenities like electricity, potable water supply and provision for sanitary waste management necessary for quality health care delivery is poor in many of the PHC facilities in the country (Onoka *et al*, 2011; Uzochukwu, 2014).

Nigeria produces one of the highest stock of human resource for health in Africa but still suffers inadequate numbers of the various categories of these workers because of maldistribution between urban and rural areas, across regions of the country (FMOH, 2016), and due to external brain drain for greener pasture (Uzochukwu, 2014).

Although enormous resources were leveraged in order to fight the HIV epidemic in the LMICs, there have been concerns that the epidemic has affected the already overstretched systems of these countries negatively. The HIV epidemic resulted in decreased referrals and access to antenatal care services due to shortage of health worker in Malawi (Mtonya *et al*, 2005). Similarly, there were reports that basic health services like family planning were increasingly strained in many places due to shift in donor funding to HIV programme (England, 2008).

In the next section, the initiatives and strategies put in place by the Nigerian government to fight the HIV pandemic, the policy and framework guiding the implementation of the initiatives are discussed.

#### **1.4.2 The HIV fight in Nigeria: A historical perspective**

Since the outbreak of the HIV pandemic in Nigeria in the early 1980s, the government of Nigeria has demonstrated political will, and through the support of its development partners, has developed strategies and funded a number of initiatives to fight the pandemic. For instance,

the Nigerian government established the National Expert Advisory Committee on AIDS (NEACA) in 1986 to offer technical advisor to the government to fight the HIV crisis in the country. Following from that the National AIDS and STDs Control Programme (NASCP), which is now a division within the department of Public Health of the FMOH, was established (Federal Government of Nigeria, 2009). The NASCP has a mandate to coordinate the formulation and effective implementation of the Nigeria government policies, guidelines and standard operating procedures for the prevention of new HIV infections as well as improve on the existing treatment, care and support for those persons living with the disease (FMOH, 2021).

Beyond the establishment of the NASCP, the government has also set up various specialist agencies and committees, including the establishment of a Presidential Committee on AIDS (PCA), and the National Action Committee on AIDS (NACA) in the year 2000, with the responsibility to coordinate the multi-sectoral response to the HIV epidemic at the national level. At the sub-national/state level, the State Action Committee on AIDS (SACA) and Local Government Action Committee on AIDS (LACA) were created to expand the work of the national committees beyond the national level. In 2007, the National Action Committee was transformed into the National Agency for the Control of AIDS (NACA) by an Act of the National Assembly to further strengthen its coordinating role and the overall national response under a Director General and a Governing Board (Federal Government of Nigeria, 2009). SACA is responsible for mobilizing resources (local and foreign) and coordinating the equitable application for HIV/AIDS activities in Nigeria, as well as they provide and coordinate linkages with the global community on HIV/AIDS (NACA, 2020).

### **1.4.3 Policies and frameworks guiding implementation of actions/interventions**

The Government of the Federal Republic of Nigeria through the FMOH adopted the National policy on HIV/AIDS and STI in 1997 (Federal Government of Nigeria, 2003). The policy has since been reviewed (2003 and 2009) to reflect the changes made in the HIV fight, and to put in place the requisite framework and guidelines to all the structural changes and interventions adopted by the government (Federal Government of Nigeria, 2003; Federal Government of Nigeria, 2009). The overall goal of the national HIV policy is to control the spread of HIV/AIDS in Nigeria and to mitigate its impact to the point where it is no longer of public health, social and economic concern (Federal Government of Nigeria, 2003). The policy has adopted a multisectoral approach to the HIV response, to ensure the full inclusiveness of all sectors and stakeholders in the HIV fight. The 2009 review leveraged on the increased political commitment of the government and stakeholders resulting in an expanded response to the epidemic, especially with the launching of the Universal access to HIV prevention, treatment, care and support advocated by the United Nation (Federal Government of Nigeria, 2009).

Following the HIV/AIDS and STIs policy, and the creation of the PCA and NACA in year 2000, a 3-year multi-sectoral HIV/AIDS Emergency Action Plan (HEAP) was formulated in 2001 to guide the implementation of the government initiatives (NACA, 2010). HEAP mainly addressed the issues of creating public awareness, at a time when the epidemic was beginning to spread in the country and when awareness, knowledge and behavior change were critical to curtailing the epidemic (NACA, 2010). Most of HEAP activities were conceived as short-term, high impact interventions whose implementation formed the base for the medium term strategic plan for HIV/AIDS in Nigeria. HEAP was built on two strategic components: creation of an enabling environment and specific HIV/AIDS intervention. Strategies for the creation of the enabling environment for HIV prevention and control included: 1) removal of socio-cultural

barriers; 2) removal of information barriers; 3) removal of systemic barriers; and 4) catalysing community-based responses. On the other hand, the specific HIV/AIDS interventions included: 1) preventive interventions targeted to high-risk populations; 2) preventive intervention for the general population; 3) care and support for persons infected by HIV; and 4) care and support for persons affected by HIV (NACA, 2001).

The National Strategic Framework (NSF) 2005-2009 replaced HEAP in 2005 (Federal Government of Nigeria, 2009). This further facilitated the development and implementation of interventions to tackle the problem more seriously. The NSF provided the broad structure for the multi-sectoral implementation of the National policy on HIV/AIDS and STIs that was developed in 2003. The goal of the NSF 2005-2009 was to reduce HIV/AIDS incidence and prevalence, provide equitable prevention, care, treatment and support and mitigate its impact among women, children and other vulnerable groups and the general population in Nigeria by 25% by the year 2009 (NACA, 2005). The NSF was reviewed in 2007 and 2015 to respectively reposition HIV prevention as the centrepiece of the national HIV/AIDS response (NACA, 2010), and fast-track the national response towards ending AIDS in Nigeria by 2030 (NACA, 2017, NACA 2019).

### **1.5 Adoption of an integrated approach to care and treat PLWH in Nigeria**

Concerted efforts towards programmes for the control of HIV and AIDS have attracted much attention and consumed huge resources both at global level and in the resource-constrained countries. Fortunately, these investments seem to have reduced the sufferings and deaths due to HIV in developing sub-Saharan African countries (Odeny *et al.*, 2013) where most of the achievements were arguably due to commitments of development partners. Notwithstanding,

the global burden of HIV continues to be a major challenge, having claimed about 32.7 million lives by the end of 2019 (UNAIDS, 2020).

The universal access to ART advocated by the United Nation's Millennium Development Goal (MDG) 6 required that all HIV infected patients eligible for treatment in LMICs have access to ART (Okonkwo *et al*, 2014). The achievement in coverage of antiretroviral treatment in Africa is largely due to the large-scale vertical treatment programme in urban centres leaving the majority of rural communities still underserved. This necessitated the development of new strategies/ models for provision of sustainable treatment and care for HIV patients in resource limited settings. The strategy required that HIV programmes are decentralised to lower-level health facilities that are at the doorsteps of the people, and integrated with other health services (United Nations, 2012). Decentralisation of HIV care and treatment in the context of PHC implies the delivery of HIV care and treatment for instance antiretroviral therapy in lower-level (PHC) health facilities and within communities (Bussmann *et al.*, 2008). A PHC approach is crucial for equitable healthcare delivery (Ivers, Kendrick and Doucette, 2005; Egger, 2006; Wester *et al.*, 2005).

Integration of HIV care into PHC appears to be a veritable strategy for ensuring wider access and sustainability of the HIV programme. PHC-based health systems achieve better health outcome and equity than those that are specialty-based (Valentijn *et al.*, 2013).

Many researchers have reported on the integration of HIV care and treatment within PHC in a number of low resource African countries and have shown good working potentials (Topp *et al.*, 2013; Odeny *et al.*, 2013; Uebel *et al.*, 2013a; Uebel *et al.*, 2013b; Crowley and Stellenberg, 2014). The literature suggests that integration of HIV within PHC mostly occurs at the micro/ service delivery level (Delnoij *et al*, 2002). Documented strategies for integration of HIV care into PHC include amalgamation of physical space and patient flow for outpatient services;

combined pharmacy, laboratory and medical records services; HIV counselling and testing services in the PHC (Uebel *et al.*, 2013a, Topp *et al.*, 2013), co-location of HIV services in PHC facilities; ART refill at PHC facilities; specialist support from secondary/ tertiary ART sites to PHC facilities; joint staff training, and standardisation of protocols among others (Uebel *et al.*, 2013b; Odeny *et al.*, 2013). However, because of the complex nature of the integration, clear recommendations for effective implementation of the intervention are scarce. (Sweeney *et al.*, 2012; Uebel *et al.*, 2013b).

Evidence on integrated HIV care has shown that situating HIV/AIDS care into efficient PHC system has increased access in hitherto underserved communities (Odeny *et al.*, 2013; Crowley and Stellenberg, 2014). Evidence show that patient enrolment, acceptability, quality and continuity of services have improved in such settings compared to care provided in parallel specialist clinic setting (Pfeiffer *et al.*, 2010; Sweeney *et al.*, 2012; Bedelu *et al.*, 2007; O'Connor *et al.*, 2011; Mutevedzi *et al.*, 2010, Chan *et al.*, 2010). Also, integrating HIV care into PHC have been reported to improve efficiency in the use of available resources and structures, patient waiting time, and ensures that funds leveraged for any of the services also benefited the others (Coetzee *et al.*, 2004; Pfeiffer *et al.*, 2010). Furthermore, lower costs of patient care (Long *et al.*, 2011; Brennan *et al.*, 2011), improved capacity of staff due to opportunities for in-service training (Price *et al.*, 2011), and expansion of health management information system databases (Pfeiffer *et al.*, 2010; Coetzee *et al.*, 2004) were additional benefits of integrated health care.

Albeit the enormous gains from integrated health care, integrating HIV/AIDS care into PHC may come with serious disadvantages if not adequately funded or managed. In South Africa, the integration of HIV with sexual and reproductive health services resulted in poor outcomes

from increased patient burden, inadequate staffing and resistance from existing health care workers (Smit *et al.*, 2012). Others have also reported that integrated health care has resulted in lower utilisation and patient satisfaction (Nyamuryekunge *et al.*, 1997), reduced knowledge of health intervention (Tuladhar and Stoeckel, 1982), and increased perception of being stigmatised (Church *et al.*, 2013). However, the evidence presented on the potential benefits of adopting an integrated approach to healthcare provision appears to outweigh any demerits. It is for this reason that the Nigerian government adopted and piloted the integrated treatment and care of HIV, by incorporating HIV treatment and care services, which used to be delivered parallel to the routine primary health care, into its PHC system with the aim to improve quality of care and treatment outcomes.

The Kumbotso Comprehensive Healthcare Centre (KCHC) is one of the primary healthcare delivery centres in Nigeria which were selected to pilot the new integrated care in 2010, and this study has drawn on data generated from the implementation of the integrated care at the centre to understand the potential impact of the integration. In the next section, a description of the development and subsequent implementation of the integration care and treatment service/intervention is presented to provide some context and rationale of the present study.

### **1.5.1 Development and implementation of the integrated care and treatment model**

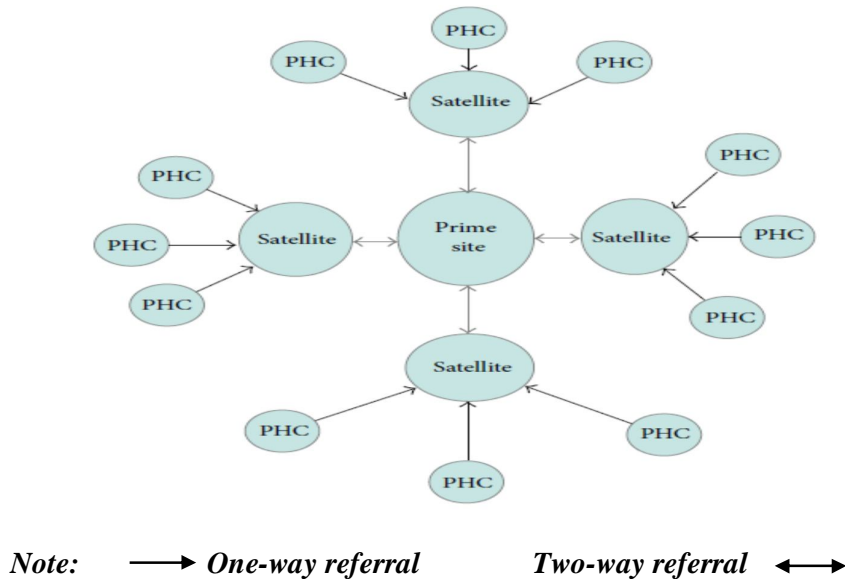
In Nigeria, the decentralisation of HIV care and treatment from tertiary and secondary health care facilities and integration into PHC started in 2003. This followed the realisation by the Federal Ministry of Health, of the need to expand coverage of HIV care and support services to underserved communities, in line with the global policy of universal access to ART advocated by the United Nation's Millennium Development Goal (MDG) 6 (Okonkwo *et al.*, 2014). As previously discussed, estimates from Nigeria showed that 3229757 people were

living with HIV virus in 2013, and 1476741 required anti-retroviral drugs (NACA, 2014), but only 30% of those in need of urgent treatment could access ART (FMOH and MEASURE Evaluation, 2014). The National guidelines on HIV/AIDS care and support in Nigeria recommends that eligible people living with HIV (PLHIV) should receive unrestricted access to medical treatment of HIV/AIDS and its complications including ART, care for emotional issues and mental health problems associated with HIV/AIDS through the National HIV/ AIDS programme (NACA, 2014). As stated earlier, integration of HIV care and treatment within PHCs that are at the doorsteps of the majority of the population would guarantee sustainable access to these services (Ivers, Kendrick and Doucette, 2005; Egger, 2006; Wester *et al.*, 2005).

The major implementing partners of the PEPFAR project supported the development of the integrated care in Nigeria: The United States Embassy in Nigeria, United States Government (U.S.G) agencies including Communicable Disease Control (CDC), the United States Agency for International Development (USAID) among others (Center for Global Development, 2020). Although documentation on details of the implementation of HIV integration within PHC in Nigeria is scarce, Okonkwo *et al.* (2014) described the implementation model used in Nigeria as the “hub-and-spoke” model (Figure 1.1). In this model, the central project sites of the PEPFAR project, mostly the teaching hospitals in the country and the central project sites for the HIV project where services were decentralised from, are used as the "hub" and the referral centres. The spoke comprised of 13 satellite sites, selected from secondary-level hospitals located at semi urban and rural communities within different Local Government Areas (LGAs) in the states based on a preliminary assessment of the PHC facilities in the country (FMOH and MEASURE Evaluation, 2014). They include a combination of public, private, and faith-based health centres that offer general health services. Hitherto, the satellite sites were naive for provision of comprehensive ART services, although all were providing single-dose



nevirapine for PMTCT and HCT prior to the scale-out process. Each of the secondary-level facilities was in turn linked to at least three PHC facilities.



**Figure 1.1: Hub and spoke model of HIV decentralisation in Nigeria (Okonkwo *et al*, 2014).**

### 1.5.2 Pilot implementation at the Kumbotso Comprehensive Health Centre (KCHC)

The pilot service was jointly developed as part of an understanding between the Nigerian Federal Ministry of Health, AKTH, the Institute of Human Virology Nigeria, and the Institute of Human Virology of the University of Maryland School of Medicine (Charurat, *et al.*, 2010). The piloting took place in 2003, at the KCHC. Implementation required shifting of the task for management of HIV from physicians to nurses, community health extension workers (CHEWs), trained peer educators, and to the patients. In addition, decentralising HIV treatment and care and integration within KCHC was expected to strengthen community involvement by linking community-based interventions with the PHC, thereby improving access to health services (FMOH, 2014).

Before the decentralisation of HIV care in the country, which paved way for the integration of the HIV services within PHC, treatment and care for HIV was a separate stand-alone service. The available service was ART programme, which was supported by Nigerian Institute of Human Virology (NIHV-N) and operated at the "SS Wali" treatment centre within the tertiary hospital - AKTH. The components of the programme included the adult antiretroviral treatment (ART), paediatric ART, PMTCT of HIV, treatment support services (adherence support, home-based care), HIV integrated laboratory services, ARV pharmacy service, and monitoring and evaluation (AKTH, 2013). By December 2009, there were 10,846 patients on the HIV programme in AKTH (84.1% adult and 15.9% paediatric) and 6110 (91.7% adults and 8.3% children) were on ART. Furthermore, 3730 antenatal care (ANC) clients were counselled and tested in 2009. Of these, 372 (9.8%) were found positive for HIV and were commenced to join the antiretrovirals (ARVs) programme. At present, AKTH serves as the hub of the ART programme in many health facilities within the north-western region of Nigeria (AKTH, 2013). By 2010, the antiretroviral (ART) component of the integrated programme was decentralised from AKTH and integrated into the PHC in KCHC.

Decentralisation of HIV services and integration within PHC services in KCHC then became the devolution of part of the responsibility for the HIV treatment and care from the tertiary level AKTH ART centre to KCHC. Under the arrangement the health facility was to offer additional ART services together with the routine PHC services (FMOH, 2014). This implied using facility for outpatient and directly observed treatment short-course (DOTS) services for tuberculosis (TB) treatment to deliver ART services, MCH facilities for PMTCT services, and the laboratory for routine services to offer HIV laboratory service.

### ***1.5.2.1 Description of the intervention/ integrated care service***

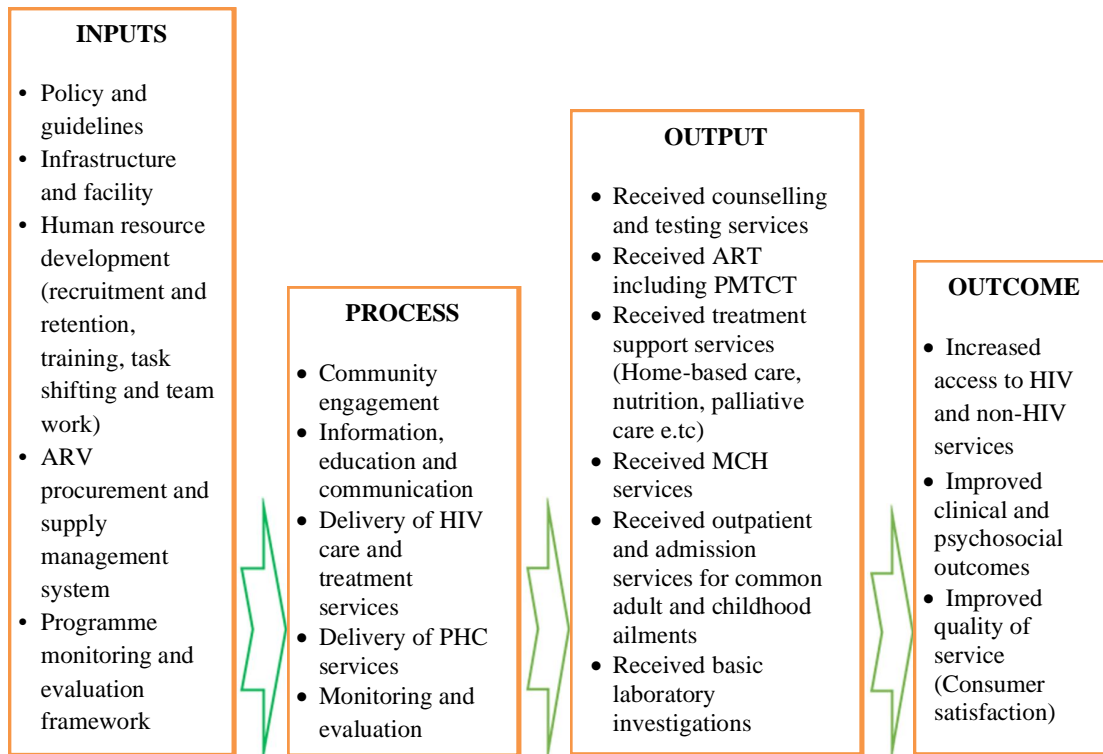
Figure 1.2 describes the integrated care and treatment intervention's logic model. The logic model explains how the integrated service works or was expected to work in the Nigerian context. The components of the service, described in detail below, include training, community engagement, education and information sharing; and treatment, care and support for PLWH.

- a. **Training of health workers:** Health workers working in the PHC facilities were trained on the minimum package of HIV care to be delivered at PHC recommended by the national guidelines for the decentralisation of ART services (FMOH, 201). In line with the guidelines, the health workers were trained on HCT, initiation of ART including PMTCT, routine ARV-refill, adherence counselling, psychosocial counselling, home-based care services, nutrition support, palliative care, and basic diagnostic techniques among others. This is in addition to the services provided under the primary health care under one roof approach. In order to improve on the efficiency in service delivery, the health workers were also trained on communication skills, logistic management, patients' records and appointment systems, and monitoring and evaluation. Regular re-training sessions were conducted to keep the health workers updated on the dynamic needs of HIV management in the integrated care setting.
  
- b. **Community engagement:** The HIV positive patients were mobilised and trained to form treatment and peer support groups that work as volunteers that provide basic HIV education to community members, mobilise them to take HIV tests, normalise HIV stigma and discrimination and linkage of community members to clinic and social support including psychosocial, child care and income generating activities/empowerment.

- c. **Education and information sharing:** At every opportunity in the outpatient clinic, ANC, postnatal clinic/ family planning clinic and during immunisation sessions, all patients received health talks on HIV prevention, care and support, and on general prevention practices like personal and food hygiene, proper nutrition, immunisation and so on. These messages are extended to the communities through outreach sessions organised by the health workers, or through the treatment and peer support groups that work in the communities.
  
- d. **HIV counselling and Testing:** The integrated service provides HIV counselling and testing (HCT) to all persons accessing healthcare at the KCHC outpatient department for the first time, and all pregnant women accessing antenatal, immunisation, family planning services at the centre. Those found positive received posttest counselling, and were referred to the consulting physician for management or treatment planning.
  
- e. **Treatment with Antiretroviral (ART):** Patients who test HIV positive were treated with ART according to national treatment guideline. The guidelines follow the WHO HIV treatment recommendation that all patients assessed as being in WHO clinical stage 4, 3 with CD4 count < 350 cells/mm<sup>3</sup> or any WHO stage with a CD4 count 200 to 350 cells/mm<sup>3</sup> receives ART (FMOH, 2007). The first line ART regimen in fixed-dose combination of nevirapine, lamivudine and stavudine were used as the first-line ART regimen, and second-line regimens were reserved for cases of treatment failure or toxicity from the first line drugs. Combination of a boosted protease inhibitor (bPI) plus two nucleoside reverse transcriptase inhibitor (NRTIs) was recommended (WHO, 2010) as second-line regimen. In AKTH/ KCHC, a combination of Zidovudine (AZT), Lamivudine (3TC) and Lopinavir-Ritonavir (or Azatanavir-Ritonavir) are used as

second-line regimen if Tenofovir (TDF) has been used in the first-line combination. However, TDF/3TC/Lopinavir-Ritonavir (or Azatanavir-Ritonavir) combination is used as second-line regimen for patients who have used AZT in the first-line drugs combination.

- f. Psychosocial support and care:** The integrated care facility provide counselling support services for patients on healthy living with the HIV virus, adherence counselling, difficulty coping with HIV diagnosis or HIV related conditions, normalising HIV stigma and discrimination among others. The support specialists in the clinic also provide referral or linkage service to mental health clinic, legal support services for cases of discrimination in employment, gender-based and domestic violence, housing and public accommodation; and linkage to income generating activities.
  
- g. Supervision and monitoring of service delivery:** After initiation of antiretroviral treatment, HIV patients were re-assessed after two (2) weeks, and thereafter assigned on monthly follow up visits, provided they have no complaints. After three (3) months, stable patients were subsequently switched to eight (8) weeks follow up appointment. The HIV programme in Kano is currently managed by the SACA with support from partner agencies working in the state. The committee is responsible for coordinating HIV related operations and service delivery. Specifically, SACA is responsible for promoting task shifting, improving laboratory and diagnostic services; and strengthening procurement and supply management systems.



**Figure 1.2: Framework for understanding outcomes of integrating HIV and PHC services (Author’s construct)**

## 1.6 RESEARCH QUESTIONS

This research was informed by the lack of evidence to understand the impact of the implementation of the integrated HIV care service in Nigeria. Following the implementation of the integrated care for HIV service in KCHC in 2010, no research has been arranged to evaluate the effect of the integration on service utilisation, service quality and patients’ satisfaction. A scoping review of the literature helped to understand the nature, magnitude and volume of literature that has already addressed this topic, and the research gaps that could be addressed by this thesis. Based on the programme initial theory of change presented in the model (Figure 1.2), and the findings of the scoping review, the following research questions were formulated to address the evidence gaps:

1. What has worked following the implementation of an integrated HIV care in Nigeria?
2. Why has the integrated HIV care service worked or did not work within the Nigerian context?

## **1.7 STUDY AIM AND OBJECTIVES**

The aim of the study was to evaluate the performance of the integrated HIV care service delivered as part of routine PHC service in Nigeria. The study also assessed the factors that influence the service performance and impact.

### **1.7.1 Specific objectives**

1. To assess the effect of the integrated HIV care service on uptake/utilisation of HIV counselling and testing (HCT) and anti-retroviral therapy (ART) provided at the KCHC.
2. To assess the effect of the integrated HIV care on uptake /utilisation of non-HIV services provided to both HIV and non-HIV patients at the KCHC.
3. To identify and describe the barriers to, and facilitators of, uptake of the integrated HIV care service.
4. From the perspectives of the service-users, assess their satisfaction and perceived stigma associated with the integrated care.
5. To explore the views/ perceptions and experiences of health service providers (health workers and health administrators) and service users (patients) with respect to the integrated HIV care delivery.

**CHAPTER TWO: INTEGRATION OF HIV CARE INTO ROUTINE PRIMARY  
HEALTHCARE SERVICES IN LOW- AND MIDDLE - INCOME COUNTRIES  
(LMICs) - A SCOPING REVIEW OF LITERATURE**

**2.1 INTRODUCTION**

This chapter presents results from a systematic scoping review of the literature to understand the extent and nature of the evidence available on the impact of integrating HIV care into PHC. The review was conducted primarily to identify gaps that exist in the literature so that they can be addressed in the primary study of this thesis. The specific objectives of the review are outlined in section 2.3.

**2.2 RATIONALE FOR THE REVIEW**

Despite the numerous studies demonstrating the benefits of integrated care discussed in chapter one, there is lack of reviews on this subject that has attempted to synthesise evidence to understand whether integrating HIV care into an already overburdened primary healthcare systems in LMICs is beneficial. A quick search in PubMed revealed that no scoping review has yet explored what worked, and what factors influenced success following integration of HIV care into PHC system in LMICs.

A systematic scoping review, rather than a systematic literature review with meta-analysis was chosen in order to map out the literature available on the integration of HIV care into primary health care. The choice of this approach was largely informed by Brien *et al.* (2010), asserting that scoping review is a novel methodology for assessing the depth and breadth of a body of literature on area of interest systematically. Until recently, much less emphasis has been placed on this technique to ‘map’ relevant literature in particular areas of interest (Arksey and O’Malley, 2005). According to Mays *et al.* (2001), scoping review can be undertaken as



standalone projects in complex settings or under settings where an area has not been comprehensively reviewed. Armstrong *et al.* (2011) and Brien *et al.* (2010) reported that scoping review is used to inform a systematic review, especially where the topic has a very broad scope. This review became imperative to identify whether or not a systematic literature review is feasible, that is, if literature in the area of interest exist, or relevant if systematic reviews have not been conducted already on the effectiveness of integrating HIV care into primary health care (Arksey and O'Malley, 2005). A scoping review was therefore adjudged appropriate in this study to enhance understanding of existing literature, including gaps and uncertainties, clarification of definitions related to the research question and an understanding of the way in which these are conceptualised within existing literature (Arksey and O'Malley, 2005).

### **2.3 AIM OF THE REVIEW**

The aim of the review was to identify and review published research including grey literature in order to understand the nature, magnitude and volume of evidence available on the impact of integrating HIV care into routine PHC systems in LMICs. The specific research questions of the review were:

1. What is the scope of the literature around the integration of HIV services into routine primary healthcare?
2. Is there evidence in the literature demonstrating the impact of integrating HIV care services into routine PHC?
3. What are the likely factors that could facilitate the integration of HIV services into routine PHC?
4. What are the main barriers hindering the integration of HIV services into routine PHC?

5. What are the perspectives of health care providers (workers) and users (HIV patients) and non – HIV patients regarding integrated care?

## **2.4 THE REVIEW APPROACH**

The methodological framework for conducting a scoping review as developed by Arksey and O'Malley (2005) and advanced by Levac *et al.* (2010) was adopted for this review. The process has six steps (Arksey and O'Malley, 2005) including an optional step (Levac *et al.*, 2010): identifying the research question; identifying relevant studies; study selection; charting the data; collating, summarising, and reporting the results. The sixth optional process, recently recommended by Levac *et al.* (2010) involves consultation with stakeholders to ensure comprehensive inclusion of all relevant material. A description of how these steps were applied in this review is presented in sections 2.4.1 to 2.4.5.

### **2.4.1 Identifying the research question**

The framework by Arksey and O'Malley recommend that researchers should maintain a wide approach in formulating research question in order to generate breadth of coverage. Bearing this recommendation in mind the research question formulated for this study was: "What is known from the existing literature about integration of HIV care into PHC in LMICs?"

### **2.4.2 Identifying relevant studies**

The main purpose of scoping review is to be as comprehensive as possible in breadth in identifying relevant studies and reviews suitable for answering the central research question. To identify the relevant studies in this review, a search strategy was developed and used to conduct searches in relevant electronic databases. In addition, reference lists of selected articles were searched to identify studies missed in the database search. Websites of relevant

organisations and conferences were also searched for similar purpose. Local journals not indexed on Medline or other popular academic databases were not hand-searched because of limited access. The search strategy was developed ab-initio to minimise bias as recommended by Wright *et al.* (2007). The search strategy and a description of the search process are described below:

### ***Search strategy***

A comprehensive and reproducible literature search is the foundation of good reviews (Zvi and Chung, 2007). A good search strategy is a reflection of how well the research question is articulated. A good search strategy is worked out by performing separate searches to identify key concepts in the research question, and combining search terms using Boolean logic (Lefebvre *et al.*, 2021, Grewal, Cataria and Dharwan , 2016). This search strategy was developed in consultation with the information specialist at the library of the School of Health and Related Research (SchARR) of the University of Sheffield in November 2015. The search strategy was tested by performing a quick search in MEDLINE described below.

### ***Quick Scoping Search***

Initially, MeSH (Medical Subject Headings) terms were used to search for published literature in MEDLINE. However, an initial search of this database revealed that the MeSH terms could not locate many of the relevant studies. Conducting the scoping search helped to pick the popular keywords indexed in studies related to the integration of HIV care and treatment within PHC services. The scoping exercise was performed using the subject heading “Integration of HIV care and treatment with PHC services”. The keywords were then generated and used to perform detail searches in various databases, in order to identify the relevant studies for inclusion in the review.

### ***Main search for relevant literature***

The outcome of the initial search was used to refine the main search strategy. Using this strategy (Appendix 1) a comprehensive literature search was conducted in various bibliographic databases. According to Grewal, Cataria and Dharwan (2016) a comprehensive literature search to address research questions should include all information relevant to the question(s) of interest. These should include data from published studies and abstracts from conferences. As Dickersin *et al.* (1994) has recommended, for a good review, there is a need for reviewers to perform searches in multiple databases because single database search is unlikely to retrieve all the studies of interest because of coding and indexing issues. Using the additional keywords identified from the scoping search in combination with the MeSH terms and free-texts, a search was conducted in the following databases: MEDLINE, CINAHL, PSYCH-INFO, COCHRANE and EMBASE. These databases contain approximately 90% of indexed health and related research literature (Zhange *et al.*, 2006).

Bibliographies of studies identified in electronic databases were also reviewed to identify additional relevant studies as recommended by Wright *et al.* (2007). This will also take care of publication bias that exists when studies with only positive or substantial differences are published (Song *et al.*, 2013).

Additional studies outside bibliographic databases were searched for using the citation follow-up/ ancestry referencing technique (Booth, Sutton and Papaioannou, 2016). This is because researchers reported that unpublished studies may contain data that would affect the overall conclusions of a review (Sterne, Gavaghan and Egger, 2000; Sterne, Egger and Smith, 2001). Additional search was carried in Google Scholar and in the websites of relevant organisations such as the WHO, United Nations, USAID, including Frontier and Population Council, Pathfinder International, Family Health International among others to identify grey literature. Individuals were also contacted for possible unpublished grey literature and research papers

under preparation. The output of the searches was exported and sorted in Microsoft Excel sheets, and selected articles were saved in Mendeley referencing software. This software was also used to remove duplicate articles from the multiple search results.

### **2.4.3 Selection of studies**

As in systematic reviews, researchers recommend the use of explicit criteria at the outset for selection of relevant studies for scoping reviews in order to sort out irrelevant materials from the broad literature (Brien *et al.*, 2010; Arksey and O'Malley, 2005). In this study, a screening tool was developed based on the specific objectives of the review (Brien *et al.*, 2010). The tool elicited information on the type and relevance of literature on HIV care integration within PHC in LMIC (Table 2.1). The screening process was piloted on a sample of articles retrieved from MEDLINE database. Multiple sample tests of the criteria were also carried out by the research supervisors before giving approval for the screening process to progress.

The screening for relevant studies was conducted twice by the researcher on all articles retrieved from the electronic databases, citation follow-up and grey literature. The researcher read the titles and abstracts of all the articles, applying the inclusion/exclusion criteria in the screening tool (Table 2.1). For inclusion in the scoping review:

- Studies must focus on HIV care integration in PHC
- Studies must have assessed integration at point of delivery
- Studies must use either a qualitative, quantitative or a combination of both in their designs
- Studies must have been implemented in LMICs
- Published in English and available in full text version.

**Table 2.1: Questionnaire for selection of articles for the review**

Question number	Question	Action
1.	Is the study focused on integrated care for HIV?	No - exclude Yes - Next question
2.	Did the study assess integration of any element of HIV care and treatment with any of the PHC services at point of delivery?	No - exclude Yes - Next question
3.	Was the study implemented in low - and middle - income countries (LMICs)?	No - exclude Yes - Next question
4.	Did the study use either a qualitative, quantitative or a combination of both in their designs	No - exclude Yes – Include in the review

#### 2.4.4 Data extraction and charting

Relevant data selected from the previous stage were subjected to sifting, charting and sorting according to issues and themes, based on the Arksey and O'Malley (2005) framework for scoping reviews. Data were charted by the researcher using data charting checklist adapted from the Effective Practice and Organisation of Care (EPOC) group (McAuley and Ramsay, 2002). The form had provision for capturing study details (author and year of publication, country and year of study, setting, study design and purpose); participants (study population including age and sample size); intervention details (description, including alternative intervention or comparator); results; conclusions and key study limitations. The data charting form was piloted on 15 random samples of the included studies. The charting process included reading the selected article, and taking note (sifting) and recording data (charting) on the various domains of the data extraction form. This was done for all of the selected articles for the review. The process was done in two cycles by the researcher to ensure accuracy and completeness of data.

### **2.4.5 Collating, summarising and reporting result**

Sequel to the large volume of literature uncovered in this review, the narrative synthesis approach was used as proposed by Brian *et al.* (2010) in a similar review to organise findings into specific categories based on focus areas. According Arksey and O'Malley (2005) and Levac *et al.* (2010), scoping review does not seek to assess the quality of evidence. Thus, no attempt was made to present a view regarding the 'weight' of evidence in this study.

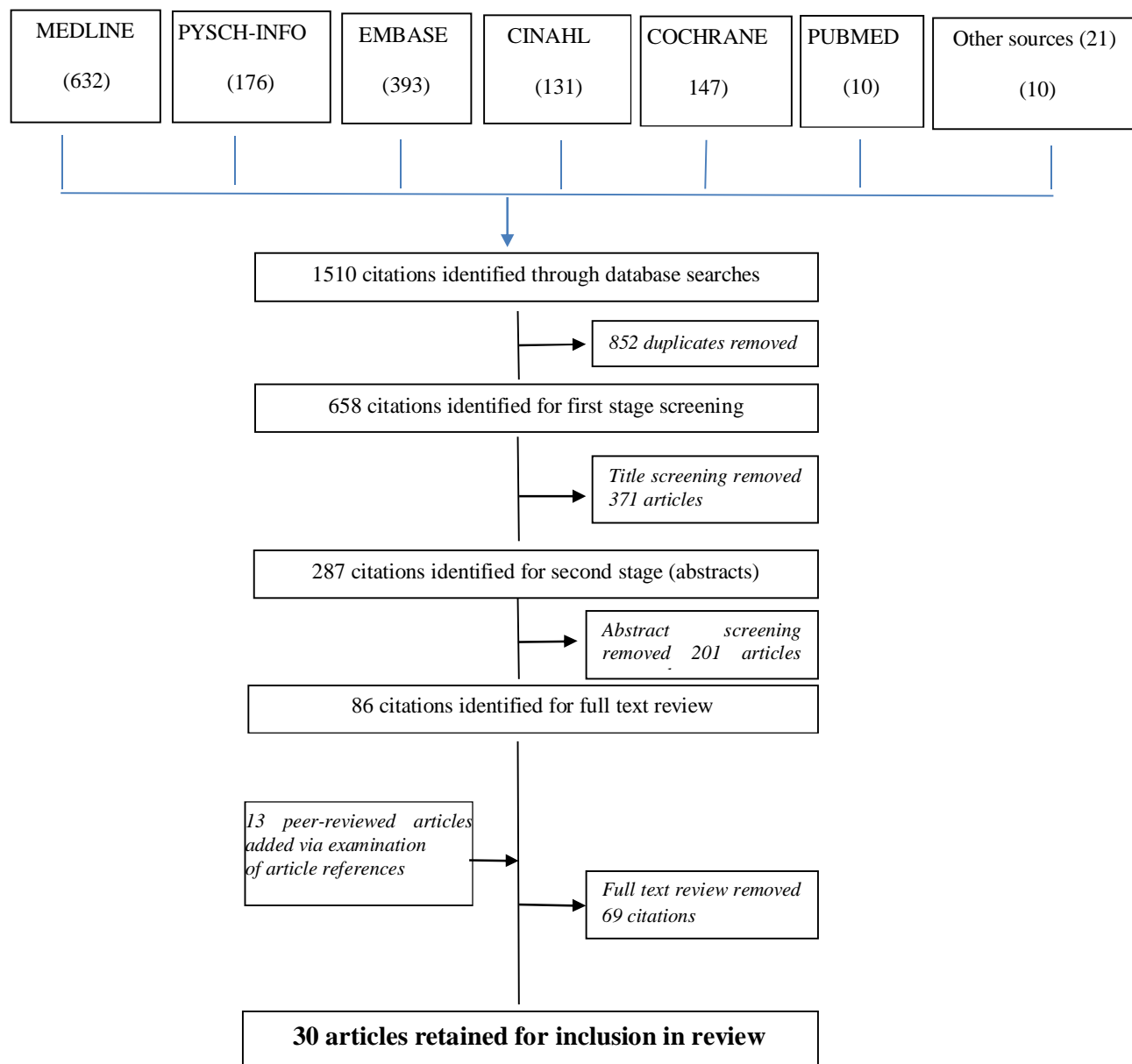
## **2.5 FINDINGS OF THE REVIEW**

### **2.5.1 Introduction**

According to Anderson *et al.* (2008), literature mapping is the most common element of scoping studies. These authors propose that a good literature map outlines the origins of work on topic of interest and gives a good feel for its chronological development. It also gives account of the authors involved, where the work has been carried out, key areas where good evidence appears to be available, and if a part of the literature can be dismissed because of fundamental flaws in the methodology. In this study, the literature mapping was conducted in line with the specific research questions for the literature review.

### **2.5.2 Search results**

In all, 1510 citations were identified through searches conducted in the six (6) databases: MEDLINE, Psych-Info, EMBASE, CINAHL Plus, Cochrane registry of systematic review and PubMed. The total also included technical briefs and reports from WHO (n=5), USAID (n=3), NGOs (n=6) and national programmes (n=7). After removing 852 duplicates using Mendeley referencing software, and filtering on Microsoft Excel programme, 658 citations were available for the first stage (Title) screening. Through this process, 371 citations were removed, and 287 qualified for the second stage (Abstract) screening.



**Figure 2.1: Flowchart for selection of publications for the scoping review**

On examination of the abstracts, only 86 citations were adjudged to be eligible for full text review. Thus, the full versions of the 86 citations were printed for reading to determine their relevance with the study objectives. A further 13 papers were included after scanning through



the reference lists of the included studies. After the full texts review, 69 citations were removed, and only 30 citations were included in the review. Since scoping studies aim to map key concepts underpinning a research area in addition to the main sources and types of evidence available as proposed by Mays *et al* (2001), while examining the reference lists of included studies, relevant publications on the concepts and theories of integration that did not meet the inclusion criteria for this review were used as part of background literature review but not included among the group of articles for literature mapping. The flowchart for the identification and selection of the publications for the scoping review is as shown in Figure 2.1.

### **2.5.3 What is the scope of the literature around the integration of HIV services into routine primary health care?**

#### ***2.5.3.1 Regions and the country of studies***

South Africa (n=7) and Kenya (n= 4) had the highest number of studies conducted on this topic. Two studies (Greig *et al.*, 2012 and Sweeney *et al.*, 2014) were multi-country studies. Only one study was conducted in Nigeria (Hembah-Hilekaan *et al.*, 2012). The studies were conducted between years 2003 and 2015 with most of them conducted between years 2003 and 2012. The distribution of the studies by their geographical location is as shown in Table 2.2. All the 30 included studies were conducted in primary health care facility setting.

#### ***2.5.3.2 Types of the studies***

All the 30 studies included in the review were peer-reviewed primary studies. Out of the 30 included studies, 24 were quantitative studies, four were mixed methods studies and the remaining two were qualitative studies (Table 2.2). In the course of the review, four systematic reviews (Lindegren *et al.*, 2012; Legido-Quigley *et al.*, 2013; Suthar *et al.*, 2013; Suthar *et al.*, 2014) and one scoping review (Hope *et al.*, 2014) focusing on integration of HIV care with

different elements of PHC services were encountered. However, because the primary studies included in these systematic reviews were already included as part of this review, they were not treated as separate “stand-alone studies”.

**Table 2.2 Characteristics of reviewed studies**

<b>Region</b>	<b>Countries</b>	<b>Number of studies</b>	<b>Publication type</b>	<b>Setting</b>	<b>Study types</b>
Africa	South Africa	7	JA	Health facility	Q (6), q (1)
	Kenya	4	JA	Health facility	Q(3), q (1)
	DRC	2	JA	Health facility	Q (2)
	Malawi	2	JA	Health facility	Q (2)
	Mozambique	2	JA	Health facility	Q (2)
	Tanzania	2	JA	Health facility	Q (1), MM (1)
	Ghana	1	JA	Health facility	MM (1)
	Nigeria	1	JA	Health facility	Q (1)
	Rwanda	1	JA	Health facility	Q (1)
	Zambia	3	JA	Health facility	Q (1), MM (2)
Central America	Guatemala	1	JA	Health facility	Q (1)
Caribbean	Haiti	1	JA	Health facility	Q (1)
Asia	India	1	JA	Health facility	Q (1)
Multi-country		2	JA	Health facility	Q (2)
<b>Total</b>		<b>30</b>			

*JA = Journal article, Q = Quantitative, q = Qualitative, MM = Mixed methods*

### **2.5.3.3 Study designs**

The study designs used by the primary studies were varied and had no definite geographical pattern. Thirteen studies utilised a cohort study design (Table 2.3), of which eight were retrospective cohort studies while the remaining five studies were prospective cohort studies (Schulz *et al.*, 2013; Patel *et al.*, 2014; Patel *et al.*, 2013; Topp *et al.*, 2010 and Owiti *et al.*, 2015). Twelve (12) studies were descriptive studies. Of these nine were descriptive cross-sectional (Table 2.3), two were case studies (Phiri *et al.*, 2011 and Pfeiffer *et al.*, 2010), and the

remaining one study was a comparative study (Ansa *et al.*, 2014). Five of the included studies used a quasi-experimental design (Killam *et al.*, 2010; Nyasulu *et al.*, 2013; Bindoria *et al.*, 2014; Ikeda *et al.*, 2014; Odeny *et al.*, 2013). A summary of the study characteristics is shown in Table 2.2

**Table 2.3: Classification of studies by study design**

Country	Type of study design					
	Cross-sectional	Case study	Comparative	Retrospective cohort	Prospective cohort	Quasi-experimental
South Africa	√√			√√√	√	√
Kenya	√√				√	√
DRC					√√	
Zambia	√				√	√
Haiti				√		
Malawi		√		√		
Mozambique		√		√		
Ghana			√			
Guatemala						√
India						√
Nigeria	√					
Rwanda				√		
Swaziland						
Tanzania	√√					
Multi-country	√			√		
Sub-totals	9	2	1	8	5	5

#### 2.5.3.4 Focus of the studies

Twenty-nine (29) out of the 30 included studies examined the impact of integrating HIV care and treatment services with PHC frontline services. The remaining one study explored knowledge, attitude and barriers to MTCT of HIV by women attending ANC in Nigeria (Hembah-Hilekaan *et al.*, 2012). However, it was also observed that many of the studies had many objectives and as such addressed multiple areas. Overall, 19 studies examined impacts of integrating HIV care with PHC (Tables 2.4 to 2.6), three studies focusing on assessing

barriers to integrated HIV care (Table 2.7), and eight studies examining health workers' and service users' (HIV patients) perceptions and experiences with integrated care (Tables 2.8 and 2.9). The review did not find any study that explored the factors that facilitate or enabled integration of HIV into routine PHC, which thus suggests that there is gap a in the literature addressing this issue.

#### **2.5.4 What is the impact of integrating HIV services into routine PHC?**

Here, the findings on impact are presented in three thematic areas: 1) Impact on access to healthcare; 2) Impact on health outcomes, and 3) Impact on quality of health care.

##### **2.5.4.1 Impact on access to health care**

Eleven out of the 30 studies selected for this review reported on indicators of access to health care (Table 2.4). Majority of these studies (8) were from Africa, one from the Caribbean (Peck *et al.*, 2003), one from South America (Ikeda *et al.*, 2014), and the remaining one study came from South Asia (Bindoria *et al.*, 2014).

Although the studies reported on different indices of access, they generally reported increased uptake of HIV testing in integrated health facilities compared to single service or referral facilities (Bindoria *et al.*, 2014, Ansa *et al.*, 2014, Peck *et al.*, 2003 and Topp *et al.*, 2010). ART enrolment and initiation (Killam *et al.*, 2010, Nyasalu *et al.*, 2013, Ikeda *et al.*, 2014, Owiti *et al.*, 2015, Topp *et al.*, 2010 and Pfeiffer *et al.*, 2010) and co-trimoxazole preventive treatment (CPT) for opportunistic infections (Owiti *et al.*, 2015) were reportedly higher in integrated health facilities compared with single-service or referral facilities. Bindoria *et al.* (2014) reported increased uptake of Nevirapine prophylaxis among HIV positive pregnant women and their exposed babies with integration of HIV care.

Table 2.4 also shows that only one of the studies reviewed assessed the impact of integrating HIV services into PHC on access to the non- HIV PHC services (Price *et al.*, 2009). The study

reported that preventive services, hospitalisation rates, and child health services increased with integration. The study also observed that there was no decline in curative care and laboratory services with integration of HIV care in the PHC.

**Table 2.4: Impact of HIV and PHC services integration on access to healthcare**

Author/ Year	Country	Study design	Study aim and method	Key results
Killam <i>et al.</i> , 2010	Zambia	Quasi-experimental	A stepped-wedge design was used to evaluate a consecutive sample of HIV-infected ART eligible pregnant women in 8 public sector clinics (Before integration = 17619; After integration= 13917)	ART enrolment – after integration (44%), before integration (25.3%), AOR = 2.06, 95% C.I (1.27 to 3.34), ART initiation after integration (32.9%), before integration (14.4%), AOR = 2.01, 95% C.I (1.37 to 2.95)
Nyasalu <i>et al.</i> , 2013	South Africa	Quasi-experimental	A quasi-experimental design with interrupted time series analysis was used to study impact of nurse-initiated management of ART (NIMART) on ART initiation at PHCs and referral facility. 20,535 ART-naive participants initiated on ART (6957 before NIMART and 13578 after NIMART intervention) were used for assessment	PHC ART initiation increased by 99 patients immediately after NIMART (p = 0.013) and continued to increase by 9 every month (p=0.013); referral facility initiation decreased by 12 after NIMART (p = 0.791) and decreased by 18 every month (p = 0.01)
Bindoria <i>et al.</i> , 2014	India	Quasi-experimental	A before and after design was used to study the benefits of integrating the prevention of parent-to-child transmission (PPTCT) with MCH by offering HIV screening at PHC. Data were collected pre and post-integration of HIV care from 42,120 ANC attendees.	Total ANC registration – pre-intervention (52411), post-intervention (53239); % women screened for HIV was 55.4 (pre-intervention) and 79% (post-intervention) (p<0.001); At post intervention, 93% HIV+ women were linked to ART centres, 92% mother-baby pairs received Nevirapine and 89% exposed babies enrolled in infant diagnosis programme.
Ansa <i>et al.</i> , 2014	Ghana	Comparative	A TB/HIV integration comparison of 3 different delivery models of care. Participants were HIV positive TB patients (n=590).	HIV screening was highest at OSS (98.6%) [95% C.I: 97.6 to 99.5%] and lowest at RS (72.5%) [71.9 to 73.9%]; CPT was highest at RS (93.8%) [91.0 to 96.7%] and lowest at PIS (74.7%) [72.8 to 76.5%]; ART was highest at PIS (59.5%) [58.0 to 61.0%] and 10.8% [10.4 to 11.1%] at RS.
Ikeda <i>et al.</i> , 2014	Guatemala	Quasi-experimental	A before and after design was used to examine impact of integrated TB/HIV care on clinical and survival outcomes (n= 99 pre, 155 post-integration)	In pre-integrated programme only 6 patients received ART; in integrated programme, all 155 patients received ART, proportion of patients who received TB

treatment increased (95% C.I.:58.6 vs 100%, p<0.0001); proportion of patients that received ART increased (95% C.I.: 72 vs 22%, p<0.001).

Peck <i>et al.</i> , Haiti 2003	Retrospective cohort	A review of patients records to determine the feasibility, demand and effect of integrating PHC services into VCT	Number of people seeking VCT increased from 142 before integration to 8175 after integration; after integration, new VCT uptakes received AIDS care (17%), TB treatment (6%), STI treatment (18%) and family planning (19%)
Price <i>et al.</i> , Rwanda 2009	Retrospective cohort	A before and after comparison of aggregate service data for 30 PHCs to determine the quantitative effects of integration of HIV care into PHC	Preventive services - increased, hospitalisation rates - increased, child health services - increased, curative care services - no decline, laboratory services - no decline
Owiti <i>et al.</i> , Kenya 2015	Prospective cohort	A before and after comparison of integration programme data for 17 PHCs to assess uptake, timing and outcomes of CPT, ART and anti TB treatment among HIV infected TB patients	Uptake of CPT - pre-integration (71.3%), post-integration (97.8%) [RR 1.37, 95% CI: 1.30 to 1.46], p < 0.001; ART initiation – pre-integration (38.9%), post-integration (60.7%) [RR 1.56, 95% CI: 1.35 to 1.80], p <0.001
Topp <i>et al.</i> , Zambia 2010	Prospective cohort	Prospective assessment of the feasibility of a fully integrated model of HIV and non-HIV outpatient services in 2 clinics	Over 6 months of integrated care in clinic 1: PITC - 2760, uptake of HIV test - 148 (53%), ART enrolment – 80(42%); clinic 2: PITC – 1510, uptake of HIV test – 882 (58%), ART enrolment – 121 (58%)
Phiri <i>et al.</i> , Malawi 2011	Case study approach	A case study approach was used to describe successes and challenges of TB/HIV integration	TB patients with known HIV status increased from 93% (2007-8) to 96% (2009), % of HIV positive TB patients on ART improved from 53% (2007) to 68% (2009)
Pfeiffer <i>et al.</i> , Mozambique 2010	Case study approach	A case study approach was used to describe lessons learnt from integration of HIV/AIDS services into PHC	After integration, HIV treatment was available in 67 health facilities in 23 districts, 80,000 adults were enrolled in HIV program, 30,000 adults were on ART

*N/A = Not available, HR = Hazard Ratio, AOR = Adjusted Odds Ratio, DRC = Democratic Republic of Congo, OSS = One Stop Shop,*

*RS = Referral Site, PIS = Partially Integrated Site, CPT = Co-trimoxazole Preventive Treatment, NIMART = Nurse-initiated management of ART*

#### **2.5.4.2 Impact on health outcomes**

Six studies, all from Africa, reported the effect of integration on health outcomes (Table 2.5). Three of the studies were from South Africa (Schultz *et al*, 2013, Jacobson *et al*, 2015 and Kaplan *et al*, 2014), one from Malawi (Chan *et al*, 2010), one from Democratic Republic of Congo (Patel *et al*, 2013), and a multi-country study by Greig *et al*, 2012. This review observed that four of the six studies considered under this sub-section reported increase in ART and TB treatment success, decrease in the numbers of patients that died, and decrease in treatment default rate for HIV and/or TB treatment in integrated health facilities compared to those in single-service/ referral health facilities (Jacobson *et al*, 2015, Schultz *et al*, 2013, Chan *et al*, 2010 and Patel *et al*, 2013). Kaplan *et al*, (2014) on the contrary reported that death and default rate for HIV patients were lower in single-service health facilities, and ART treatment success was higher in single-service facilities compared with integrated health facilities. Greig *et al* (2012) reported similar mortality outcomes for HIV patients managed in single-service and in integrated health facility (aHR= 1.02 (95% C.I: 0.83 to 1.24). The Greig *et al* study also reported that risk of loss to follow up among HIV patients was lower in integrated health facility compared to single service facility [aHR = 0.71 (95% C.I: 0.61 to 0.83)].

All the studies reviewed did not report on the impact of the integrated care on outcomes of non – HIV PHC services (Table 2.5), which reveals a serious evidence gap.



**Table 2.5: Health outcomes of the HIV and PHC integrated services**

Author/ Year	Country	Study design	Study aim and method	Key results
Schultz <i>et al.</i> , 2013	South Africa	Prospective cohort	A comparison of the outcomes of integrated and single (vertical) care. Participants were TB-HIV co-infected patients at PHC facilities (n= 271)	Unfavourable TB treatment outcome: single- 28.7%, integrated - 5.9% (p<0.0001) Unfavourable ART outcome: single - 30.1%, integrated - 7.4% (p<0.0001)
Jacobson <i>et al.</i> , 2015	South Africa	Retrospective cohort	A retrospective analysis of clinic records of 657 HIV positive patients initiating TB treatment to evaluate outcomes in TB/HIV co-infected patients in integrated and decentralised system	Treatment success - integrated - 87.1%, single- 78.5%; died - integrated 2.1%, single - 16.7%; default - integrated - 10.7%, single - 4.2%
Chan <i>et al.</i> , 2010	Malawi	Retrospective cohort	A retrospective analysis of routine clinic data for 8093 patients registered for ART to assess the effect of decentralisation of ART provision in an integrated PHC model	Died – integrated – 2.9%, single – 11.3% Default – integrated – 7.4%, single – 15.0%
Greig <i>et al.</i> , 2012	Nine countries in SSA	Retrospective cohort	A retrospective analysis of clinic records of 17,561 adult ART patients ≥ 15 years (n=15,861 - vertical; 1685 - integrated) to observe outcomes of HIV integration	Mortality - similar outcomes for integrated and single facility [aHR=1.02 (95% CI: 0.83-1.24)] Risk of loss to follow up - lower in integrated [aHR = 0.71 (95% CI: 0.61-0.83)]
Kaplan <i>et al.</i> , 2014	South Africa	Retrospective cohort	A retrospective review of TB programme data for 13 integrated TB/ART PHCs and 4 single service PHCs to compare TB treatment	Death – integrated (6.4%), single-service (5.2%); default – integrated (10.8%), single-service (8.8%); treatment success – integrated (74.1%), single-service (81.7%); treatment failure – integrated (1.6%), single-service (1.7%); transfer out – integrated (4.7%), single-service (1.9%)
Patel <i>et al.</i> , 2013	DRC	Prospective cohort	A prospective analysis of 31 HIV infected children 3-18 years initiating anti-TB treatment to observe outcomes of integrated HIV/TB treatment	73% of children-initiated ART; cure rate for TB = 6.5%; completed treatment = 80.5%, died = 6.5%; defaulted = 6.5%

*aHR = Adjusted hazard ratio, SSA = Sub-Saharan Africa*

#### ***2.5.4.3 Impact on quality of health care***

Six of the 30 studies, all from Africa, reported on the impact of integrating HIV and PHC on the quality of health care provided (Table 2.6). The studies consistently found that integration of HIV and PHC services increased efficiency and quality of health care as evidenced by increased patient - provider contact time for OPD (Topp *et al*, 2010), reduced waiting time for both OPD and ART patients (Topp *et al*, 2010), reduced time to ART initiation (Kershberger *et al*, 2012, Owiti *et al*, 2015, Patel *et al*, 2013 and Pfeiffer *et al*, 2010), reduced time to CPT initiation (Owiti *et al*, 2015); and increase in proportion of patients that were adherent to ART (Patel *et al*, 2013). Only the study by Topp *et al* (2010) reported a statistically significant decrease in patient – provider contact time for ART following integration of HIV care into out-patient care. In Mozambique, Lambdin *et al* (2013) reported that patients attending integrated facility had higher risk of attrition in late follow-up compared with those attending single service facilities.

**Table 2.6: Impact of HIV-PHC integration on quality of health care**

Author/ Year	Country	Study design	Study aim and method	Key results
Lambdin <i>et al.</i> , 2013	Mozambique	Retrospective cohort	A retrospective analysis of records of 11,775 ART naïve patients initiating treatment at integrated and vertical centres to estimate association between clinic model, experience and attrition	Patients attending integrated facility had higher risk of attrition in late follow up: - Integrated HR= 1.75 (95%CI: 1.04-2.94) - Single HR = 0.57 (95%CI: 0.35-0.91)
Kerschberger <i>et al.</i> , 2012	South Africa	Retrospective cohort	A retrospective review of clinic data for 209 TB/HIV co-infected adults before and after integration of TB and HIV services to compare time to initiation of ART	Median time to ART (days): Pre - 147 (95% CI: 85-188), Post - 75 (95% CI: 52-119). Patients post integration were 1.6 times (95% CI: 1.11-2.29) more likely to have started ART
Owiti <i>et al.</i> , 2015	Kenya	Prospective cohort	A before and after comparison of integration programme data for 17 PHCs to assess uptake, timing and outcomes of CPT, ART and anti TB treatment among HIV infected TB patients	Median time to CPT initiation (days): Pre-integration- 7, Post-integration - 2; Median time to ART initiation (days): Pre-integration - 42, Post-integration - 34
Topp <i>et al.</i> , 2010	Zambia	Prospective cohort	Prospective assessment of the feasibility of a fully integrated model of HIV and non-HIV outpatient services in 2 clinics	- Median OPD patient - provider contact time (minutes) - clinic 1: 55% increase for OPD: pre- 6.9, post - 10.7 (p<0.001); 1% decrease for ART: pre-27.9, post - 27.1 (p = 0.94; median waiting times increased by 36 (p< 0.001) and 23 minutes (p<0.001) for ART and OPD respectively. - Clinic 2: median OPD patient provider contact time (minutes) increased 110% - pre = 6.1, post = 12.8 (p<0.001); decreased for ART by 23% pre = 23, post = 17.7 (p,0.001); median waiting times increased by 47 (p<0.00) and 34 minutes (p<0.001) for ART and OPD respectively

Patel <i>et al.</i> , DRC 2013	Prospective cohort	A prospective analysis of 31 HIV infected children 3-18 years initiating anti-TB treatment to observe outcomes of integrated HIV/TB treatment	53% children initiated “timely ART” as per protocol; median time to ART initiation = 68 days (IQR 59-84); 78.3% were adherent to ART
Pfeiffer <i>et al.</i> , 2010	Mozambique Case study approach	A case study approach was used to describe lessons learnt from integration of HIV/AIDS services into PHC	Average time to ART initiation - significantly faster in integrated; adherence to ART - better in integrated; loss to follow up from ANC and TB testing to ART services declined from 70% to < 10% in many integrated facilities

*HR = Hazard Ratio, IQR = Inter-quartile range*

### **2.5.5 What are the main barriers hindering the integration of HIV services into routine PHC?**

Table 2.7 summarises the only three studies that reported on factors that either hindered integration of HIV care with primary health care services (Uebel *et al.*, 2013; Hembah-Kilekaan *et al.*, 2012) or undermined the efficacy of the models (Topp *et al.*, 2013). Common barriers highlighted by the three studies included workload and staff shortages. The study from Nigeria (Hembah-Hilekaan *et al.*, 2012) further identified fear of stigmatisation, non-availability of service close to consumers, unfriendly attitude of healthcare providers, knowledge about location of service, and lack of encouragement from partner as common barriers to integration of PMTCT and ANC services. Additional barriers reported by the other studies were administrative systems (Uebel *et al.*, 2013) and inadequate infrastructure (Topp *et al.*, 2013).

It is worth mentioning at this point that none of the studies reviewed reported on factors that facilitate integration of HIV care and treatment within PHC services.

**Table 2.7: Barriers to integration of HIV care into primary health care**

Author/ Year	Country	Study design	Study aim and method	Key results
Uebel <i>et al.</i> , 2013	South Africa	Cross-sectional	A synthesis of findings of 3 qualitative studies using meta-ethnographic approach to identify factors that influence integration of HIV care into PHC. Participants were staff and patients from 31 HIV / PHC facilities.	Factors that hindered integration include: existing administrative systems, workload, staff shortages
Hembah-Hilekaan <i>et al.</i> , 2012	Nigeria	Cross-sectional	A descriptive study design was used to assess knowledge, attitude and barriers to uptake of PMTCT. Participants were a random sample of 384 women attending ANC and PNC of a rural health facility	Common barriers to PMTCT among ANC clients include: fear of stigmatisation (65.1%), non-availability of service close to respondents (63.5%), understaffing of health facilities (60.4%), unfriendly attitude of healthcare providers (45.3%), lack of encouragement from partner (49.2%), knowledge about location of PMTCT services (26%)
Topp <i>et al.</i> , 2013	Zambia	Cross-sectional	A mixed methods approach was used to examine the effect of integrated model of care on organisation of clinic services, and perceptions service providers about integrated care	Factors that undermined efficacy of the integration model include: ongoing staff shortages, inadequate infrastructure

PNC = Postnatal care

### **2.5.6 What are the perspectives of health workers and/ or HIV patients regarding integrated care for HIV?**

Out of the 30 included studies, three reported on the perceptions of the health care providers about integration of HIV into PHC services (Topp *et al.*, 2010; Mathibe *et al.*, 2015 and Wallace *et al.*, 2014), and one study reported on the experiences of the workers with integrated care (Mutemwa *et al.*, 2013).

The review found that providers perceived that integrated care reduces stigma (Topp *et al.*, 2010, and that workload from integration of services affects clinicians' performance (Mathibe *et al.*, 2015). Providers also perceived that integrated care is beneficial because it helps in reaching mothers who ordinarily would not have come for HIV testing, but on the other hand they also perceived that integrated care was associated with poor patient flow affecting confidentiality, heavier workloads on providers and community stigma against HIV infected persons (Wallace *et al.*, 2014). On the other hand, health care providers' experiences with integrated care were numerous (see Table 2.8). One study, conducted in Kenya (Mutemwa *et al.*, 2013) classified them into personal and operational level experiences.

As presented in Table 2.9, five studies reported findings on perceptions of the patients and two other studies reported their experiences with integration of HIV and PHC services. The two studies on experiences of the patients were about their satisfaction with integrated care. One of the studies (Odenyl *et al.*, 2013) reported that post-integration of HIV care with PHC, patients were more likely to be satisfied with reception services [aOR = 2.71 (95% CI: 1.32 to 5.56)], HIV education [aOR = 3.28 (95%CI: 1.92 to 6.83)] and waiting time [aOR = 1.97 (95%CI: 1.03 to 3.76)]. The second study (Vo *et al.*, 2012) however reported more satisfaction with care among HIV infected patients in integrated facility ( $p = 0.044$ ), but there was no difference

in satisfaction with the care obtained from integrated and not integrated facilities among HIV un-infected patients.

Five of the studies reported on the patients' perceptions about integration of HIV and PHC services (Table 2.9). Two of the five studies reported that patients were concerned about stigma of separate HIV services (Uebel *et al*, 2013) and perceived reduction in stigma with integrated care (Topp *et al*, 2010). Patients also perceived more satisfaction with integrated care, associated reduction in waiting time, and increased efficiency and quality of service, but on the other hand also perceived that providers may experience burn-out if their number was inadequate (Awadhi *et al*, 2012, Mathibe *et al*, 2015, Wallace *et al*, 2014). A study from Tanzania reported that perceived challenges of integrated care among mothers included fear of HIV testing, poor spousal support and mandatory HIV testing (Wallace *et al*, 2014).



**Table 2.8: Health service providers' perceptions and experiences with Integration of HIV and PHC services**

Author/ Year	Country	Study Design	Study aim and method	Key results
Topp <i>et al.</i> , 2010	Zambia	Prospective cohort	Prospective assessment of the feasibility of a fully integrated model of HIV and non-HIV outpatient services in 2 clinics	Provider interviews indicated broad acceptability of integrated care model; providers highlighted perceived reduction in stigma with integrated care
Mathibe <i>et al.</i> , 2015	South Africa	Cross-sectional	An exploratory qualitative study approach was used to explore clinicians' perceptions and patients' experiences of integration of antiretroviral treatment in PHC clinics.	Providers perceived that workload, staff development and support for integration affected clinicians' performance and view points
Wallace <i>et al.</i> , 2014	Tanzania	Cross-sectional	A qualitative study design was used to examine 64 mothers who had received integrated HIV and immunisation services, and 16 providers who delivered the services on the feasibility of integrating paediatric HIV services with routine immunisation	Providers' perceived benefits include: reaching mothers who usually would not come for only HIV testing Providers' perceived challenges: poor patient flow affecting confidentiality of service delivery; heavier provider workloads; community stigma against HIV infected persons
Mutemwa <i>et al.</i> , 2013	Kenya	Cross-sectional	Semi-structured in-depth interviews were conducted with 32 frontline clinical officers, registered nurses and enrolled nurses from facilities providing HIV and RH integrated care to explore provider experiences with integrated care	Provider experiences at a personal level: skills enhancement; more variety and challenge in work; better job satisfaction through increased client's satisfaction; felt salaries were poor; felt they face increased occupational stress (from increased workload, treating very sick clients, and less quality time with clients) Provider experiences at operational level: increased service uptake; reduced loss of clients; infrastructural and logistic deficiencies; increased workload; increased waiting times; increased contact session times; low staffing

RH = Reproductive health

**Table 2.9: Patients' perceptions and experiences with integration of HIV care with primary health care services**

Author/ Year	Country	Study design	Study aim and method	Key results
Topp <i>et al.</i> , 2010	Zambia	Prospective cohort	Prospective assessment of the feasibility of a fully integrated model of HIV and non-HIV outpatient services in 2 clinics	Patient interviews indicated broad acceptability of integrated care model; patients highlighted perceived reduction in stigma with integrated care
Awadhi <i>et al.</i> , 2012	Tanzania	Cross-sectional	A mixed methods design was used to assess the capacity for integrating family planning into HCT. Participants were 147 randomly selected service users, 35 health providers, and MoH and LGA officials	Clients perceive that if number of providers is inadequate, they will be overloaded and likely experience burnout; they also perceive more satisfaction, reduction in waiting time, increased quality and efficiency of service
Mathibe <i>et al.</i> , 2015	South Africa	Cross-sectional	An exploratory qualitative study approach was used to explore clinicians' perceptions and patients' experiences of integration of antiretroviral treatment in PHC clinics	Clients' perceived benefits include: privacy; reduced stigma and discrimination; increased access to comprehensive care; increased satisfaction with integrated or semi-integrated care Clients' perceived challenges include: delays; poor patient care; dissatisfaction
Wallace <i>et al.</i> , 2014	Tanzania	Cross-sectional	A qualitative study design was used to examine 64 mothers who had received integrated HIV and immunisation services, and 16 providers who delivered the services on the feasibility of integrating paediatric HIV services with routine immunisation	Mothers' perceived benefits include: time saving; opportunity to learn their child's HIV status and receive HIV treatment if necessary Mothers' perceived challenges: mothers' fear of HIV testing; poor spousal support; perceived mandatory HIV testing
Uebel <i>et al.</i> , 2013	South Africa	Cross-sectional	A synthesis of findings of 3 qualitative studies using meta-ethnographic approach to identify factors that influence integration of HIV care into PHC. Participants were staff and patients from 31 HIV / PHC facilities.	Patients were concerned about stigma of separate HIV services and yet preferred to be seen by nurses with expertise in HIV care

Odenyl <i>et al.</i> , Kenya 2013	Quasi- experimental	A before and after comparison of outcomes of integrated care to assess patient level effect of integrating HIV care into PHC. Participants were HIV positive adults (n=343 baseline; after 3 months = 107; after 12 months = 142)	Post integration, patients were more likely to be satisfied with: reception services [aOR=2.71 (95%CI: 1.32-5.56)]; HIV education [aOR=3.28 (95%CI: 1.92-6.83)]; wait time [aOR=1.97 (95%CI: 1.03-3.76)]
Vo <i>et al.</i> , Kenya 2012	Cross- sectional	A comparison of fully integrated (FI) and not integrated (NI) facilities to determine if full integration of HIV care into ANC clinics improves outcomes of HIV infected women and exposed infants. Participants were pregnant women from 5 FI (n=185) and 4 NI clinic (n=141)	Satisfaction with care among HIV infected: fully integrated (FI) - 79% very satisfied; not integrated (NI) - 54% very satisfied (p = 0.044) Satisfaction with care among HIV un-infected women - no difference between FI and NI

\*aOR=Adjusted Odds Ratio, MoH = Ministry of Health, FI = Fully integrated, NI = Not integrated

## 2.6 DISCUSSION ON FINDINGS

The aim of this review was to identify and review published and grey literature in order to understand the nature, magnitude and volume of evidence available on the impact of HIV care integration into routine primary health care systems in LMICs. The review was conducted using the six steps recommended for a scoping literature review (Arksey and O'Malley, 2005; Levac *et al.*, 2010). Thirty peer-reviewed studies comprising of 24 quantitative, two qualitative and four mixed methods studies were reviewed. Many of the studies reviewed addressed multiple objectives/research questions, but overall, 19 studies focused on the impacts of integrating HIV care with PHC, eight assessed health care providers' and patients' perspectives about integrated HIV care; and the remaining three studies focused on assessing barriers to integrated HIV care.

The review found that integrated health care results in a better access to a range of health services, improves health outcomes, and quality of health care (Kodner and Spreeuwenberg, 2002; Bindoria *et al.*, 2014; Kredo *et al.*, 2013). The majority of the studies reviewed under this study reported improved access to HIV services with integration, as evidenced by improved uptake of HIV screening, ART enrolment and initiation and uptake of co-trimoxazole preventive treatment (Bindoria *et al.*, 2014, Ansa *et al.*, 2014, Peck *et al.*, 2003 and Topp *et al.*, 2010). Perhaps the increased access may not be unconnected with availability of a wide range of services with the integration. Integration has been reported to reduce missed opportunity for linking patients with HIV treatment and care programmes (Hope *et al.*, 2014). This study observed that the studies that examined access to health care services following integration focused more on HIV care. Only one of the studies reported improvement in access to non-HIV services in integrated facilities (Price *et*

*al.*, 2009). In already weak and underfunded health systems of Africa, the result of integrating HIV services to the overburdened system should be of utmost priority.

Evidence from this review suggest that health outcomes are generally better in integrated facilities than in single-service facilities. Except for two studies from nine sub-Saharan African countries (Greig *et al.*, 2012) and south Africa (Kaplan *et al.*, 2014) that showed no difference in outcomes between integrated and single service facilities, the other studies that reported on outcomes of integration showed favourable effect of integration on mortality, default and treatment success (Jacobson *et al.*, 2015, Schultz *et al.*, 2013, Chan *et al.*, 2010 and Patel *et al.*, 2013). These improvements in outcomes may have been possible from the improved organisation and management in integrated facilities (Top *et al.*, 2013, Sweeney *et al.*, 2014 and Phiri *et al.*, 2011). Integration has resulted in more efficient use of staff time, clinic space and has improved teamwork and accountability in the facilities (Topp *et al.*, 2013). The integration has also provided patients with the opportunity for accessing a range of health services (Sweeney *et al.*, 2014).

Findings from this review also show that integration of HIV and PHC services increased efficiency and quality of health care. The findings showed that patient - provider contact time increased in integrated facilities possibly from longer consultation. A previous study corroborates that the time the physicians spent in health education and the effect of treatment has significant influence on patient satisfaction (Robbin *et al.*, 1993). However, Dudgale *et al.* (1999) argued that what was responsible for the satisfaction in the long contact time was not the length of time spent with the provider but the content of what was done. The reduction in time to ART and CPT initiation, in loss to follow up; and increased adherence to ART in integrated facilities signify improved efficiency and quality of the services obtained from these facilities. In addition, the results also

showed that median waiting times for both OPD and ART patients increased significantly in the integration phase, perhaps from increased demand in attending to multiple health problems. Patient waiting time as defined by Dinesh *et al.* (2013) is the time spent from entry of the patient to the outpatient department to the time the patient leaves the facility. It is a renowned indicator of the quality of service rendered, and long waiting time have been associated with decrease in service utilisation (Oche and Adamu, 2013).

Findings from this review generally showed that health care providers positively perceived that integration of HIV care with PHC services reduces HIV stigma and provides access to wide-range of services. The workers negatively perceived that integration is associated with increased workload and hazards with no corresponding increase in salaries. Their experience is that of working under poor infrastructure, logistic deficiency and under-staffing. However, skills enhancement, a variety of challenging work environment and better job satisfaction as a result of increased patients' satisfaction are among the positive experiences of the workers with the integration. The patients on the other hand broadly accepted integrated care and perceived that it reduces HIV stigma, increased access to health services, increased efficiency and quality of health care and overall, increased patient satisfaction with integrated care. These perceptions and experiences have also repeatedly featured among the common barriers to integration of HIV care with other health services.

## **2.7 LIMITATIONS OF THE SCOPING LITERATURE REVIEW**

The literature shows that scoping reviews have a number of limitations. The first limitation of this review is in the selection of studies, only articles written in English were considered for the review

making it possible to have missed out relevant literature which could have added materials for the review. Pharm *et al* (2014) observed that many researchers used different methodological frameworks for scoping review, and along the line of selection of the databases to study, exclusion of grey literature or language restriction, relevant studies may have been missed out from the review, and as a result the review may not be as exhaustive. The second limitation of this scoping study is the fact that it did not assess the quality of the evidence used for the review because the aim of a scoping review is not to assess quality of evidence but to understand the magnitude and extend of the literature and evidence (Booth *et al* 2016). The aim was to identify gaps to take forward in the Ph.D process. Furthermore, the literature shows that not all scoping reviews evaluate the quality of evidence but they often gather a wide range of study designs and methods (Sucharew and Malacuso, 2019; Pharm *et al*, 2014).

The fact that this study is not a systematic review with meta-analysis to understand the pull effect of the evidence or answer specific question is another limitation. The scoping review generally provides overview of the breadth and depth of literature rather than provide answers to specific questions (O'Brien *et al*, 2016, Gopalakrishnan and Ganeshkumar, 2013). Although in this study adequate time as required was allocated to complete the narrative synthesis where large volume of literature was uncovered, as suggested by Brian *et al*, 2010, researchers reported challenge with conducting comprehensive synthesis of the literature given the large volume of articles identified in scoping reviews (Cronin de Chavez *et al*, 2005; Brien *et al*, 2010). Furthermore, the depth of analysis was also reported to be limited by the time needed for the review (Cahill *et al*, 2008; Brodie *et al*, 2009). Other limitations of scoping review documented include risk of bias from different sources of literature, and studies may be out of date at time of completion as they require a substantial amount of time to complete (O'Brien *et al*, 2016).

## 2.8 CONCLUSION

The literature explored revealed a wealth of evidence on the integration of HIV care with frontline PHC services. As reported earlier, 30 studies were included in the review and many of them had multiple objectives, thereby addressing more than one area of this review. This review revealed a plethora of quantitative literature on integration of health care. The majority of the quantitative studies have focused on exploring the impact of integrating HIV care with PHC, and barriers to integrated HIV care. Very limited qualitative studies exist, suggesting the need for more qualitative studies in this area. The few qualitative studies reviewed focused on health workers' and service users' perceptions and experiences with integrated care. This review observed that none of the selected studies probed or reported on the factors that enable integration of HIV and PHC. This finding reveals a gap in the literature that calls for further research in this area to provide understanding of the contextual factors associated with implementation of integration programme. Furthermore, few studies investigated common barriers to integration of HIV care with PHC services (Uebel *et al.*, 2013; Hembah-Hilekaan *et al.*, 2012; Topp *et al.*, 2013). Since there are peculiarities within different settings, there is need to expand the knowledge base.

This review also found that only two of the 30 studies reviewed (Price *et al.*, 2009; Pfeiffer *et al.*, 2010) reported on the effect of the integration on non-HIV PHC services, leaving this area conspicuously deficient. The unanswered question is, has the integration also improved access, quality of services and health outcomes of non-HIV PHC services? As mentioned earlier, the effect of the integration of HIV services into an overburdened and underfunded PHC system, common among the LMIC require a good understanding of the corresponding effect on the non-HIV PHC services for the purpose of sustainability. This is corroborated by the fact that there are generally few researches on integration intervention, especially of HIV care and treatment with PHC services



in Nigeria. Only one cross-sectional study that elicited barriers to PMTCT among ANC clients qualified for this review (Hembah-Hilekaan *et al.*, 2012). Evidence base is the strength of policy making and programming. For the success of HIV integration into PHC in Nigeria and similar countries, there is need to establish or strengthen the knowledge base for such intervention. The lack of information on impact of the integration on non – HIV services has left a vacuum in the integration literature that needs to be addressed. This is therefore another area in need of further research.

Most of the subjects among whom perceptions and experiences with integrated care were assessed in the studies reviewed were health care providers and HIV patients, the views expressed therefore grossly lack the representation of non- HIV patients accessing other services from the facilities. This area of gap also needs further research. In a PHC setting, the views from specific service areas of the ward minimum PHC package should be voiced out.

## **2.9 FURTHER AREAS OF RESEARCH**

The findings of this review and the gaps identified suggest need for further research in the following areas:

- A quantitative study to assess the impact of integrating HIV care services with PHC frontline services on non-HIV services. The study should focus on comparing records of utilisation of selected non-HIV PHC services before and after the integration. This should be complemented with a quantitative assessment of the trend of utilisation of selected non-HIV services before and after the integration.

- A qualitative assessment of the views/ perceptions of patients accessing non – HIV PHC services using FGDs.
- A qualitative study assessing enablers and barriers to integration of HIV care and PHC services in Nigeria, using KIIs with policy makers/ health administrators and health workers; and FGDs with both HIV and non – HIV patient groups.

## **CHAPTER THREE: RESEARCH SETTING AND GENERAL METHODOLOGY**

### **3.1 INTRODUCTION**

This chapter describes the research setting and the mixed methodological approach adopted to conduct the study. First, the research setting is described and justified. After this the statement of research aim and objectives/questions presented earlier in chapter one are reiterated to remind readers. The philosophical underpinning of the mixed methods approach is considered and discussed followed by a description of the rationale for the choice of methods. Finally, some methodological reflection and ethical considerations are presented to conclude the chapter.

### **3.2 THE RESEARCH SETTING**

#### **3.2.1 Nigeria country profile**

This study was carried out in Kumbotso LGA of Kano state in Nigeria. To provide some context, Nigeria is located in West Africa. It is the fourth largest country in Africa with a land mass of 923, 768 square kilometres and an approximate population of 202 million, and one of the largest populations of the youth in the world (World Bank, 2019). Nigeria is located between latitude  $4^{\circ}16'$  and  $13^{\circ}53'$  north, and longitude  $2^{\circ}40'$  and  $14^{\circ}41'$  east. The country shares land borders with Niger republic in the north, Chad in the northeast, Cameroun in the east, and Benin in the west. Its coast lies on the Gulf of Guinea in the south and it borders Lake Chad to the northeast (Oladipo, 2013). Nigeria is made up of 36 states (which includes Kano state) and the Federal Capital Territory (FCT), which is the seat of power. The states are grouped in six geo-political zones including northwest, northeast, northcentral, southwest, southeast and southsouth. There are 774 constitutionally recognised LGAs spread within the 36 states and the FCT (Figure 3.1).



**Figure 3.1: Map of Nigeria showing the 36 states and the Federal Capital Territory**  
*Source: National Population Commission (NPC), 2014.*

### 3.2.2 Socio-economic situation of Nigeria

Nigeria's population has about 200 ethnic groups and 500 indigenous languages, with Islam and Christianity as the two major religions (UNIDO, 2020). Nigeria has the largest natural gas reserves in Africa, and was the fifth-largest exporter of liquefied natural gas (LNG) globally in 2018 (EIA, 2020). The country is the biggest oil exporter on the African continent (EIA, 2020). However, despite its abundant human and natural resources, Nigeria is challenged with poverty and reclusive growth (UNIDO, 2020).

Nigeria depends heavily on oil and gas for export which accounts for about 75% of its consolidated budgetary revenue (UNIDO, 2020). Furthermore, oil price fluctuations and disruptions in supply continue to influence its growth performance, with the country's gross domestic product (GDP) growth rate fluctuating between 1.9 to 7% between year 2000 and 2019 (World Bank, 2019). With the launching of Nigeria's economic transformation blueprint "vision 20:2020" in the year 2009, the country made significant developmental progress. According to Basu and Miroshnik (2016) "Nigeria rebased its GDP from 1990 to 2010 and as a result became the largest economy in Africa, with an estimated nominal GDP of USD 510 billion, surpassing South Africa's USD 352 billion". However, insecurity, poor infrastructure, lack of access to finance and energy and so on still bedevil the country's economic development (UNIDO, 2020). The Nigeria Bureau of Statistics and the World Bank estimate that over 40% of Nigerians live below the poverty level and about 50% of its labour force is underemployed while 40% of its youth remain unemployed (UNIDO, 2020).

### **3.2.3 Population health situation of Nigeria**

In spite of being the giant of Africa, Nigeria is among the countries of the world that have the worst health indices. With a population growth rate of 3.2% and a total fertility rate (TFR) of 5.3 per woman, Nigeria is faced with risks of limited health resources to cater for the growing population (NBS, 2018; NPC and ICF, 2019). WHO identified this as a major threat to achieving the MDGs in Nigeria (WHO, 2011). Data from the United Nations indicate that 68% of Nigerians were living below \$1.25 per day (UNDP, 2013). However, the country's total per capita expenditure on health in 2009 (US\$67) was amongst the lowest globally, although 80% of the

health expenditure was from household out-of-pocket expenses, further exacerbating the poverty level in the country (WHO, 2012a).

According to a report of the WHO, in 2013, life expectancy at birth in Nigeria was 55 years compared to the African average of 58 years; in the same year, adult mortality rate was 357/ 1000 for females and 323/ 1000 for males compared to 281/ 1000 and 332/ 1000 African average for females and males respectively (WHO, 2016). Furthermore, the 2015 African average for under-five mortality (81/1000 live births) and infant mortality (55/ 1000 live births) rates are much better than the national 132/ 1000 live births and 67/ 1000 live births for the under-five mortality and infant mortality rates respectively reported from a recent national survey in Nigeria (WHO, 2016c; NPC and ICF, 2019). The burden of communicable diseases in Nigeria (69%) in 2012 as percentage of total disability adjusted life years (DALYs) is also higher than the African average of 65% (WHO, 2016c).

The Nigerian population health indicators show a wide disparity in health inequities between the rural and urban areas of the country. Table 3.1 summarises selected health indicators in the country highlighting the urban and rural differences, and includes the situation in Kano state where this study was conducted. The table shows a wide urban and rural disparity in access to basic amenities related to health. Key disparities include female education, access to electricity and clean drinking water, health insurance coverage, reproductive health, infant and child health, maternal health and so on. In general, urban areas seem to be better off compared to rural areas. The trend in population health in Kano state is generally worse than the national situation for most of the selected indicators highlighted in Table 3.1.

**Table 3.1: Selected indicators of population health in Nigeria**

Indicator	Nigeria			Kano
	National	Urban	Rural	
<b>Access to basic amenities</b>				
Proportion of Nigerian females (6 years and older) with no education (%)	36	20	48.9	45.5
Proportion of Nigerian males (6 years and older) with no education (%)	27	13.1	37.4	30.1
Proportion of Nigerian women (15-49 years) that had more than secondary school education (%)	11	12.1	3.0	4.7
Proportion of Nigerian men (15-49 years) that had more than secondary school education (%)	17	17	6.3	11.7
Proportion of households with electricity (%)	59.4	82.7	38.9	N/A
Proportion of households with improved sanitation/ toilet facility (%)	55.5	74.1	39.1	54.0
Proportion of households with access to an improved source of drinking water (%)	65.7	73.9	58.4	58.6
Proportion of women 15-49 years with any form of health insurance cover (%)	2.6	4.2	1.4	2.8*
Proportion of men 15-49 years with any form of health insurance cover (%)	3.0	4.8	1.4	2.2*
<b>Sexual and reproductive health</b>				
Median age (years) at first sexual intercourse (female 20-49 years)	17.3	18.6	16.1	16.0
Median age (years) at first marriage (female 20-49 years)	19.1	N/A	17.2	16.0
Proportion of currently married women with one or more co-wives (%)	30.5	21.2	36.8	47.1
Total fertility rate (TFR)/ woman for women 15-49 years	5.3	4.5	5.9	6.5
Median age (years) at first birth (women 25-49 years)	20.4	22.3	19.0	18.3
Proportion of married and unmarried women 15-49 years using any form of modern contraception (%)	10.5	18.2	7.8	5.6
Proportion of all married and unmarried women 15-49 years with unmet need for family planning (%)	15.2	14.7	15.6	11.7*
Proportion of women 15-49 years with comprehensive knowledge of HIV (%)	46.2	N/A	N/A	N/A
Proportion of men 15-59 years with comprehensive knowledge of HIV (%)	45.8	N/A	N/A	N/A
HIV prevalence among adults 15-64 years (%)	1.5	N/A	N/A	0.6*†
<b>Infant and child health</b>				

Infant mortality rate/ 1000 live births	67	56	74	62
Under-5 mortality rate/ 1000 live births	132	92	157	164
Proportion of children 12-23 months who received BCG vaccine by appropriate age (%)	66.0	83.3	55.8	61.2
Proportion of children 12-23 months who received Penta 1 vaccine appropriate age (%)	64.5	81.2	55.0	59.8
Proportion of children 12-23 months who received Penta 3 vaccine by appropriate age (%)	48.3	67.9	38.4	45.9
Proportion of under-5 children (%) with height-for-age less than -2 S.D from the median of the reference population (stunting)	36.8	26.8	44.8	56.9
Proportion of under-5 children (%) with weight-for-height less than -2 S.D from the median of the reference population (wasting)	6.8	5.3	8.0	6.4
Proportion of under-5 children (%) with weight-for-age less than -2 S.D from the median of the reference population (underweight)	21.8	15.1	27.0	30.8
Proportion of children 12-23 months old exclusively breastfed (%)	0.2	N/A	N/A	N/A
Prevalence of anaemia in children 6-59 months old (%)	67.9	62.0	72.5	72.9
<b>Maternal health</b>				
Proportion of women 15-49 years who received antenatal care from a skilled provider (%)	67	83.6	56.1	65.3
Proportion of births assisted by skilled provider (%)	43.3	67.6	28.0	21.5
Prevalence of anaemia in women 15-49 years (%)	57.8	53.6	61.5	46.6
Maternal mortality ratio/ 100,000 live births	512	N/A	N/A	N/A

*\*Only northwest figure available and used; N/A – Figure not available; † sourced from Nigeria*

*HIV/AIDS indicator and impact survey (NAIIS) 2019.*

*Source: NPC and ICF (2019)- Nigeria demographic and health survey 2018.*

### **3.2.4 The study site: The Kumbotso comprehensive health centre, Kano state**

Kano state has a projected population of over 20 Million based on the 2006 national population census, making it the most populous state in the country (NBS, 2006). The state occupies a land area of 20760 square kilometres, with 1754200 hectares agricultural and 75000 hectares forest



vegetation and grazing land (KSMOH, 2009). Kano state is bordered by Kaduna state in the southwest, Katsina state in the northwest, Jigawa state to the northeast, Bauchi state to the southeast (KSMOH, 2013a). The map of Kano state showing its 44 LGAs is in Figure 3.2.

Kano state has 1346 health facilities (HFs) comprising 1066 primary, 34 secondary, 2 tertiary and 244 private health facilities across its 44 LGAs (KSMOH, 2013a). This makes access to health care challenging with a facility to population ratio of one secondary health care facility to 120000 to 200000 persons, and one PHC facility to 9000 to 13500 persons (KSMOH, 2009). There is urban-rural inequity in the distribution of health resources in favour of the urban areas, with 73% of nurses and 89% of doctors in the employment of the state located in the metropolis (KSMOH, 2009).



**Figure 3.2: Map of Kano state showing the 44 Local Government Areas**

*Source: Ministry for Local Government and Chieftaincy Affairs, Kano state*

The HIV prevalence in Kano state has consistently been lower than the national average, but the state is considered one of the priority HIV burdened states in the country because of its large population (KSMOH, 2013a). HIV prevalence in Kano according to the National HIV Sentinel Survey (FMOH, 2010) ranged from zero prevalence in 1991, peaked at 4.3% and 4.1% in 1999 and 2003, and then dropped to 2.2% in 2008. The 2018 HIV prevalence in the northwest region where Kano is situated according to the most recent Nigeria HIV /AIDS indicator and impact survey (NAIIS) report dropped to 0.6% (FMOH, 2019b). As the commercial centre of the north, spread of HIV in the state is fuelled by high prevalence of the disease among the high-risk groups: 1.4% among transport workers, 4.4% among police, and 3.7% among armed forces; 11.7% among men who have sex with men (MSM), 10.1% among injection drug users (IDUs), 49.1% among brothel-based female sex workers (FSWs), 44.1% among non-brothel-based FSW (FMOH, 2010). In response to the HIV/AIDS pandemic, Kano State Ministry of Health (SMOH) established the State HIV/AIDS/ STIs Control Program unit (SASCP) in 1988 to steer the health sector responses (HSR) to HIV and other sexually transmitted infections (STIs), and later in 2001 the Kano State Action Committee on AIDS (KSACA) was established under the SMOH to coordinate multisectoral responses to HIV/AIDS in the state (KSMOH, 2013a). However, ART commenced in public facilities in the state in 2003 as a pilot project at AKTH under the Institute of Human Virology, Nigeria (IHN-N) -a US Government's funded PEPFAR project (KSMOH, 2013b). HIV treatment in secondary health facilities in the state started in 2004 under the USAID funded Family Health International (FHI) Global HIV/AIDS Initiative, Nigeria (GHAIN) project (KSMOH, 2013b). As part of the efforts to achieve universal access to HIV/AIDS services and to realise MDG targets, the SMOH working with the FMOH and partners commenced the pilot phase of decentralising HIV/AIDS services from secondary and tertiary health facilities to some selected

PHCs in Kano in 2010. At present, only 101 HFs across 25 LGAs in the state provide HTC, services for PMTCT and comprehensive ART (KSMOH, 2013b).

KCHC, where this study was carried out is one the PHCs in Kano that had HIV services integrated with its PHC services in 2010. The health facility is located in Kumbotso LGA of Kano state. It was established in 1993 by the Council of the LGA. Four years later, the management of KCHC changed following a tripartite collaboration of services between the Kumbotso LGA, community medicine department of AKTH, and Bayero University, Kano (BUK). In the year 2009, the health centre was officially taken over from the Local Government Council by AKTH, with its community medicine department taking full responsibility for the health facility (Awolabi, 2013). Currently all services rendered at the KCHC are provided by the staff of AKTH.

KCHC provides comprehensive PHC services comprising of promotive, preventive, curative and rehabilitative services. On the average, 3151 patients including 2342 out-patient cases, 47 in-patient admissions (including maternity), 725 antenatal clients and 37 deliveries are attended to on a monthly basis in KCHC. The ART programme was commenced in KCHC in 2010. As at end of June 2020, there were 394 adult males and females and 99 paediatric male and female patients enrolled on the programme, and 137 (34.8%) HIV positive adults and 13 (13.1%) HIV positive paediatric patients are already on antiretroviral drugs (ARVs).

In addition to service provision, KCHC serves as the rural practice centre for resident doctors from the departments of community medicine and family medicine of AKTH; and medical students of Bayero University, Kano. This is in addition to community health officers and other resident doctors from other departments of the hospital such as ophthalmology, maxillo-facial surgery and obstetrics and gynaecology (Awolabi, 2013).

### *A recap of the research aim and questions*

The aim of the study was to evaluate the performance of the integrated HIV care service delivered as part of routine PHC service in Nigeria. The study also assessed the factors that influenced the service performance and impact. The research was designed to address two important questions:

1. What has worked following the implementation of an integrated HIV treatment and care service in Nigeria?
2. Why has the integrated HIV treatment and care service worked or did not work within the Nigerian context?

### **3.3 PHILOSOPHICAL UNDERPINNING OF THE RESEARCH: THE PARADIGM DEBATE**

The philosophical assumptions or research paradigm is one of the key considerations in choosing a research approach. According to Kincheloe and Berry (2004:6): “assumptions shape the outcome of the research” and “choices made about research methodology profoundly affect what you find”. Mertens (2010) defined paradigm as “the set of profound beliefs that each researcher holds as his or her worldview about the nature of reality (ontology), the nature of knowledge (epistemology), and the nature of human nature (axiology)”. This definition suggests that different researchers inherently have differing epistemological and ontological assumptions that shape the choice of their research approach to study the social world (Scotland, 2012). Scholars have argued that empirical research should include explicit discussion about the paradigm(s) used to guide the research, and the implications for the choice (Creswell and Plano Clark, 2011). Failure of researchers to acknowledge the philosophical stance for their research may mean that they are operating with unexamined assumptions (Mertens, 2010).

Over the years, there have been lots of debate about the different paradigms proposed by researchers, referred to as the “paradigm war” (Gage, 1989). Candy (1989) classified the different taxonomies into i) post positivism (and positivism), a belief which is grounded in the scientific method of investigation and is linked to quantitative research; ii) interpretivism/ constructivism that holds the belief that reality is socially constructed (Bogdan and Biklen, 1998), and which favour qualitative data collection methods and analysis; and iii) critical/ transformative paradigm that arose to address issues of social inequalities, minority groups and social justice (Mertens, 2012). Positivism and interpretivism are two extreme mutually exclusive paradigms about the nature and sources of knowledge, and many researches are located within one of these two main paradigms. As a solution to the philosophical arguments, Tashakkori and Teddlie (2003a; 2003b) and other researchers proposed the pragmatic paradigm that has elements from the three paradigms already outlined above as a rationale for combining quantitative and qualitative data (Hall, 2013). Other paradigms in the literature that have a framework that is compatible with mixed methods research include the transformative paradigm (Mertens, 2010), and critical realism paradigm (Maxwell, 2010). Hall (2013) argues that research planning to use mixed approach (combining qualitative and quantitative methods) should be guided by the pragmatic paradigm, or utilise a multiple paradigm approach.

The position taken by the researcher to lean towards the pragmatic paradigm is based on Hall (2013) arguments, considering that pragmatic researchers place emphasis on the value and applicability of research to the real world and adopts the combination of diverse research strategies based on what works in practice and solutions to problems (Patton, 1990, Creswell and Plano Clark, 2011; Lavelle, Vuk, and Barber, 2013). The pragmatic researchers argue that it is not

possible to assess the ‘truth’ about the real world solely by virtue of a single scientific method as advocated by the positivist paradigm, nor was it possible to determine social reality as constructed under the interpretivist paradigm (Kivunja and Kuyini, 2017). According to those who hold this, they opined that “there are many different ways of interpreting the world and undertaking research, that no single point of view can ever give the entire picture and that there may be multiple realities”. Morgan (2007), and Teddlie and Tashakkori (2010) convey the importance of pragmatic paradigm for focusing attention on the research problem using pluralistic view. Pragmatism views combination of quantitative and qualitative methods as complementary although interdependent of each other (Cronholm and Hjalmarsson, 2011), and there are far more advantages of mixing methods than disadvantages (Scott *et al.*, 2011). Within the field of health service and public health research, pragmatic approach has been used by a number of researchers (such as Cameron, 2009; Cronholm and Hjalmarsson, 2011; Johnson *et al.*, 2007; Morgan, 2007). It is a suitable approach for investigating both objective and subjective knowledge, focus on what “works” in what contexts, and in what circumstance (Johnson and Onwuegbuzie, 2004; Morgan, 2007). It is oriented towards studying real world problems rather than the nature of knowledge (Hall, 2013).

### **3.4 THE MIXED METHODS APPROACH AND JUSTIFICATION FOR USING IT IN THIS Ph.D STUDY**

This study was guided by a theory of change/ logic model (Figure 1.2) that provides an explanation of how the integrated care is expected to work. The theory of change or logic model (or otherwise called programme theory of change) provides a framework for understanding the outcomes of integrating HIV care and treatment into PHC in this study. Briefly, a programme theory consists of a set of statements that describe a particular programme, explains why, how and under what

conditions the programme effects occur, predicts the outcome of the programme and specifies what needs to be done to achieve the desired outcomes (Sharpe, 2011).

The model recognises that effective integrated care programmes require appropriate policy and guidelines to leverage funding, and support joint planning and sharing of resources and infrastructure. It also requires upgrading infrastructure and developing human resource to be able to respond to the needs of integrated care programme. Human resource development would include the use of new professionals, reallocation of tasks, improvement in case management and communication, and team work. Programme support functions like procurement and supply management systems for antiretroviral drugs, laboratory networking and monitoring and evaluation systems also need to be strengthened in order to implement programme activities effectively. The combination of requisite policy and guidelines, robust infrastructure and resources would allow a mutually beneficial interaction in the delivery and uptake of the integrated care services (Odeny *et al*, 2013). Furthermore, the theoretical basis for this integration is that, “IF HIV care and treatment are integrated into routine PHC, there would be universal access to HIV/AIDS care and treatment to people living with the disease in Nigeria, and THEN this would lead to an improvement in the quality and treatment outcomes” (Okonkwo *et al*, 2014). The result is improvement in access to both HIV and PHC services, improvement in clinical and psychosocial outcomes of health care; and improvement in quality of integrated HIV and PHC services (Figure 1.2).

A mixed methods approach was used to collect and analyse data. As previously explained, mixed methods approach involves the use of quantitative and qualitative methods in a single study, and the integration of data at one or more stages of the research process (Kroll and Morris, 2009). Eminent researchers argue that mixing the two methods will allow the strength of the quantitative method to compensate the weakness of the qualitative method and vice-versa (Bryman, 2008). Mixed methods designs are used to achieve synergy where the product provides answers to research questions beyond the capabilities of each of the methods when used alone (Johnson, Onwuegbuzie and Turner, 2007).

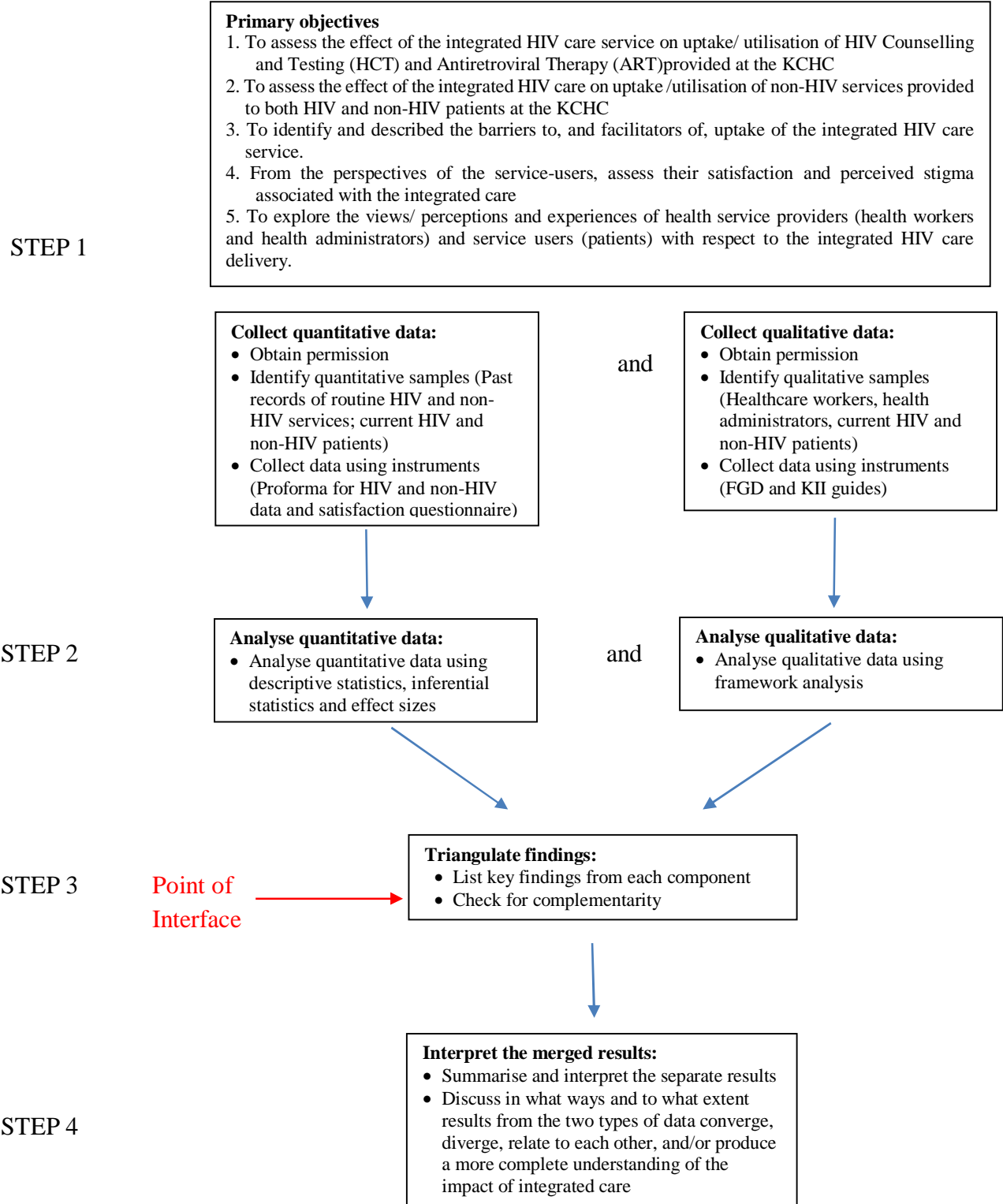
The Agency For Health Care Research And Quality (AHRQ) classified mixed methods design, based on potential uses, as follows (Wisdom and Creswell, 2013): concurrent design, where qualitative and quantitative data collection and analysis occur at the same time; explanatory sequential design where quantitative set of data is collected first, followed by qualitative data collection and analysis; and exploratory sequential design, where qualitative data collection precedes the quantitative data collection and analysis (Hughes, 2016). In other words, the exploratory sequential design is used to support the development of appropriate quantitative instruments or for testing emergent theory (Hughes, 2016). Other authors list embedded design, where a qualitative data collection and analysis is added to a quantitative outcome study like randomised controlled trial; and the multiphase design which is typically used in community-based studies to engage stakeholders in the different phases of the quantitative and qualitative study process to bring about change such as community-based participatory approach (Almeida, 2018).



This study integrated quantitative and qualitative research methodologies to assess what worked following the implementation of an integrated HIV care in Nigeria and why the integrated HIV and PHC services worked or did not work in the Nigerian context. The nature of the research questions in this study is appropriate for use of the mixed methods design (Creswell, 2009). Bamberger *et al* (2012) argue that mixed methods approach to data collection is appropriate for evaluating such complex intervention to broaden understanding of the process and contextual factors.

### **3.5 JUSTIFICATION FOR USING CONCURRENT MIXED METHODS DESIGN**

The research considered the concurrent mixed methods design appropriate to use to collect primary data to address the multiple research questions. As described previously, concurrent mixed method design allows for the collection of data for the two arms of the study, at the same time. Adopting a concurrent design in this study means that both the quantitative and qualitative data were collected concurrently but the data were analysed and presented sequentially (Kroll and Morris, 2009). Figure 3.3 below is a schematic flow chart of the mixed methods study design



**Figure 3.3: Schematic diagram describing the concurrent mixed methods study design**

### **3.6 METHODOLOGICAL REFLECTIONS: CLAIMS OF VALIDITY, RELIABILITY AND GENERALISABILITY**

Validity is one of the criteria for assessing the quality of a study. It applies to both design and methods of a study and refers to when the findings represent the phenomenon expected to be measured. According to Selinger and Shohamy (1989), "Any research can be affected by different kinds of factors which, while extraneous to the concerns of the research, can invalidate the findings". Credible researchers should therefore plan to control all possible factors that threaten the validity of their research.

The selection of mixed methods design and by extension the use multiple data collection methods in this study is a planned way of increasing the validity of this study. Mixed methods studies have been used to obtain a more comprehensive picture of the phenomenon under study and improve validity of theoretical propositions much more than if only one method is used (Webb *et al.*, 1966).

Another criterion for assessing the quality of research is its reliability. It deals with the consistency or replicability of results in quantitative research, and in qualitative research refers to trustworthiness and dependability of findings (Healy and Perry, 2000). Ways of improving reliability of results and findings include a well laid out investigation plan, developing clear research questions, and clear communication of research process (Lewis and Ritchie, 2003). Researchers also documented that triangulation of findings in mixed methods studies improves reliability of research (Turner, Cardinal & Burton, 2015). In addition to the mixed methods design utilised in this study, clear research questions and investigation plan were laid-out to enhance reliability, and trustworthiness and dependability of results and findings respectively.

Generalisability is one of the two underlying concepts of external validity that is concerned with extending results from a sample to the population from which the sample was drawn. The second is applicability that is concerned with using inferences drawn from study participants in the care of specific patients belonging to any population (Murad, Katabi, Benkhadra *et al*; 2018). Simply put, generalisability refers to the extent to which research findings can be applied to other settings outside which the study was conducted. Although generalisability is a criterion for quality in quantitative research, it is more controversial in qualitative research. Most qualitative studies aim to provide a rich, contextualised understanding of human experience through in-depth study of particular cases and as such many do not agree with the importance of generalisability in any type of research (Polit and Beck, 2010). However, Firestone (1993) documented a framework depicting three models for considering generalisability in quantitative and qualitative researches: statistical generalisation, analytic generalisation and case-to-case translation or transferability. Statistical generalisation is the classical model underpinning most quantitative studies, extrapolating from a sample to a population. In analytic generalisation model, researchers strive to generalise from particular to broader constructs or theory, and this model has relevance in both qualitative and quantitative research (Polit and Beck, 2010). On the other hand, the case-to-case translation or transferability model involves the use of findings from an inquiry to a completely different group of people or setting, is more widely referred to as transferability (Lincoln and Guba, 1985), but has also been called reader generalisability (Misco, 2007).

Being a mixed methods study that combines both quantitative and qualitative methodologies, strategies used to enhance generalised inference in this study include replication of sampling, thick description, “immersion in data” among others. Replication is effective in all the three models of generalisation (Polit and Beck, 2010). Firestone argued that “When conditions vary, successful

replication contributes to generalisability. Similar results under different conditions illustrate the robustness of the finding”. Writers have acknowledged the need for thick description in enhancing generalisability of inference (Geertz, 1973; Lincoln and Guba, 1985). This refers to robust descriptive information about the setting under which the study was conducted, study participants, and of the data collection, and processing such that readers can make good judgments about the proximal similarity of study contexts and their own environments (Polit and Beck, 2010). Furthermore, thorough understanding of, and engagement of researcher with the data is the foundation for the process of “making meaning” and developing powerful analytic generalisations in qualitative studies, and this buttress the role of emersion in enhancing generalisability of inference.

### **3.7 ETHICS CONSIDERATIONS**

Ethical concerns were considered and addressed at every stage of the research process, and through fulfilling the ethical approval requirements of the School of Health and Related Research (ScHARR), University of Sheffield (Reference number 020403), and the ethics approval obtained from the Institutional Review Board (IRB) of AKTH, Nigeria (Reference number NHREC/21/0/200/ATH/EC/2118). The ethics approval letters from ScHARR and AKTH are attached as Appendices 2 and 3 respectively.

Additionally, permission to access participants and patients’ records was obtained from the Chair of Community Medicine Department who supervises the affairs of KCHC (Appendix 4), and the Medical Superintendent of KCHC was also notified from the department before subjects’ recruitment and data collection began. Recruitment of subjects was voluntary after the researchers explained the content of the information sheet to potential participants, and patients willing to

participate were asked for their consent after been given as much time as they needed to consider it. Potential participants were also given opportunity to ask questions to clarify anything in doubt or consult their friends and families before deciding to take part. The information sheets for the different categories of respondents are in Appendices 5-8.

As mentioned earlier, before signing the consent form, participants were assured that their participation is voluntary, and that they have the right to refuse to participate in the research without any penalty. They also have the right at any time during their active participation or after providing information to withdraw from the research without giving any reason and with the assurance that any service or help they are already receiving will not be affected in any way. However, participants were also informed that these rights cannot be extended to the withdrawal of already published findings or be invoked in such a way as to compromise anonymised data sets that are being used as specified in the original consent agreement. Having clarified this to them, they were then assured that their names or identity will not be mentioned in any such publication. Those who finally decided to participate were asked to give their consent as stated in section 4.3.6.1. In order to minimise psychological stress that may occur from inconveniences or other sensitivities of HIV, patients were provided conducive space that will provide both visual and auditory privacy for interviews, and research assistants with good counselling skills were used for data collection.

To ensure further confidentiality of personal data, all information collected from the participants were anonymised. Data were strictly used for the research purpose only, and research assistants were counselled to ensure that they did not in any way divulge any information related to any participant to any person. For the primary research participants, they were informed that their

names will be replaced with codes/IDs during data processing, including during transcription and entering of survey data into data analysis software. No third party had access to the data except the research team. For the secondary data, anonymised data were collected from the records section of the hospital and was used for the analysis – names were removed and replaced with IDs, and only the lead researcher could relate the IDs to patients' names.

To ensure the security of data processed during the project, including any identifiable personal data, encrypted audio recorder was used for the individual interviews and focus groups, and collected data were stored onto restricted folders on the University of Sheffield shared network file store. Only the researcher and supervisors have access to the data. Data analysis was done by the researcher. The hard copies of the questionnaires, consent forms and transcripts were stored under lock and key in a metal cabinet for the period just enough to complete reporting and publications and will thereafter be destroyed - after the degree is awarded. The electronic data will only be used for the purpose of this research work. Participants were also informed that the data collected will be stored only for one year period after the award of this Ph.D to give provision for making reference to the data during the terminal stages of the research and publication processes.

## **CHAPTER FOUR: QUANTITATIVE STUDY ON THE EFFECT OF THE INTEGRATED HIV – PRIMARY HEALTH CARE SERVICES**

### **4.1 INTRODUCTION**

As stated under section 3.3, this Ph.D study utilised the mixed methods design to evaluate the performance of the integrated HIV - PHC services in northern Nigeria. This chapter presents the two studies that were conducted to address the quantitative research objectives. First, the methods used to collect and analyse, and the results are described and presented.

### **4.2 QUANTITATIVE STUDY 1: EFFECT OF THE INTEGRATED HIV - PRIMARY HEALTH CARE SERVICES ON UPTAKE OF SERVICES**

#### **4.2.1 STUDY OBJECTIVES**

The first quantitative study involves collection and analysis of routine data collected following the implementation of the integration of HIV care and treatment within PHC settings at the KCHC.

The study addressed the following specific objectives:

1. To assess the effect of the integrated HIV – PHC services on uptake of HIV services: counselling and testing (HCT) and anti-retroviral therapy (ART) services provided at the KCHC.
2. To assess the effect of the integrated HIV – PHC services on uptake of non-HIV services.

#### **4.2.2 STUDY DESIGN**

A retrospective cohort study design was adopted to collect and analyse data retrospectively to evaluate the potential effect of the integrated HIV - PHC services on HIV and non- HIV services use.



The retrospective cohort study design is one in which the outcome or event of interest has already occurred in the past, and the researcher goes back in time to select study participants from existing medical, employment or other records stored in databases, and followed them over time to evaluate for occurrence of outcomes of interest (Parks, 2005; Sedgewick, 2013). This study design is appropriate when the researcher is interested in reconstructing the experiences of a group of patients (the cohort) from records as if they had been followed prospectively (Sedgewick, 2013). This study design allowed the researcher to retrospectively sample existing data from medical health records database of KCHC in order to evaluate the effect of the HIV-PHC integrated care on uptake of HIV and non-HIV services in KCHC.

#### **4.2.3 STUDY PARTICIPANTS**

The participants for this study were adults who were diagnosed with HIV prior to 2010, and who accessed health care from the KCHC from March 2010 to December 2016. The sample also include adults who were not HIV positive (HIV negative patients) but accessed primary health care (PHC) services from the KCHC from January 2009 (prior to the implementation of the integrated care) to December 2016. All male and female HIV positive patients who were 18 years and older were eligible for the study. For the HIV negative patients however, male and female children 0-60 months old, and adults who were 18 years and older were considered for this study. The inclusion of the 0-60 months old children in the study participants provided the opportunity to study the effect of the integrated care on non-HIV infant and child health services.

#### **4.2.4 DATA SOURCE(S) AND DATA COLLECTION**

The data for this study were drawn from health/medical records of the service users who accessed healthcare from the KCHC. The data were originally generated by the health care providers (Nurses, Community Health workers and Doctors) following routine service delivery to all the service users including HIV positive and negative patients. As part of the practices in KCHC, all health care services rendered are recorded by health workers in designated registers. Under this component of the study, data on use of HIV services and non-HIV services were collected. The list of the registers from where the data were extracted is in **Appendix 9**. As documented in section 3.5, permission was sought from the KCHC authorities before accessing the data for this study, after ethical clearance from the University of Sheffield (UK) and the AKTH/ KCHC (Nigeria) ethics review boards. Prior to the service delivery, the health care providers had obtained permission from the service users for their data set to be used in future research. Therefore, the researcher did not have to chase individual service users for their permission before accessing their dataset. Nonetheless, the researcher ensured that the individual service users' information accessed and collected were kept strictly confidential following data protection laws. After permission was sought, the researcher accessed and reviewed the anonymised medical records of the HIV and non-HIV patients sampled.

Data collection proformas were designed, piloted and used to collect the relevant data from the records of the study participants (see Appendices 10-12 for copies of the proformas). Monthly aggregates of the data covering service delivery period March 2010 to December 2016 (for HIV positive sample), and January 2009 to December 2016 (for patients with no HIV) were collected in July 2019. Details of the variables are described in the next section.

## 4.2.5 DATA MANAGEMENT AND ANALYSIS

### 4.2.5.1. Description of variables

#### *A: Variables essential to measurement of uptake of HIV services*

Twelve outcome variables were measured to evaluate the effect of the integrated care on uptake of HIV services. The variables are categorised into three groups based on the type of HIV service they represent. Below, a definition and detailed description of the variables are presented.

#### Uptake of HIV counselling and testing (HCT)

Knowledge of HIV status is a pre-requisite for gaining access to HIV treatment, care and support services. Uptake of HCT is an important indicator of access to the HIV programme (McNaghten *et al*, 2015). The HCT variable was further divided into 3 specific variables: HIV counselling, HIV testing and received HIV test results.

- **Uptake of HIV counselling:** is defined as the number of people (adult males and females) who received counselling on HIV disease and testing.
- **Uptake of HIV testing:** is defined as the number of people (adult males and females) who took HIV test.
- **Received HIV test result:** is defined as the number of people who received their HIV test result.

#### Uptake of antiretroviral therapy (ART)

ART refers to treatment of HIV using a combination of antiretroviral drugs, and is recommended for all people having HIV regardless of how healthy they are. Although it does not cure the disease,

ART reduces the amount of virus (viral load), keeping them healthy and reducing the chances of transmitting the disease to others (CDC, 2019). Uptake of ART is the number of people that are diagnosed with HIV disease and are commenced on antiretroviral treatment. Uptake of ART was measured using the following specific variables:

- **New ART enrolment:** This is defined as the number of people that are diagnosed with HIV disease and, for the first time, started receiving antiretroviral drug combination for treatment. New ART enrolment provides a rough cross-sectional indicator of access to the ART programme.
- **Follow up ART:** This is the total number of HIV positive individuals that are already on ART and not taking the drugs for the first time. It provides an estimate of HIV positive individuals that are already covered by the ART programme. ‘
- **Total ART:** This is the cumulative number of new and old HIV positive patients that are on antiretroviral drugs for treatment. It provides a rough estimate of the coverage of the ART programme as ‘ART coverage’ could not be calculated since the denominator (number of people eligible for ART) was not available.

#### Uptake of PMTCT services

The PMTCT programme offers a range of services for mothers of child bearing age to maintain their health and prevent or reduce the risk of infecting their infants. The United Nations (UN) four-pronged strategy for PMTCT comprises of primary prevention of HIV infection among women of reproductive age; preventing unintended pregnancies among HIV positive women; preventing the transfer of HIV infection from HIV positive mothers to their infants; and provision of treatment, care and support for HIV positive mothers, their children and families (WHO, 2007). The PMTCT

cascade is an 18 months of care comprising of “antenatal care (ANC), HIV testing and counselling during ANC, receiving HIV test results; If tested negative, subsequent retesting; If tested positive, antiretroviral drugs (ARVs) for the mother, ARVs and co-trimoxazole prophylaxis for the infant(s), safe delivery, safer infant feeding, early infant diagnosis within 6 weeks, second DNA PCR test done 6 weeks after cessation of the breastfeeding, serology at 18 months if DNA PCR negative, and linkage to treatment and care” (Hamilton *et al*, 2017).

However, optimal utilisation of the PMTCT spectrum of services has not been previously described in the literature (Mustapha *et al*, 2018). Within the limits of available data at the PHC, this study measured the following PMTCT variables to evaluate impact of the integrated care intervention on PMTCT service uptake:

- **PMTCT counselling:** Is measured as the number of pregnant women that were counselled on HIV disease and treatment during antenatal care (ANC).
- **PMTCT testing:** Is measured as the number of all pregnant women that received HIV testing during ANC.
- **PMTCT positive test result:** Is measured as the number of all pregnant that were found HIV positive following HIV testing during ANC.
- **Delivery by HIV positive mothers:** Is measured as the total number of HIV positive mothers who delivered in KCHC.

***B: Variables essential to measure uptake of non-HIV PHC services***

Four groups of outcome variables (based on service type) were measured to evaluate the effect of integrated care on uptake of non-HIV service within the KCHC. These variables are described in details below:

### Uptake of maternal health services

Care of women's health during pregnancy, child birth and immediately following delivery is critical in the reduction of the burden of illnesses and deaths associated with women and their newborns especially in LMIC (Kifle *et al*, 2017). High uptake of maternal health services is therefore paramount in the control of maternal and infant morbidity and mortality. Maternal health services are those group of services given to the mothers before pregnancy, during pregnancy, at child birth and following child birth. They comprise of antenatal care, delivery care and post-natal care services (Kifle *et al*, 2017). In the context of this study uptake of maternal health services refers to the use of antenatal care, delivery care and family planning services. Variables identified to measure this outcome include:

- **Total ANC:** Antenatal care (ANC) refers to the care given by health care professionals to pregnant women during pregnancy to ensure optimum health condition for both mother and baby. ANC reduces maternal and perinatal morbidity and mortality directly through identification and treatment of pregnancy related complications, and indirectly through early identification of women at risk of the complications and ensuring referral to appropriate level of care (WHO, 2016). 'Total ANC' is measured as the total number of HIV negative pregnant women who attended KCHC for ANC.
- **Total delivery:** Both maternal and fetal complications are associated with lack of supervised child birth, and when they take place in unhygienic environment usually at home (Archibong *et al*, 2002). Delivery services in the hospital ensures that child births are supervised by experienced health care professionals, and that they occur under hygienic environment. Uptake of delivery services in the context of this study refers to the use of

delivery services in KCHC by pregnant women. ‘Total delivery’ is therefore measured as the total number of deliveries from all pregnant women irrespective of their HIV status.

- **Total Family planning:** The world contraception day of year 2018 reiterated the role of post-partum family planning (FP) in ensuring the health of women and their new born babies through preventing unintended pregnancies (WHO, 2020a). FP empowers women to exercise their human right to decide if and when to have children, and to attain their desired family size. Yet many of the women who have recently given birth in developing countries are among those who want to avoid pregnancy but are not using any modern contraceptive method (WHO, 2020a). Furthermore, FP is a cost-effective strategy for PMTCT of HIV (Wilcher, Cates and Gregson, 2009). Thus, providing FP for women is key for ensuring their health and well-being, and that of their new born babies. In the context of this study, total FP refers to total number of women who used FP services. ‘Total FP’ is measured as the total number of women (irrespective of their HIV status) who used FP services KCHC.

### Uptake of child health services

The complete state of physical, mental and social wellbeing of children is crucial for their optimum growth and development. This can be achieved through the promotive, preventive, and curative child health services in the primary health care setting. Uptake of these child health services is therefore crucial for improving childhood development, and this is a fundamental human right and an essential requisite for sustainable development. According to UNICEF (2020), immunisation is the most cost-effective child health intervention, saving the lives of 2 - 3 million children from deadly childhood diseases but almost 20 million children did not receive the most basic vaccine in

2018. It is against this background that the use of uptake of immunisation was used as proxy for child health services in this study. Within the limits of available data, uptake of immunisation in this study is the number of time infants aged 0 to 11 months old received any of the routine immunisation antigens in KCHC during the pilot period. Coverage could not be measured due to non-availability of data on target population (The eligible children). The following antigens/ indicators of routine immunisation service delivery (WHO, 2018) were measured to assess uptake of immunisation in KCHC:

- **BCG vaccination uptake:** BCG refers to Bacille Calmette - Guerin, it is a vaccine used for protection against Mycobacterium tuberculosis infection in infants/ children. BCG vaccination coverage is the number of actual doses of BCG vaccine given to infants less than one year of age compared to the number in the target population of surviving infants under one year of age (eligible children). As BCG vaccination is given at birth, it is used to indicate the size of infants that have made contact with child health services. ‘Uptake of BCG’ is measured as the total number of 0 – 11 months old infants who received BCG vaccine from KCHC.
- **DPT1\_Pentavalent first dose vaccination (DPT1\_Penta 1):** This refers to first dose of the triple antigen vaccine against diphtheria, pertussis/ whooping cough and tetanus infections or the first dose of the recently introduced (WHO, 2012b) five in one vaccine against diphtheria, whooping cough, tetanus, hepatitis b and haemophilus influenza type b. Uptake of DPT1\_Penta 1 indicates availability of, access to, and initial use of immunisation services by parents or caregivers. ‘Uptake of DPT1\_Penta 1’ is measured as the total number of 0 – 11 months old infants that received DPT1\_Penta1 vaccine from Kumbotso CHC.



- **DPT3\_Pentavalent third dose vaccination (DPT3\_Penta3):** This refers to third dose of the triple antigen vaccine against diphtheria, pertussis/ whooping cough and tetanus infections or the third dose of the recently introduced (WHO, 2012b) five in one vaccine against diphtheria, whooping cough, tetanus, hepatitis b and haemophilus influenza type b. Uptake of DPT3\_Penta 3 indicates continuity of use of immunisation service by parents or caregivers, and is sometimes used as an indicator for assessing fully immunised children. ‘Uptake of DPT3\_Penta 3’ is measured as the total number of 0 – 11 months old infants that received DPT3\_Penta3 vaccine from Kumbotso CHC.

#### Uptake of out-patient (OPD) services

Outpatient services refers to therapeutic and diagnostic services given to patients that do not require admission in the hospital. Cases of minor ailments from both communicable and non-communicable diseases are usually seen at the outpatient department of hospitals. Uptake of outpatient services in this study refers to the number of people that used the outpatient services of KCHC. Outpatient services were measured for both adult and children as follows:

- **OPD child services:** This is measured as the total number of children 0-60 months old that were attended to at the outpatient clinic of Kumbotso CHC.
- **OPD adult service:** This is measured as the total number of persons who were 18 years or more that were attended to at the outpatient clinic of Kumbotso CHC.

#### Uptake of in-patient services

In-patient services refer to the medical care given to patients under admission in the hospital environment. Uptake of in-patient services in this study refers to the number of people who were

admitted in KCHC for the purpose of any form of medical treatment. In-patient services were measured for both adult and children as follows:

- **In-patient child:** This is measured as the total number of children 0-60 months old that were admitted in Kumbotso CHC for medical treatment.

**In-patient adult:** This is measured as the total number of persons 18 years or more, that were admitted in Kumbotso CHC for medical treatment.

#### **4.2.5.2 Data entry and management**

The patients' characteristics and monthly aggregates of the anonymised service datasets that were extracted from the medical records registers of the HIV positive and HIV negative patients with the aid of the data collection proformas were systematically entered into three (3) separate Microsoft Excel spread sheets (Windows 10 Enterprise) and stored in sequential rows against the time period (in month) in which the data were generated. The three (3) spreadsheets were used for storing data on HIV services, non-HIV services, and for patients' characteristics. The data were first cleaned on the Microsoft Excel sheet by the use of the "filter" function to ensure that all entered variable are within their values, as well as to check for completeness of the data. Thereafter, the data were transferred onto IBM SPSS Statistic 22 (UCLA Institute for Digital Research and Education, 2019) and Minitab 17 statistical software for statistical analysis. The data were first subjected to exploratory analyses including running frequency distribution checks to screen for errors, missing values and outliers. The main purpose for this stage of the data management was to ensure quality of collected data and ultimately in the findings of the study (Van den Broeck, 2005).

#### 4.2.5.3 Coding of variables

All the collected monthly summaries of services utilisation were numerical and as a result the absolute values were entered into the Microsoft Excel sheets without coding. The patients' characteristics were however coded as follows before the statistical analysis:

- Age group: This describes the categories of the respondents' ages. For the adult patients, age group (in years) was categorised and coded into '15-24' = 1, '25-34' = 2, '35-44' = 3, '45-54' = 4 and '55-64' = 5. For the children however, age (in months) was categorised into '0-5' = 1, '6-11' = 2 and '>11' = 3.
- Sex: This measures the sex orientation of respondents on a nominal scale with values of male and female. Respondents were asked to state their sex. Male respondents were coded as '1' while female respondents were coded as '2'.

#### 4.2.5.4 Statistical analysis

The statistics used to analyse the outcomes are as follows:

i. Descriptive statistics

To describe the study sample, the characteristics of patients were descriptively summarised depending on the type of variable. For example, the mean and standard deviation were used to summarise the distribution of continuous variables such as age. The numbers and proportions or percentages were used to summarise the distribution of categorical variables such as sex, and descriptive summaries are stratified by HIV status. In addition, the scatter plots of outcome variables described in Sections 4.2.7.2 and 4.2.7.3 were produced to display the trends in uptake of categories of HIV services over time and to inform an appropriate approach for further analysis.

ii. Simple linear regression analysis to assess uptake of HIV services

Simple linear regression analysis was used to estimate the slope (95% C.I) in order to describe changes in uptake of the different HIV services following the service integration. Uptake of aggregated services (for categories of HIV services) was also assessed using a simple linear regression model.

iii. Interrupted time series analysis to assess the effect of integrated care on non-HIV services

To familiarise with the data, scatter plot of the time series for the non-HIV service categories were constructed to determine underlying trend and seasonal patterns. The interrupted time series analysis (ITS) using segmented regression/ piecewise regression analysis with the help of IBM SPSS statistics 22 was thereafter used to analyse the impact of the integrated care intervention on the non-HIV services in KCHC.

ITS is a strong quasi-experimental design that is being popular in evaluating impacts of interventions (Zhang *et al*, 2009). It is considered an appropriate intervention when the use of randomised controlled trials (RCTs – the gold standard for evaluating the effectiveness of interventions) is not feasible like in the case of this study where there was need to retrospectively evaluate intervention that had been implemented without randomisation or control group (Bernal, Cummins and Gasparrini, 2017; Penfold and Zhang, 2013). Taljaard *et al* (2014) recommends a modification of ITS to standard segmented analysis to utilise the strength of the design.

The time period in a basic segmented regression analysis is divided into pre- and post-intervention segments. Thus, separate intercepts and slopes, and statistical tests of changes in the intercepts and slopes pre- and post-intervention are estimated (Taljaard *et al*, 2014).

### *Parameterisation of the time series model*

The standard equation for segmented regression model for a single group was used to estimate parameters for the ITS, that is,

$$Y_t = \beta_0 + \beta_1 T_t + \beta_2 X_t + \beta_3 X_t T_t + \epsilon_t$$

Where:

$Y_t$  is the outcome measured or assessed at time  $t$  over the whole time horizon (before and after the intervention)

$T_t$  is the time series from the start of the intervention to the end (1, 2, 3 ... , 95)

$X_t$  is the dummy indicator of the intervention period (that is, 0 for pre-intervention for all values of  $t < 15$  and 1 for post-intervention for all values of  $t > 15$  and  $t \leq 95$ )

$X_t T_t$  is an interaction term variable obtained by multiplying  $X_t$  and  $T_t$

$\epsilon_t$  is an error term indicating how far each predicted value at time  $t$  is from what was actually observed

### *Interpretation of parameters:*

$\beta_0$  is the value of the outcome (we predicted) at the start of the time series pre-intervention

$\beta_1$  is the slope of the outcome until the start of the intervention (that is how the outcome changes pre-intervention as the time increases by one unit)

$\beta_2$  is the change in level of the outcome that happens immediately following the introduction of the intervention

$\beta_3$  is the differences in slopes (rates of change) between pre-and post-interventions

The Process Macro version 3.5 (Hayes, 2020) was used to estimate heteroscedasticity adjusted standard error and covariance in SPSS. The covariance HC3 estimator was used for the analysis (Hayes and Cai, 2007).

Microsoft Excel was used for constructing the time series plots and combined models for data from the categories of the non-HIV services.  $R^2$  was estimated to check appropriateness of all fitted models. The procedure for fitting the combined models is described below.

*Procedure for adding a trend line to multiple series of data on Microsoft Excel*

On the Microsoft Excel sheet, a scatter plot of the variables of interest (dependent variables) using the months/ time as independent variable was plotted. By right clicking on the chart/ scatter plot and then clicking on “Select Data” from the pop-up menu, the “Select Data Source” dialogue appeared. The “Add” button on the “Select Data Source” box was then selected to open up the “Edit Series” dialog. In the “Series Name” box of the “Edit Series”, a descriptive label: “Combined” was added, and in the “Series X Values” box, the range of X values (time/ month) was selected with the mouse. In the “Series Y Values” box however, the “={1}” existing in the box was first deleted, and then with the mouse the first range of Y values (dependent variable) was selected. Subsequent ranges of Y values were selected and separated by comma, until all range of the Y values were selected. Thereafter, the Click OK button was clicked twice, and a the new “Combined” series appeared, whose markers obscured those of the existing series. To add the trend line, the new series was selected and the plus “skittle” next to the chart was clicked to reveal the Trend line.

#### **4.2.6 LIMITATIONS OF USING SECONDARY DATA**

Although the use of secondary data for research is considered inexpensive, convenient and faster than research involving collection of primary data, it may however present problems. A common limitation of secondary data is that the secondary researcher is not part of the data collection team and is therefore not sure about the accuracy of the data, which may expose researchers to possible errors that may affect the quality of their research (Olabode *et al* 2019; Johnston, 2014; Boslaugh, 2007). In order to ensure quality of the secondary data in this study the researcher got familiarised with the process of generating the secondary data, the data elements collected and the time frame and population on which the data were collected from ab-initio before setting out for the study.

Another limitation of the use of secondary data is that the data were not collected to answer the specific research question of the researcher, and as a result information on the variables of interest may be incomplete, not have been collected on the geographical region or on the population of interest (Doolan and Froelicher, 2009; Cheng and Phillips, 2014). Lack of, or incomplete data turned out to be the biggest limitation of the secondary data analysis in this study as the impact of the integrated care on the utilisation of outpatient and admission services for specific adults and childhood diseases could not be disaggregated. In addition, data were not available on eligible population/ denominators for computing coverage of services. As a result, absolute numbers of patients that used any of the services was used as uptake for that service.

Anonymising data sets to protect the confidentiality of patients is another limitation of using secondary data as this can lead to residual confounding when blinding a variable is crucial to control for during analysis (Cheng and Phillips, 2014). In this study, data on quantifiable health

outcomes of integrated care (morbidity, mortality and disability) were not available from records, and patients could not be linked to utilisation data as anonymised data were collected and used for analysis. As such, only psycho-social health outcomes were explored from other patients through qualitative interviews.

## 4.2.7 RESULTS

### 4.2.7.1 Characteristics of the sampled patients that accessed health care services in KCHC

Medical records of 125844 patients comprising of 78351 (62.3%) adults and 47493 (37.7%) children (0-60 months old) were collected and analysed.

**Table 4.2.1: Age and sex distribution of the adult patients**

<b>Characteristic</b>	<b>HIV Positive (n = 3948) n (%)</b>	<b>HIV Negative (n = 74403) n (%)</b>
<b>Age group (Years)</b>		
15-24	332 (8.4)	27306 (36.7)
25-34	2100 (53.2)	30803 (41.4)
35-44	841 (21.3)	11904 (16.0)
45-54	517 (13.1)	1191 (1.6)
55-64	158 (4.0)	3199 (4.3)
Mean (S.D)	34.6 (9.6)	29.0 (9.9)
<b>Sex</b>		
Male	1698 (43.0)	30728 (41.3)
Female	2250 (57.0)	43675 (58.7)

Most of the adult patients (95.0%) were HIV negative whereas the remaining 3948 adults (5.0%) were HIV positive. More than half (58.7%) of the HIV negative patients were females, and had a



mean age (standard deviation, S.D) of 29.0 (9.9) years. Similarly, majority of the HIV positive adults (57.0%) were females, and had a mean age (SD) of 34.6 (9.6) years as shown in Table 4.2.1. Table 4.2.2 shows the age and sex distribution of the children studied. About two-thirds were females, and their mean age (S.D) was 8.1 (1.5) months.

**Table 4.2.2: Age and sex distribution of the infants / children (n = 47493)**

<b>Characteristics</b>	<b>Frequency (%)</b>
<b>Age group (Months)</b>	
0 - 5	17155 (36.1)
6 - 11	20091 (42.3)
>11	10247 (21.6)
Mean (S.D)	8.1 (1.5)
<b>Sex</b>	
Male	17382 (36.6)
Female	30111 (63.4)

The type of healthcare service accessed by the patients are in Tables 4.2.3 and 4.2.4 for the adults and children respectively. Most of the HIV positive adult patients accessed antiretroviral treatment service whereas 39.8% and 34.5% of the HIV negative adult patients accessed outpatient service for treatment of common ailments, and antenatal care for pregnant women respectively (Table 4.2.3). Majority of the children (65.6%) received outpatient care, with BCG identified as the most common immunisation service received by the children (Table 4.2.4).

**Table 4.2.3: Type of health care service accessed by the adult patients**

<b>Type of service accessed (Adults)</b>	<b>HIV Negative (n = 74,403) n (%)</b>	<b>HIV Positive (n = 3,948) n (%)</b>
Antenatal care (ANC)	25650 (34.5)	0 (0.0)
Delivery	3243 (4.4)	40 (1.0)
Family planning (FP)	2732 (3.7)	0 (0.0)
Outpatient visit (OPD)	29578 (39.8)	0 (0.0)
Admission	447 (0.6)	0 (0.0)
HIV Counselling and Testing (HCT)	478 (0.6)	82 (2.1)
HCT for PMTCT	122775 (16.5)	116 (2.9)
Antiretroviral treatment (ART)	N/A	3710 (94.0)

N/A = Not applicable

**Table 4.2.4: Type of health care service accessed by the infants/ children (n = 47493)**

<b>Type of service accessed</b>	<b>n (%)</b>
BCG	6473 (13.6)
DPT1_Penta1	5021 (10.6)
DPT3_Penta3	263 (9.0)
Outpatient visit (OPD)	31164 (65.6)
Admission	572 (1.2)

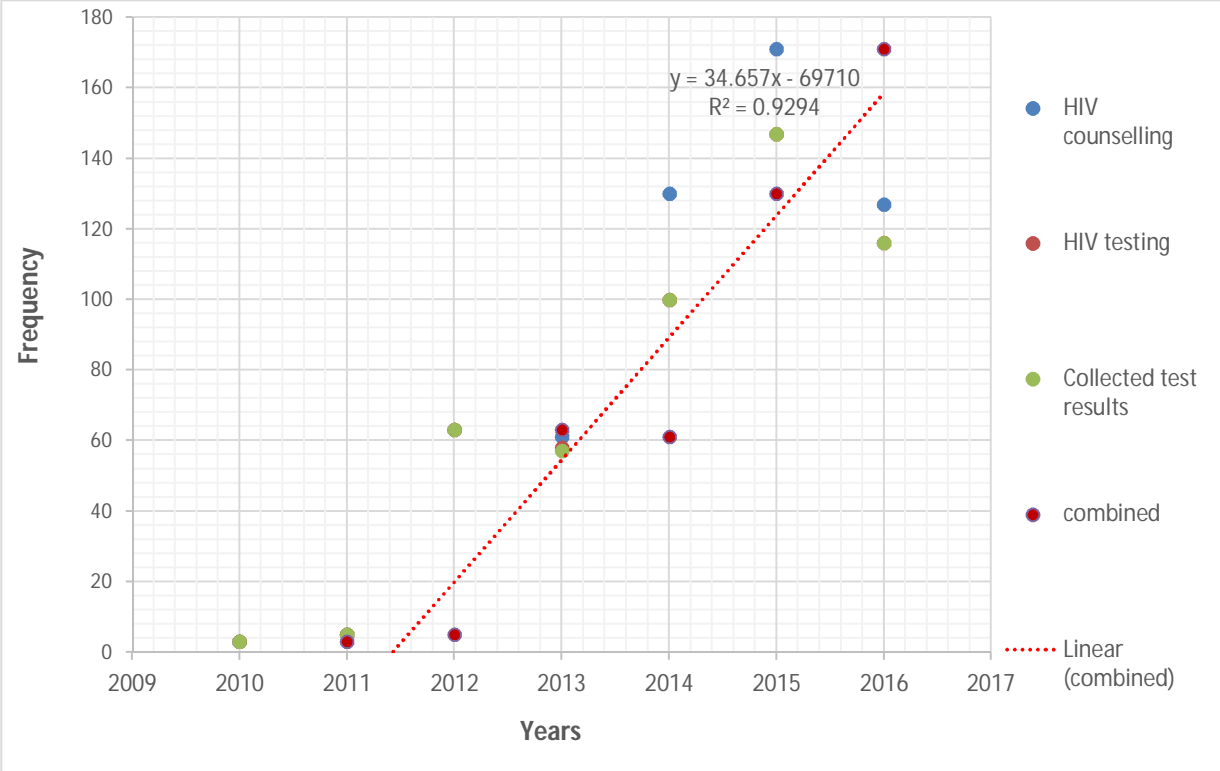
#### **4.2.7.2 Effect of integrated care on uptake of HIV services**

##### *Uptake of HIV Counselling and Testing services*

Before the integration of HIV care and treatment into routine PHC services in the Kumbotso CHC, HIV services were available only at the tertiary hospital linked to KCHC (That is, AKTH). All

HIV patients that visited KCHC were referred to AKTH. The results from the data analysed show that following the integration, uptake of HIV counselling service increased over time. Use of HIV counselling service increased from 3 patients in 2010 to 127 patients by the end of year 2016. The results (Figure 4.2.1) shows that all the patients that were counselled in 2010 to 2012 took the HIV test and collected their test results, but between 2013 to 2016, the number of patients that took the test was 3 patients less than those counselled in 2013. However, in 2014, the results show that the proportion of those who received counselling and subsequently tested increased.

The rate at which the HIV counselling and testing services changed over the years is presented in Table 4.2.5. HIV counselling and testing services significantly increased at the rate of 2.11 and 1.89 per annum respectively, whereas the rate at which the patients collected their test results increased at the rate 1.90 per annum.



**Figure 4.2.1: Annual trend of HIV testing and counselling (HTC) services in KCHC**

**Table 4.2.5: Annual change in uptake of HIV testing and counselling (HTC) services in KCHC**

Service	Change/ annum (95% C.I)	t - test	p-value
HIV counselling	2.11 (1.19, 3.04)	4.58	0.0001*
HIV testing	1.89 (1.02, 2.76)	4.38	0.0001*
Collected test results	1.90 (1.03, 2.76)	4.38	0.0001*

*\*Statistically significant*

### *Uptake of antiretroviral (ART) treatment services for HIV*

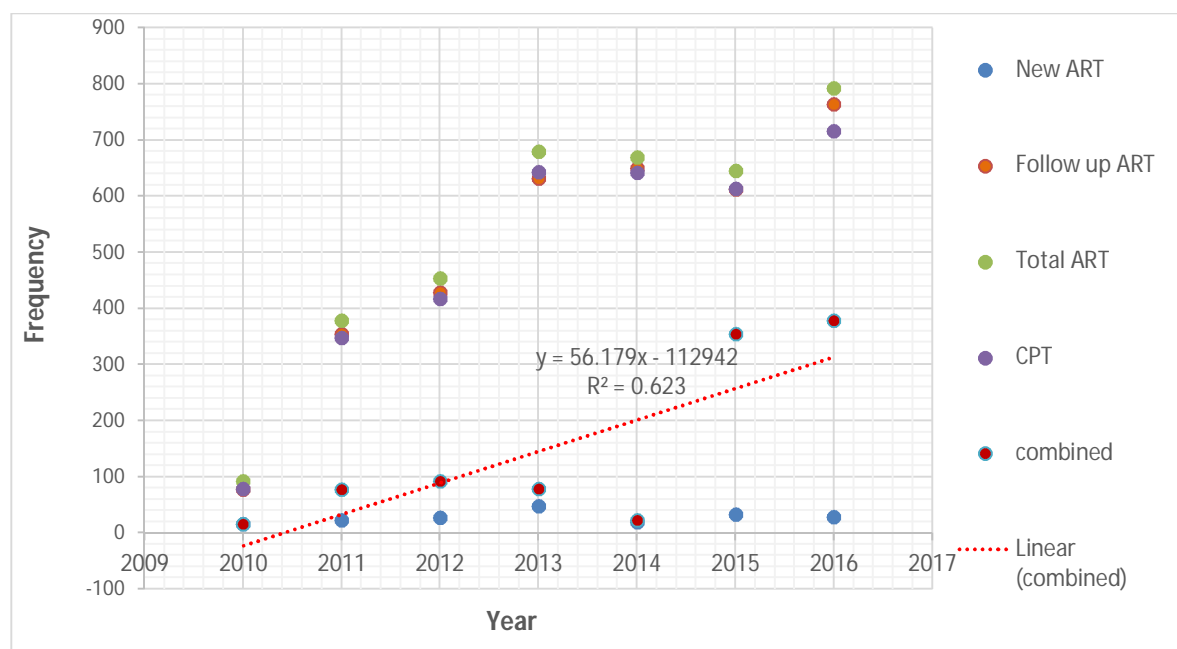
Figure 4.2.2 shows the trend of ART from 2010-2016. The results show a fluctuating trend. New ART enrolment<sup>1</sup> increased linearly from 16 patients in 2010 to 48 in 2013. In 2016, a decline in ART was recorded. The number of patients who received ART on follow up<sup>2</sup> increased dramatically from 77 patients in 2010 to 764 patients in 2016, while the total number of patients on ART (total ART) increased from 92 patients in 2010 to 669 patients in 2014. In 2015 a decline in ART uptake on follow up was observed, but increased again in 2016 (Figure 4.2.2). The results presented in Figure 4.2.2 also show that uptake of co-trimoxazole preventive treatment (CPT) was less than the total ART per annum by as much as 14 to 76 patients.

Table 4.2.6 shows the annual rate of uptake of ART services. New ART enrolment decreased at the rate of -0.02 patients annually although the change was not statistically significant. However, follow up ART, total ART and CPT increased significantly at the rate of 8.5, 8.9 and 8.1 per annum respectively as shown in Table 4.2.6.

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<sup>1</sup> New ART enrollment is the number of HIV positive patients registered to commence antiretroviral treatment (ART)

<sup>2</sup> Follow up ART patients are those HIV positive patients that are already on antiretroviral drugs and are coming to the health facility for review or drug refill



**Figure 4.2.2: Trend of antiretroviral treatment (ART) services in KCHC**

**Table 4.2.6: Annual change in uptake of antiretroviral treatment (ART) services in KCHC**

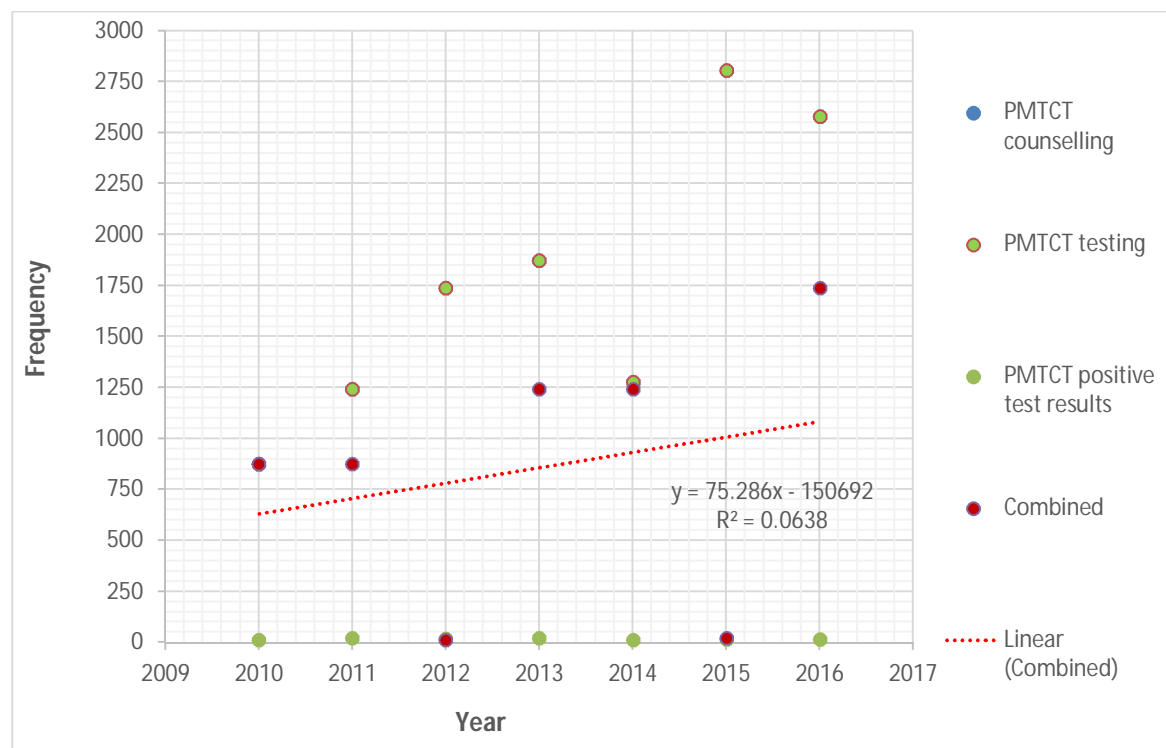
Service	Change/ annum (95% C.I)	t - test	p-value
New ART	-0.02 (-0.28, 0.23)	-0.183	0.855
Follow up ART	8.51 (6.95, 10.08)	10.85	0.0001*
Total ART	8.85 (7.27, 10.42)	11.18	0.0001*
CPT	8.12 (6.50, 9.74)	9.97	0.0001*

*\*Statistically significant*

### ***Uptake of counselling and testing services for PMTCT***

The trend of HIV counselling and testing services among pregnant women is as shown in Figure 4.2.3. Both counselling and testing services received by mothers attending antenatal clinics as part of the PMTCT of HIV significantly increased over time from 876 patients in 2010 to 2579 patients in 2016. The number of pregnant women testing HIV positive following testing at ANC initially

increased from 13 in year 2010 to 21 patients in year 2011, and then decreased thereafter until it reached 14 in 2015.



**Figure 4.2.3: Trend of PMTCT – HIV counselling and testing services in KCHC**

**Table 4.2.7: Annual change in uptake of PMTCT – HIV counselling and testing services in KCHC**

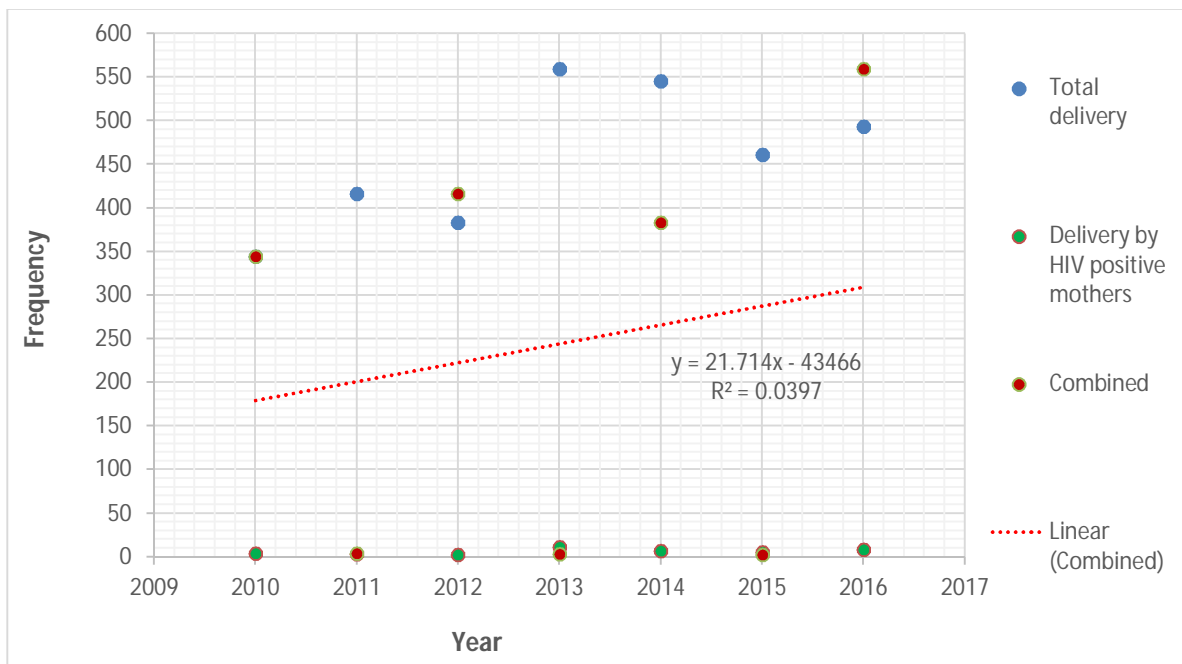
Service	Change/ annum (95% C.I)	t - test	p-value
PMTCT counselling	24.32 (16.70, 31.95)	6.35	0.0001*
PMTCT testing	24.32 (16.70, 31.95)	6.35	0.0001*
PMTCT positive test results	-0.09 (-0.19, 0.01)	-1.78	0.08

*\*Statistically significant*

Counselling and testing for PMTCT both increased significantly at the rate of 24.3 per annum. The rate of HIV positive test results decreased at the rate of -0.09 per annum although the change was not statistically significant as shown in Table 4.2.7.

***Uptake of PMTCT delivery services by pregnant women***

The trend of delivery services under the PMTCT programme is presented in Figure 4.2.4.



**Figure 4.2.4: Trend of PMTCT - Delivery services in KCHC**

The figure shows that the number of HIV positive mothers delivering/ exposed babies<sup>3</sup> decreased from 4 in 2010 to as low as 2 in 2012, and then fluctuated between 11 and 5 between 2013 and 2016. Although the rate of deliveries by HIV positive mothers decreased by 0.09 annually, the

<sup>3</sup> Exposed baby is any newborn baby whose mother is HIV positive and therefore had the chance of being infected by the mother with HIV during pregnancy or childbirth



change was not statistically significant. Figure 4.4 also shows that total deliveries in Kumbotso CHC increased significantly from 344 deliveries in 2010 to 559 deliveries in 2013, and then gradually slowed down over years to 493 in 2016.

Table 4.2.8 further shows that total delivery significantly rose at the rate of 2.3 per annum. The results show that none of the exposed babies (babies born to HIV positive pregnant women) was found HIV positive.

**Table 4.2.8: Annual change in uptake of PMTCT - Delivery services in KCHC**

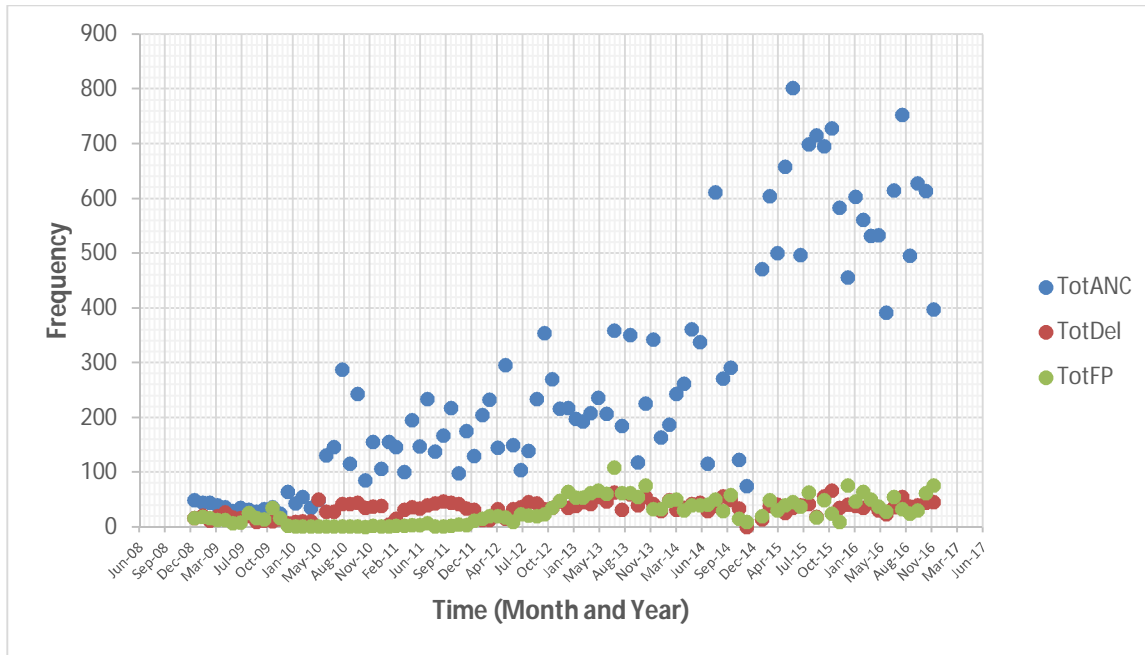
Service	Change/ annum (95% C.I)	t - test	p-value
Total delivery	2.34 (0.92, 3.75)	3.29	0.002*
Delivery by HIV positive mothers	-0.09 (-0.19, 0.012)	-1.78	0.080

*\*Statistically significant*

#### **4.2.7.3 Effect of integrated care on non-HIV services uptake**

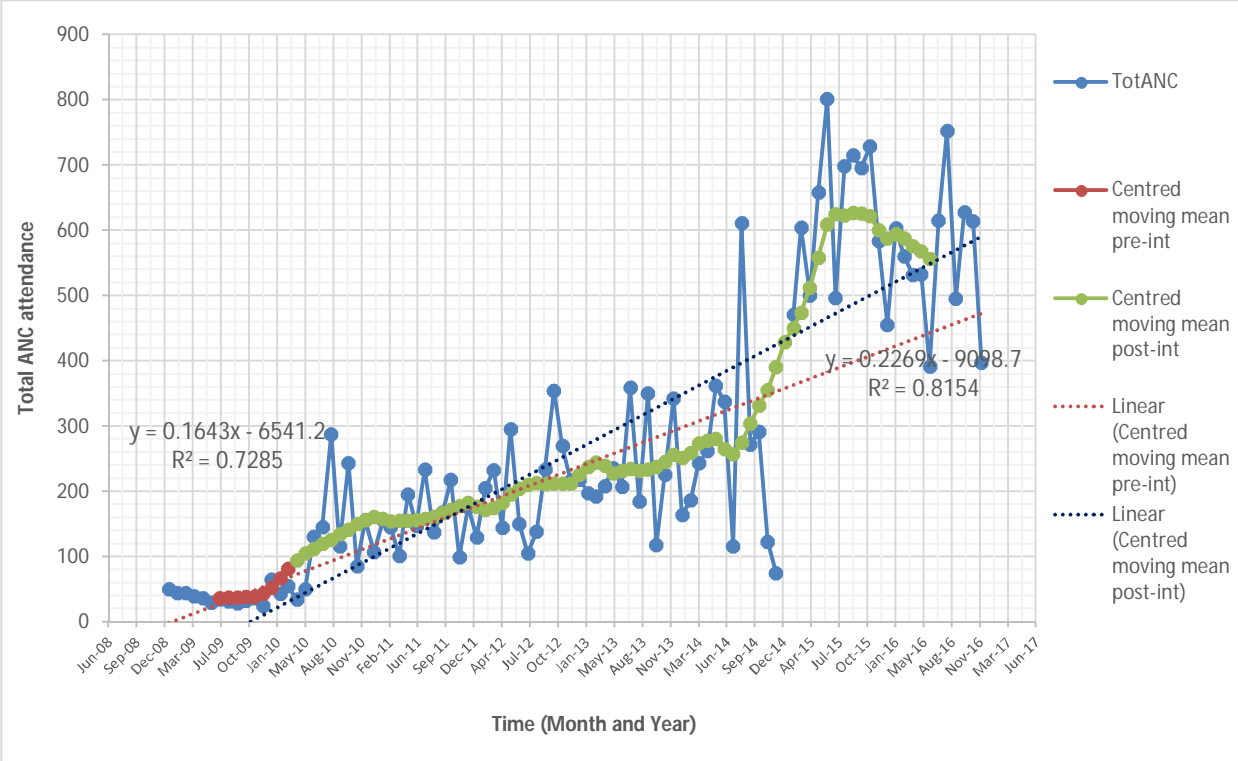
##### *Uptake of maternal health services*

Figure 4.2.5 revealed that ANC, deliveries and FP uptake generally increased with increasing unit of time from 2009 to 2016, exhibiting a positive correlation with time. Total ANC increased in a linear fashion with moderate strength, and with an outlier occurring around August 2010. Total delivery and FP also showed a linear trend, strong relationship with time and with no outliers.



**Figure 4.2.5: Scatter plot of data on uptake of maternal health services in KCHC**

The time series plot of total ANC attendance in Figure 4.2.6 depicts a positive secular trend with cyclical pattern indicating a non-regular increase in ANC attendance with increasing months of the integrated care intervention. Before the integrated care, ANC attendance was increasing at the rate of 0.2 per month from the pre-intervention level of 38.2 clients. Following the intervention however, ANC attendance dropped by 105.2 clients per month and then significantly increased monthly by an average of 6.6 patients per month as shown in Table 4.2.9.

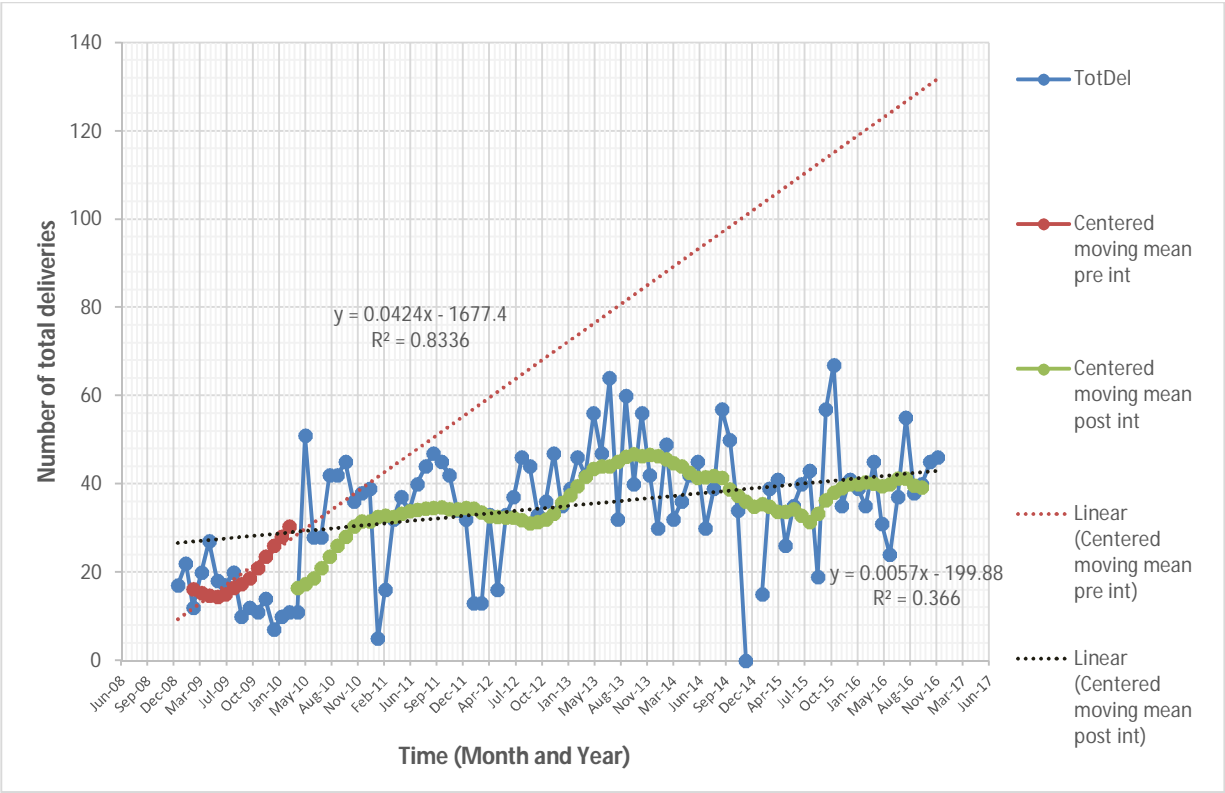


**Figure 4.2.6: Time series plot of antenatal care (ANC) attendance in KCHC**

**Table 4.2.9: Segmented regression analysis of the impact of integrated care on maternal health care services (Antenatal care services)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	38.16	26.26 to 50.06	0.0001
$\beta_1$	0.25	-1.43 to 1.93	0.7720
$\beta_2$	-105.21	-161.24 to -49.17	0.0003
$\beta_3$	6.60	4.55 to 8.65	0.0001

In a similar fashion, the time series plot of uptake of delivery services depicts a positive secular trend with cyclical pattern indicating that monthly deliveries progressively increased with time, and with some elements of seasonality occurring between July and September (Figure 4.2.7).



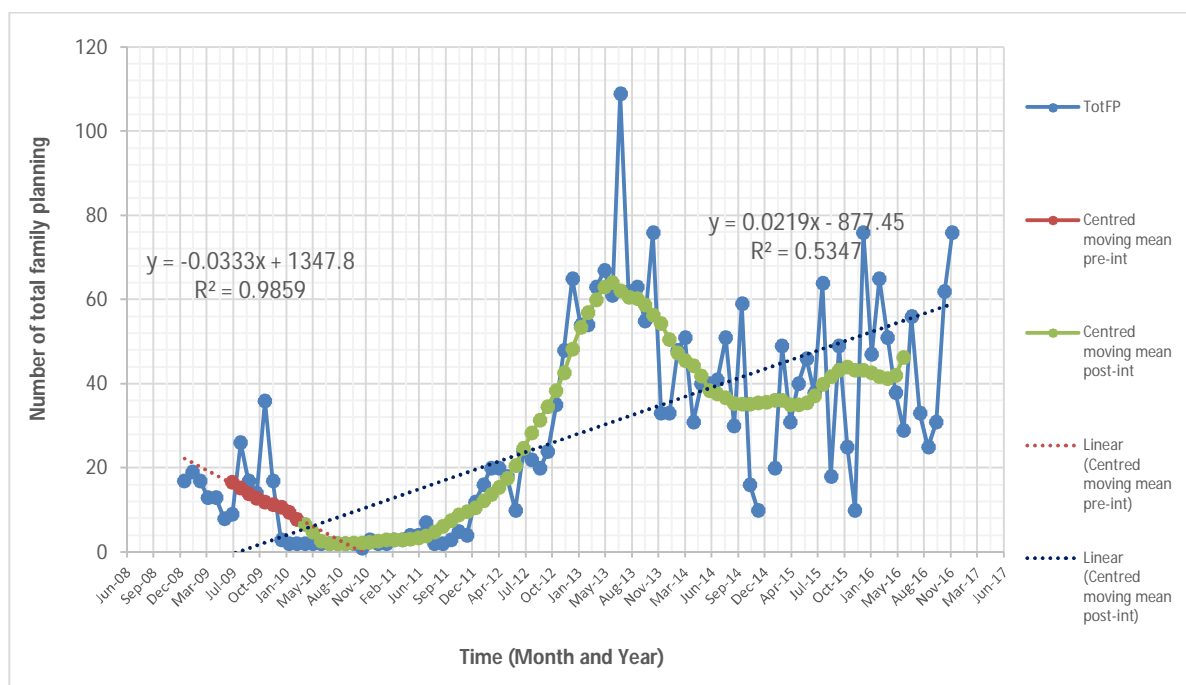
**Figure 4.2.7: Time series plot of monthly use of delivery services in KCHC**

The graph also shows that monthly delivery was dropping by 0.82 deliveries per month at the pre-intervention months. With the integrated care however, there was a level change in monthly delivery by 10.4, and thereafter gradually increased by 0.9 deliveries per month (Table 4.2.10).

**Table 4.2.10: Segmented regression analysis of the impact of integrated care on maternal health care services (Delivery services)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	21.77	15.97 to 27.57	0.0001
$\beta_1$	-0.82	-1.34 to -0.30	0.0020
$\beta_2$	10.44	1.24 to 19.64	0.0260
$\beta_3$	0.92	0.39 to 1.45	0.0009

The time series plot of uptake of FP services (Figure 4.2.8) depicts a positive secular trend with a cyclical pattern without periodicity. Before the integrated care, uptake of family planning services was dropping from 19.1 at the rate of 0.6 per month between January 2009 to February 2010. With the integrated care however, family planning uptake further dropped by 23.6 clients before it started to rise at the rate of 1.3 client per month (Table 4.2.11).



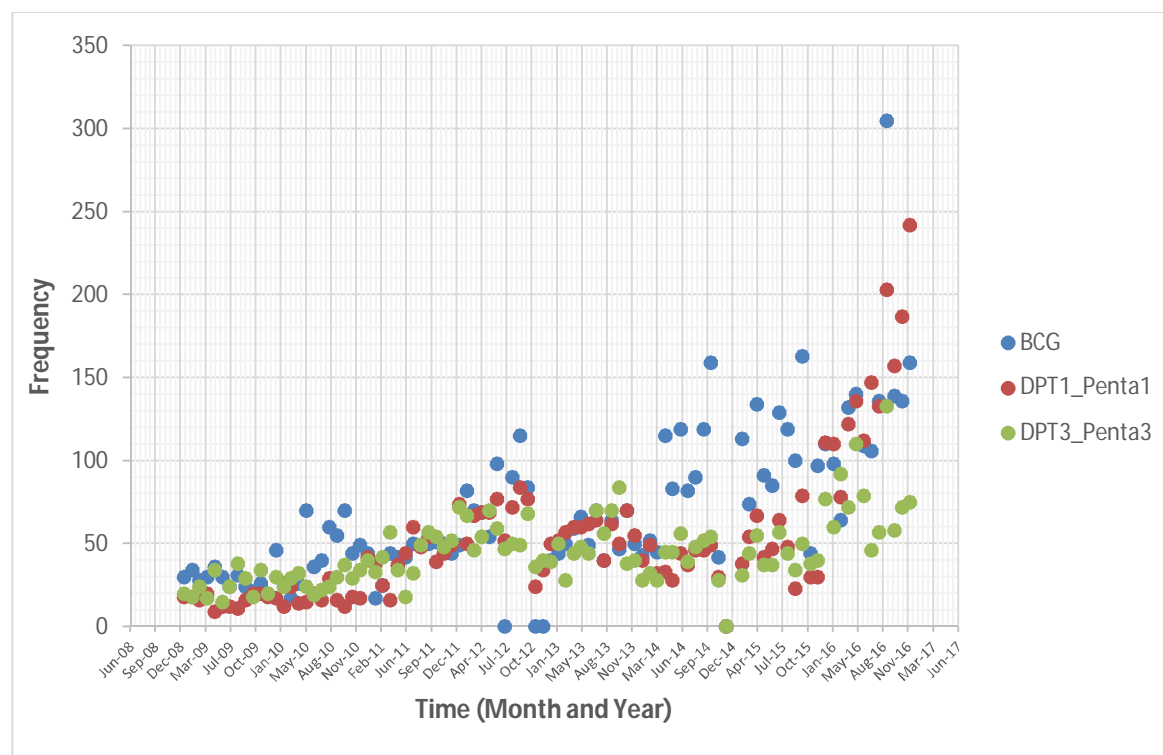
**Figure 4.2.8: Time series plot of monthly uptake of family planning services in KCHC**

**Table 4.2.11: Segmented regression analysis of the impact of integrated care on maternal health care services (Family planning)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	19.11	13.73 to 24.50	0.0001
$\beta_1$	-0.61	-1.60 to 0.37	0.2200
$\beta_2$	-23.59	-33.13 to -14.06	0.0001
$\beta_3$	1.26	0.26 to 2.26	0.0140

***Uptake of child health services***

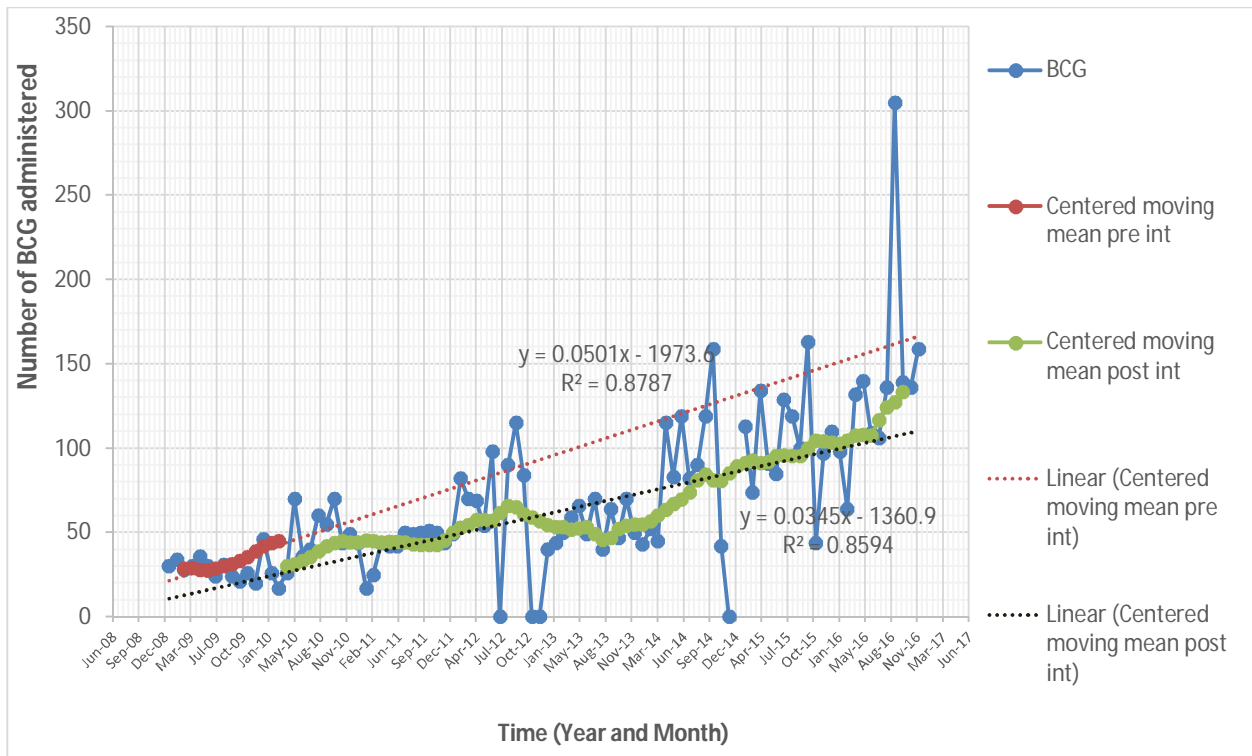
Figure 4.2.9 shows that uptake of BCG, DPT1\_Penta 1, and DPT3\_Penta 3 vaccinations increased from 2009 (the pre-integration period) with increasing months, indicating positive correlation with time.



**Figure 4.2.9: Scatter plot of uptake of child health services in KCHC**

The increase in uptake of BCG follows a linear trend with a moderate strength. However, outliers were noted between July and October 2012, and August 2016. Uptake of DPT1\_Penta 1 exhibited a strong nonlinear relationship with time, with outliers showing between August to December 2016. Uptake of DPT3\_Penta 3 also exhibited a strong nonlinear relationship with time, with an outlier seen around December 2014.

The time series plot of monthly BCG vaccination follows a positive secular trend with cyclical pattern (Figure 4.2.10). Before the integrated care, uptake was decreasing at 0.5 per month from the pre integration phase of 32.1 patients per month. With the integrated care however, BCG uptake dropped by 23.3 between March and May 2010 before it started to increase at the rate of 1.8 patients per month as shown in Table 4.2.12.

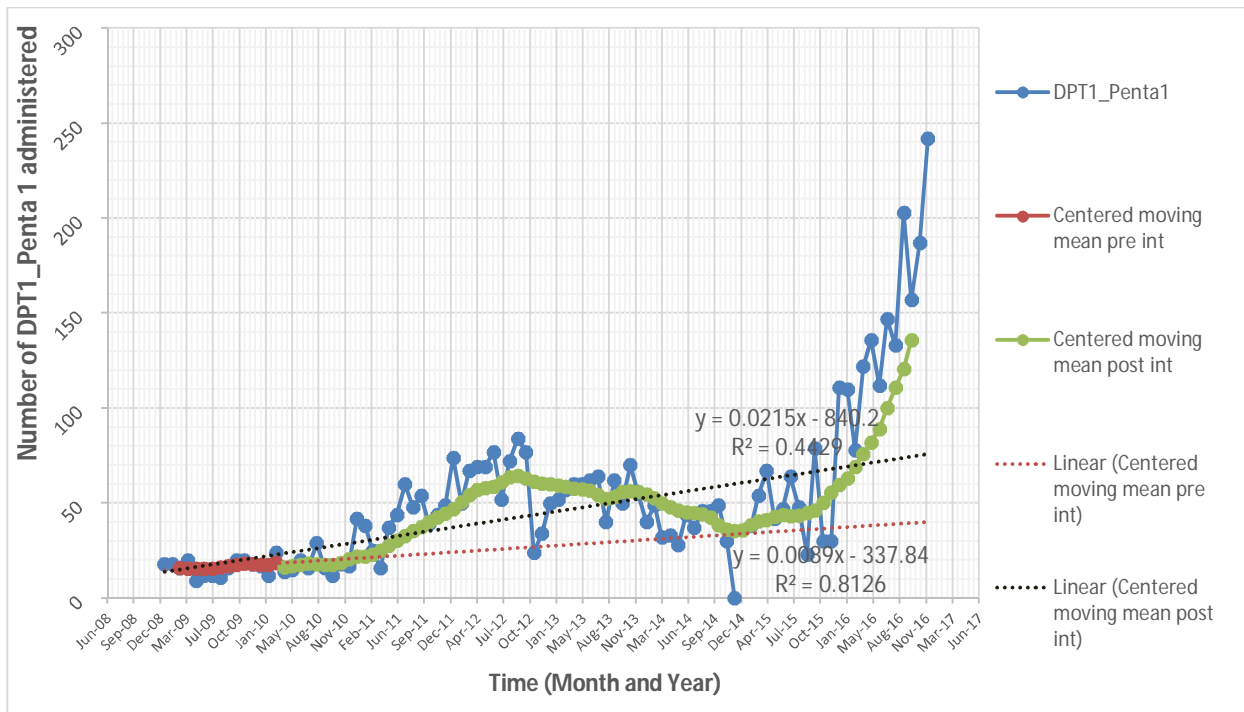


**Figure 4.2.10: Time series plot of monthly BCG vaccination in KCHC**

**Table 4.2.12: Segmented regression analysis of the impact of integrated care on child health services (BCG vaccination)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	32.11	26.40 to 37.82	0.0001
$\beta_1$	-0.49	-1.54 to 0.56	0.3580
$\beta_2$	-23.31	-41.88 to -4.73	0.0140
$\beta_3$	1.76	0.64 to 2.88	0.0020

The time series plot in Figure 4.2.11 also shows a positive secular trend with cyclical non seasonal pattern, with the uptake of the DPT1\_Penta 1 vaccine gradually increasing from the 14.6 level before the integrated care at 0.2 per month. With the integrated care intervention however, uptake of the vaccine dropped to 18.7 before it started to rise at the rate of 1.0 per month (Table 4.2.13).



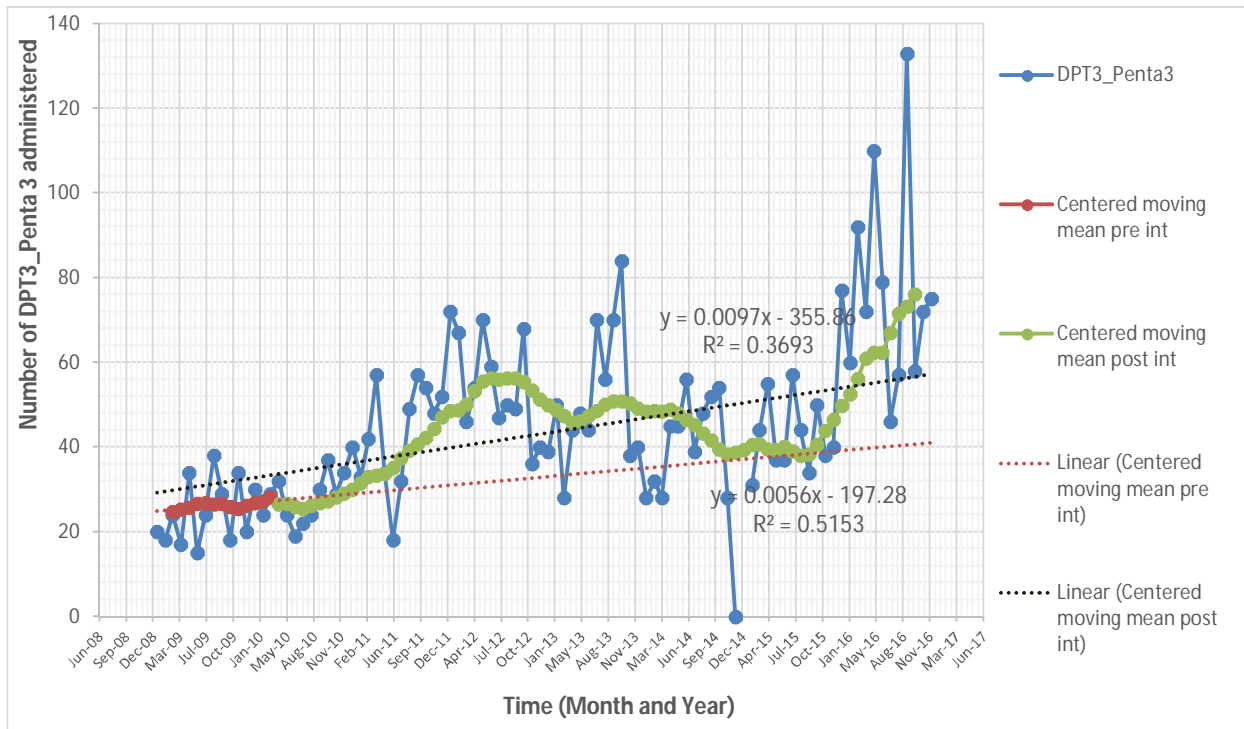
**Figure 4.2.11: Time series plot of DPT1/ Penta1 vaccination in KCHC**



**Table 4.2.13: Segmented regression analysis of the impact of integrated care on child health services (DPT1/ Penta1 vaccination)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	14.60	9.50 to 19.69	0.0001
$\beta_1$	0.20	-0.42 to 0.82	0.5250
$\beta_2$	-18.66	-37.91 to 0.59	0.0570
$\beta_3$	0.97	0.20 to 1.73	0.0130

In the same fashion, the time series plot of DPT3\_Penta 3 shows a positive secular trend with a cyclical non seasonal variation (Figure 4.2.12).



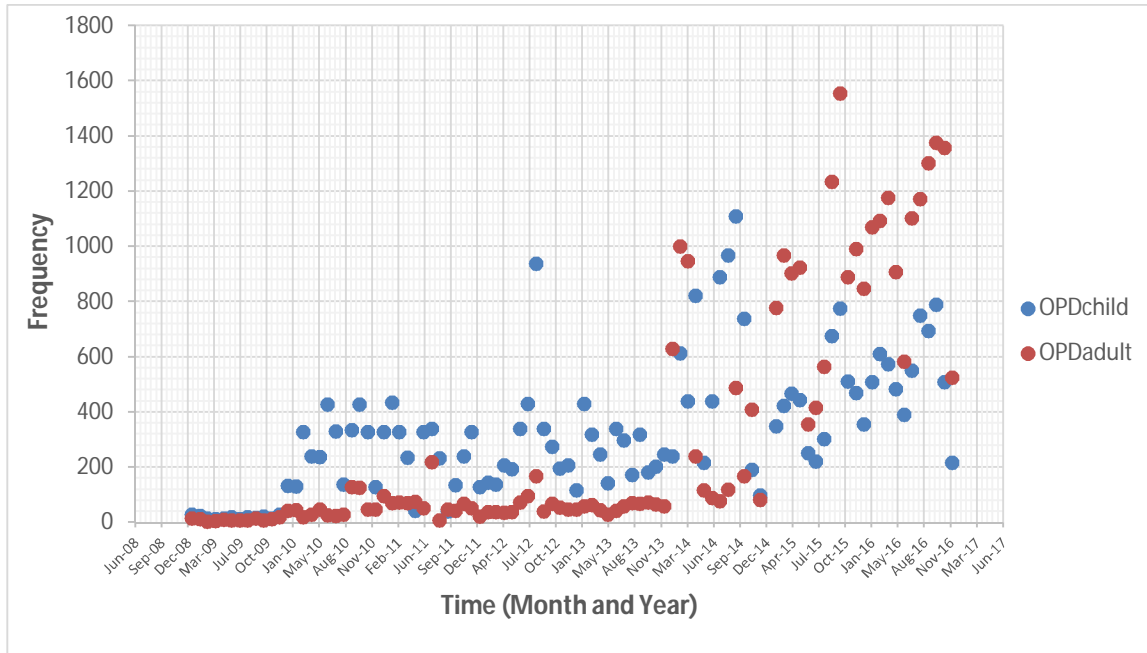
**Figure 4.2.12: Time series plot of DPT3/ Penta3 vaccination in KCHC**

DPT3/ Penta3 vaccination increased at the rate of 0.5 per month before integrated care. Following the integrated care, there was an upward level change in the uptake of the vaccine by 6.3 before it decreased at the rate of 0.1 per month (Table 4.2.14).

**Table 4.2.14: Segmented regression analysis of the impact of integrated care on child health services (DPT3/ Penta3 vaccination)**

Parameter	Effect	95% Confidence interval	p-value
$\beta_0$	20.59	14.61 to 26.57	0.0001
$\beta_1$	0.54	-0.03 to 1.11	0.0620
$\beta_2$	6.27	-4.80 to 17.34	0.2630
$\beta_3$	-0.14	-0.74 to 0.46	0.6490

**Effect on non-HIV outpatient services**

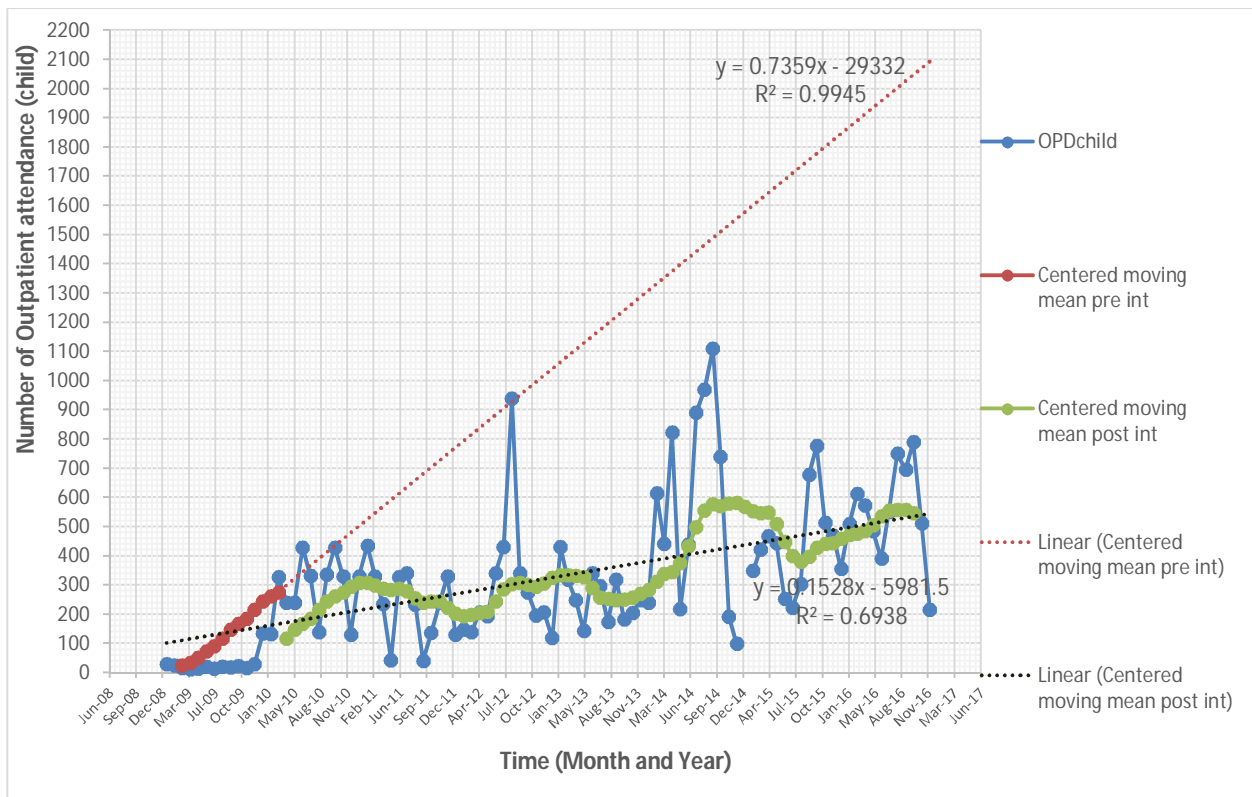


**Figure 4.2.13: Scatter plot of data on utilisation of outpatient services in KCHC**

Figure 4.2.13 shows that outpatient attendance for both adult and paediatric patients increased from 2009 with increasing month in a nonlinear fashion. Both adult and paediatric outpatient attendance shows moderate relationship with time. Outliers are noted for adult outpatient attendance around October 2012, September 2014 and November 2016. Similarly, there are

outliers for paediatric outpatient attendance around March 2014, October 2015 and November 2016.

The time series plot of the paediatric outpatient clinic attendance shows a positive secular trend with element of seasonality occurring around August to October (Figure 4.2.14). Paediatric outpatient attendance was increasing at the rate of 12.1 per month before the integration. This was observed to have jumped immediately to 172.9 following the integrated care, and thereafter decreased at the rate of 7.7 per month (Table 4.2.15).

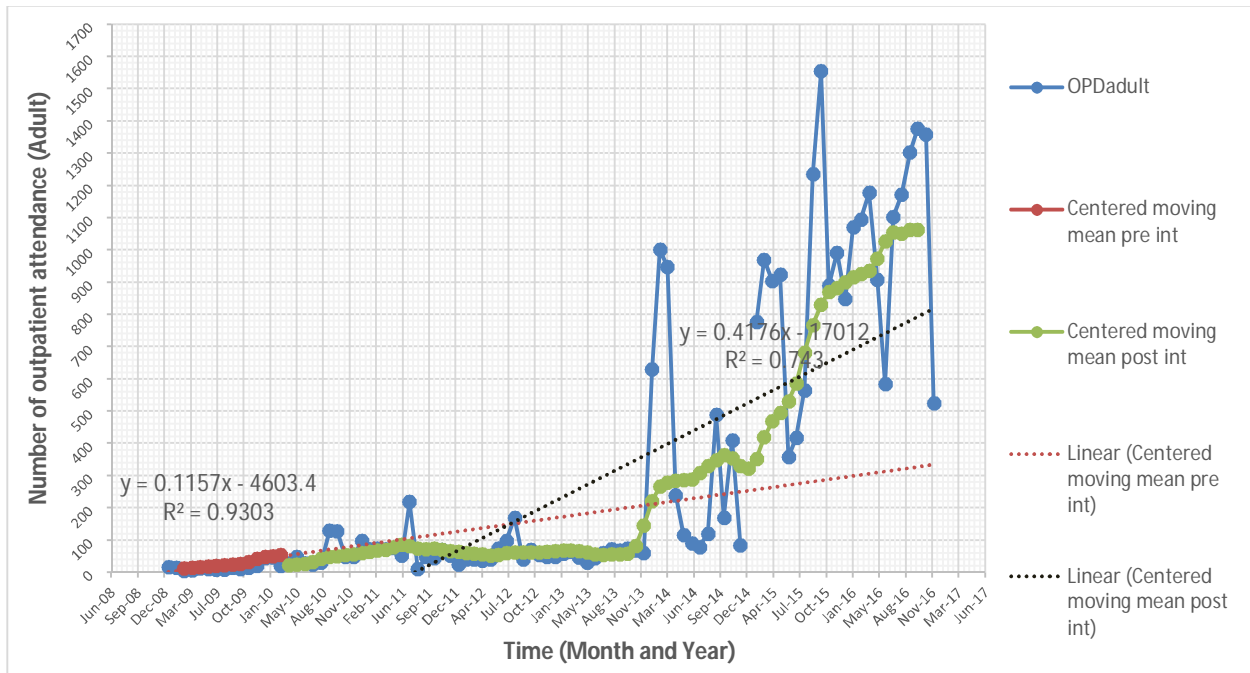


**Figure 4.2.14: Time series plot of monthly paediatric OPD attendance in KCHC**

**Table 4.2.15: Segmented regression analysis of the impact of integrated care on outpatient services (Paediatric outpatient services)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	-41.41	-124.50 to 41.69	0.325
$\beta_1$	12.14	-1.34 to 25.63	0.077
$\beta_2$	172.95	51.23 to 294.67	0.006
$\beta_3$	-7.68	-21.27 to 5.91	0.264

The time series plot of monthly adult outpatient clinic attendance in KCHC is as depicted in Figure 4.2.15. The plot shows a positive secular trend and cyclical pattern with elements of seasonality between August and October.



**Figure 4.2.15: Time series plot of monthly adult OPD attendance in KCHC**

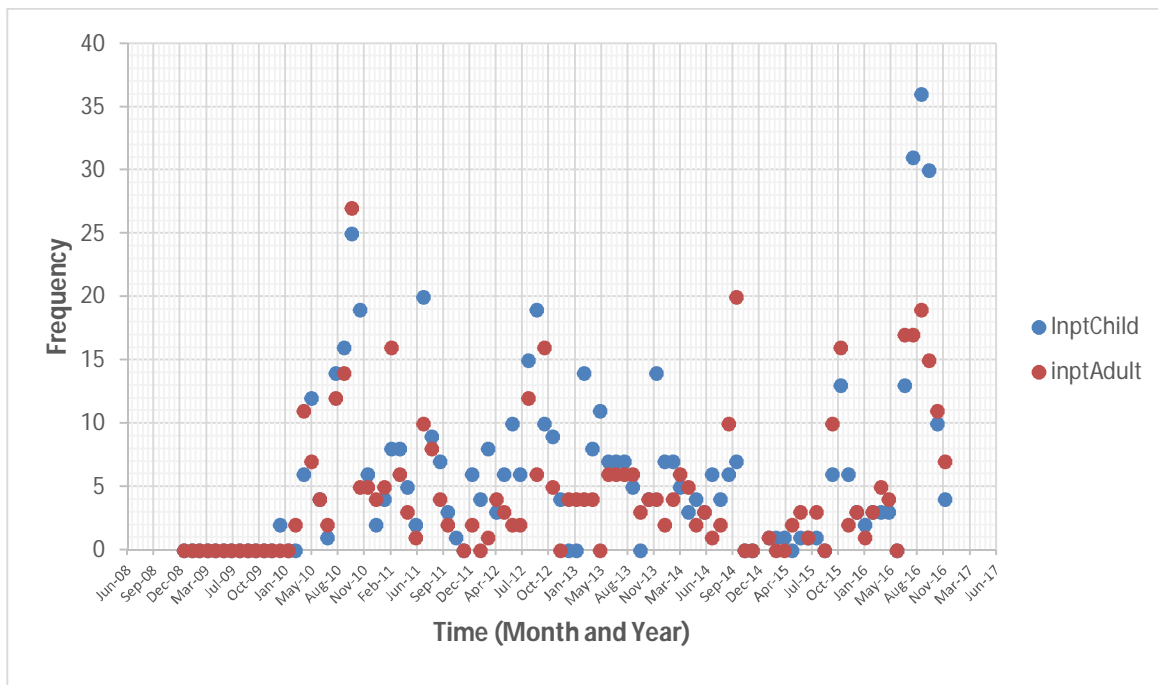
Adult outpatient attendance was increasing at the rate of 1.8 per month before the integrated care intervention. Immediately after the intervention however, there was a significant downwards level

change (decrease) by 464.86, followed by a monthly increase at the rate of 13.2 per month as shown in Table 4.2.16.

**Table 4.2.16: Segmented regression analysis of the impact of integrated care on outpatient services (Adult outpatient services)**

Parameter	Effect	95% Confidence interval	p-value
$\beta_0$	2.56	-9.49 to 14.61	0.6740
$\beta_1$	1.77	0.05 to 3.50	0.0440
$\beta_2$	-464.86	-599.37 to -330.36	0.0001
$\beta_3$	13.16	9.88 to 16.44	0.0001

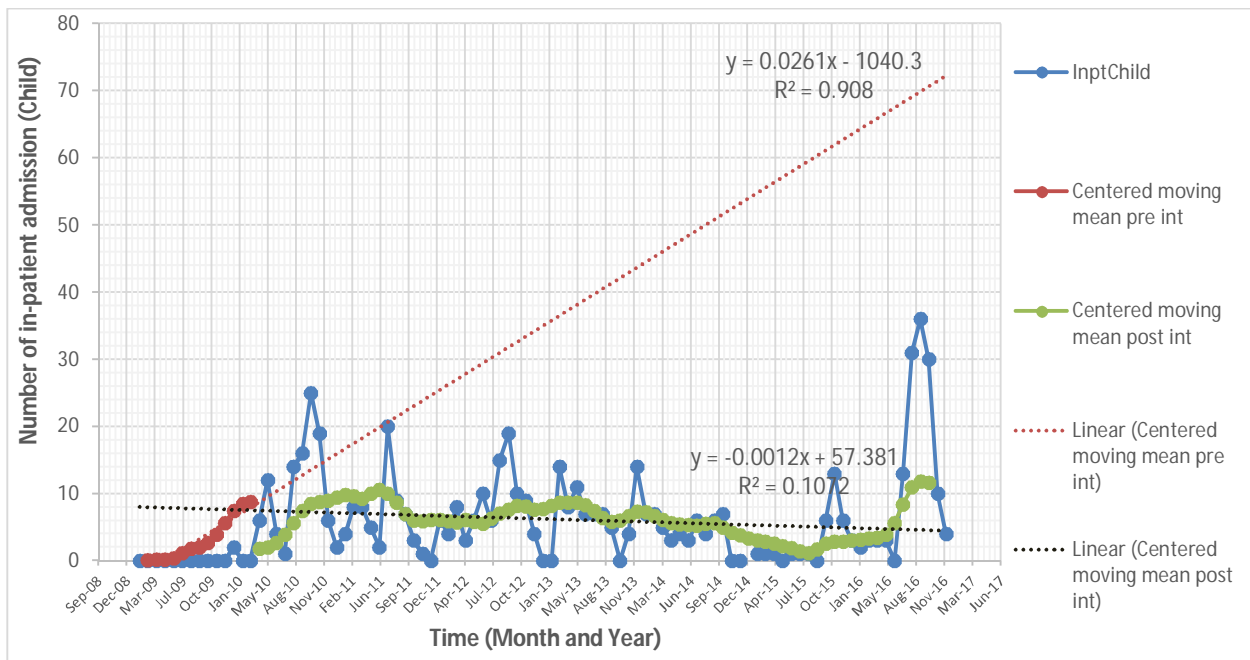
*Effect on in-patient services*



**Figure 4.2.16: Scatter plot of data on in-patient attendance in KCHC**

Figure 4.2.16 shows that in-patient admission (adult and children) increased with time from January 2009 to December 2016 in a linear fashion, suggesting a moderate relationship with time. However, multiple outliers were observed in the paediatric admissions around November 2010, September 2011, October 2012, March 2014, and between August and November 2016. Similarly, there were multiple outliers in the adult admissions around November 2010, February 2011, October 2012 and September 2014.

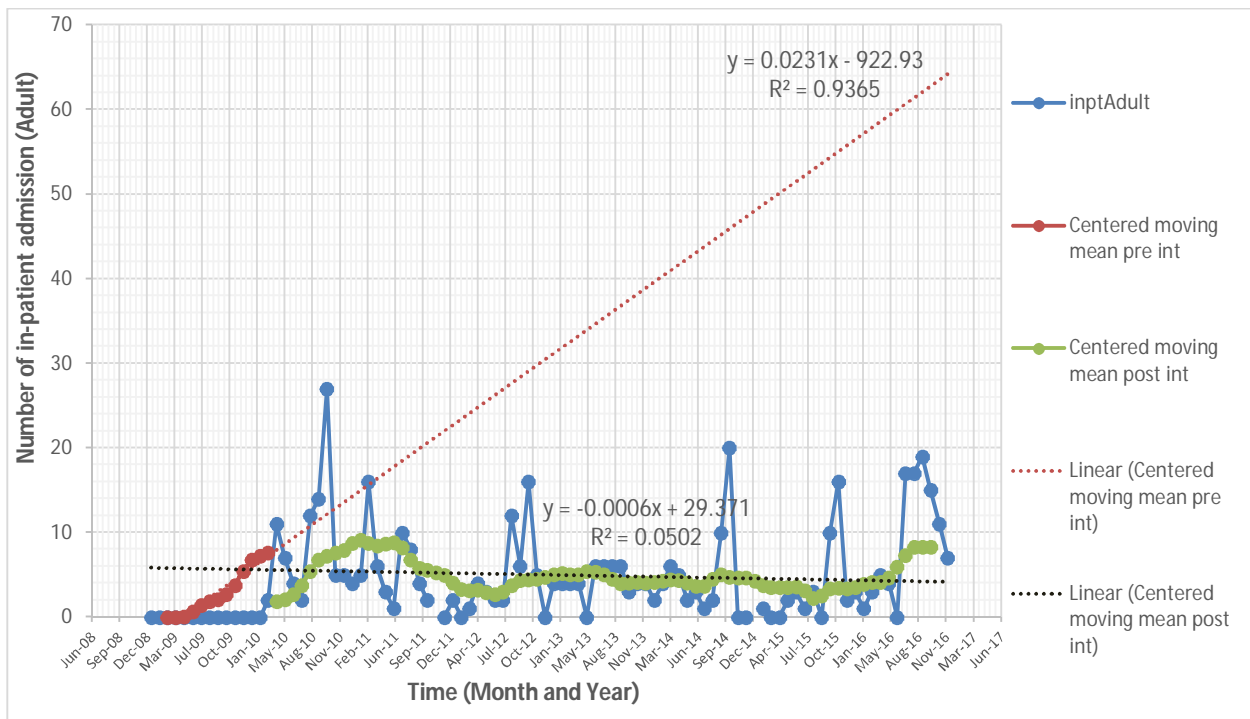
The time series data of the paediatric in-patient admission shows a positive secular trend with cyclical pattern and elements of seasonality occurring around August to October as depicted in Figure 4.2.17. The paediatric in-patient admission was decreasing at the rate of 0.03 patients per month before the integrated care, but suddenly increased to 7.7 after the integrated care, and then started to decrease at the rate of 0.04 patients per month thereafter as shown in Table 4.2.17.



**Figure 4.2.17: Time series plot of monthly paediatric in-patient attendance in KCHC**

**Table 4.2.17: Segmented regression analysis of the impact of integrated care on in-patient services (paediatric in-patient services)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	-0.15	-0.51 to 0.21	0.403
$\beta_1$	0.03	-0.04 to 0.11	0.370
$\beta_2$	7.73	2.79 to 12.66	0.002
$\beta_3$	-0.04	-0.17 to 0.08	0.487



**Figure 4.2.18: Time series plot of monthly adult in-patient attendance in KCHC**

The time series plot of the adult inpatient admissions depicts a positive secular trend with cyclical pattern and seasonality occurring around August to October (Figure 4.2.18). Before the integrated care intervention, adult in-patient admission was increasing at the rate of 0.05 patients monthly. With the integrated care however, there was a sudden positive level change to 5.9, and then it started to decrease at the rate of 0.05 per month (Table 4.2.18).

**Table 4.2.18: Segmented regression analysis of the impact of integrated care on in-patient services (Adult inpatient services)**

Parameter	Effect	95% C.I	p-value
$\beta_0$	-0.27	-0.85 to 0.31	0.364
$\beta_1$	0.05	-0.05 to 0.15	0.349
$\beta_2$	5.88	1.94 to 9.83	0.004
$\beta_3$	-0.05	-0.18 to 0.07	0.421

#### **4.2.8 Summary**

In summary, this study showed that HIV counselling, testing and collection of test results increased over time. The results also revealed that HIV counselling and testing for pregnant mothers increased over time but the number of HIV exposed babies decreased with time. For the non-HIV services, uptake of maternal health services (ANC, family planning, and delivery) increased with time. Child health services (BCG, and DPT1/ Penta 1 vaccinations) showed a moderate increase over time, except DPT3/ Penta 3 vaccination which dropped gradually with time. Overall, the study found that integrated care improved uptake of both HIV and non-HIV services.

### **4.3 QUANTITATIVE STUDY 2: SURVEY OF THE SERVICE USERS' SATISFACTION WITH THE HIV INTEGRATED PRIMARY HEALTH CARE SERVICES**

#### **4.3.1 OBJECTIVE**

The objective of the study was to assess the level of satisfaction of the users of the HIV integrated primary health care service.



### **4.3.2 STUDY DESIGN**

A descriptive cross-sectional study design was used to conduct the study. A cross-sectional design was used to collect and analyse data to address the research aim. The cross-sectional study design is an observational study design that is used to study data from a population or representative sample at a given point in time, which may be a day(s), week(s), month(s) or a time period that is just enough to complete the study (Kesmodel, 2018). In this type of design, exposure and outcome are measured at the same time without temporality. Because of this a cross-sectional study cannot determine cause and effect relationship (Setia, 2016; Whalley, 2006). Thus, the design is appropriate for population-based surveys or studying the prevalence of diseases or condition, and related factors in clinic-based samples (Setia, 2016; Kesmodel, 2018). The cross-sectional study design allowed the researcher to collect primary data at a point in time from the HIV positive and HIV negative patients in order to answer the research questions.

### **4.3.3 STUDY PARTICIPANTS**

The participants for this cross-sectional survey were male and female patients, 18 years and older, that accessed HIV and non-HIV services in the health facility. Seriously ill patients who lacked capacity to respond to consent for the study were excluded.

### **4.3.4 SAMPLE SIZE ESTIMATION**

The minimum sample size for the patient satisfaction survey was obtained using the Leslie Fischer's formula for estimating minimum sample size for descriptive studies, that is,  $n = Z^2pq/d^2$  (Lwanga and Lemeshow, 1991). Where  $n$  = minimum sample size;  $Z$  = standard normal deviate

corresponding to 95% confidence level that is, 1.96;  $p$  = prevalence (obtained from previous study);  $q$  = complimentary probability of  $p$  that is,  $1 - p$  and  $d$  = degree of precision = 5% that is, 0.05.

By substituting these values into the formula and using a prevalence of 83% for the proportion of patients/ clients satisfied with the services obtained from AKTH, Kano state, Nigeria (Iliyasu *et al*, 2010),  $n = (1.96)^2 \times 0.83 \times (1-0.83)/0.05^2 = 216.8$

Assuming a non-response rate of 10%, adjustment for the sample size was made using the formula  $n/1-f$  (Araoye, 2008), where  $n$  is the calculated sample size and  $f$  is the estimated response rate. By substituting the values into the formula, sample size therefore is  $217/0.90 = 241.1 = 241$ . Thus, a minimum of 121 patients was required from each of the HIV positive and negative patients for the study, but all the 241 participants were recruited to participate

#### **4.3.5 PARTICIPANTS RECRUITMENT**

Recruitment of the study participants took place at the KCHC in July 2019. A systematic sampling method was used to select the 241 service users (comprising HIV and non-HIV patients) to explore their level of satisfaction with the integrated HIV primary health care. This sampling method allows for system to be applied into selection of respondents by selecting every  $k^{\text{th}}$  element after a random start, and the process is simple and can easily be checked (Forthofer, Lee & Hernandez, 2007).

The research team was introduced to the patients by the health care providers during health talks at the general outpatient department (GOPD), which are held daily in the morning before the commencement of the clinic sessions. The researcher explained the purpose, process and roles of the participants in the study, and also sought for their participation. After the introduction, potential participants were given opportunity for questions and answers about the survey. The researcher

thereafter asked those who were willing to participate in the study to register their names at the research desk in a close-by office at the GOPD. Potential participants were given the information sheet to study at the point of registration. The researchers explained the content of the information sheet to participants that did not speak or understand English. Participants were given 48 hours to reflect on their participation before deciding to participate. They were told that they can discuss their participation with friends, their health providers or family members to help them make an informed decision. After 48 hours, only those who were willing to participate, and had contacted the researcher, were asked to give consent before they can be enrolled for interviews. Those that gave consent were then interviewed in an interview room located at the GOPD. The detail of the informed consent process is described in section 4.3.6.2.

The selection of participants to take part in the study was achieved by estimating the sampling intervals ( $S_1$  and  $S_2$ ) for the HIV and non-HIV groups, obtained by dividing the monthly attendance of the respective group of patients ( $X_1$  and  $X_2$ ) with the required number to be sampled from each of the groups ( $Y_1$  and  $Y_2$ ), i.e  $X_1/Y_1$  and  $X_2/Y_2$  for the HIV and non-HIV groups respectively. The estimated sampling intervals for the respective groups was applied to the list of registered service users in the interview office to select potential respondents. The first respondent serial number was identified by randomly selecting a number between one (1) and the sampling interval, and subsequent respondents were obtained by adding the sampling interval to the previous respondent's serial number. This continued until the 241-sample size was obtained.

#### **4.3.6 DATA COLLECTION**

Prior to field work, the researcher,

- a. Sought a written permission for the study from the management of AKTH and also paid advocacy visits to Primary Health Care Management Board (PHCMB) and to KCHC in order to solicit the co-operation of the officials in the conduct of the research. Further details of consent seeking with participants is presented in section 4.3.6.2. The co-operation of the PHC workers involved in the provision of health care and the HIV support group in the health facility was also sought and obtained. These were accomplished about two weeks before the commencement of data collection.
- b. Recruited four research assistants. The assistants were selected from a pool of experienced health workers based on their educational qualifications and past experiences with administering survey questionnaires.
- c. Trained the research assistants on the purpose of the study and other relevant information on the information sheet for the study, the quantitative questionnaire, role of communication in research, and on privacy and confidentiality of data. The training guide was based on published materials on research methodology (Crookes & Davies, 2004; Green and Browne, 2008; Araoye, 2008).
- d. Designed and pretested more than 10% (30) of the survey questionnaires in a different health facility located in an LGA about 50km away from the study LGA to prevent contamination of participants.

#### **4.3.6.1 Interview questionnaires**

This questionnaire had two sections: The first section elicited the socio-demographic characteristics of the respondents, while the second section sought information on the HIV positive and negative respondents' satisfaction with integrated care. Some items on the questionnaire were adapted from a validated questionnaire used in previous survey that assessed patients' satisfaction with services obtained from Aminu Kano Teaching Hospital (Iliyasu *et al*, 2010). The questionnaire is attached as Appendix 13.

#### **4.3.6.2 Informed consent with participants**

Informed consent was obtained from all participants before beginning of data collection. As previously stated, participants were given information during the morning health talk sessions on the purpose and procedure of the research including their roles. In addition, before signing consent forms, participants were asked to read the information sheet in order to get full information on the research including the nature and purpose of the project, the research methods to be employed with full explanation of any technical term used, the conditions under which the project will be conducted, who is undertaking and who is sponsoring the project, potential risks and inconveniences that may arise, potential benefits that may result, what participation in the research will be required in practice, how participant confidentiality will be safeguarded, what will happen to the research data and how it will be stored, how to raise concerns or to complain about the research, and to whom; and the consequences of non – participation (University of Michigan, 2021). For non-literate respondents, the information sheet was read and explained to them in Hausa language (a language they can understand). Participants were also given an opportunity to ask questions to clarify anything in doubt. The information sheet for the patients' satisfaction survey

is in Appendix 5. Before signing the consent form, the participants were assured that their participation is voluntary, and that they have the right to refuse to participate in the research without any penalty. They also have the right at any time during their active participation to withdraw from the research without giving any reason and with the assurance that any service or help they are already receiving will not be affected in any way. However, participants were also informed that these rights cannot be extended to the withdrawal of already published findings or be invoked in such a way as to compromise anonymised data sets that are being used as specified in the original consent agreement. Their names or identity will not be mentioned in any such publication.

All the participants were then allowed enough time as they needed to consider their participation in the study. Those who finally decided to participate were asked to give their consent (either sign a written informed consent or verbal consent was acceptable). Participants were given the chance to make a choice of what form of consent they preferred. As it is the case in Nigeria, the research team expects that participants who cannot write or read English will opt for verbal consent – therefore provision was made for such participants to thumb print (in lieu of signatures). In the case of married women, consent for the survey is not a problem once they have initial permission from their husbands to attend health facility. The consent form for the satisfaction survey is attached as Appendix 14.

#### **4.3.6.3 Administration of questionnaires**

Two trained research assistants administered the structured survey questionnaire to participants. As described before, the assistants were hired and trained by the researcher on the tools and

procedure of data collection, and on the requirements for data security and confidentiality. Researcher held daily review meetings with interviewers after each day's job to ensure quality of data collection and confidentiality.

#### **4.3.7 DATA MANAGEMENT AND ANALYSIS**

##### **4.3.7.1 Description of outcome variables**

Patients were adjudged to be satisfied with integrated care if they feel that their needs and expectations are being met by the care they received (Iliyasu *et al*, 2010). The variables measured to ascertain level of satisfaction with the services were compartmentalised into four domains of satisfaction adapted from the Iliyasu *et al* study. All the variables under these domains were measured on a Likert scale, with 1 and 5 indicating lowest and highest levels of satisfaction respectively. The domains and variables under them are as follows:

- i. Waiting time and waiting area:* This domain provides for exploring respondents' satisfaction with the time spent in the hospital while being attended to by health workers, and with provision made in the hospital as waiting area for patients before being attended to. 'Waiting time' is an indicator of efficiency in delivery of health service involving any unit of the health care system, while 'waiting area' gives an idea about how robust the health care infrastructure is. Variables measured under this domain include:
  - Satisfaction with time spent in retrieving folder: This measures patients' level of satisfaction with the time taken to retrieve patients' folders from the medical records department. It is an indication of the efficiency of the medical record system.
  - Satisfaction with waiting time before being attended to by health worker/ physician: this describes the time spent from the time the folder is taken to the physician/ health worker

to the time when patient is called in for consultation. This is a measure of consultation time and workload in the clinic.

- Satisfaction with waiting area: This measures respondents' satisfaction with the general provisions of the waiting area, including infrastructure, furniture, conveniences and general cleanliness among others.

*ii. Services obtained:* This domain provides for exploring respondents' satisfaction with services obtained from the integrated care facility, and with the health workers. 'Services obtained' is an indicator of service availability and of patient - health worker relationship. Variables measured under this domain include:

- Satisfaction about interaction with health worker/ physician: This grossly measures patient-health worker interaction, attitude of health workers and efficiency of health workers
- Satisfaction with pharmacy: This measures availability and efficiency of the pharmacy services.
- Satisfaction with laboratory services: This measures availability and efficiency of the laboratory services.
- Satisfaction with the standard of HIV services in the facility: This measures availability and efficiency of the overall HIV services in the health facility.
- Satisfaction with the standard of non-HIV PHC services in the facility: This measures availability and efficiency of the non-HIV PHC services in the health facility.

*iii. Access:* This domain provides for exploring respondents' access to services in the integrated care health facility. Variables measured under this domain include:



- Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility: This measures respondents' ease of access to clinical services as a result of integrated care at the health facility.
- Satisfaction that joint delivery of care improves access to standard laboratory services in the facility: This measures the ease of access to quality diagnostic laboratory services as a result of integrated care at the health facility.
- Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility: This measures the ease of access to variety of affordable and quality drugs as a result of integrated care at the health facility.

iv. *Stigma and discrimination*: This domain provides for exploring respondents' assessment of the presence or absence of stigma and discrimination among patients attending the integrated care health facility. Variables measured under this domain include:

- Satisfaction that joint delivery of care reduces stigma among patients: This measures respondents' view on whether integration of HIV and PHC services in KCHC reduced stigma among patients.
- Satisfaction that joint delivery of care reduces discrimination among patients: This measures respondents' view on whether integration of HIV and PHC services in KCHC reduced discrimination among patients.

**Table 4.3.1: Categorisation of variables**

Independent variables	Outcome variables
<p><b>Age group</b></p> <ul style="list-style-type: none"> <li>- 15-24</li> <li>- 25-34</li> <li>- 35-44</li> <li>- 45-54</li> <li>- 55-64</li> </ul> <p><b>Sex</b></p> <ul style="list-style-type: none"> <li>- Male</li> <li>- Female</li> </ul> <p><b>Marital status</b></p> <ul style="list-style-type: none"> <li>- Single</li> <li>- Married</li> <li>- Divorced</li> <li>- Widowed</li> </ul> <p><b>Highest education</b></p> <ul style="list-style-type: none"> <li>- At least secondary</li> <li>- No secondary education</li> </ul> <p><b>Occupation</b></p> <ul style="list-style-type: none"> <li>- Civil service</li> <li>- Private employee</li> <li>- Self-employed</li> <li>- Unemployed</li> </ul> <p><b>Ethnicity</b></p> <ul style="list-style-type: none"> <li>- Hausa</li> <li>- Fulani</li> <li>- Yoruba</li> <li>- Igbo</li> <li>- Others</li> </ul>	<p>Satisfaction with elements of integrated care (%)</p> <p>Overall satisfaction with integrated care (%)</p>

Overall satisfaction: This measures the respondents' satisfaction with integrated care after aggregating the variables from all the four domains examined. Overall satisfaction summarises

respondents into those who are 'satisfied' or 'not satisfied' with the services provided in the integrated care KCHC.

All the satisfaction variables discussed above constitute the dependent/ outcome variables for measuring patients' satisfaction with the integrated care services. The sociodemographic variables described under coding below make up the independent variables. These are summarised in Table 4.3.1.

#### **4.3.7.2 Coding**

As mentioned under section 4.3.7.1, the variables under all the four domains of satisfaction were measured on a Likert scale, with 1 and 5 indicating lowest and highest levels of satisfaction respectively. Patients were asked to indicate their level of satisfaction with each of the variables by selecting responses ranging from 'Very poor' = 1, 'Poor' = 2, 'Fair' = 3, 'Good' = 4 and 'Very good' = 5. To ease comparison, the Likert scale variables were transformed to binary by categorising the responses 'Very poor' = 1, 'Poor' = 2, and 'Fair' = 3 into 'Not satisfied'; and 'Good' = 4 and 'Very good' = 5 into 'Satisfied'.

The explanatory (sociodemographic) variables measured in this study were also coded as follows:

- Age: This describes the current age of respondents in years, measured on a ratio scale (discrete). Patients were asked to state how old they were at their last birth day.
- Age group: This describes the category of respondents' ages, categorised and coded into '15-24' = 1, '25-34' = 2, '35-44' = 3, '45-54' = 4 and '55-64' = 5. For the purpose of comparing satisfaction, respondents' ages were further grouped into younger age, '15-44' = 1 and older age, '45-64' = 2.

- Sex: This measures the sex orientation of respondents on a nominal scale with values male and female. Respondents were asked to state their sex. Male respondents were coded as '1' while female respondents were coded as '2'.
- Marital status: This measures respondents' state of being united in formal relationship. Marital status is measured on a nominal scale with four (4) values coded as 'Single' = 1, 'Married' = 2, 'Divorced' = 3 and 'Widowed' = 4. Respondents were asked to state their marital status.
- Highest education: This measures respondents' highest educational attainment. 'Highest education' is measured on a nominal scale with five (5) values and coded as 'No education' = 1, 'Qur'anic only' = 2, 'P= 3, 'Secondary' = 4, 'Post-secondary' = 5.  
For the purpose of comparison, 'Highest education' was categorised into 'At least secondary' comprising of classes 4 and 5, and 'No secondary education' for classes 1-3. 'At least secondary' was created considering that participants had at least completed basic education and been exposed to the optimum setting to prepare them for healthy and productive adult lives, including participation in social, political, and economic spheres (Jacob and Lehna, 2011). Respondents were asked to state their highest level of education.
- Occupation: This measures the type of work respondents do to earn a living. 'Occupation' is measured on a nominal scale giving values for four (4) job categories/ values and coded as 'Civil service' = 1, 'Private employee' = 2, 'Self-employed' = 3 and 'Unemployed' = 4. Respondents were asked to state the job they do.
- Ethnicity: this measures the ethnic background of respondents. 'Ethnicity was measured on a nominal scale with values and coded as 'Hausa' = 1, 'Fulani' = 2, 'Yoruba' = 3, 'Igbo' = 4 and 'Others = 5. Ethnic groups 1-4 are the most common in Nigeria, while the other

minority groups are lumped under code 5. Respondents were asked to state the ethnic group/ tribe they belong.

#### **4.3.7.3 Data entry and management**

The data from the primary satisfaction survey was entered into a Microsoft Excel spread sheet and stored in sequential rows against the respondents' serial numbers. The data were cleaned on the Microsoft Excel sheet by the use of the "filter" function to ensure that all entered variables are within their values, as well as to check for completeness of the data. The data were thereafter coded as described under coding below before it was finally transferred onto IBM SPSS Statistic 22 and Minitab 17 statistical software for analysis. The data were first subjected to exploratory analyses including running frequency distribution check to screen for errors, missing values and outliers. The main purpose for this stage of the data management is to ensure quality of collected data and ultimately in the findings of the study (Van den Broeck, 2005).

#### **4.3.7.4 Statistical analysis**

##### *Descriptive analysis*

Descriptive analysis was performed to estimate the proportion of people who were satisfied with the service: waiting time, service quality and stigma and discrimination (see details of areas of satisfaction variables described in section 4.3.7.1).

To describe the study sample, the characteristics of patients were descriptively summarised depending on the type of variable. For example, the mean and standard deviation were used to summarise the distribution of continuous variables such as age. The numbers and proportions or

percentages were used to summarise the distribution of categorical variables such as sex, and descriptive summaries were stratified by HIV status.

### *Inferential statistics*

i. The chi-square test ( $\chi^2$ ): This was used to determine significant difference in socio-demographic variables between HIV positive and HIV negative respondents using a p-value  $\leq 0.05$  at 95% confidence interval (C.I) as significant.

ii. Normal approximation test: The normal approximation test for two proportions and confidence interval were used to test the difference in proportions of satisfied respondents between the HIV positive and HIV negative patients.

iii. The Fischer's exact test: This was used where the normal approximation test appears inaccurate because of small samples.

Satisfaction with domains of integrated care between HIV positive and HIV negative patients was compared by respondents' sex, age group, and level of education.

iv. Computation of overall satisfaction with integrated care: Respondents' overall satisfaction with integrated care was computed in two stages:

a. The satisfaction scores from the Likert scale across all items under all the domains examined for each patient was aggregated, and the total was divided by 13 (total number of items under the domains) to obtain individual level of satisfaction grade with integrated care.

b. The individual level satisfaction grades were aggregated, and all respondents that scored 4 (satisfied) and 5 (very satisfied) were considered 'satisfied' with the integrated care in

the integrated care KCHC, whereas those that scored less than 4 were adjudged as ‘not satisfied’.

#### **4.3.8 RESULTS**

Two hundred and forty-five integrated care users comprising 123 (50.2%) HIV positive patients and 122 (49.8%) HIV negative patients were involved in the survey, and all participated giving a response rate of 100%.

##### **4.3.8.1 Sociodemographic characteristics of the respondents**

The sociodemographic characteristics of the survey participants is presented in Table 4.3.2. Respondents’ ages ranged from 18 to 64 years for the HIV positive patients, and 18 to 52 years for the HIV negative patients. The mean ages (SD) for the two group of patients were 32.8 (9.1) years and 26.5 (7.2) years for the HIV positive and HIV negative patients respectively. The majority of the patients in the HIV positive group (74.8%) were between 25 to 44 years while those from the HIV negative group (83.6%) were 15-34 years as shown in Table 4.3.2. The table also shows that majority of the patients interviewed were females with males contributing only 52 (21.2%) of the overall patients’ number.

**Table 4.3.2: Demographic profile of the survey participants**

	<b>HIV positive (n = 123)</b>	<b>HIV negative (n = 122)</b>	<b>N</b>
<b>Characteristics</b>	<b>n (%)</b>	<b>n (%)</b>	<b>Total</b>
<b>Age group (Years)</b>			
15 – 24	13 (10.6)	63 (51.6)	76
25 – 34	69 (59.1)	39 (32.0)	108
35 – 44	23 (18.7)	16 (13.1)	39
45 – 54	15 (12.2)	4 (3.3)	19
55 – 64	3 (2.4)	0 (0.0)	3
Mean (SD)	32.8 (9.1)	26.5 (7.2)	
<b>Sex</b>			
Male	33 (26.8)	19 (15.6)	52
Female	90 (73.2)	103 (84.4)	193
<b>Marital status</b>			
Single	3 (2.4)	11 (9.0)	14
Married	99 (80.5)	101 (82.8)	200
Divorced	7 (5.7)	4 (3.3)	11
Widowed	14 (11.4)	6 (4.9)	20
<b>Highest education</b>			
No education	40 (32.5)	30 (24.5)	70
Qur'anic only	11 (8.9)	12 (9.8)	23
Primary	33 (26.8)	46 (37.7)	79
Secondary	30 (24.4)	28 (22.9)	58
Post-secondary	9 (7.3)	6 (4.9)	15
<b>Occupation</b>			
Civil service	12 (9.8)	6 (4.9)	18
Private employee	29 (23.6)	14 (11.5)	43
Self-employment	42 (34.1)	22 (18.0)	64
Unemployed	40 (32.5)	80 (65.6)	120
<b>Ethnicity</b>			
Hausa	53 (43.0)	56 (45.9)	109
Fulani	35 (28.5)	34 (27.9)	69
Yoruba	12 (9.8)	2 (1.6)	14
Igbo	17 (13.8)	26 (21.3)	43
Others	6 (4.9)	4 (3.3)	10

*\*Other ethnicities include, Kanuri, Egbira, Bendel*



#### **4.3.8.2 Patients' satisfaction with integrated HIV-PHC services**

This section summarises results of the HIV positive and negative patients' satisfaction with the integrated care services they obtained from KCHC. First, the respondents' satisfaction with the domains of the integrated care is presented, and the results are then categorised by sex, age and educational status of the patients. Finally, the overall satisfaction grades are summarised.

The distribution of respondents' satisfaction with the integrated care by the domains and items studied is summarised in Table 4.3.3. All the HIV positive and HIV negative patients were satisfied with the length of time spent in retrieving their folders. About two thirds of the respondents from both HIV positive (67.5%) and HIV negative (66.4%) were satisfied with the waiting time before they were attended to, whereas all the HIV negative patients were satisfied with the waiting area in the health facility compared to the 95.1% of the HIV positive patients that expressed satisfaction with the waiting area (Difference = -0.049, 95% C.I: 0.07 to 0.011,  $p = 0.012$ ).

Regarding the services obtained, all the HIV positive and HIV negative patients were happy with their interactions with the health workers, but one of the HIV negative patients (0.8%) expressed dissatisfaction with pharmacy and laboratory services, as well as with the standards of HIV and non-HIV clinical services in the facility. Table 4.3.3 also shows that all the HIV positive and HIV negative patients were satisfied that integrated care improved access to HIV and non-HIV services in the facility, standard laboratory services, and to a range of affordable and standard drugs.

On stigma and discrimination, most of the HIV positive 121 (98.4%) and HIV negative 121 (99.2%) patients were satisfied that integrated care reduces stigma and discrimination among patients.

**Table 4.3.3: Distribution of respondents' satisfaction with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive – P1 (n=123)		HIV negative – P2 (n=122)		Difference P1 – P2 (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied n (%)	Satisfied n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	123 (100.0)	-	122 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	83 (67.5)	40 (32.5)	81 (66.4)	41 (33.6)	0.011 (-0.107, 0.129)	Z=0.18 (0.857)
Satisfaction with waiting area	117 (95.1)	6 (4.9)	122 (100.0)	-	-0.049 (-0.087, -0.011)	Z = -2.51 (0.012*)
<b>SERVICES RECEIVED</b>						
Satisfaction about interaction with health worker/ physician	123 (100.0)	-	122 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	123 (100.0)	-	121 (99.2)	1 (0.8)	0.008 (-0.008, 0.024)	Z = 1.00 (0.315)
Satisfaction with laboratory services	123 (100.0)	-	121 (99.2)	1 (0.8)	0.008 (-0.008, 0.024)	Z = 1.00 (0.315)
Satisfaction with the standard of HIV services in the facility	123 (100.0)	-	121 (99.2)	1 (0.8)	0.008 (-0.008, 0.024)	Z = 1.00 (0.315)
Satisfaction with the standard of non-HIV PHC services in the facility	123 (100.0)	-	121 (99.2)	1 (0.8)	0.008 (-0.008, 0.024)	Z = 1.00 (0.315)
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	123 (100.0)	-	122 (100.0)	-	N/A	N/A

Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	123 (100.0)	-	122 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	123 (100.0)	-	122 (100.0)	-	N/A	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	121 (98.4)	2 (1.6)	121 (99.2)	1 (0.8)	-0.008 (-0.036, 0.019)	Z = -0.57 (0.565)
Satisfaction that joint delivery of care reduces discrimination among patients	121 (98.4)	2 (1.6)	121 (99.2)	1 (0.8)	-0.008 (-0.036, 0.019)	Z = -0.57 (0.565)

*\*Statistically significant difference, P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

The respondents' satisfaction with the items under the domains of the integrated care was categorised by sex and the results for male and female patients presented in Tables 4.3.4 and 4.3.5 respectively. Table 4.3.4 shows that all the male HIV positive and negative patients were satisfied with the time spent in retrieving their folders from the records office. However, a larger proportion of the male HIV negative patients (68.4%) was satisfied with waiting time before they were attended to compared to 48.5% of the male HIV positive patients. Furthermore, all the male HIV negative patients and 90.9% of the male HIV positive patients were satisfied by the waiting area in the health facility. Table 4.3.4 also shows that all the male HIV positive and negative patients were satisfied with the interactions they had with the health workers in the facility. All of them were also satisfied with pharmacy, laboratory and with the standards of HIV and non-HIV clinical services in the health facility. With regards to access to services in the health facility, Table 4.3.4 shows that all the male HIV positive and negative patients were satisfied with access to HIV and non-HIV services in KCHC, that integrated care improves access to a range of affordable and standard drugs, and also to standard laboratory services and to a variety of HIV and non-HIV services in the health facility.

Regarding stigma and discrimination, all the male HIV negative patients were satisfied that integrated care reduces stigma and discrimination compared to 97.0% of the male HIV positive patients, although the difference was not statistically significant as shown in Table 4.3.4.

Table 4.3.5 shows satisfaction of the female HIV positive and negative patients with domains of integrated care. All the female patients (HIV positive and negative) expressed satisfaction with the time spent in retrieving the folders from the medical records office. A higher proportion of the female HIV positive patients (74.4%) were satisfied with the waiting time before they were

attended to by health worker compared with 66.0% of the female HIV negative patients, while on the other hand all the female HIV negative patients were satisfied with the waiting area in the health facility compared with the 96.7% of the female HIV positive patients. However, the difference in satisfaction was not statistically significant as shown in the table. With respect to the services obtained, Table 4.3.5 shows that all the female patients (HIV positive and negative) were satisfied with the interactions they had with health workers from the health facility.

**Table 4.3.4: Distribution of male respondents' satisfaction with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive (n=33)		HIV negative (n=19)		Difference (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied n (%)	Satisfied n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	33 (100.0)	-	19 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	16 (48.5)	17 (51.5)	13 (68.4)	6 (31.6)	-0.199 (-0.69, 0.070)	Z= -1.45 (0.147)
Satisfaction with waiting area	30 (90.9)	3 (9.1)	19 (100.0)	-	-0.0910 (-0.189, 0.007)	Z = -1.82 (0.069)
<b>SERVICES OBTAINED</b>						
Satisfaction about interaction with health worker/ physician	33 (100.0)	-	19 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	33 (100.0)	-	19 (100.0)	-	N/A	N/A
Satisfaction with laboratory services	33 (100.0)	-	19 (100.0)	-	N/A	N/A
Satisfaction with the standard of HIV services in the facility	33 (100.0)	-	19 (100.0)	-	N/A	N/A
Satisfaction with the standard of non-HIV PHC services in the facility	33 (100.0)	-	19 (100.0)	-	N/A	N/A
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	33 (100.0)	-	19 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	33 (100.0)	-	19 (100.0)	-	N/A	N/A

Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	33 (100.0)	-	19 (100.0)	-	N/A	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	32 (97.0)	1 (3.0)	19 (100.0)	-	-0.030 (-0.089, 0.028)	Z = -1.02 (0.310)
Satisfaction that joint delivery of care reduces discrimination among patients	32 (97.0)	1 (3.0)	19 (100.0)	-	-0.030 (-0.089, 0.028)	Z = -1.02 (0.310)

*P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

**Table 4.3.5: Distribution of female respondents' satisfaction with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive (n=90)		HIV negative (n=103)		Difference (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied n (%)	Satisfied n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	90 (100.0)	-	103 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	67 (74.4)	23 (25.6)	68 (66.0)	35 (34.0)	0.084 (-0.044, 0.212)	Z = 1.29 (0.198)
Satisfaction with waiting area	7 (96.7)	3 (3.3)	103 (100.0)	-	-0.033 (-0.070, 0.004)	Z = -1.76 (0.078)
<b>SERVICES OBTAINED</b>						
Satisfaction about interaction with health worker/ physician	90 (100.0)	-	103 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	90 (100.0)	-	102 (99.0)	1 (1.0)	0.010 (-0.009, 0.029)	Z = 1.00 (0.315)
Satisfaction with laboratory services	90 (100.0)	-	102 (99.0)	1 (1.0)	0.010 (-0.009, 0.029)	Z = 1.00 (0.315)
Satisfaction with the standard of HIV services in the facility	90 (100.0)	-	102 (99.0)	1 (1.0)	0.010 (-0.009, 0.029)	Z = 1.00 (0.315)
Satisfaction with the standard of non-HIV PHC services in the facility	90 (100.0)	-	102 (99.0)	1 (1.0)	0.010 (-0.009, 0.029)	Z = 1.00 (0.315)
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	90 (100.0)	-	103 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	90 (100.0)	-	103 (100.0)	-	N/A	N/A



Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	90 (100.0)	-	103 (100.0)	-	N/A	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	9 (98.9)	1 (1.1)	102 (99.0)	1 (1.0)	-0.001 (-0.03, 0.027)	Z = -0.10 (0.924)
Satisfaction that joint delivery of care reduces discrimination among patients	9 (98.9)	1 (1.1)	102 (99.0)	1 (1.0)	-0.001 (-0.03, 0.027)	Z = -0.10 (0.924)

*P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

Furthermore, all the HIV positive females and 99.0% of the HIV negative female patients were satisfied with the pharmacy and laboratory services, and with the standards of HIV and non-HIV PHC clinical care rendered in the health facility. With regards to access to services in the integrated care facility, all the female patients (HIV positive and negative) expressed satisfaction with access to HIV and non-HIV services, laboratory services, and to a range of affordable and standard drugs in the integrated care health facility. On stigma and discrimination, higher proportion of the HIV negative female patients (99.0%) were satisfied that integrated care reduces stigma and discrimination among patients compared to the 98.9% HIV positive female patients, although the difference was not statistically significant as shown in Table 4.3.5.

The respondents' satisfaction with the domains of integrated care was also categorised by age into less than 45 years old and 45 years and above and presented in Tables 4.3.6 and 4.3.7 for the respective groups.

On waiting time and waiting area, Table 4.3.6 shows that all HIV positive and negative patients that were less than 45 years old were satisfied with the time spent in retrieving their folders from the medical records office. The table shows that 68.6% and 66.1% of the HIV positive and HIV negative patients respectively were satisfied with the waiting time before they were seen by the health worker. On the other hand, all the HIV negative patients that were less 45 years old and 96.2% of their counterparts in the HIV positive group were satisfied with the waiting area in the integrated care health facility, and the difference was statistically significant as shown in the table. Regarding services obtained, all the patients that were less than 45 years old declared satisfaction with services in the health facility. With the exception of one HIV negative patient (0.9%), all the HIV positive and negative patients that were less than 45 years old also expressed satisfaction with

the pharmacy and laboratory services, and with the standards of HIV and non-HIV PHC clinical services in the integrated care health facility.

On the patients' satisfaction with access to services in the facility, all of the patients (HIV positive and negative) aged less than 45 years expressed satisfaction. On stigma and discrimination, only one of the 105 HIV positive patients less than 45 years old (1.0%) and one from the counterpart group of HIV negative patients (0.9%) expressed dissatisfaction.

For the patients that were 45 years and above (HIV positive and negative), majority expressed satisfaction with waiting time and waiting area. All the patients in this category were satisfied with the time spent in retrieving their folders from the medical records office. A higher proportion of the HIV negative patients in this category (75.0%) were satisfied with the waiting time before they were attended to by health worker compared to the 61.1% HIV positive patients under this category. In the same vein, all the HIV negative patients were satisfied with the waiting area in the facility when compared with the 88.9% from the HIV positive patients under this category. However, the difference was not statistically significant (Table 4.3.7).

With respect to the services obtained from the facility, the table shows that all the HIV positive and negative patients more than 45 years old demonstrated satisfaction with all aspects. Similarly, all the patients were satisfied that integrated care improves access to HIV and non-HIV clinical services, laboratory services, and to a range of affordable and standard drugs in the health facility. On the issue of stigma and discrimination, only one of the 18 HIV positive patients (5.6%) was not satisfied that integrated care reduces stigma and discrimination (Table 4.3.7).

**Table 4.3.6: Distribution of satisfaction of respondents aged less than 45 years with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive (n=105)		HIV negative (n=118)		Difference (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied, n (%)	Satisfied, n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	105 (100.0)	-	118 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	72 (68.6)	33 (31.4)	78 (66.1)	40 (33.9)	0.0247 (-0.010, 0.148)	Z = 0.39, (0.694)
Satisfaction with waiting area	101 (96.2)	4 (3.8)	118 (100.0)	-	-0.038 (-0.0755, -0.001)	Z = -2.04 (0.041*)
<b>SERVICES OBTAINED</b>						
Satisfaction about interaction with health worker/ physician	105 (100.0)	-	118 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	105 (100.0)	-	117 (99.1)	1 (0.9)	0.008 (-0.008, 0.025)	Z = 1.00 (0.315)
Satisfaction with laboratory services	105 (100.0)	-	117 (99.1)	1 (0.9)	0.008 (-0.008, 0.025)	Z = 1.00 (0.315)
Satisfaction with the standard of HIV services in the facility	105 (100.0)	-	117 (99.1)	1 (0.9)	0.008 (-0.008, 0.025)	Z = 1.00 (0.315)
Satisfaction with the standard of non-HIV PHC services in the facility	105 (100.0)	-	117 (99.1)	1 (0.9)	0.008 (-0.008, 0.025)	Z = 1.00 (0.315)
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	105 (100.0)	-	118 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	105 (100.0)	-	118 (100.0)	-	N/A	N/A

Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	105 (100.0)	-	118 (100.0)	-	-	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	104 (99.0)	1 (1.0)	117 (99.1)	1 (0.9)	-0.001 (-0.026, 0.024)	Z = -0.08 (0.934)
Satisfaction that joint delivery of care reduces discrimination among patients	104 (99.0)	1 (1.0)	117 (99.1)	1 (0.9)	-0.001 (-0.026, 0.024)	Z = -0.08 (0.934)

*\*Statistically significant difference, P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

**Table 4.3.7: Distribution of satisfaction of respondents aged 45 years and above with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive (n=18)		HIV negative (n=4)		Difference (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied n (%)	Satisfied n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	18 (100.0)	-	4 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	11 (61.1)	7 (38.9)	3 (75.0)	1 (25.0)	-0.139 (-0.619, 0.341)	Fisher's exact p = 1.000
Satisfaction with waiting area	16 (88.9)	2 (11.1)	4 (100.0)	-	-0.111 (-0.256, 0.034)	Fisher's exact p = 1.000
<b>SERVICES OBTAINED</b>						
Satisfaction about interaction with health worker/ physician	18 (100.0)	-	4 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	18 (100.0)	-	4 (100.0)	-	N/A	N/A
Satisfaction with laboratory services	18 (100.0)	-	4 (100.0)	-	N/A	N/A
Satisfaction with the standard of HIV services in the facility	18 (100.0)	-	4 (100.0)	-	N/A	N/A
Satisfaction with the standard of non-HIV PHC services in the facility	18 (100.0)	-	4 (100.0)	-	N/A	N/A
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	18 (100.0)	-	4 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	18 (100.0)	-	4 (100.0)	-	N/A	N/A

Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	18 (100.0)	-	4 (100.0)	-	N/A	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	17 (94.4)	1 (5.6)	4 (100.0)	-	-0.055 (-0.161, 0.050)	Fisher's exact p = 1.000
Satisfaction that joint delivery of care reduces discrimination among patients	17 (94.4)	1 (5.6)	4 (100.0)	-	-0.055 (-0.161, 0.050)	Fisher's exact p = 1.000

*P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

The respondents' satisfaction with the domains of the integrated care was also examined by educational status of the patients (Tables 4.3.8 and 4.3.9).

Table 4.3.8 shows with respect to waiting time and waiting area that all the HIV positive and negative patients without secondary school level of education said they were satisfied with the time spent by the medical records staff in retrieving their folders from the records office. A higher proportion of the HIV positive patients under this category (66.7%) were satisfied with the waiting time before they were attended to by health workers compared to their HIV negative counterparts (62.5%). On the other hand, all the HIV negative patients indicated satisfaction with the waiting area in the health facility while in the HIV positive category, 94.0% were satisfied, and the difference between the groups was statistically significant (Table 4.3.8).

On the area of the services obtained from KCHC, all patients without secondary school level of education (HIV positive and negative) were satisfied with their interactions with the health workers, and the laboratory services in the integrated care facility. Furthermore, all the HIV positive patients without secondary school education indicated satisfaction with the pharmacy, and with HIV and non-HIV clinical services in the health facility. On the other hand, 98.9% of the HIV negative patients under this category said they were satisfied with the respective services, although the difference was not statistically significant (Table 4.3.8).

With respect to access, all patients without secondary school education (HIV positive and negative) were satisfied with all aspects. On issue of stigma and discrimination however, higher



proportion of the HIV negative patients (98.9%) expressed satisfaction that the integrated care reduces stigma and discrimination, although the difference was not significant.

Table 4.3.9 summarises the satisfaction of the patients that had at least secondary school level of education with the domains of integrated care. With respect to waiting time and waiting area, the table shows that all patients in this category were satisfied with the time spent by the records staff in retrieving their folders from the records office. More HIV negative patients were satisfied with the waiting time before they were attended to by the health workers (76.5%), and with the waiting area (100%) as compared to the 69.2% and 97.4% of the HIV positive patients that were satisfied with the respective items.

On the area of the services obtained from the health centre, only one patient from the HIV negative patients under this category expressed dissatisfaction with laboratory services. All other patients however were satisfied with all aspects of service delivery in the integrated care health facility. Similarly, all the HIV positive and negative patients that had at least secondary school level of education indicated satisfaction with access to all aspects of the integrated care, and with integrated care reducing stigma and discrimination among patients (Table 4.3.9).

Overall, when the respondents' satisfaction to the domains of integrated care was aggregated and graded, it was observed that 98.4% and 99.2% of the HIV positive and HIV negative patients respectively were satisfied with the integrated care services in KCHC as shown in Table 4.3.10.

**Table 4.3.8: Distribution of satisfaction of respondents without secondary education with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive (n=84)		HIV negative (n=88)		Difference (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied n (%)	Satisfied n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	84 (100.0)	-	88 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	56 (66.7)	2 (33.3)	55 (62.5)	33 (37.5)	0.042 (-0.101, 0.14)	Z = 0.57 (0.567)
Satisfaction with waiting area	79 (94.0)	5 (6.0)	88 (100.0)	-	-0.060 (-0.110, -0.009)	Z = -2.31 (0.021*)
<b>SERVICES OBTAINED</b>						
Satisfaction about interaction with health worker/ physician	84 (100.0)	-	88 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	84 (100.0)	-	87 (98.9)	1 (1.1)	0.011 (-0.011, 0.033)	Z = 1.01 (0.315)
Satisfaction with laboratory services	84 (100.0)	-	88 (100.0)	-	N/A	N/A
Satisfaction with the standard of HIV services in the facility	84 (100.0)	-	87 (98.9)	1 (1.1)	0.011 (-0.011, 0.033)	Z = 1.01 (0.315)
Satisfaction with the standard of non-HIV PHC services in the facility	84 (100.0)	-	87 (98.9)	1 (1.1)	0.011 (-0.011, 0.033)	Z = 1.01 (0.315)
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	84 (100.0)	-	88 (100.0)	-	N/A	N/A

Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	84 (100.0)	-	88 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	84 (100.0)	-	88 (100.0)	-	N/A	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	82 (97.6)	2 (2.4)	7 (98.9)	1 (1.1)	-0.012 (-0.052, 0.027)	Z = -0.62 (0.536)
Satisfaction that joint delivery of care reduces discrimination among patients	82 (97.6)	2 (2.4)	7 (98.9)	1 (1.1)	-0.012 (-0.052, 0.027)	Z = -0.62 (0.536)

*\*Statistically significant difference, P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

**Table 4.3.9: Distribution of satisfaction of respondents having at least secondary education with the domains of integrated HIV – PHC care**

Domain/ items	HIV positive (n=39)		HIV negative (n=34)		Difference (95% C.I)	Test (p-value)
	Satisfied n (%)	Not satisfied n (%)	Satisfied n (%)	Not satisfied n (%)		
<b>WAITING TIME AND WAITING AREA</b>						
Satisfaction with time spent in retrieving folder	39 (100.0)	-	34 (100.0)	-	N/A	N/A
Satisfaction with waiting time before been attended to by health worker/ physician	27 (69.2)	12 (30.8)	26 (76.5)	8 (23.5)	-0.072 (-0.276, 0.131)	Z = -0.70 (0.485)
Satisfaction with waiting area	3 (97.4)	1 (2.6)	34 (100.0)	-	-0.026 (-0.075, 0.024)	Z = -1.01 (0.311)
<b>SERVICES OBTAINED</b>						
Satisfaction about interaction with health worker/ physician	39 (100.0)	-	34 (100.0)	-	N/A	N/A
Satisfaction with pharmacy services	39 (100.0)	-	34 (100.0)	-	N/A	N/A
Satisfaction with laboratory services	39 (100.0)	-	33 (97.1)	1 (2.9)	0.029 (-0.027, 0.086)	Z = 1.02 (0.310)
Satisfaction with the standard of HIV services in the facility	39 (100.0)	-	34 (100.0)	-	N/A	N/A
Satisfaction with the standard of non-HIV PHC services in the facility	39 (100.0)	-	34 (100.0)	-	N/A	N/A
<b>ACCESS</b>						
Satisfaction that joint delivery of care improves access to a variety of HIV and non-HIV clinical services in the facility	39 (100.0)	-	34 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care improves access to standard laboratory services in the facility	39 (100.0)	-	34 (100.0)	-	N/A	N/A

Satisfaction that joint delivery of care improves access to a range of affordable and standard drugs in the facility	39 (100.0)	-	34 (100.0)	-	N/A	N/A
<b>STIGMA AND DISCRIMINATION</b>						
Satisfaction that joint delivery of care reduces stigma among patients	39 (100.0)	-	34 (100.0)	-	N/A	N/A
Satisfaction that joint delivery of care reduces discrimination among patients	39 (100.0)	-	34 (100.0)	-	N/A	N/A

*P1 = First proportion of respondents, P2 = Second proportion of respondents, N/A = Not applicable*

**Table 4.3.10: Overall satisfaction of respondents with the integrated HIV-PHC services**

<b>Overall satisfaction</b>	<b>HIV positive patients (n = 123)</b>	<b>HIV negative patients (n = 122)</b>	<b>Total</b>
Satisfied	121 (98.4)	121 (99.2)	242 (98.8)
Not satisfied	2 (1.6)	1 (0.8)	3 (1.2)

#### **4.3.9 Summary**

In summary, the results of this component of the PhD study suggest that most of the HIV positive (98.4%) and HIV negative (99.2%) patients were satisfied with the quality of services they received from the integrated care health facility.

# **CHAPTER FIVE: A QUALITATIVE STUDY ON BARRIERS, FACILIATORS AND SERVICE USERS EXPERIENCE OF THE HIV/AIDS INTEGRATED PRIMARY HEALTH CARE SERVICE**

## **5.1 INTRODUCTION**

This chapter describes and presents results of a qualitative investigation of service users' and providers' experiences, the barriers to, and facilitators of, the integrated care service delivery and uptake of the service. First, the qualitative methods used to collect and analyse data are described. This is followed by a presentation of the findings of the investigation. As a recap, the qualitative study sought to address the following research objectives:

1. Explore the views/ perceptions and experiences of health service providers (health workers and health administrators) and service users (patients) with respect to the integrated HIV care and its delivery in order to understand why the service worked or did not work
2. Identify and describe the barriers to, and facilitators of, uptake of the integrated HIV care service.

## **5.2 STUDY DESIGN**

Cross-sectional study involving focus groups and key informant interviews with service users (HIV patients, non-HIV patients) and service providers (health managers/administrators and healthcare professionals - community health workers, nurses and doctors).

### **5.3 PARTICIPANTS**

The primary participants for this component of the study were male and female service users, aged 18 years and older, who were consented to participate. The study also recruited the following groups to participate:

- Health professionals (community health workers, nurses, doctors),
- Health managers/administrators coordinating and delivering PHC services at the KCHC.

### **5.4 PARTICIPANTS' RECRUITMENT AND SAMPLING**

Purposive sampling or recruitment approach was used to recruit the participants. Purposeful sampling technique was adjudged appropriate for selection of these participants because it can be conveniently applied for identifying and selecting “information rich” cases for the most effective use of limited resources (Patton, 2002). The sampling approach allows the researcher to select only participants who know the subject and can take part actively in discussing the issues (Palinkas *et al*, 2013). The use of purposeful sampling therefore allowed the researcher to select the appropriate patients, health workers and administrators that had the requisite information and experiences or benefited from the integrated care in the study facility.

#### **i. Recruitment of service users/patients**

The service users were approached and recruited at the health facility. After obtaining permission of the authorities, the research team visited the health facility to inform the hospital medical superintendent about the study, including a discussion on who will be invited to participate. The medical superintendent introduced the research team to the health workers directly working with patients in the outpatient clinic in the KCHC. The health workers then introduced the research



team to the patients during the morning health talk sessions which usually takes place daily in the outpatient department before commencement of the clinic sessions. The research team at this point introduced the purpose and procedure of the study to the patients and explained why they were being recruited to take part using an information sheet. At this stage, they were given opportunity for questions and answers. An invitation was extended to the patients who were willing to participate. They were given enough time (up to 48 hours) to reflect on their participation, and to contact the lead researcher if they make up their minds to participate.

### **ii. Recruitment of Healthcare professionals**

The health professionals (primary service providers) were recruited at stage two, also from the health facility. First, they were approached by the medical superintendent who introduced the researcher to them. The researcher explained the details of the study, their involvement, and asked for their participation in the study. Prior to the individual interviews, those that agreed to participate were asked to sign an informed consent form following recruitment.

### **iii. Recruitment of health managers/administrators**

The health administrators were first approached via email inviting them to participate. The researcher then visited them individually to discuss the details of the study including their involvement, using the study information sheet. Like the other participants (described above) they were allowed enough time to study the information sheet before making any final decision to take part. Those who finally decided to take part were invited to consent and take part in an individual interview at a location of their choice (mostly their offices).

#### **iv. Ethical consideration addressed during recruitment**

Details of ethics is described earlier in section 3.7. However, as a recap, the letter of ethics approval and any document supporting the study were shared with potential respondents who agreed to take part in the study by responding to the emails. Participants were informed ab-initio before the consent that their voices will be recorded in order to compare with the notes that were taken during the interviews, and participants were asked to give approval for the recording. Participants were also assured that the recordings and other forms of data will be stored under lock and key and will only be available to the researchers, who will destroy them approximately a year after the completion of this Ph.D thesis.

#### **5.5 SAMPLE RECRUITED**

Overall, a total of 64 service users from HIV positive and HIV negative groups were selected to participate in the FGDs (32 patients per group) and individual interviews (16). Additionally, 8 health professionals and 4 health managers/administrators were recruited to take part in individual key informant interviews to explore their knowledge/ understanding, experiences and/or perceptions about the HIV integrated PHC.

The individual interviews which held with service users after the focus group interviews were aimed at cross checking or validating the responses from the outcomes of the FGD. The summary of the sampled participants is in Table 5.1.

**Table 5.1: Summary of sampled respondents by type of qualitative method**

Qualitative method	Number of participants	Number	Total
FGD	16 HIV positive females (8 per focus group)	2	8 FGDs
	16 HIV positive males (8 per focus group)	2	
	16 HIV negative females (8 per focus group)	2	
	16 HIV negative males (8 per focus group)	2	
KII	HIV positive patients	8	28 KIIs
	HIV negative patients	8	
	Health professionals	8	
	Health administrators	4	

## **5.6 DATA COLLECTION INSTRUMENTS**

Three separate interviews guides were developed and used to guide and direct the interviews with the participants. The interview guide is an instrument that contains the list of topics and questions the interviewer intends to explore from participants (Mason, 1994; DiCicco-Bloom and Crabtree, 2006). Most qualitative interviews are either unstructured or semi-structured, and usually conducted using interview guides (Masson, 1994; Bolderston, 2012). The interview guide helped the researcher to set boundaries for the interview, and to determine the order to ask questions and follow-up probes to help participants expand their answers (Bolderston 2012). It also helped the researcher to maintain consistency and direction during the interviewing process. The interview guides were structured to allow three levels of questioning: the main interview questions, questions to follow-up or probes; and those that emerged spontaneously during the interviews (Bolderston, 2012). According to Bolderston (2012) “Frequent and thoughtful spontaneous follow-up questions

add richness and validity to the data because they help clarify the meaning of the issue or question for the participant”.

The specific interview guides are described below:

### **I. FGD guide for interviewing patients attending KCHC**

This instrument was used to guide discussion with both HIV and non – HIV patient groups. It was used to guide discussions to explore patients’ perspectives about integrated care including their perceptions and experiences with integrated HIV-PHC care in the facility (Appendix 15).

### **II. Individual interview guide for interviewing health professionals**

This guide was used to explore, from the perspective of the health professionals, understanding of integrated care, experiences with HIV – PHC integration in the facility, impact of the integration on non – HIV services, and the perceptions of enablers and barriers to integration of HIV and PHC services in the health facility (Appendix 16).

### **III. Individual interview guide for interviewing health managers**

This guide was used to explore the perspective of the health managers/ administrators on how HIV and PHC services integration works, potential benefits and disadvantages, the impact on non – HIV services, and the enablers and barriers to integration of HIV care with PHC services (Appendix 17).

## **5.7 DATA COLLECTION**

Both the interviews and focus groups (with the exception of three key informant interviews done in Hausa language) were conducted in English by the lead researcher at the KCHC health facility.

The process is described in details below:

I. Focus groups with homogenously assembled groups of HIV positive and HIV negative participants (2 male HIV participants' group, 2 female HIV participants' group, 2 male HIV negative participants' group, 2 female HIV negative participants' group as shown in Table 5.1 above) to explore their experiences, views and perceptions about integrated care.

II. The focus group, described above, was followed by individual interviews conducted with different samples of eight (8) HIV positive and eight (8) HIV negative patients to validate the responses gathered from the FGDs.

III. Separate individual interviews were conducted with selected health care providers (8), who were directly providing health care/services to HIV and non-HIV positive patients, to explore their perspectives regarding the integrated health care delivery.

III. Separate individual interviews were conducted with selected health administrators (4) to explore their understanding and experiences with HIV-PHC integration in the health facility, impact of the integration on non-HIV PHC services and perceptions of barriers and enablers to integration of HIV and PHC in health facility.

### **5.7.1 The interviewing process**

The interviews and FGDs were conducted at a quiet location that was preferred by participants to make them feel relaxed and safe (Khan *et al*, 1991; Mareschal, Delaney and Walton-Ellery 2019).

The individual interviews took place at the health facility for patients and health care providers,

and the respective offices of the health administrators, took the form of a face-to-face interviewing approach and lasted between 30 minutes and one hour. The FGDs were held at a location agreed by the participants at the health facility, face-to-face, and lasted for about 60 to 90 minutes. All focus groups were conducted by a moderator (the researcher), a note taker and a time keeper, and the interviews were conducted by the researcher/ moderator and a notetaker who doubled as the time keeper.

At the beginning of each of the interviews/ FGDs, the moderator/ researcher established rapport with participants to foster a comfortable atmosphere for the interview/ discussion (Mareschal, Delaney and Walton-Ellery 2019; Khan *et al*, 1991). This was ensured through greetings, self-introduction, and asking a few informal warm-up questions to break the ice and to further create a relaxing atmosphere for interviewees. Participants were also explained the purpose of the interview/ discussion and were asked for their informed consent before starting the interviews/ FGDs. All interviews/FGDs were thereafter recorded using a digital recorder after participants gave consent to the recordings (Tausch and Menold, 2016). The information sheets and consent forms for the different categories of respondents for the qualitative study are in Appendices 6-8 and Appendices 18-20 respectively.

The moderator/ researcher conducted the interviews/ FGDs with the aid of the semi structured questions in the interview/ discussion guides. These types of questions allowed some flexibility for participants to freely articulate their views on issues discussed (Walt *et al.*, 2008). The researcher/ moderator asked the questions as they are written in the guide but allowed flexibility in the order of the questions to encourage natural flow of the discussions. In addition, the researcher probed for more responses where necessary for in-depth information or to clarify statements / responses. However, leading questions (questions that subtly prompt respondents to desired

answers) and sensitive questions (that would put interviewees off from responding to the questions) were not asked (Mareschal, Delaney and Walton-Ellery 2019). The researcher also paid attention to avoiding interrogation. Thus, very simple easy to understand language was used throughout the interviewing process. In the case of the FGDs, the moderator ensured that the group focused on the discussion topic, encouraged members to speak freely and made sure that one group member did not dominate the discussions (Khan *et al*, 1991). At the end of each interview/ FGD, participants were asked if they had anything to add. Furthermore, the researcher/ moderator used active listening techniques throughout the interviews/ discussions (maintaining eye contact, leaning in and using body language, and always referencing earlier answers) to indicate attentiveness to participants' responses (Mareschal, Delaney and Walton-Ellery 2019). The note taker took notes of the discussions/ interviews and observed and noted nonverbal group feedbacks such as facial expressions and so on (Khan *et al*, 1991).

At the wrap-up stage, participants were thanked for their participation and reassured of confidentiality, and that the information generated from the interviews/ discussions would be used for the Ph.D research.

The profile of the participants is in Table 5.2.

**Table 5.2. Qualitative participants' profile**

Participants' ID	Age (years)	Sex (F/M)	Marital status	Ethnicity	Level of education	Religion	HIV status	Interview setting	Occupation/ Position
F1.1	30	F	Married	Hausa	Secondary	Islam	Positive	HF	Unemployed
F1.2	32	F	Married	Hausa	Post-secondary	Islam	Positive	HF	Civil servant
F1.3	26	F	Divorced	Hausa	Primary	Islam	Positive	HF	Unemployed
F1.4	26	F	Divorced	Hausa	Secondary	Islam	Positive	HF	Civil servant
F1.5	30	F	Married	Hausa	Post-secondary	Islam	Positive	HF	Unemployed
F1.6	31	F	Divorced	Hausa	Qur'anic only	Islam	Positive	HF	Unemployed
F1.7	35	F	Married	Hausa	Primary	Islam	Positive	HF	Unemployed
F1.8	32	F	Divorced	Hausa	Secondary	Islam	Positive	HF	Civil servant
F2.1	25	F	Married	Hausa	Primary	Islam	Negative	HF	Unemployed
F2.2	30	F	Married	Hausa	Primary	Islam	Negative	HF	Unemployed
F2.3	22	F	Married	Hausa	Secondary	Islam	Negative	HF	Unemployed
F2.4	25	F	Married	Hausa	Secondary	Islam	Negative	HF	Unemployed
F2.5	25	F	Married	Hausa	Secondary	Islam	Negative	HF	Unemployed
F2.6	35	F	Married	Hausa	Secondary	Islam	Negative	HF	Unemployed
F2.7	19	F	Single	Hausa	Secondary	Islam	Negative	HF	Unemployed
F2.8	23	F	Married	Hausa	Primary	Islam	Negative	HF	Unemployed
F3.1	30	M	Married	Hausa	Secondary	Islam	Positive	HF	Technician
F3.2	32	M	Widower	Hausa	Secondary	Christianity	Positive	HF	Trader
F3.3	38	M	Divorced	Hausa	Post-secondary	Islam	Positive	HF	Unemployed
F3.4	28	M	Single	Hausa	Post-secondary	Islam	Positive	HF	Trader
F3.5	27	M	Single	Hausa	Post-secondary	Islam	Positive	HF	Technician
F3.6	40	M	Married	Hausa	Post-secondary	Islam	Positive	HF	Trader
F3.7	31	M	Married	Hausa	Secondary	Islam	Positive	HF	Trader
F3.8	32	M	Married	Hausa	Secondary	Islam	Positive	HF	Trader



F3.9	40	M	Married	Hausa	Secondary	Islam	Positive	HF	Farmer
F4.1	28	M	Single	Hausa	Secondary	Islam	Negative	HF	Farmer
F4.2	29	M	Married	Hausa	Secondary	Islam	Negative	HF	Technician
F4.3	27	M	Single	Hausa	Secondary	Islam	Negative	HF	Technician
F4.4	25	M	Single	Hausa	Secondary	Islam	Negative	HF	Trader
F4.5	27	M	Married	Hausa	Secondary	Islam	Negative	HF	Farmer
F4.6	29	M	Married	Hausa	Secondary	Islam	Negative	HF	Trader
F4.7	44	M	Married	Hausa	Post-secondary	Islam	Negative	HF	Civil servant
F4.8	22	M	Single	Hausa	Secondary	Islam	Negative	HF	Trader
K1.1	32	F	Married	Hausa	Secondary	Islam	Positive	HF	Civil servant
K1.2	41	M	Married	Hausa	Post-secondary	Islam	Positive	HF	Technician
K1.3	30	F	Divorced	Hausa	Secondary	Islam	Positive	HF	Trader
K1.4	52	M	Widower	Hausa	Primary	Islam	Positive	HF	Trader
K1.5	39	M	Married	Hausa	Secondary	Islam	Positive	HF	Farmer
K1.6	48	M	Married	Igbo	Secondary	Christianity	Positive	HF	Trader
K1.7	32	M	Married	Hausa	Secondary	Islam	Positive	HF	Trader
K1.8	65	M	Married	Hausa	Qur'anic only	Islam	Positive	HF	Farmer
K1.9	25	F	Married	Hausa	Secondary	Islam	Negative	HF	Unemployed
K1.10	26	F	Married	Hausa	Secondary	Islam	Negative	HF	Trader
K1.11	24	F	Divorced	Hausa	Secondary	Islam	Negative	HF	Trader
K1.12	42	M	Married	Hausa	Qur'anic only	Islam	Negative	HF	Farmer
K1.13	29	F	Married	Hausa	Primary	Islam	Negative	HF	Unemployed
K1.14	37	M	Married	Hausa	Qur'anic only	Islam	Negative	HF	Farmer
K1.15	52	F	Married	Hausa	Quranic only	Islam	Negative	HF	Unemployed
K1.16	26	M	Single	Hausa	Post-secondary	Islam	Negative	HF	Civil servant
K1.17	34	M	Single	Bolewa	Post-secondary	Islam	Negative	HF	MS, KCHC
K1.18	51	M	Married	Hausa	Post-secondary	Islam	Negative	HF	CMAC AKTH
K1.19	52	M	Married	Hausa	Post-secondary	Islam	Negative	Office	ES, Kano PHCMB

K1.20	49	M	Married	Egbira	Post-secondary	Islam	Negative	Office	Partner IHV-N
K1.21	32	M	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (Doctor)
K1.22	34	M	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (Doctor)
K1.23	45	F	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (Matron I/c)
K1.24	52	F	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (I/c ANC/ Labour room)
K1.25	43	M	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (I/c Pharmacy)
K1.26	39	M	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (I/c Laboratory)
K1.27	57	M	Married	Hausa	Post-secondary	Islam	Negative	HF	Health worker (I/c Medical records)
K1.28	52	F	Divorced	Hausa	Post-secondary	Islam	Negative	HF	Health worker) I/c ART refill)

## 5.8 QUALITATIVE DATA ANALYSIS

As shown in Table 5.1, data were collected from the study participants through eight (8) focus groups and 28 key informant interviews, and the audio-recordings were transcribed by a professional transcriber in the department of community medicine of Bayero University, Kano state, Nigeria, with a background in sociology.

Before the start of the transcription, the transcriber was asked to transcribe verbatim what the participants said in the audio including noting long silence and nonverbal communication like clapping, laughter, knocking or banging of tables and so on. The researcher checked all transcripts for errors by listening back to the audio-recordings and reading the transcripts.

A framework analysis approach was considered for analysing the data as it offers researchers systematic structure to manage, analyse and identify themes, and is particularly useful with large volumes of texts (Hackett and Strickland, 2018). According to Smith and Firth (2011), structured approaches provide useful guidance to novice researchers. Additionally, framework approach can be used with different qualitative approaches as it is not aligned to any particular philosophical or theoretical approach (Gale *et al*, 2013).

Using the framework approach described by Ritchie *et al* (2003), the researcher considered a combined approach to analysis, enabling themes to be developed both inductively from the accounts (views, perceptions and experiences) of research participants and deductively from existing literature example barriers to, and facilitators of services access. The key steps in framework analysis are described as follows:

### Stage 1: familiarisation with the interview texts

The researcher thoroughly read and re-read each transcript, and listened back to the audio-recorded interviews to re-familiarise himself with the whole data set. While familiarising with the transcript,

the researcher jotted notes of any interesting issues identified in the margin of the transcript. This stage enabled the researcher to immerse himself in the data, and prepared him to ensure that labels developed at the initial framework stage were supported by the data (Spencer *et al*, 2014).

### Section 2: constructing initial thematic framework/ coding index

At this stage, the researcher first reviewed the lists of topics and ideas that emerged from the familiarisation stage, while remaining cognisant of the aims of the study and the topics in the interview and discussion guides as they reflected the research questions, and then drafted the framework using themes and subthemes obtained from the familiarisation stage. Thereafter, the researcher coded a sample of seven transcripts with the help of the framework to identify any additional themes. The coding of the sampled transcripts was accomplished using a table that contains columns indicating the data items, initial codes, categories into which similarities and differences in patterns of the codes can be classified, the key themes covering the code categories, and the emerging themes from the code categories. Interesting segments of data items under each question are highlighted/ coloured and labelled as a code under the ‘initial code’ column. The code could range from only a few words, to parts of sentences or phrases. The ‘category’ column was then used to classify similar or related codes that were identified from the data items, and the themes and sub-themes were teased out of the categories of the codes. Completing this process for all the questions/ topics in the reviewed transcripts resulted in the initial thematic framework or ‘coding index’ of themes and subthemes that will be applied to label all the data in the next stage.

### State 3: Indexing and sorting

Indexing is the process whereby thematic framework is systematically applied to data (Ritchie and Spenser, 2002). During this stage, all the transcripts from this study were reread and codes were

indexed appropriately according to the developed thematic framework. The framework was also re-examined to remove unassigned codes and to combine duplicate codes.

*Stage 4: Charting data into the framework matrix*

This entails lifting data and rearranging them according to appropriate thematic reference (Pope, Ziebland and Mays, 2000). Once all the data had been coded using the analytical framework, the researcher summarised the data in a matrix for each of the themes. The matrix comprised of columns for the main themes, sub-themes and quotes from transcripts. The subthemes corresponding to each theme are presented in rows, and relevant quotes from all transcripts related to the subthemes are summarised in the respective column under the subtheme row as shown in Appendix 21.

*Stage 5: Mapping and interpretation of the data*

The researcher was guided by the original research questions, key objectives and features of qualitative research<sup>ii</sup>, and by the new concepts generated inductively from the data (themes and subthemes) to map the views, perceptions and experiences of patients, health workers and health administrators on integration of HIV care within routine PHC services. Enablers and barriers to integrated care were also mapped out by comparing and contrasting participants' responses summarised in the themes and subthemes. The researcher also presented direct quotes from participants own words in the findings where necessary to support the interpretation of data. Quotes were edited and made simple and brief to enhance reader's comprehension. The framework matrix is attached as Appendix 21.

## **5.9 FINDINGS**

To provide some clarity, the findings are presented in two separate sections. The first section (A) presents results of how health providers described the concept of integrated care and the benefits of the approach, as a reflection their knowledge and understanding of this approach to HIV care. The health workers', as well as the users' views and experiences having been involved with the services are also presented. In section B, the barriers and facilitators of the integrated care service delivery and access and utilisation, is presented.

### **SECTION A:**

#### **5.9.1 HOW THE HEALTH PROVIDERS AND PATIENTS DESCRIBED INTEGRATED CARE**

##### **5.9.1.1 Healthcare workers' understanding of the concept of integrated care for health**

Health workers play a strategic role in the implementation of the integrated care intervention, and therefore their understanding of the concept of integrated care is key to the success or failure of such service. While integrated care means different things to different people, it is a multipronged intervention at the different levels of the health system and as such health workers need to understand and synchronise their various roles to achieve outcomes.

When the health workers were asked to explain what integrated care in relation to HIV means, the analysis of their responses revealed that they had good knowledge of the concept. Almost all those interviewed explained that HIV integrated care entails co-location of HIV and PHC services within the same facility. According to them the integration of HIV care and treatment services means that 'both HIV and routine PHC services are delivered concurrently by the same health workers. One health worker, said:

*“.....using the same consultation room, using the same laboratory, using the same pharmacy for both HIV and non-HIV patients. (Doctor, Male 34 years [Appendix 21, 1.1a])”.*

An important concept that shaped the health workers’ understanding of integrated care is the issue of sharing resources, as one health worker explains:

*“..integrated care is about sharing of resources and services of HIV care along with the routine PHC activities which at the end will help to provide a wider coverage in terms of access for the patients’. (Doctor, Male 32 years [Appendix 21, 1.2a])”.*

The description provided by the two health workers above re-echoes the understand of the concept of integrated care and the benefits that come with it, in terms of optimising shared resources to improve health and wellbeing of patients and the health practitioners that care for them. Findings from the literature suggest that by sharing the resources available to both HIV and routine PHC care, cost of care on patients and lack of financial access to health care are reduced, and this generally improves access to health care for both HIV and non-HIV patients (Rocks *et al*, 2020; Desmedt *et al.*, 2016). On the side of the health workers, integrated care leverages resources for capacity building and conducive work environment. Thus, risk and benefit sharing are key to the success of integrated care intervention.

Holistic management of patients is another dimension to the understanding of integrated care expressed by the health workers. As patients may present with multiple health problems during a visit, one of the key tenets of good medical practice provides that they are evaluated

comprehensively. This will also allow opportunity for addressing the conditions in a one-stop-shop fashion. In this regard, one health worker narrated that:

*“I think integrated care is an opportunity for a holistic management of the patients because HIV patients do not have only HIV disease as a problem, they could have other problems which might require other aspects of health care (Nurse, Female, 51 years [Appendix 21, 1.3a])”.*

Another key concept expressed by the health workers as part of their understanding of integrated care is the coordination and collaboration of stakeholders. One of the health workers, during the interview said the following:

*“What I understand is a process and act of successful coordination of different health care providers to provide quality health care for both HIV and non-HIV patients (Nurse, Female 45 years [Appendix 21, 1.4a])”.*

Coordination and collaboration are key to the success of integrated care. This is important considering that different models of integrated HIV care within PHC exist. As stated earlier (see section 1.4.2), documented strategies/ models for this form of integrated care include amalgamation of physical space and patient flow for outpatient services as in the one-stop-shop model; combined pharmacy, laboratory and medical records services; HIV counselling and testing services in the PHC; co-location of vertically run HIV services in PHC facilities; down referral of stable patients on antiretroviral (ART) medication to PHC facilities for ART refill; provision of outreach support to PHC clinics from existing ART sites; and joint staff training, and standardisation of protocols among others. Although there is convenience in the ‘one – stop –



shop' model, it may simply mean that services are housed under the same roof but do not guarantee coordinated care. Integration may exist at different levels and in different forms from formalised agreements in services, sharing of administrative processes, through clinical, laboratory and referral services and so on, such that services are organised and coordinated around the needs of patients.

Another important dimension to the understanding of integrated care cited by the health workers was that integrated care help to reduce HIV stigma among patients by bringing them together under one roof to utilise the same resources and facilities. This was reflected in one health worker's statement below:

*“Integration is to help the patients and stop isolating the HIV clients. Then it helps in bringing them together not isolate them (CHEW, Female, 52 years [Appendix 21, 1.5a])”.*

Providing HIV care and treatment in the primary health care setting will reduce discrimination and encourage participation by people thereby reducing stigma and discrimination within the general populace. This further showcases how health workers will actively contribute to normalising HIV stigma. By observing how the health workers mingle and interact freely with the HIV patients in the hospital environment, and it sends signals to other patients to realign their confidence and this reduces HIV stigma.

### **5.9.1.2 How HIV integrated primary health care works/functions or should function**

Primary health care is a grass root management approach for attaining the goal of health for all. Primary health care (PHC) facilities are the first level of contact of individuals and families in the Nigerian health system. The health services provided at the PHC include preventive, promotive, curative and rehabilitative services. On the other hand, HIV services are also preventive, promotive, curative or rehabilitative, and according to one administrator, HIV treatment and care is an integral part of the PHC that suffered verticalisation while giving attention to HIV disease:

*“I think we have to look at it from the perspective that ideally, HIV is integral part of primary healthcare, and one of the major policy push even in the country, that HIV services should be fully integrated because is supposed to be part and parcel of PHC package (Administrator from Kano State Primary Health Care Management Board, 52 years, Male [Appendix 21, 1.6c])”.*

As stated earlier, different models of integrated care at PHC exist in the literature and all occur at the micro/ service delivery level of integration (see section 1.4.2). In Nigeria, integration of HIV care and treatment into PHC was achieved by taking advantage of the existing primary health care under one roof structure at the PHC. Under this arrangement, the bundle of care in most PHCs is MCH, immunisation, child care and outpatient care. The integration of HIV care and treatment to these service components was therefore accomplished by introducing HIV care (being essentially an outpatient care) into the PHC outpatient care and TB-DOTS programme, and the PMTCT component of the programme into the MCH component, and these produced the one-stop-shop HIV and PHC integrated care model that was subsequently strengthened through capacity building. One administrator from a development partner agency describes the process as follows:

*...we used the same pattern of MNCH integration into PHC level, ...and then for bigger PHCs we introduced the TB-HIV programme into the already existing TB DOTS. So, nothing really new rather than capacity building (Administrator from a development partner agency in Kano, 49 years, Male [Appendix 21, 1.6d])”.*

Other participants generally presented the same model of how integration of HIV and PHC services works. As gathered from an administrator in AKTH, the implementation of the integrated care in KCHC is such that all components of health care (HIV and routine PHC) are planned and implemented at the service points or units by the same staff at same clinic locations:

*“In the comprehensive health centre where PHC services are provided, the same staff that are providing the general services there, are the ones that are providing the HIV services there, and that all the components of the HIV services are also provided there including PMTCT (Administrator, AKTH, 34 years, Male [Appendix 21, 1.6b])”.*

In addition to all PHC services, components of the HIV services available at the Kumbotso health centre include HIV screening services, enrolment and treatment of HIV positive patients, as well as of PMTCT of the HIV virus for pregnant women. HIV patients get into the integrated care system through referral from other health facilities, they could be diagnosed at the health facility, or self-referred. Integrated care therefore starts from the point of registration, the first point of call when a patient comes to the facility and along all the units to the last point when the patient eventually collects drugs and leaves. All clinical activities are conducted “under one roof” by same staff and for all patients. However, there is a separate counselling room with a trained counsellor that provides pre – and post counselling services for consenting patients. The opt – out model of

counselling is used for all pregnant women attending antenatal care at the health facility. Giving an account of how integrated care works, one administrator from KCHC has this to say:

*“We integrate even from the level of record keeping, ..and there are different service points ranging from consultations, laboratory services, pharmaceutical services and any other services that we provide at the facility. So, integration includes antenatal care services, even postnatal care services, immunisation sessions, nutrition clinic, family planning clinic and other services. Even mental health services. (Administrator, KCHC, 34 years, Male [Appendix 21, 1.6a])*

### **5.9.1.3 Health workers’ views/ perceptions about the integrated care service**

The dividend of integrating HIV/AIDS care and treatment with PHC services is an improved PHC system that will respond to the need of the majority of the population that is being served by the PHC facilities, which hitherto had little or no access to specialised HIV care available at secondary and tertiary health care facilities. The rationale for introducing the integrated care concept at the KCHC was to increase access to health care, improve quality of health care rendered to the population, and to improve outcomes of health care. In order to achieve this, all the PHC facilities enrolled into the integration programme in Nigeria were renovated and, in some cases, upgraded, staffed and provided with the requisite supplies of drugs, consumables and equipment to provide the comprehensive package of improved HIV-PHC services.

KCHC is one of the PHC facilities in Kano state, Nigeria that benefitted from the integrated care intervention. In this study, health providers were asked to share their views of the integrated care, in terms of its benefits, and the following were what they perceived are the benefits:

### Integrated care increased hospital attendance

By integrating HIV care to PHC, it is envisaged that the rural underserved majority will have access to HIV care which was hitherto available only at secondary and tertiary health care facilities before the integrated care intervention. Through this development, integrated care increased access to health care for the rural population and as a result increased hospital attendance. This was made possible by the increased staffing, equipment and quality of service from the enormous support that came with the integrated care.

### Integrated care provided opportunity for staffing, staff development and training

It was revealed during the interviews that inadequate staffing was one of the challenges bedeviling provision of health care before the integrated care in KCHC. According to one senior doctor, although resident doctors from AKTH attend KCHC on posting, the community health extension workers (CHEWS) in the hospital were the most available to attend to patients' needs". He narrated further that following the integrated care the health facility was renovated, equipped and staffed to be able to provide the requisite services of the integrated care setting. As accounted by this health worker, the integrated care has resulted in many health workers now attending to patients (patients increased access to clinical care service):

*"..Well, we have also experienced progress here with this integration. Remember there were only CHEWS in this facility seeing few patients, but now we have many doctors to attend to many problems any time (Matron, Female, 52 years [Appendix 21, 8.8d])".*

The integrated care programme came along with tremendous support to staff development and training. In order to meet up with the requirement of the HIV care and treatment all technical staff in the integrated care facilities were trained to equip them with the special knowledge and skills

needed to provide the specialised service. Although the trainings are more focused on HIV care and treatment but the skills gained are also applied on managing other health problems according to one of the doctors interviewed:

*“..ahh.., in the area of capacity building a lot of training and retraining of staff has been organised usually in support of HIV but you are doing it to the same staff that provide the services at the primary health care level (Doctor, Male, 32 years [Appendix 21, 8.8b])”*

#### **5.9.1.4 Patients’ views/ perception about the integrated care**

The users (patients) of the KCHC health service were also interviewed to assess their views and perceptions about the integrated care service. The interviews specifically explored whether the participants think the integrated care provides any benefits, as well as their experiences with the service. The results of the interviews are presented below:

##### ***Positive views/ perceptions***

Majority of the patients were of the view that integrated care is good and a welcome development because it has improved health care experiences of patients in several ways. The patients cited the following examples of ways it touched their lives to buttress their point:

##### **Integrated care resulted in seamless service**

Over the years, health care systems in developing countries have faced a number of challenges resulting in fragmented and discontinuous services with negative consequences on patients. Integrated care is that intervention advanced to ensure smooth and uninterrupted services, and a

continuity of care for all patients. With integrated care patients experience a smooth transition from the hospital to their homes. The care they receive in the health facility is coherent and linked, all from the improvements in the hospital as dividends of integrated care. One of such improvements is good communication and information flow translating into good reception and ab-initio a feeling of satisfaction with the health system at points of contact with patients. Such feeling was expressed by one of the patients to explain one of the changes in KCHC from the integrated care:

*“I feel happy and relieved when I came to this facility to access health care services because the way I was received and attended to was exceptional. ...I am really very pleased”. (HIV positive Male, 32 years, FGD, P2 [Appendix 21, 2.1j]).*

Another element of a seamless care expressed by participants is good interpersonal skills among the health workers. Interpersonal skills among health workers help to develop and foster good working relationships with colleagues and patients and contribute to increasing organisational goal. According to the patients interviewed, integrated care has improved understanding between health workers and patients:

*“..it brings a lot of impact and improvement among us. It brings unity among the patients and health workers”. (HIV Male client, aged 32 years [Appendix 21, 2.1k]).*

The third element of a seamless care expressed by participants is good coordination of care. This involves good organisation of patient care activities, sharing information among all participants involved in patient care and above all, teamwork. Good coordination of care is necessary for

achieving quality care and satisfaction of patients. In this regard, patients in KCHC expressed as follows:

*“There is smooth running of services and availability of qualified and high skilled medical personnel that will handle any case brought by the patients (HIV negative Female client, aged 26 years [Appendix 21, 2.1d])”.*

*“Due to integrated care services there is team work among staff leading to improvement in health care delivery (HIV negative Female, 25 years, FGD, P4 [Appendix 21, 2.1l])”.*

#### Improved health awareness and reduced stigma and discrimination

HIV stigma and discrimination in the health sector are significant causes of reduced access to health care. Integrating HIV care and treatment into PHC brought along the advantage of increasing health awareness for HIV and its services through the counselling and testing services in the hospitals and the health campaigns in the surrounding communities. These according to the patients interviewed have significantly reduced HIV stigma and discrimination. In one of the interviews an HIV positive patient testified that HIV related stigma and discrimination has reduced in KCHC courtesy of the counselling and awareness they receive:

*“..we are receiving good counselling and more awareness on HIV and its treatment. Not like in the previous years that we experienced a lot of discrimination from the public. ...but things have now changed as a result of creating awareness on how HIV is contracted, and how to avoid getting infected with it (HIV positive female client, aged 30 years [Appendix 21, 2.2a])”.*



Improved health awareness reduces HIV stigma by empowering patients and communities to understand how HIV is transmitted, effectively managed, and how to live a normal life with the disease. This helps in normalising the stigma and improves interaction within patients in the hospital, and between HIV positive patients and their families, and with other community members. According to one patient interviewed, she is very happy with integrated care because it has restored normalcy in her life. She went on to say:

*“This integration is working well, we fully interact with people now, we eat together and gist a lot with people without any problem (HIV positive female client, aged 30 years [Appendix 21, 2.2n])”.*

Once normalised, people will be encouraged to once again feel free to access health services and present themselves for counselling and testing in the hospitals. One HIV negative patient has this to say:

*“The benefits to be derived from this joint delivery of HIV services and other services is it makes the HIV positive patients to feel and mingle freely with everybody in the clinic and will make others with similar infection to access healthcare services in the facility and nobody will identify him that he is HIV patient (HIV negative Female client, aged 25 years [Appendix 21, 2.2y])”.*

#### Reduced missed appointments and defaults

By combining HIV and other services in the same location, integrated care provides a friendly environment for all patients to access health care in such a way that clinics are not identified by type of patients seen, a condition that bred stigmatisation, missed appointments and defaults.

According to participants, integrated care has resulted in remarkable progress by reducing missed appointment and defaults in stand-alone clinics. One HIV positive patient narrates his experience as follows:

*“..initially the HIV positive patients were seen separately, and when they notice someone they know around the clinic they refuse to come close, ..with combined the clinic.., ..we hardly see missed appointment now... (HIV Male client, aged 36 years [Appendix 21, 2.3a])”.*

#### Integrated care has increased geographical access to health care

The improved package of HIV and PHC services from the integrated care at PHC facilities has expanded coverage of specialised health care services to the grassroots by bringing the services to as close as possible to where people work and leave, and this has significant implication for access to health care. While exploring the participants’ experiences with integrated HIV and PHC care, a focus group participant stated that integrated care has brought health care close to their community. If not for the integration they would have to travel to far distance to access health services, and this may even deter some patients from accessing health care. According to the patient:

*“This integrated care has made access to the healthcare service closer to our communities, had it been there is no integration here they will have to travel far to get the services, may be some may not even go to the hospital, or will start to go and cease because of lack of transport money (HIV negative Male, 44 years, FGD, P7 [Appendix 21, 7.2a])”*

Geographical accessibility also has implication for utilisation of health services. This is especially so in some parts of rural settlements of Nigeria where distance, cost of transportation and poor road networks have persistently been challenging access to health care. Bringing a comprehensive package of health care close to the people is a big achievement of integrated care according to another focus group participant. He also sees this progress as a source of motivation for health workers:

*“This integration proved very important in one thing, it has increased number of patients in this hospital. ...integration has increased attendance to the hospital it motivates health workers by keeping them active (HIV negative Male, 28 years, FGD, P1 [Appendix 21, 7.2c])”.*

Apart from the geographical distance, the integrated care has saved them the cost of transporting themselves to the distant tertiary and secondary health facilities that were hitherto the only centres where these services were provided. These concerns were expressed by majority of the patients during focus group discussions. One of the participants said:

*“Bringing this integrated care service in this hospital relieves patients from going far places to access healthcare and also reduce the transportation cost (HIV negative Male, 27 years, FGD, P3 [Appendix 21, 2.4c])”.*

Another participant also narrates her view as follows:

*“To be honest this joint delivery of HIV and other health services had brought a lot improvement and development in this hospital and the surrounding communities at large. ..patients living within the areas of Kumbotso will access the healthcare services easily without any stress of going far to either Murtala Mohammed Specialist Hospital*

*or AKTH for treatment. It also reduces the transporting cost that mostly affect patients coming to the hospital (HIV negative female client, aged 26 years [Appendix 21, 2.4g])”.*

#### Increased access to diverse range of services and patients’ satisfaction with services

Participants also said that integrated care works because of the improved access to diverse range of services in KCHC. By offering HIV care and treatment services together with the package of PHC services in a one-stop-shop, it saves patients the time and energy of attending multiple clinics to attend to their multiple problems. One of the patients explains how integrated care gives access to multiple services as follows:

*“It provides for attending to patients with different diseases in the same place. For instance, if I come to see a health worker together with my sick child, we will all be attended to in the same place, I do not have to go to another clinic to address his problems (HIV negative Female, 25 years, FGD, P4 [Appendix 21, 2.5a])”.*

Access to multiple services in a one-stop-shop increases wellness, confidence, happiness and satisfaction with health services. This was expressed by one of the patients during a focus group discussion. He says:

*“In my own opinion I want to thank the health workers and also show my appreciation on the way they receive and attend patients in this hospital. To be sincere they deserve commendation (HIV negative Male, 29 years FGD, P6 [Appendix 21, 2.5h])”.*

### Integrated care is helping to prevent mother-to-child transmission of HIV

The patients also expressed the view that integrated care is working because it prevents mother-to-child transfer of the virus. HIV care and treatment services came with some interventions including drug treatment with antiretroviral drugs for HIV positive pregnant women during pregnancy and childbirth to prevent transfer of the HIV virus to the unborn child. In some situation, women may undergo scheduled caesarean section to prevent mixing of the mother's blood with that of the baby as it sometimes happens during normal delivery all in attempt to prevent mother to baby transfer of the virus. Furthermore, babies born to HIV positive women receive antiretroviral drugs for about six weeks to reduce the risk of possible infection with any virus that might possibly have entered the baby's blood despite the earlier stated interventions.

An HIV positive female patient was happy to mention that integrated care has made it possible for them to deliver HIV negative babies despite being positive, and describe this advancement as a major progress. She narrated as follows:

*“The major progress in this integration is, in the past pregnant women do not know that they can come to the hospital and protect their babies from getting infected with this disease but with the integration .., she will be counselled, placed on medication and be guided throughout the pregnancy and she will be delivered an HIV free baby. Our babies don't get infected if you go through the process (HIV positive Female, 32 years, FGD, P8 [Appendix 21, 2.6d])”.*

The experience with integrating HIV care to PHC in KCHC is the PMTCT interventions that drastically reduced the number of babies born with HIV infection. Some of the HIV patients happily shared this experience and reported that it is a significant outcome of the integrated care in KCHC:

*“...we make remarkable progress because we have never delivered a positive child in this facility. Once a positive mother gets pregnant, she becomes one of my closest friends until she delivers and weans off her baby (HIV female patient, aged 30 years [Appendix 21, 7.7a])”.*

Integrated care avails health workers the opportunity for updating their knowledge and skills

Integrated care intervention came along with capacity building component to train and retrain health workers on the various aspect of the intervention in order to facilitate smooth implementation. The capacity building included introduction of new technologies, clinical approaches, information management, communication and research through training by partners more familiar with the innovations. These trainings have helped the health workers with the requisite knowledge and skills for good patient management. This development is part of the examples cited by the patients to support their claims that integrated care is functional in KCHC. The patients attribute the improvement in health workers’ patient management practices to the knowledge and skills gained from the trainings. One of them states as follows:

*” As part of the integrated care, the health workers benefited from a lot of trainings and this seen reflected in the way they treat patients. You will never see or hear that a health worker discriminates any of our patients (Hassan, HIV positive male client, aged 36 years [Appendix 21, 2.7f])”.*

The trainings under integrated care are not limited to the health workers but also includes the members of the patients’ support group in order to help them with their activities of being the functional link between the patients, community members and the health workers, and this has

helped a lot and beefed up their confidence. One of the support group members stated as follows:

*“Health workers have gone on trainings on HIV care to improve their practices, and sometimes as support care members we the patients also go on training. In fact, the health workers sometimes benefit from us because they ask us on things that are not clear to them and we explain to them, especially those that have not gone on a training (HIV positive female client, aged 26 years [Appendix 21, 2.7e])”.*

#### Integrated care has improved community involvement and development

Community involvement and participation in health activities encourages community members to take ownership of interventions directed at their health in order to promote sustainability of programmes. The progress in reducing the prevalence of the HIV infection in the communities would not have been possible without mobilising the communities to recognise their vulnerabilities and take collective action for the control of the disease. Integrated care has been said to promote community development and involvement in health care. In KCHC for instance, the role of the support group members in the success of the integrated care programme cannot be over emphasised. The support group members have taken complete ownership of the programme and complement the staffing in the health facility. They are responsible for mobilising the public to access the health facility for counselling and testing for HIV, play active role in the PMTCT programme and partake in adherence and home-based care services in the communities. By improving availability and uptake of health services in the community, the patients and community members relate it to significant development in the community. These were part of accounts given by the patients during the assessment:

*“This integration has brought positive development, not only on the hospital but the town itself is now being respected more because of the services in the hospital. I think this is a good development, we are happy and we will want more of this if there are more available (HIV negative Male, 27 years, FGD, P3 [Appendix 21, 7.8b])”.*

Integrated care in KCHC came along with other developments to the health facility and the surrounding communities. This included human personnel development, infrastructural development as well as provision of equipment, drugs and other consumables covering both HIV and some of the non-HIV services. These were among the examples cited by participants to support their view that integrated care is working in KCHC. One of the participants of a focus group discussion went on to say as follows:

*“This integration has brought progress to this hospital. In the past, this hospital was to some extent neglected, patients’ attendance was low and the hospital was not getting the required attention, ..now with this integration, there are a lot of health workers here, patients are even being admitted and there is adequate drugs (HIV positive Male, 38 years, FGD, P3 [Appendix 21, 2.4f])”.*

### ***Negative views/ perception***

Although the patients generally value and expressed positive views about integration of HIV care and treatment into routine PHC, few of the patients encountered expressed misgivings about integrated care, largely stating that the approach is not useful and should be scrapped. They gave the following accounts to support their claim:



### Integrated care increases congestion in the clinics and workload on health workers

One of the objectives of integrated care is to increase efficiency in the clinics, reduce congestion and improve the quality of service. However, few participants of a non-HIV male focus group were of the view that integrated care increases congestion in the clinics. Their argument is that integrated care increases patients load in the hospital, and this in the event of inadequate manpower brings about congestion, overwork on the workers, and lack of working materials, drugs and consumables. One of the patients stated as follows:

*“..It will add to demand in the hospital and this may lead to congestion, overwork and lack of drugs, working materials and consumables. It is possible that you may come especially in the evening when there are usually few staff on duty and the health worker might say that they will only attend to emergencies because of overwork (HIV negative Male, 44 years FGD, P7 [Appendix 21, 3.1e])”.*

### Integrated care is resulting in poor clinic attendance, lack of confidentiality and stigmatisation

Integrated care aims to normalise HIV stigma by bringing together both HIV positive and negative patients in the same clinic setting and providing them with health services using the same health workers. However, very few patients interviewed opined that integrated care is not working based on the claim that it results in poor clinic attendance. Patients from the locality of the health facility refuse to attend the health facility or get uncomfortable and shy away from the clinics even when they come around to avoid familiar faces. According to a patient:

*“...the HIV positive patients that reside in this town do not like to come in, because they may likely meet with familiar faces that come from the same area. This usually makes them uncomfortable to come to the clinic to collect their drugs because they don't want*

*to be identified by known faces. (HIV positive Male client, aged 29 years [Appendix 21, 3.2a])”.*

*“..In my opinion the separation is better for the sake of our patients that are from this town, I personally do not have any problem with the combination. ..Other patients will not insist on coming to see who and who are there, at worst they may stand from far and point at our direction. .. there are many technics they can use to enter the separate place that will be assigned to us without being seen by people (HIV positive Male client, aged 29 years [Appendix 21, 3.2b]).*

The patients are also of the view that combining HIV positive and negative patients in the same clinic stand the risk of bridging confidentiality, and patients’ status disclosed. This is more so in situation where consultation for multiple patients is done within the same consulting room as in KCHC, thereby overlooking visual and auditory privacy. While expressing this concern, one of the HIV negative patients narrates as follows:

*“.. there may be a problem in a situation whereby the HIV and non-HIV patients are seeing one doctor at the same time, ..If the non-HIV patient expose the other patient status, there will be problem and from there stigmatisation may arise and also if other patients identified familiar person with HIV.., they may likely go back and expose such person in a community or society where they live together and this can bring stigma on the part of the patients”. (HIV negative Female client, aged 25 years) [Appendix 21, 3.2c]”.*

In order to hide their HIV status, some of the positive patients attending KCHC resorted to sending their spouses to refill their antiretroviral drugs from the clinic when their stock gets exhausted.

This according to the patients is the reason why there are more females in the clinics than males:

*“.... it is the reason why there are more women than men in the clinic. The women use to collect the drugs on behalf of husbands. (KII with ART patient 5 – Male 39 years [Appendix 21, 3.2d])”.*

#### Integrated care is exposing HIV negative patients to risk of HIV infection

Very few of the HIV negative patients were of the view that integrated care exposes HIV negative patients to the risk of HIV infection. They claim that needles, syringes and other related equipment in the hospital are shared among HIV positive and negative patients. Fear of getting infected is one reason why some patients are of the view that integrated care is not working and the clinics should be separate for the two groups of patients:

*“In my opinion the two should be separated, ..I heard that the same equipment like injections are used for all patients and sometimes problems occur. This is why I do not come for injections in this hospital (HIV negative Female client, aged 52 years [Appendix 21, 3.3b])”.*

According to other patients, even if patients don't get infected from sharing of equipment, there is the possibility of mixing up results especially where the clinics are rowdy. A 24 years old HIV negative female patient expressed concern that test results of patients may get mixed up and is therefore of the opinion that clinic for HIV and non-HIV patients should remain separate:

*“...Sometimes results for tests from other units get mixed up, and in this case, I think it will be more disastrous (HIV negative Female client, aged 24 years [Appendix 21, 3.3a])”.*

#### **5.9.1.5 Similarities in views/ perceptions of patients versus health workers**

Both patients and the health workers expressed similar views related to quality of service provision. In the context of health care, quality simply means providing needed care to patients, in a safe, effective and affordable way. This implies the use of appropriate infrastructure, equipment and personnel to deliver needed health care to deserving patients. Focus groups and key informant interviews held with both patients and health workers revealed that patients and health workers hold a similar view regarding the impact of the integration on healthcare infrastructure improvement, leading to quality of healthcare delivery. Both groups were of the view that the introduction of the integrated care came with improvement in furniture, equipment and additional structures like wards, and eye and dental clinics which were previously dilapidated and not being put to use. With the integration, these facilities were renovated and upgraded in order to give a conducive environment for patient care. According to a patient, the health facility that was previously almost moribund is once more alive because of the integrated care. One HIV negative female client, aged 29 years explains:

*“..because of this integration there are many new units like eye clinic, dental unit, scanning facilities and so on, and many people even reject transfers and referrals from this facility (Female, HIV negative patient, 29 years[Appendix 21, 7.1b])”.*

She added that:

*“Before the integrated care, patients were not being admitted because the wards were not habitable for admission but with coming of integrated care, the wards are now renovated and functional and patients are being admitted and catered for when the need arises (Female, HIV negative patient, 29 years [Appendix 21, 7.1b])”.*

The above experience was re-echoed by another recently discharged patient from the KCHC as follows:

*“...In the past there were even no facilities for admission and the staffing was very poor, and now I was even admitted sometimes back, and you can see so many health workers around”. (HIV negative Female client, aged 52 years [Appendix 21, 7.1c])”.*

These views expressed by the patients were also observed by the health workers who participated in the interviews. For examples a record officer went on to give details of facilities that changed operations at different units of the hospital. He narrated his experience as follows:

*“..Structure and facilities have improved, ..new equipment was brought to the hospital. In the lab we have new equipment, in the pharmacy we have enough drugs and, in the records, we have cards and our folders, table and chairs are all available. Talk less of electricity, before they give us only one-hour light between 10 and 11 am, but now if we put on the generator it will work up to 4.00pm”. (Medical records officer, Male, 57 years [Appendix 21, 8.1c])”.*

Another experience of quality shared by both patients and health workers was that of overcrowding and waiting time in the clinic. Overcrowded clinics commonly occur from lack of organisation in the clinic, either at point of medical records, consultation or laboratory. Overcrowding makes the clinic unbearable for patients and staff, leads to unnecessary delays in the clinic and overall reduce efficiency in the clinics. Many of the patients interviewed said that integrated care reduced overcrowding and waiting time in the clinics. According to them, congestion does not happen in the integrated care clinics because of good appointment system in the routine clinics and patients are seen on first come first serve basis:

*“The crowd is manageable here and there is no congestion. There is good organisation of patients, you have to follow queue and it is first come and first serve (HIV negative Female client, aged 52 years [Appendix 21, 7.4o])”.*

Overcrowding in the clinics may also occur from inadequate staffing where few health workers are assigned to attend to overwhelming number of patients. Under this scenario, the health workers may become exhausted, unfriendly and inefficient in addition to the many delays that may occur in the clinic. With the adequate staffing of integrated facilities, this has been “a thing of the past” as described by the patients. Another patient, narrated her experience with staffing and overcrowding in Kumbotso integrated care facility. She says:

*“It was before when there were few health workers in the facility that you see people congested in the different units waiting to be attended to, but with the integration sometimes you see up to five doctors or more at a time in this facility (HIV negative Female client, aged 29 years [Appendix 21, 7.4m])”.*

The majority of the health workers interviewed agree with the patients' assertion, revealing that congestion and waiting time has reduced in KCHC, and attributed that to the integrated care in the health facility. One of the health care workers reported as follows:

*"..Yes, there is no congestion why because we have appointment system. ..all because of integration". (Medical records officer, Male, 57 years [Appendix 21, 8.a])"*

Another common experience shared by the patients and health workers is on health supplies and consumables. Availability of drugs, equipment and supplies at health facility is an important measure of the quality of service therein. Provision of quality health services rely on availability of medical equipment, supplies and consumables when needed and in adequate quantities in addition to skilled health workers. Before the integrated care, medical supplies and consumables in KCHC were provided by the parent hospital that is, AKTH, and patients were charged for the cost of items used on them, although at a cost slightly cheaper than would have been paid at the tertiary hospital. With the integrated care however, patients and health workers observed that the health centre benefitted from massive improvement in equipment, drug supplies and consumables especially those used for HIV/AIDS treatment, care and support, and for related ailments. The charges on the services rendered with these items are free to all patients. Many of the patients and health workers emphasised that, with integrated care in KCHC, stock out of drugs and laboratory reagents therefore became a thing of the past. This view was further emphasised below by a 29-year-old HIV patient:

*"Some years back we experienced shortage of equipment and working materials in the lab, but with coming of this organisation that support us, there was a time when items*

*were supplied on the same day they got finished (HIV negative Male client, aged 29 years [Appendix 21, 7.6e])”.*

The patients were particularly happy about the fact that integrated care has made it possible for them to adhere to their prescribed drugs once commenced on them:

*“..it has resulted to the state where our patients will not start drugs and fail to continue, they have stopped all that. In addition, whatever advice they are given on their health in the hospital, they stick to it (HIV positive Female client, aged 36 years [Appendix 21, 7.6b])”.*

The health workers experience with availability of drugs at all times in the health facility goes beyond the antiretroviral drugs. According to the health workers, while the HIV drugs are supplied free by the donors, the non-HIV drugs are procured through the drug revolving fund and this has been regular:

*“.... The HIV drugs are always been supplied by donors, but on the other side it is a revolving fund that if the drugs is out of stock the pharmacists will go and source it outside. We don't experience shortage of drugs for all sides in this health facility”. (Matron, Female, 52 years [Appendix 21, 8.6b])”.*

One of the gains from integrated care is its design towards providing seamless care, where patients experience smooth and safe transition from the hospital to their homes. Good communication between individuals and the health system, the process of actual care given and received, and the structure of health care are crucial for the smooth transition of patients through the health care system. A significant number of patients encountered were happy with the way health workers in



the integrated care facility communicated with them. They shared the experience that health workers in the integrated care setting are receptive and show good attitude:

*“Honestly this is my first time here but I was so impressed with the reception and the way things are being conducted here. In fact, when we were waiting outside my sister whispered me that this is where she is coming to book for her ANC. ...my patient has delivered safely and we were allowed to see her without any form of maltreatment from the health workers (HIV negative Female, 29 years, FGD, P6 [Appendix 21, 7.5g])”.*

With respect to the health care process, the patient-health worker contact time attending to the clinical needs of patients in the clinic is used by patients to express the quality of care given to them. The longer the patient-health worker consultation time, the more satisfying it becomes. The patients examined are happy with the contact time. According to them, health workers in the integrated care clinic take their time listen to patients, examine them and counsel them on their problems. An HIV positive patient shares her experience:

*“..Very well, the doctors take time to check patients well and attend to their problems, to be honest we are favoured patients in this facility (HIV positive Female client, aged 30 years [Appendix 21, 7.5a])”.*

The health workers also reported having seamless health care in the integrated care KCHC. According to one of the health workers, there is continuity of care and services are organised:

*“..So, patients flow is smooth and organised. They are not crowded and there are no any disrupted services (Matron i/c, Female, 45 years [Appendix 21, 8.5a])”.*

The most popular experience among the outcomes of integrated care reported by the patients and health workers was reduction of stigma and discrimination. HIV stigma and discrimination are among the serious issues challenging the prevention and control of HIV infection. HIV stigma and discrimination are often associated with severe psychological consequences like anxiety, depression, withdrawal with even suicidal tendencies. In the past, in order to avoid being identified by known faces, patients in KCHC had refused being tested for the disease, refused attending the clinic even after being diagnosed or delegated their spouses to collect their antiretroviral drug refills from the clinic. With the integrated HIV-PHC care in KCHC however, HIV related stigma is normalised such that HIV and non-HIV patients mingle freely and interact well without any form of stigmatisation as narrated by a female HIV positive patient:

*“..patients are relaxed with themselves and other normal patients, no stigmatisation. When you come to the clinic all patients, HIV and non-HIV are together and one cannot be able to identify who is who (HIV positive Female client, aged 30 years [Appendix 21, 7.3d])”.*

Furthermore, privacy and confidentiality are also well maintained in integrated care facility. Everyone minds his business, and for this reason patients do not shy away from clinics or request for transfer to other health facilities to avoid meeting known faces as narrated by another HIV positive patient attending clinic in KCHC. He stated as follows:

*“..they will also not come to ask for transfer because they see their relatives attending the same health facility with them, they have stopped all that. The way they relate with other patients in the hospital is also commendable (HIV positive Male client, aged 36 years [Appendix 21, 7.3e])”.*

The health workers also reported that stigmatisation is a thing of the past in the integrated care KCHC:

*“.. there is no stigmatisation among our patients (Matron ANC/ labour room, female, 52 years [Appendix 21, 8.3b])”.*

Few patients reported their satisfaction with the services they assessed in the integrated care facility as a remarkable outcome. The seamless service delivery in integrated care facility improves satisfaction with services rendered at the facility. This statement was made by some of the patients as attested by an HIV positive patient:

*“I am happy with the way they carry out with their services”. (HIV positive Male client, aged 55 years [Appendix 21, 7.9a])”.*

The health workers experience with satisfaction is as narrated by a community health extension worker whose accounts are as follow:

*“..our patients are happy, they are always cheerful and they even brought commendation letters for some of our staff (ART CHEW, female, 52 years [Appendix 21, 8.7c])”.*

On the other hand, very few patients and health workers reported deterioration of quality of health care in Kumbotso integrated care facility. One of the negative effects of integrated care cited by both patients and workers was the claim that it led to increased workload. The increased workload may bring about negative consequences on the workers like physical and mental stress, stress related illnesses and reduced efficiency. Heavily overworked workers may develop depression and worker burnout, a state of physical and emotional exhaustion that also involves sense of reduced

accomplishment and personal identity. According to one patient, workload increased with the integrated care, and this led to lack of commitment of health workers:

*“...there was a day when about 20-30 of us came in the evening to see the doctor and when he came out from the wards, he selected only three patients and asked the others to come back in the morning because he was alone and genuinely busy (HIV negative Male, 44 years, FGD, P7 [Appendix 21, 7.10a])”*

*“...there is negligence and I don't care attitude played by health workers when you bring patient especially a woman in labour the nurses/midwives used to shout at them or asked them to go back home in an impolite manner (HIV negative Female client, aged 25 years [Appendix 21, 7.10c].)”*

Experience of overwork from integrated care was also narrated by one of the health workers. She narrated her account as follows:

*“..There is too much workload here, .. we only 4 on morning shift in this facility today, and in the scanning room the doctor wants to attend to only 2 patients but we had more than 50 patients waiting for scan. So, one of our nurses was there to attend to those requiring scanning and also to give another appointment to those that will not be attended to today; another nurse is at the antenatal unit attending to more than 60 pregnant women, I am attending to labour cases and in-patients and so on, this shows that the work is too much for us (Matron, Female, 52 years [Appendix 21, 8.9b])”.*

Very few patient and health workers reported that integrated care resulted in occasional stock out of drugs and consumables in the hospital:

*“..with this integrated care services there is shortage of drug in the pharmacy because of the large number of patients around to collect drugs and not all drugs are available. (HIV negative Female client, aged 25 years [Appendix 21, 7.11b).*

Stock out of drugs can lead to interruptions in drug treatment with chances of drug resistance, and this has serious consequences on outcomes of health care. For HIV positive patients, drug resistance may imply the use of more expensive second line or salvage therapy which may not be always readily available to patients, and this has deleterious consequences for the control of the virus. Drug resistance also has severe implications in tuberculosis and other antimicrobial management.

## **SECTION B:**

### **5.9.2 FACTORS IMPACTING ON THE DELIVERY AND UPTAKE OF THE INTEGRATED SERVICES IN NIGERIA**

The present section focuses on the factors identified to be influencing the delivery of HIV treatment and care services integrated within routine PHC in Nigeria. As discussed in the literature integration of health care can occur at macro (systems), meso (organisational and professional) or at micro (clinical) levels. The integration of care across the three levels of the health system can occur through referrals, linkages and other similar interventions in vertical integration. Pooling skills and expertise of similar organisations through hierarchical governance structures, market-based governance structures like mergers and acquisitions, and networking as in intersectoral collaborations are described under organisational integration; and partnerships between professionals within the same organisation and between organisation in the delivery of health care

is professional integration. Clinical integration on the other hand is the coherence in the delivery of care to individual patient.

Successful integration of HIV services into PHC requires a continuum of care that gives patients access to needed health care services within the three levels of the health system and between organisations and professional groups. Therefore, both vertical and horizontal integration are necessary to counteract fragmentation of health care services. This is achieved in an integrated system through functional integration, which encompasses coordination of key support functions such as financial management, human resources, strategic planning, information management and quality improvement. All of these support functions among others are necessary for successful integration. Along the line of implementation however, integrated care may encounter barriers that may hinder full integration of services.

#### **5.9.2.1 Barriers to the provision of integrated care**

The barriers to a successful delivery of the integrated care services in Nigeria were identified following interviews with health providers, and described below:

##### Inadequate funding

Funding is necessary for the success of any intervention. To achieve the goals of integrated care for primary health care, the required infrastructure, equipment and health manpower to make quality health services accessible are paramount. However, PHCs in Nigeria are seriously underfunded and the funding for the integrated HIV-PHC programme is largely from development partners. This has been a barrier to integrated care according to participants. Funding at PHC is a

challenge according to an administrator from KCHC, there are often no funds available to organise and operationalise routine activities:

*“Funding is also a problem for example if you wish to conduct outreach services, we need funding and that may not be forthcoming (Administrator, KCHC, Male, 34 years [Appendix 21, 13.3a])”.*

### Inadequate staffing

Staffing generally involves the process of recruiting the right personnel for the right job and at the right time in order for desired activities to occur in the right manner. In the healthcare setting, human resource is the greatest investment of all resources because the other resources like money, materials and equipment only become effective and utilised efficiently by the positive efforts of human resource. Employing the right persons for the right job and in adequate numbers leads to optimum productivity and performance. Therefore, integrated care setting whose primary objective is to improve access to quality health care throughout the continuum of health care requires adequate numbers of skilled and specialised health care workers. However, the participants interviewed identified inadequate staffing as a barrier to achieving impact of the integrated care in Nigeria. Inadequate staffing at PHC level is a national problem in Nigeria, according to one administrator interviewed from Kano SMOH, and this has been a major barrier to integration. He explained that:

*“..the major challenge is the capacity of the PHC system, not only in Kano state but generally across Nigeria, is very weak, and that could be a major barrier. Weak because many PHC centres are understaffed. Many of them they are already overwhelmed by what they provide (Administrator, PHCMB, Male, 52 years [Appendix 21, 13.1b])”.*

### Knowledge gap

Under integrated care setting, health care workers are expected to have the requisite knowledge to stay up to date with the dynamic needs of the HIV and PHC integrated care. Training and re-training of the health workers is therefore key to the success of the integrated care programme.

The belief that HIV care and treatment is a complex procedure requiring specialist attention is a serious problem militating against the rollout of integrated care in Nigeria, and this has been a major barrier to the success of the programme. According to one administrator of healthcare;

*“There was a dogma or rather a belief that oh, care of HIV can only be done by a specialist, so that knowledge gap becomes a barrier when you go to a PHC and you want to integrate HIV, they say no, no, no we cannot do this, this is much more than our capacity (Administrator, Development partner, Male, 49 years [Appendix 21, 13.2b])”.*

### Inadequate infrastructure

The Nigerian PHC system faces a lot of infrastructural challenge and this has affected the integrated HIV-PHC programme negatively. Many PHC facilities are faced with challenges such as space for consultation, admission of patients among others. Participants further noted that some facilities do not have potable water or electricity and these have retarded the progress of integrated care:

*“..the infrastructure in those PHCs, and we have got PHCs that do not have potable water, they do not have light, they do not have power and they do not have even enough rooms to see patients. So we have these infrastructural barrier that becomes very*



*difficult to add to an already stressed system (Administrator, Development partner, Male, 49 years [Appendix 21, 13.7a])”.*

According to a third of the participants who participated in the interviews, the infrastructure at PHC is inadequate and do not allow visual and/or auditory privacy during consultation. In KCHC for instance, despite being a comprehensive health centre in size and function, there is shortage of consulting rooms to the extent that there are two to three consultation tables within one consultation room with different patients being attended to at the same time. Privacy is impaired when two or more patients are attended to at the same time and in the same consultation room and this could serve as a serious barrier to integrated care according to an administrator from KCHC:

*“It is not uncommon when you have two healthcare workers consulting in the same room. ..the issue of confidentiality, because you are consulting two patients for instance we have two consulting rooms here and we have like four, five healthcare workers consulting at the same time, .. the issue of confidentiality will really be a problem (Administrator, KCHC, Male, 3 years [Appendix 21, 13.4b])”.*

#### Inadequate facility for counselling, testing and other diagnostics

Counselling and testing are the gateway for HIV treatment, care and support services. Patients need to know their status to determine their eligibility for the services that the HIV programme has to offer. In many health facilities in Nigeria, counselling and testing for HIV is done at designated units in the hospital or a section in the laboratory. In KCHC, patients requiring counselling are given a form from the consulting health worker at the outpatient department to go to a section in the laboratory for counselling and testing. After collecting the test result, the patients undergo post-

test counselling at the same counselling site in the laboratory and then returns to the consulting health worker in the outpatient clinic for further management. According to a health administrator, the fact that some of the patients carry a special form to those units is on its own stigmatising and constitutes a barrier to full integration of HIV and PHC services. In his view, there should be adequate facility for integrating counselling and testing at point of consultation to remove this barrier:

*“if we can seriously liberalise this counselling and testing thing such that at the point of consultation the healthcare provider should be able to counsel you and test you so that one does not need to go out with another paper for someone else to counsel that person (Administrator from AKTH, Male, 51 years [Appendix 21, 13.5a])”.*

Counselling and testing services should be commonplace in the PHC setting where basic health care services needed by the majority of the population are provided. In addition, because of its proximity to the underserved population, they will benefit more from the knowledge of their HIV status. This implies functional laboratories and equipment with adequate supplies and consumables at all times. However, these requirements are lacking in many PHCs. According to one administrator from the SMOH, “many PHC facilities in Kano do not have the minimum laboratory structure to screen patients or run some vital diagnostic tests” he was captured during the interviews stating the following:

*“...many of our PHCs that do not have even a lab, the minimum laboratory structure that can be able to do this screening and whatever (Administrator, PHCMB, Kano state, Male, 52 years [Appendix 21, 13.6a])”.*

### **5.9.2.2 Enablers/ facilitators**

On the other hand, the participants identified some factors that were influencing the integrated care positively. These factors are described in details as follows:

#### ***Enablers related to upgrading infrastructure, facility and services***

The health care workers and administrators mentioned upgrading PHC infrastructure, implementation of minimum service package for PHC; and scaling up of HIV services to all PHC facilities among factors that will enable full integration of HIV services within PHC in Nigeria.

#### **Upgrading the PHC infrastructure**

The PHC facilities are the most common occurring health facilities and the closest to the population in Nigeria, making them the most convenient structures to provide coordinated and patient centred health care to the underserved population using the integrated care approach. The health workers were of the view that upgrading the PHC infrastructure is a positive factor facilitating the HIV-PHC integrated care. It was widely agreed among participants that the integrated care would record further success once existing PHC structure is expanded to accommodate more services, provision of basic amenities like power and water, and provision of vehicles for essential services:

*“..Strengthen the system in our PHCs, it’s the closest unit to the consumers, if you could just upgrade the structures, buildings and provide basic amenities like power and water, it becomes easy to integrate any form of service not just HIV in PHC is going to work (Administrator, Development partner, Male, 49 years [Appendix 21, 16.2a])”.*

### Implementing minimum service package for PHC

The Federal Government of Nigeria (FGN) through the National Primary Health Care Development Agency (NPHCDA) has developed the ward minimum health care package that will guide implementation of primary health care in Nigeria. The document has outlined the minimum requirement of primary health care facilities with regards to infrastructure, facility, equipment and human resource; and also, the services rendered by the levels of the PHC facilities. For many of the states in Nigeria, similar guidelines do not exist. These guidelines are needed to define which PHC services are being integrated with the HIV services. This document is recently been domesticated in Kano state where this study was conducted. This development is of immense benefit to the success of the HIV-PHC integrated care in Kano state says an administrator from Kano state:

*“Few weeks ago Kano state finalised the domestication of the minimum service package and that document has already been approved by government and really going to be of immense benefit as a policy guide to Kano state in the implementation of PHC including services, including of course HIV care and support (Administrator, PHCMB, Kano state, Male, 52 years [Appendix 21, 16.4a])”.*

### Scaling up of basic HIV services to all PHC facilities

As mentioned earlier, PHC facilities are the closest health units to individuals and communities. For the success of HIV-PHC integration, there is need for basic HIV services to be available at most or all of the PHC facilities. According to an administrator in AKTH, scaling HIV services to a level of the PHC facilities will enable the HIV-PHC integration:

*“...as it is now not every PHC facility has HIV services. So, if it is possible to scale up to cover say certain level from PHC, it will help integration (Administrator, AKTH, Male, 51 years [Appendix 21, 16.6a])”.*

### Demand creation

According to Razum (1993), the availability of a service does not ensure its utilisation. For proper utilisation of the integrated care services therefore, there is need to create awareness for the services through social mobilisation. This was suggested by administrators as well as patients in interviewed in the KCHC:

*“On the issue of patients, I think it’s all about awareness, creating enough awareness, ensuring effective social mobilisation for all services ranging from immunisation, HIV and even family planning. If the communities are well mobilised, they are likely to utilise and improve the health outcome of the community (Administrator, KCHC, Male, 34 years [Appendix 21, 16.5a])”.*

### ***Enablers related to PHC facility management systems***

Under this section, factors that facilitate integrated care mentioned by the health workers and administrators include planning for integration, strengthening medical records system, and ensuring effective framework for monitoring and evaluation for the integrated care.

### Planning for integration

Planning is one of the key management functions and ensures that objectives are achieved effectively, and failure to plan amounts to planning to fail. According to an administrator from

KCHC, planning for integration with the necessary community stakeholders ensures sustainability of the integrated care programme:

*“I think it is important to involve the facility, members of the community as well as individuals that have interest on health or other stakeholders, the community groups to ensure that these services are not provided stand alone,. ...If right from planning it has been taken into consideration that these services will be integrated into the main system sustainability will not be a problem (Administrator, KCHC, Male, 34 years [Appendix 21, 16.2a])”.*

#### Effective framework for monitoring and evaluation

Monitoring and evaluation system is paramount to the success of any planned intervention. Developing an effective framework for monitoring and evaluation will enable the successful implementation of the HIV-PHC integrated care says an administrator from KCHC:

*“On the part of government is to ensure that there is an effective framework for monitoring and evaluation, not only planning and implementation there must be a follow up system where we ensure the right thing is being done at all levels and all the time (Administrator, KCHC, Male, 34 years [Appendix 21, 16.1a])”.*

#### ***Enablers related to health workers***

Participants’ suggestions on health workers include introducing integration into the curriculum of health training institutions, implementing task shifting policy, capacity building, developing rapport and communication skills of health workers, and motivating health workers.

### Introducing integration into curriculum of health training institutions

Availability of health workers at the right quantity and mix is one of the prerequisites of the integrated care intervention. According to a development partner, introducing integration agenda into the curriculum of the training institutions that produce PHC workers will support the integration programme by producing a calibre of health care workers that will look beyond the routine health care delivery and embrace nuts and bolts of complex interventions like integrated care:

*“...go back to the human resource production for PHCs, most of the staff that tend to work PHCs are trained from School of Health Technology as an example, so we now have to include in the curriculum of those schools, HIV care and HIV integration services. So as soon as we create a pool of staff that will work at PHC they will look beyond the routine that are already used to (Administrator, Development partner, Male, 49 years [Appendix 21, 16.7a])”.*

### Implementing task shifting policy

The task shifting policy is a provision made under situation of deficiency of appropriate cadre of health workers that handle a particular task, which allows lower cadre but skilled health workers to handle complex tasks like HIV care that is ordinarily handled by much senior cadre of staff like doctors. A development partner suggested that, just as applied in prevention of maternal mortality in Nigeria, implementing the task shifting policy on HIV care is a formidable strategy for overcoming the chronic shortage of high-level health care workers at the PHC, and this will support integration programme:

*“..we need to ..probably ..do some form of policy or legislation that allows low cadre but skilled staff to take care of HIV just like we allowed low carder staff to take care of*

*pregnant women, because in some places people still believe that HIV should never be taken care of in PHCs, so they will never allow that, so maybe that policy need to change”. (Administrator, Development partner, Male, 49 years [Appendix 21, 16.8a])”.*

### Capacity building

The integrated care programme came along with strong component for developing the capacity of the health man power, bearing in mind the dynamic nature of HIV/AIDS management and that of integrated care. This, according to an administrator is an essential component of the integration:

*“For health care workers, the issue of capacity building, training and development is essential”. (Administrator, KCHC, Male, 34 years [Appendix 21, 16.3a])”.*

## **5.10 SUMMARY**

Overall, the findings of the qualitative study involving 8 focus groups and 28 key informant interviews, demonstrate that integrated care increased geographical access to health care, and to a diverse range of services. Positive health outcomes of integrated care reported included reduction of stigma and discrimination, maintenance of privacy and confidentiality of patients, improved satisfaction with services, and prevention of transfer of HIV from mother to an unborn baby. Negative outcomes of integrated care reported included poor clinic attendance due to fear of stigmatization, and exposure of non-HIV patients to risk of HIV infection. Barriers to integrated care reported included inadequate funding, inadequate staffing, knowledge gap, and inadequate infrastructure and facility, while the enablers of integrated care reported were related to upgrading infrastructure, facility and services (upgrading PHC facility, MSP and scaling up HIV services to



all PHCs); to PHC facility management (planning, M&E); or to health workers (pre-service curriculum, task shifting, capacity building).

## CHAPTER SIX: META-INTEGRATION AND DISCUSSION

### 6.1 INTRODUCTION

The Ph.D research which investigated the integration of HIV into PHC services in Nigeria was based on the Federal Ministry of Health (FMOH) of Nigeria policy to provide the underserved majority unrestricted access to HIV/AIDS care and support services (NACA, 2014; Okonkwo *et al.*, 2014). Hitherto, HIV/AIDS services were available only to patients accessing health services in tertiary and some secondary health facilities in the country (Okonkwo *et al.*, 2014). With the decentralisation of HIV services from the tertiary and secondary health facilities and integration within PHC, HIV services became integrated with the PHC services in Kumbotso CHC in March 2010. The study evaluated the performance of the HIV integrated care service delivered as part of routine PHC service in Nigeria. The study also assessed the factors that influence the service performance and impact. In the sections that follow, the effect of the integrated care on the HIV and non-HIV PHC services, and the barriers and enablers of the integrated care are discussed. The discussion draws on findings of the quantitative and the qualitative components of the research to provide a holistic understanding of what works, what doesn't work, and to situate the findings within wider existing literature on integrated HIV care. Table 6.1 below summarises the overall research questions and objectives, and the key elements of the results discussed.

**Table 6.1: Triangulating quantitative and qualitative results**

<b>Research question</b>	<b>Research objective</b>	<b>The elements for the triangulation</b>
1. What has worked following the implementation of an integrated HIV care in Nigeria?	To assess the effect of the integrated HIV care on uptake/utilisation of HIV Counselling and Testing (HCT) and Anti-Retroviral Therapy services provided at the KCHC.	- Quantitative assessment of trend in uptake of HCT and ART services (Effect on access to HIV services)
	To assess the effect of the integrated HIV care on uptake /utilisation of non-HIV services provided to both HIV and non-HIV patients at the KCHC.	- Quantitative assessment of trends in utilisation of selected non – HIV services before and following the integrated care. (Effect on access to non-HIV services)
	From the perspectives of the service-users, assess their satisfaction and perceived stigma associated with the integrated care.	- Patient satisfaction with HIV and non-HIV services rendered (Quantitative). (Effect on quality of health care)
	To explore the views/perceptions and experiences of health service providers (health workers and health administrators) and service users (patients) with respect to the integrated HIV care delivery.	- Qualitative assessment of HIV positive and non-HIV positive patients’ views and experiences with integrated care - Qualitative assessment of health workers’ and administrators’ views and experiences with integrated care (Effect on access, health outcomes and quality of health care)
2. Why has the integrated HIV care service worked or not worked within the Nigerian context?	To identify and described the barriers to, and facilitators of, uptake of the integrated HIV care service.	- Qualitative assessment of patients’, health workers’ and administrators’ perspectives on barriers and facilitators of the integrated care

Integration of health care is a complex intervention implemented at different levels of health care system to improve the functioning of the system. The literature shows that integration of HIV care and treatment within the PHC system commonly occurs at the service delivery/ micro level of the health system (Delnoij *et al*, 2002). It is also in the literature that integrated care improves both access and outcomes of health care, and the quality of health care delivered to populations (Odeny *et al*, 2013; Crowley and Stellenberg, 2014; Pfeiffer *et al.*, 2010; Sweeney *et al.*, 2012; Bedelu *et al.*, 2007; O'Connor *et al.*, 2011; Mutevedzi *et al.*, 2010, Chan *et al.*, 2010; Coetzee *et al.*, 2004).

Although the overall goal of this type of intervention is to improve the performance of the health system, similar public health interventions in the past resulted in unwanted effect on some part of the system. For instance, the preponderance of HIV/AIDS programmes in Nigeria following the HIV/AIDS epidemic in the early part of the third millennium produced widespread fragmentation of health care from disease specific HIV programmes (Etienne *et al*, 2010; Aliyu *et al*, 2019), with resultant negative consequences on the PHC system (Atun, Bennett and Durat, 2008). The findings of this thesis add value to the existing body of knowledge about the effectiveness of integrated care on HIV treatment. The key findings are discussed as follows:

## **6.2 EFFECT OF THE INTEGRATED CARE ON ACCESS TO HIV TREATMENT AND CARE**

The research found that as part of the integration process in KCHC, the infrastructural base and facilities were upgraded, new clinical and laboratory equipment supplied and the staff trained to deliver the integrated care services. This observation is well captured by the United States Institute of Medicine, that such reform of HIV care and treatment allows for unrestricted access to quality HIV care and treatment especially to the underserved population (IOM, 1993).

With regards to HIV disease, access to HIV services is critical to the fight against the ravaging HIV disease. The HIV pandemic is among the highest causes of global burden, affecting 37.9 million (32.7 - 44.0 million) people from all ages globally by end of 2018 (UNAIDS, 2019), and the WHO African region is most hit by the HIV pandemic, with 3.9% adults (nearly one in every 25) living with the infection (WHO, 2019). The WHO introduced the concept of universal access to HIV care, treatment and support to confront the pandemic, and integrated care is one of the strategies being used to achieve outcomes (WHO, 2010). Universal HIV coverage refers to:

“that commitment of the world health leaders at the 2006 United Nation’s General Assembly High-Level Meeting on AIDS to scale-up services and interventions towards the goal of universal access to HIV treatment by 2010 for all those that need” (WHO, 2010).

Towards the realisation of this goal, HIV care and treatment services were integrated into the PHC services in Nigeria including KCHC, the study area. The current study found evidence demonstrating that the integration of HIV care and treatment within PHC services in KCHC improved access of patients to HIV services. The quantitative findings suggest that uptake of HIV counselling services, new and follow-up ART enrolment, and the number of patients who received co-trimoxazole prophylaxis treatment (CPT) significantly increased over time with the integrated care. Similar findings were reported by Pfeiffer *et al* (2010) in Mozambique following integration of HIV care and treatment services into PHCs in the country. The Mozambique study reported availability of HIV services in 67 PHC facilities in 23 districts following the integration, and both ART enrolment and initiation increased in all the health facilities following the integration. Other follow up studies from other African countries (Nyasulu *et al*, 2013; Ansa *et al*, 2014; Owiti *et al*,

2015; Topp *et al*, 2010; and Phiri *et al*, 2011) reported findings that corroborate what was found in Nigeria and the findings reported in Mozambique. These studies all found evidence that demonstrate increased uptake of the HIV services with integrated care. Beyond Africa, studies from Guatemala in Central America (Ikeda *et al*, 2014) and Haiti in the Caribbean (Peck *et al*, 2003) showed similar pattern, thereby supporting the hypothesis that integration of health care is an effective intervention for increasing access to HIV care, treatment and support. The findings from our qualitative study further buttress the point that integrated care increased access to HIV services. Both HIV positive and negative participants who participated in the qualitative study reported that, in addition to bringing HIV services close to their community thereby reducing cost of transportation to the hospital, the integrated care provided them the opportunity to access diverse health services under the same roof.

Our findings suggest that integrated care impacted on PMTCT of HIV infection. We observed that uptake of counselling and testing services at ANC significantly increased following the integration. The study also found evidence demonstrating that the integrated care has helped to address HIV related stigma, and increased PMTCT service use. From the qualitative study, HIV positive pregnant mothers reported delivering HIV negative babies following the PMTCT interventions. Although the records of secondary data from Kumbotso showed that not many HIV positive pregnant mothers were diagnosed (0.94%), an increase in the uptake of Nevirapine prophylaxis by mother-infant pairs was noted indicating that positive mothers that delivered either at home or in other health facilities still accessed the KCHC for PMTCT service. These findings seem to confirm what previous studies have reported. For instance, in one quasi-experimental study in India, Bindoria *et al* (2014) investigated the benefits of integrating prevention of parent-to-child transmission (PPTCT) within maternal and child health (MCH) services. The authors reported that

the proportion of pregnant women screened for HIV at ANC increased from 55.4% to 79% after integration, 93% of the HIV positive women were linked with ART centres following the integrated care; and 92% of mother-infant pairs received Nevirapine prophylaxis, further corroborating the claim that integration of HIV care and treatment services within PHCs increases access to HIV services. The reduced number of HIV positive mothers observed in this study from KCHC might be accounted for by the limitation of poor record keeping in the health centre. However, the fact that our HIV positive qualitative participants reported that all pregnant women passed through HIV screening during ANC at KCHC, and those found HIV positive were placed on drugs to prevent delivery of HIV positive babies is a clear testimony suggesting access to PMTCT programme in the integrated care KCHC.

### **6.3 EFFECT OF THE INTEGRATED CARE ON ACCESS TO NON-HIV SERVICES**

In addition to improving access to HIV care and treatment, this study theorised that the integration of HIV care and treatment within PHC in Nigeria should lead to an improvement in access to non-HIV PHC services. The quantitative results of this study found that uptake of both maternal and child health services, and of outpatient and in-patient services increased with the integrated HIV care in KCHC. Furthermore, the qualitative findings also affirm that integrated care improved geographical access to health care in general, and to a diverse range of non-HIV services in the health facility. These findings are consistent with what has been reported in the literature, although the majority of the existing studies focused on evaluating the impact of integrating HIV services within family planning as “non-HIV service”, possibly because the two are closely related components for realising reproductive and sexual rights in the context of primary health care as described in the 1994 International Conference of Population and Development (ICPD) (UNFPA,

2008). These studies consistently concluded that the integration of HIV services with family planning/ reproductive health led to increased access to the family planning/ reproductive health services. For instance, one cross-sectional study from Kenya involving 976 HIV positive women and men recruited from a public sector HIV clinic in Nyanza, found that integrating family planning into HIV care and treatment impacted positively on intention to use contraception. Majority of the women said that they or their partners would be more likely to use family planning method, if it was available at the HIV clinic (Newmann *et al*, 2013). Another study, a systematic review of the literature, on integration of family planning into HIV services reported that eight of the twelve studies that met the inclusion criteria for the review documented significant increase in contraceptive use by HIV service clients, and three reported significant increase in complete referrals from HIV services to family planning clinics (Wilcher *et al*, 2013).

This study also found that the integration of HIV care and treatment services into PHC at KCHC impacted positively on access to multiple non-HIV services. Maternal health services comprising monthly attendance for antenatal care (ANC), and uptake of delivery and family planning services also significantly improved over time with the integration. By improving access to antenatal care for pregnant women, child birth and spacing for women in Nigeria, the integrated care has invariably lessened the risk of maternal death in the country especially in deprived rural communities. According to the WHO, nearly 20% of global maternal deaths happen in Nigeria, and more than 600,000 maternal deaths and no less than 900,000 maternal near-miss cases occurred in the country between 2005 and 2015 (WHO, 2020b).



In addition to the findings on maternal health, this Ph.D study found that access to child health services improved with the integration of HIV care and treatment into PHC. The quantitative study component found that, uptake of BCG, DPT1/ Penta1 and DPT3/ Penta3 immunisation increased monthly following the integrated care in the health facility. The improvement in access to immunisation represented as increased uptake of antigens for routine childhood immunisation is a further confirmation that integration of HIV services within PHC is an effective strategy for improving child survival. This is more so, as immunisation is acknowledged as one of the most cost-effective intervention for controlling infectious diseases and reducing child mortality. Improving access to child survival services is a clear trajectory for achieving the Sustainable Development Goal (SDGs) Goal 3: aiming to “end preventable deaths of new-borns and children under 5 years of age, within all countries” and to “reduce neonatal mortality to at least 12 per 1,000 live births and under-5 mortality to at least 25 per 1,000 live births by 2030” (United Nations, 2015). At present, more than 6 million children die in LMICs before their fifth birthday every year, with more than two million dying from vaccine preventable diseases (GAVI, 2020). Therefore, any intervention that demonstrate effectiveness to tackle the problem of child mortality must be embraced.

With regards to the findings related to access to care for other non-HIV diseases, this study found evidence to suggest that HIV integrated care resulted in the improvement in access to care for other non-HIV diseases in the study setting. For instance, the analyses of routinely collected service delivery data show that the proportion of out-patient attendance, and inpatient admissions for both adult and paediatric non-HIV patients improved remarkably over time following the introduction of the integrated care approach. This finding corresponds to a similar retrospective cohort study carried out in Rwanda to determine the effects of integration of HIV care. The Rwandan study also

reported increase in access to preventive services for all patients, hospitalisation rates and child health services also increased following the integration. The study also found that curative care and laboratory services did not decline following the integration (Price *et al*, 2009). This further underscore the positive impact of the HIV integrated care on access to non-HIV services. Data from the qualitative component of the study (focus group discussions) revealed that integrated care has helped to increased geographical access to health care in general. One HIV negative patient pointed out during one of the FGDs that integrated care has brought health care close to their community. The participants remarked that “If not for the integration they would have to travel to far distance to access health services, and this may even deter some patients from accessing health care”. In addition to enabling geographic access to health care, integrated care has also increased access to diverse range of services. By offering HIV care and treatment services together with the package of PHC services in a one-stop-shop, it saves patients the time and energy of attending multiple clinics to attend to their multiple problems.

#### **6.4 EFFECT OF THE INTEGRATED CARE ON THE QUALITY OF HIV AND NON-HIV SERVICES**

The reorganisation of health care under the integration programme in KCHC touches on key aspects of the health care system including human resource development, infrastructure, equipment and consumables and health services delivery among others, and one of the desired outcomes of this intervention is improvement in the quality of health care delivered to the recipients. As part of this study a patients’ satisfaction survey was conducted to assess how the integrated care influenced the quality of overall health care service delivery, to both HIV and non-HIV patients. Quality of care was assessed as commonly done in past studies based on reflections

of patients on the services they accessed from the facility using an instrument that measured domains of satisfaction with the HIV integrated care (Ogaji and Okoye 2017; Odeny *et al* 2013; Chimbindi *et al* 2013; Aung *et al* 2015). Findings from the survey appear to be consistent with those of previous studies from African countries, and Vietnam. For instance, the survey revealed that almost all HIV positive and HIV negative patients that received non-HIV services in the clinic were satisfied with the care they received. However, satisfaction slightly varied with domains of the quality of care, although findings between HIV positive patients and HIV negative patients across the domains of satisfaction were overall observed to be similar indicating that the restructuring and reorganisation of health care from the integration has improved efficiency in the delivery of both HIV and non-HIV services in the health facility. This further adds to previous studies' conclusions that integration of HIV care and treatment services improved quality of care received by both HIV positive and negative patients (Odeny *et al*, 2013; Vo *et al*, 2012; Close *et al*, 2019).

Under the waiting time and waiting area domain we observed that, even though the finding was similar between patients that accessed HIV and non-HIV services, a significant proportion of the respondents were not happy with the prolonged waiting time before they were attended to by the health workers. Patient waiting time is the time a patient seeking health care at a health facility has to wait before being attended to by a health worker (Oche and Adamu 2013; Sun *et al* 2017). Patient waiting time is a recognised indicator of quality of health care (Oche and Adamu 2013), and is thus identified as one of the key measures of a responsive health system (Sun *et al*, 2017). Long waiting time is a common cause of concern for patients, and may lead to dissatisfaction or even constitute a barrier to health care. Common causes of long waiting time mentioned in past

studies include increased patient turnover, inadequate number of health workers, jumping of queue by patients and staff among others (Oche and Adamu 2013; Ogaji and Mezie-Okoye 2017). The prolonged waiting time observed in the integrated care setting in this study may not be unconnected with the increased access to the integrated health care facility with resultant increase in patient turnover. In rural Kenya and Zambia (Vo *et al* 2012; Topp *et al* 2010), similar observations were made previously. However, the patients' experiences of less overcrowding and waiting time following the integration in KCHC expressed during focus groups is an indication that the prolonged waiting time reported by the satisfaction survey participants may be occasional. A significant proportion of the focus group participants confirmed that congestion has cleared from the clinics and patients wait less before being attended to with the coming of the integrated care intervention that came along with improved appointment system and adequate staffing.

With regards to the domain assessing quality of services obtained from the integrated care facility, we observed that almost all the HIV positive patients and HIV negative patients were satisfied with their interactions with the health workers and with the seamless services at the different service areas of the integrated care health facility as narrated by the patients during the focus groups. This also buttresses the point that the integrated care interventions like provision of adequate staffing, infrastructure, equipment, drugs and consumables for seamless service provision has gone beyond the HIV programme areas and has touched the entire service points. However, few of the focus group participants recounted bitter experiences at service points with the integrated care, thereby suggesting deterioration of service delivery. The patients claimed that integrated care increased workload, overworked the health workers and has led to lack of commitment among the health workers. It is a well-known fact that workload reduces quality of

health care as it influences patient safety attitude of health workers (Aini, 2014) and considerably favours mental health problems like occupational stress and burnout syndrome among health workers (Robazzi *et al*, 2010).

With respect to satisfaction that integrated care improved access to health care, all patients reported that integrated care improved access to aspects of health care and to a range of affordable and quality drugs. This claim was also re-echoed by the focus groups participants, although few were concerned that the increased patients turn over from the integrated care had resulted in occasional stock out of drugs and consumables. As mentioned earlier, stock out of drugs can result in drug resistance and this may have serious implications on treatment and control of communicable diseases especially HIV disease.

In the satisfaction survey, participants said they were satisfied with the quality of the provisions made under the integrated care intervention for normalising or reducing stigma and discrimination among patients. Only few participants from the qualitative study expressed dissatisfaction on the premise that integrated care increases stigma and discrimination. These few patients who expressed these concerns indicated that some HIV positive patients refused to visit the clinics or sent their spouses to refill their drugs in attempt to avoid being identified among HIV positive patients. These findings are worrisome as they indicate that HIV stigma and discrimination are still somewhat prevalent in the clinic and within the communities, despite the ongoing efforts at containing them. Stigma and discrimination are serious challenges that continue to impact on access and utilisation of HIV services. Despite the benefits of nutritional program to health status of HIV positive patients, people living with HIV and their caregivers in Tigray region of Ethiopia

revealed experiences of stigma and discrimination that were amplified by enrolment to the nutritional program and concerns about unwanted disclosure of positive HIV status (Tesfay *et al*, 2020). Issues related to stigma are discussed further under health and psychosocial impact of integrated care below.

## **6.5 HEALTH AND PSYCHOSOCIAL IMPACT OF HIV INTEGRATED CARE**

Another area of interest in HIV integrated care is the health outcomes of patients following the massive investments in infrastructure, equipment and human resource that came with the integration. One ordinarily expects a linear change in outcomes with the investments, but the literature suggests that clinical and laboratory health outcomes of HIV patients like mortality, treatment default, treatment success including CD4 cell count and viral suppression among others appear unpredictable as findings from the literature are mixed. While higher treatment success and lower mortality and treatment default rates for HIV patients were reported in integrated care health facilities compared to single-service/ referral health facilities in some context, (Jacobson *et al*, 2015, Schultz *et al*, 2013, Chan *et al*, 2010 and Patel *et al*, 2013), other studies reported better outcomes for single service health facilities, indicating that the specialist approach has more favourable outcome (Kaplan *et al*, 2014). The outcomes appear more unpredictable considering the works of Greig *et al* (2012), where similar mortality outcomes for HIV patients in integrated and single-service health facilities were reported, further corroborating that contexts plays a role in determining clinical response. On the other hand, psychosocial health outcomes of HIV positive patients like reduction of stigma, discrimination, privacy and confidentiality of patients, and the satisfaction with health care services are HIV specific outcomes with more potential to a linear change with settings like integration of care, although this is not well studied especially in LMICs

like Nigeria where this study was conducted. According to Green and Smith (2004), medical measures of treatment outcome are prioritised over sociocultural measures like psychological well-being of HIV positive patients. This study examined some of the psychosocial outcomes of HIV following integration of HIV care within PHC. In Nigeria, the qualitative findings of this study show that HIV stigma and discrimination involving HIV/AIDS patients improved remarkably with the integrated care. Goffman (1963) defined stigma as “an undesirable or discrediting attribute that an individual possesses, thus reducing that individual’s status in the eyes of society”. In the context of HIV disease, HIV stigma therefore refers to the irrational attitude towards people living with HIV (PLWH) on account of their health status. Discrimination on the other hand is an aspect of stigma defined as “a form of exclusion, or restriction of expression, marginalisation, or prevention from access to something or services” (Gilmore and Somerville, 1994; UNAIDS, 2000). Psychological distress, such as shame, depression, anxiety, suicidal ideation and quality of life have been cited among the detrimental effects of stigma and discrimination on the life of PLWH (Tran *et al*, 2019). Furthermore, HIV-related stigma has been associated with lower access to HIV treatment, low utilisation of HIV care services, poorer adherence to antiretroviral therapy (ART), and thus poorer treatment outcomes (Tran *et al*, 2019). The reduction of stigma and discrimination observed in this study may be a result of how well the privacy and confidentiality of patients is being maintained in the integrated care facility. This is in addition to the favourable and supportive interactions with the health workers and between patients. Together, this has improved access to health care facilities and utilisation of services in the integrated care setting. A similar study from rural Kenya reported reduction of HIV stigma following integration of HIV services with PHC. The subjects reported higher levels of agreement that people with HIV were treated the same as

others, providers maintain privacy and confidentiality, and that they were less likely to agree that they were not comfortable receiving care at the facility (Odeny *et al*, 2013).

Another psychosocial outcome of integrated care experienced in this study is the satisfaction patients derived from the seamless and multiple services obtained from the one-stop-shop provided by the integrated care. The qualitative component of this Ph.D study explored that satisfaction with integrated care in the health facility increased wellness, confidence, happiness, and overall psychological health. Majority of the previous studies on patients' satisfaction reflect on quality of services from patients' perspective and therefore focus on process and preferred options of care (Vo *et al*, 2012; Odeny *et al*, 2013). Although the literature seems not rich on the effect of the HIV integrated care on the psychological health of patients, Afe *et al* (2016) showed that patients' satisfaction with health services is associated with the quality of life of patients. In this Ph.D study, it was observed during focus group interviews that patients were always happy, cheerful and even sent commendation letters to health workers in the Kumbotso health facility. This thus aligned with what Afe and colleagues reported in Lagos, Nigeria. Perhaps the integrated care has provided the HIV positive patients the opportunity to mingle freely with HIV negative patients, thereby reducing HIV stigma and discrimination and the consequences that follow. Satisfaction with integrated care nurtures positive feelings and active engagement of HIV positive patients within the hospital setting and, in the community, and instils in them a sense of purpose in HIV positive psychology among the patients (Harvard Health Publishing, 2014). Integrated care has therefore brought happiness, satisfaction and positive psychology among the HIV positive patients.



## **6.6 FACILITATORS AND BARRIERS IN INTEGRATION OF HIV SERVICES INTO PHC**

As mentioned earlier, integration of HIV and PHC services is a form of clinical or service integration usually conceptualised at micro/ the level of primary process of care delivery to individual patients (Delnoij *et al*, 2002). Along the line of implementation of this form of integration, barriers may be encountered which need to be overcome in order to achieve success in the implementation. Within the existing literature, “the determinants of healthcare practice that may prevent or enable accessibility, acceptability, uptake, equitable coverage, quality, effectiveness and efficiency of interventions and services have been defined as barriers and facilitators respectively (WHO, 2016b; Mc Goldrick 2016)”. The factors that could facilitate or negatively impacts on the success of the integrated care, identified in our study, are discussed below:

### **6.6.1 Facilitators of integrating HIV and PHC services**

The factors that could facilitate or enable integration of HIV within PHC services, especially in resource constraint settings, are not widely explored. As such, as part of this Ph.D study, we conducted qualitative interviews involving health care managers, health professionals and patients to understand what could help drive the success of integration of HIV into PHC services in Nigerian context. Three key potential enabling factors were identified: i) facilitators related to upgrading infrastructure, facility and services; ii) those related to PHC facility management system, and iii) those related to health workers. All participants who took part in the interviews agreed that a robust and appropriate infrastructure to house the staffing, equipment, drugs and other facilities needed to provide seamless health care in a one-stop shop fashion would enhance

integration. In this regard, upgrading the existing infrastructure at PHC and improving the provision of basic HIV services like counselling and testing for HIV, nutrition support, prevention of opportunistic infections and PMTCT of HIV among others; and intensified demand creation activities for increased awareness and patronage of HIV services at PHC were the factors they proffered that would favour full integration of HIV services within the PHC system. This is in addition to developing context-specific policies or guidelines to define relevant services of PHC for inclusion in the integration. Inadequate or inappropriate infrastructure has repeatedly been reported as a barrier to effective integration (Topp *et al*, 2013; Uebel *et al*, 2013).

Our study also found that enhancing PHC facility management system would effectively facilitate full integration of HIV and PHC services. Factors identified include planning for the integration with the necessary stakeholders, and developing an effective framework for monitoring and evaluation of the integration. Involving stakeholders will ensure ownership and sustainability of the programme, while an effective monitoring and evaluation framework will provide basis for future planning and ensure that planned programmes are implemented effectively.

With regards to the findings relating to the health worker to enhance integration of HIV to PHC services, participants indicated that the introduction of integration agenda into the curriculum of pre-service health training institutions, implementing task shifting policy, capacity building, and providing incentive and other forms of motivation for health workers are crucial. Introducing integration agenda into the curriculum of pre-service health training institutions is a formidable and innovative strategy for educating and shaping the approach of young health workers to managing health problems under one roof ab-initio from their formative stages. The consideration

of task shifting among factors that facilitate integration is consistent with findings from past studies (Uebel *et al*, 2013; Ivers *et al*, 2011; Johnson *et al*, 2003). Task shifting is the process of moving specific tasks, where appropriate, to lower cadre health workers with shorter training and fewer qualifications (WHO, 2008). In KCHC, community health extension workers (CHEWS) and community health officers (CHOs) are trained to administer antiretroviral drugs refill, counselling and health education sessions within health facilities and surrounding communities, and also to mentor HIV positive mothers. The integrated care intervention, according to interviews participants, has improved HIV awareness, reduces stigma and overall, linked the community to improved health care access.

Capacity building through skills enhancement was also frequently highlighted as a key health worker related factor facilitating the integration process. According to interview participants, prioritising and developing health workers' capacity through in-service training for existing health care workers will enhance success of the integration of HIV and PHC services. Capacity building has been defined by the WHO as “the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion...[with] actions to improve health at three levels: the advancement of knowledge and skills among practitioners; the expansion of support and infrastructure for health promotion in organisations, and; the development of cohesiveness and partnerships for health in communities” (Smith, Tang and Nutbeam, 2006). Capacity building interventions include among others, virtual and in-person training sessions, online learning, skills-based courses, technical assistance and in-depth consultations (Caron and Tutko, 2009).

The effectiveness of integrated care intervention is not unconnected to the capacity of the health workers that would implement the activities for the integration. However, many of the health workers involved do not have the requisite training and skills needed to implement the intervention successfully especially in low resource settings. This makes capacity building to stand prominent among critical factors that would favour the integrated care programme success. One systematic review on the effectiveness of capacity building interventions relevant to public health concluded that capacity building enhances outcomes related to public health (DeCorby-Watson *et al*, 2018).

### **6.6.2 Barriers to integrating HIV and PHC services**

The interviews with the health managers in Kano revealed that almost all the barriers hindering successful integration of the HIV and PHC services in Kano are resource related, with inadequate funding featuring among the most commonly mentioned. Lack or inadequate funding is a common problem bedevilling the health sector in Nigeria and many other resource constrained countries, and is the root of all problems. Funding is necessary to provide the required infrastructure, equipment, consumables, and to hire or organise training in order to equip health care workers with the requisite knowledge and skills needed to implement health interventions, including the integrated care intervention. Over the years, government funding of the health sector in Nigeria has deteriorated. Despite the dwindling global resources, the total national budget in Nigeria increased from 4695.19 billion in 2014 to 10594.36 billion in 2020. However, the percentage allocation to health consistently decreased from 7.23% in 2014 to 4.38% in 2020 (Adebisi *et al*, 2020). These allocations have been abysmally lower than the 15% pledged by the African Heads of States during the April 2001 Abuja declaration (WHO, 2011). The inadequate funding has severe implications for achieving universal health coverage in Nigeria including the integrated

care programme. For instance, our study revealed that as a result of poor funding, many PHC facilities in Nigeria lack the basic infrastructure and amenities to support integration of the HIV/AIDS services. Many of them lack electricity and/ or potable water supply that is necessary to maintain basic hygiene and infection control. Although other researchers reported physical infrastructure as a barrier to effective integration services, the reports emphasised availability of inappropriate or multiple clinic space for different services thereby causing duplication of functions (Topp *et al*, 2013; Uebel *et al*, 2013).

This study also observed that inadequate space at PHC results in lack of visual and auditory privacy, when two or more patients are openly consulted within the same consulting room. This infringes on their personal privacy and confidentiality and constitute a barrier to effective integration. This finding is consistent with that of a report from a similar study from South Africa where personal barriers including fear of finding out one's HIV test result or what people may say, shyness or embarrassment, avoidance of divulging personal information to health workers were among major barriers of HCT uptake (Mohlabane *et al* 2016). Although privacy does not have a universally accepted definition, it may be defined as “restriction put by an individual on access to his/ her bodily and mental integrity” (Demirsoy and Kirimlioglu, 2016). Right to privacy therefore provides individuals with the right to any information related to them and to control access to such information (Demirsoy and Kirimlioglu, 2016). Privacy also implies that health workers maintain private information about the health of their patients (Braunack-Mayer, 2003). The primary purpose for safeguarding the privacy of individuals is to protect the interest of individuals. Lack of privacy or mishandling of patient information may result in misinformation, embarrassment and stigmatisation especially among HIV patients.

Another barrier to effective integration of HIV services within PHC mentioned by participants, which may not be unconnected with poor or inadequate funding is inadequate facility and equipment for counselling and testing and other diagnostics in the health facility. This finding is consistent with that of a systematic review where lack of appropriate facility that will support HIV counselling, materials and properly maintained equipment for diagnosis were identified as barriers to effective integration of HIV and chronic disease services (Watt *et al*, 2017). Appropriate facility for seamless service provision in the presence of adequate materials and equipment are key to achieving the objectives of integrated care of improving outcomes and quality of health care.

Additional barrier against effective integration of HIV and PHC services highlighted by participants is inadequate staffing as this is a national problem in the Nigerian PHC system. Human resource for health is perhaps the most essential building block of the health system as they coordinate leadership and governance activities, and utilise the available infrastructure facilities and consumables to provide the needed health services. Adequate numbers of the health care workers with the requisite knowledge and skills to operationalise the diverse integrated care activities is key to the success of the programme. Inadequate staffing has featured as a barrier to effective HIV integrated care programmes in the past making duty allocation difficult and affecting morale of staff (Topp *et al* 2013), posed challenges with shifting of clinical tasks (Uebel *et al* 2013), and resulting in increased workload and burnout of the few health workers (Topp *et al* 2013; Uebel *et al*, 2013). Finally, knowledge gap is another barrier mentioned by participants for ineffective integration of HIV and PHC services. The belief among PHC workers that HIV disease is special and requires specialised doctors to manage has been a challenge. This has necessitated the development of task shifting policies at national and state levels, and training and deployment

of lower cadre staff to administer specific tasks like HIV counselling, testing and ARV refill among others.

## **6.7 KEY LESSONS LEARNED/ WHY THE INTEGRATED CARE INTERVENTION WORKED IN NIGERIA**

This study observed that integrated care has improved access to health services, outcomes of health care and quality of both HIV and non-HIV services rendered in the integrated care health facility. These outcomes were most likely achieved courtesy of the management and infrastructural changes that came along with the integrated care programme. The findings from our focus groups and individual interviews with the health workers and patients in this study attest to the fact that the PEPFAR initiative through the Institute of Human Virology, Nigeria (IHV-N) supported the SACA and the health facility in the implementation of the integrated care programme. The assistance included facility and structural upgrades, training of human resource for health to be able to respond to the needs of integrated care programme, and strengthening of programme support functions like procurement and supply management systems for antiretroviral drugs and HIV diagnostic consumables, laboratory networking; and monitoring and evaluation systems. This is notwithstanding the spill over effect of the intervention on non-HIV services as experienced in other HIV programmes in Nigeria (Chima and Homedes, 2015). Previous studies showed that GHIs have impacted positively on the HIV programme by enhancing availability of, and access to HIV services, improved quality of services, and strengthening of health information system (Banigbe *et al*, 2019; El-Sadr *et al*, 2012, Chima and Homedes, 2015; Biesma *et al*, 2009; Abraham *et al*, 2012). However, researchers argue that HIV donor funding compromises the broader health system of beneficiary countries (Banigbe *et al*, 2019; El-Sadr *et al*, 2012; Chima and Homedes, 2015;

Zakumumpa *et al*, 2021). It increases dependency on foreign aid and lack of sustainability of services/ programmes as exemplified by the case of the national treatment programme for HIV in Nigeria piloted in 2002, where the national government relinquished its responsibility of funding with the coming of the GHIs into Nigeria (Chima and Homedes, 2015). It is a well-known fact that funding determines the type, efficiency and overall quality of service delivery. Furthermore, funding is a measure of government's commitment to a programme, and one of the key metrics of project sustainability (Morfaw, 2014). Over dependence on donor support breeds lack of sustainability of programmes as reported in the case of the health facilities in Nigeria and Uganda where staff shortages and changes in range and quality of core HIV services were observed following a cut/ loss of PEPFAR support (Banigbe *et*, 2019; Zakumumpa *et al*, 2021).

Other ways reported in which the GHI support may negatively affect the health systems of benefitting countries include distracting government from national priorities (Biesma *et al*, 2009; World Bank, 2004; Brugha *et al*, 2004; McKinsey, 2005), establishing parallel coordination and planning structures like the CCM of the Global Fund to manage its three-disease focus leading to duplication in planning for HIV/AIDS control, between CCMs and national AIDS councils (Biesma *et al*, 2009), establishing parallel systems and processes of M&E thereby bypassing country's own system and the 'Three Ones' principle of a single M&E system (McKinsey 2005), establishing parallel systems for procurement and supply as in the case of supply chain management system that PEPFAR uses to procure HIV commodities in Nigeria (Chima and Homedes, 2015), maldistribution problem of health workers caused by transferring health workers to desired health facilities in order to meet the minimum requirement of the development partner enrolment; and increased workload on the few health workers in public facilities consequent upon



HIV treatment expansion (Chima and Homedes, 2015). It can be observed from the foregoing that most of the challenges highlighted with donor support strategies inadvertently favour the fragmentation/ verticalisation of the health system, and this leads to severe consequences including further weakening of the fragile health systems. Fragmented health systems are less efficient, less effective and widen disparity in access to health services within a country (Stange, 2009). The achievement of Universal Health Coverage (UHC) target of the sustainable Development Goals (SDGs) “requires that all individuals and communities receive the health service they need without suffering financial hardship” (WHO, 2021). This is only possible with a strong and quality people-centred integrated care (WHO, 2021). The COVID-19 pandemic dramatically demonstrated the invaluable role of a strong and integrated health system.

## **6.8 STRENGTHS AND LIMITATIONS OF THE MIXED METHODS STUDY**

### **6.8.1 Strengths**

Mixed methods research is now commonly used in health sciences to benefit from its numerous strengths (Regnault *et al*, (2018). One of its biggest strengths is the fact that it harnesses the strengths of both quantitative and qualitative approaches. The methodological mix of the mixed methods study provides it with the opportunity to combine the potential of generating generalisable findings of the quantitative approach (if based on samples that are both large enough and representative), and the data credibility of the qualitative methods (from the enhanced context sensitivity) to improve scientific rigor (Cojocaru, 2009, Tariq and Woodman, 2010). By combining the two methods, the strength of one approach compensates for the weakness of the other. Secondly, mixed method studies capitalise on data that reflect individual lived experiences by giving a voice to study participants, considering results from patient-perspective and thereby

focusing on the needs and priorities of the patients (Regnault *et al*, 2018). Thirdly, the mixed methods study has the ability to provide a more comprehensive understanding of the research problem than using any one of the quantitative or qualitative approach alone (Warfa, 2016; Tariq and Woodman, 2010). Finally, the mixed methods study helps to explain findings better through triangulation and/ or explain causality (Regnault *et al*, (2018).

### **6.8.2 Study limitations**

Although the use of multiple methods in the mixed methods study is considered promising and a more effective way of capturing human experiences compared to a single quantitative or qualitative approach, the design is faced with some challenges. First, mixed methods studies are costly, time consuming and require methodological expertise in multiple areas to be implemented. The logistics for collection, managing and analysing two different types of data has huge cost implication and is very demanding (Halcomb and Andrew, 2009), and this has left a sense of uneasiness and reluctance in terms of embracing mixed methods fully (Kroll and Morris, 2009). Secondly, concerns have been raised around the methodology and quality of mixed methods research. Most of the challenges encountered in mixing methods are caused by the need to ensure scientific rigor in evaluation (Cojocaru, 2009). The concerns are as follows: 1) Collecting large volumes of data will likely produce numerous outputs from a single project thereby making it difficult to manage to produce quality report (Halcomb, 2019). 2) The development of quality criteria for mixed methods studies has been a challenge (De Lisle, 2011). Mixed methods research should not be considered inherently valid (Bazeley, 2004), as they are faced with validity issues like difficulty of representing lived experience through text and numbers (representation), trustworthiness of inferences (legitimation), and integration to the multiplicative and additive

threats that result from combining methods (Onwuegbuzie and Johnson (2006). 3) Another challenge of the mixed methods study design is in the mixing of the quantitative and qualitative elements where studies most often fail to account for how the mixing was achieved. (Halcomb, 2019). 4) Analysis and presentation of findings of the large volume of data from mixed methods studies present another challenge. Alternatives in the literature for presenting such data include separate presentations of the two findings with references linking the two papers. This is best fitted for situations where findings of one study will be used to inform the development of the other. However, the potential advantages of having both qualitative and quantitative results in the same paper is lost where results are presented separately (Halcomb, 2019). Another approach for presenting mixed methods is to consider similar themes of the quantitative and qualitative to provide detailed exploration of the issue. However, the volume of findings from the study may be challenging to produce a coherent paper that fits within limited journal word limits (Halcomb, 2019).

An Interrupted Time Series design, a strong quasi-experimental design, was used to evaluate the longitudinal effect of the integrated care intervention using regression modelling. Although the Randomised Control Trial (RCT) is acknowledged as the ideal design for evaluating the effect of an intervention, not all interventions can be assessed with an RCT (Kontopantelis *et al*, 2015). Where an intervention had already been implemented and without randomisation or control group, an ITS design is considered appropriate and strong for estimating its effectiveness (Bernal, Cummins and Gasparrini, 2017; Penfold and Zhang, 2013). ITS has been applied in evaluating the impact of several public health interventions like impact of new vaccines (Lau *et al*, 2015), the evaluation of health effects of speed zones on road injuries (Grundy *et al*, 2009), changes to

paracetamol packaging (Hawton *et al*, 2013), and cycle helmet legislation (Dennis *et al*, 2013) among others.

Although the use of ITS design in this study does not allow a conclusive statement about the effect of the intervention, the effects would be more convincing when combined with the strength of the mixed-methods design that is used for the data collection in this study. This is more so as the mixed-methods study has the potential of generating generalisable findings of the quantitative approach and the data credibility of the qualitative methods to improve scientific rigor (Cojocaru, 2009, Tariq and Woodman, 2010). By combining the two methods, the strength of one approach compensates for the weakness of the other. Furthermore, the use of the mixed-methods design in this study is a planned way of increasing the validity of this study as they give a more comprehensive picture of the phenomenon under study and improve validity of theoretical propositions much more than if only one method is used (Webb *et al.*, 1966).

## **6.9 RESEARCHER'S POSITIONALITY AND REFLEXIVITY**

According to Coghlan and Brydon-Miller (2014), positionality refers to the stance or positioning of the researcher in relation to the social and political context of the study, the community, the organisation or the participant group. In other words, it is a description of how the researchers' person or being influence the conduct of the research. On the other hand, the act of examining the research process in the context of the researcher's positionality can be described, at least in part, as reflexivity. Reflexivity involves a self-scrutiny on the part of the researcher; a self-conscious awareness of the relationship between the researcher and an "other" (Chiseri-Stater, 1996; Pillow, 2003).

My experiences with deterioration of health services and significant attrition of health manpower in Nigeria from the general health service to HIV programmes during the boom of vertical antiretroviral programmes for HIV care in Nigeria around year 2000 to 2006 re-awakened with the recent decentralisation of HIV care and treatment from tertiary and secondary health facilities and integrating them within services at PHC level, the closest level of health care to the underserved population. This ultimately led to my interest in conducting a qualitative research to learn more about the experiences of health workers on the impact of such intervention on other non-HIV PHC services. Through conversations with patients and colleagues, I heard stories around this integrated care that needed to be investigated.

Throughout my preparations for this study, from the formulation of the initial research questions to the drafting of the data collection tools and protocol, my positionality as a physician studying perspectives of fellow health workers and my patients remained at the forefront of my mind. I am a male clinician with Hausa ethnic background, working under department of community medicine and invariably attend to patients in KCHC. It is therefore possible that my position as a doctor in AKTH and KCHC, and as a staff of the supervising department to KCHC might influence the responses of the health workers and patients that participated in the survey and qualitative interviews, in a way similar to the social desirability bias in quantitative studies. In order to reduce this however, participants were made to understand ab-initio the purpose of the study, and their roles in the study. They were also made to understand why they were chosen for the study, and assured that their decision to participate is totally voluntary, and their lack of willingness to participate either wholly or partially will have no negative effects or repercussions on them.

The male supremacy in northern Nigeria where this study was conducted is commonplace especially in the rural areas where KCHC is located. My positionality as a male interviewer conducting the key informant interviews and focus groups would have intimidated and influenced responses from the female participants in this study. In order to reduce or remove this influence, the researchers were introduced to the participants by the female HIV support group members, as health workers seeking to understand their problems in order to address them. Traditionally female patients open up to male health workers in the hospital settings. Furthermore, the women were also made to understand why they were chosen for the study, and assured that their decision to participate is totally voluntary, and their lack of willingness to participate either wholly or partially will have no negative effects or repercussions on them.

Another issue of concern is the sensitivity of HIV status and the stigma attached to it. Many HIV positive patients are not comfortable divulging information around HIV disease and their status especially to non- health workers, and as such might end up hoarding useful information. My positionality as health worker became an advantage in this regard, and participants were generally at ease to freely discuss issues around HIV disease and its care and treatment.

## **CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS**

This section recaps the research questions and the aim and objectives of this mixed methods Ph.D study. It also summarises the potential contributions of this thesis to knowledge, and discusses the implications of the findings for policy, practice and future research.

The research was designed to address two important questions:

1. What has worked following the implementation of an integrated HIV care in Nigeria?
2. Why has the integrated HIV care service worked or did not work within the Nigerian context?

The aim was to evaluate the performance of the integrated HIV care service delivered as part of routine PHC service in Nigeria, and to identify what could be addressed to facilitate success or improve effectiveness. The barriers to successful integration to achieve impact were also investigated. The following specific objectives were studied:

1. To assess the effect of the integrated HIV care on uptake/utilisation of HIV care and treatment services: counselling and testing (HCT), and anti-retroviral therapy services provided at the KCHC.
2. To assess the effect of the integrated HIV care on uptake /utilisation of non-HIV services: in- and outpatient services provided to both HIV and non-HIV patients at the KCHC.
3. To identify and describe the barriers to, and potential enablers of the uptake of the integrated HIV care service.
4. From the perspectives of the service-users, assess their satisfaction and perceived stigma associated with the integrated care.

5. To explore the views/ perceptions and experiences of health service providers (health workers and health manager) and service users (patients) with respect to the integrated HIV care delivery.

The study found that integration of HIV care and treatment services within PHC improved access to both HIV and non- HIV services as evident by the increase in the uptake of both HIV and non-HIV services following the implementation of the integrated care. Similarly, the integration improved psychosocial health outcomes of the patients, and the quality of services they received from the health facility. The study also found that inadequate funding, staffing, infrastructure and facility; and knowledge gap hindered the provision of integrated care, whereas the factors that would enable the integrated care were related to upgrading infrastructure, facility and services; to PHC facility management; and to health workers.

## **7.1 POTENTIAL CONTRIBUTIONS OF THE THESIS**

This study has added to the literature on the integrated care for HIV /AIDS in resource limited PHC setting. Although the wider literature demonstrates that integrated care improves access to health care more generally, the impact of the integrated care on access to, and uptake of HIV, and non-HIV services has not been widely investigated. As part of this Ph.D, a scoping review was undertaken to understand the scope, magnitude and extent of the literature in the context of LMICs, addressing integrated care issues. The review revealed that although evaluation studies have examined the effectiveness of integrated care services delivered to treat and care for people with HIV/AIDS, very limited studies have addressed impact of integrated care on HIV and non-HIV services' access and outcomes. In Nigeria we found only one study that examined patients'



experiences with decentralised HIV treatment and care (Kolawole *et al*, 2017). The present study addresses this knowledge gap and adds to the existing and growing body of literature on this topic in Nigeria. Furthermore, many of the studies reviewed were quantitative studies, and the addition of a qualitative component in this study strengthened the evidence base. Specifically, this study added significant contributions to literature on the following:

### **Impact of integrating HIV and PHC services on access to non-HIV services**

This study observed that integration of HIV care and treatment services into PHC increased access to multiple non-HIV services, a finding which has not been previously explored. Time series analysis of the implementation data demonstrated that uptake of all components of maternal health services comprising antenatal care (ANC), delivery and family planning services significantly improved over time with the integration. Similarly, uptake of immunisation services at PHC improved concurrently. In the same vein, out-patient clinic attendance and in-patient admissions on non-HIV cases for both adult and paediatric patients increased following the integration of HIV and PHC services. Hitherto, our scoping review observed that only one study from LMICs (Price *et al*, 2009) reported on the impact of integrating HIV and PHC services on access to non-HIV services. Thus, our finding has strengthened the evidence based related to this aspect of integrated care.

### **Impact of integrating HIV and PHC services on psychosocial and health outcomes of HIV patients**

Our scoping review showed that psychosocial and health outcomes of HIV are not well studied in LMICs like Nigeria as medical measures of treatment outcome are prioritised over sociocultural measures like psychological well-being of HIV positive patients (Green and Smith, 2004). Thus,

researchers working on health outcomes of integrated care most often focused on clinical and laboratory outcomes like morbidity, mortality, disability among others. As highlighted earlier, these outcomes are multifactorial and are thus not reliable predictors of the integrated care intervention. The various improvements expected from integrated care interventions would have a more direct effect on the psychological health of the patients. Thus, this study introduced the innovation of examining psychosocial outcomes of HIV following integration of HIV care within PHC. We observed that HIV stigma and discrimination involving HIV/AIDS patients improved remarkably with the integrated care, and patients derive satisfaction from the seamless and multiple services obtained from the one-stop-shop provided by the integrated care. Although many researchers used patients' satisfaction to study quality of services from patients' perspective, it was used in this study to, in addition assess the general psychological health of the patients. According to Priebe and Miglietta (2019) patients with more disturbing symptoms and with lower subjective quality of life tend to express less satisfaction with their health care. This study in addition observed that satisfaction with integrated care in the health facility increased wellness, confidence, happiness, and overall psychological health.

### **Quality of health care in the integrated care facility**

One of the objectives of this study was to quantitatively assess the quality of health care rendered in the integrated care facility using a reflection of the HIV positive and negative patients' level of satisfaction with the relevant components of the health care process encountered. This is in addition to our innovation of the qualitative exploration of participants' experiences with the quality of the different aspects of care they received from the integrated care health facility. Our

scoping review revealed paucity of studies that explored quality of health care services using the qualitative approach.

### **Facilitators of integrated care**

Although the literature is rich on factors that militate against integrated care, our review found that it is deficient on factors that facilitate or enable integration of HIV and PHC services especially in resource constraint settings. Very few of the studies we reviewed addressed the issues of facilitators or enablers of integration of HIV and PHC services from providers' and users' perspective. In this study we qualitatively explored responses of health care managers, health care workers and patients on factors that enable the integration of HIV and PHC services (facilitators). The exploration paved way for novel, and unbiased responses on enablers of integration of HIV and PHC services from the participants' perspectives. It contributed new ideas on factors that would improve infrastructure facility and services; PHC facility management systems, and PHC human resource in order to achieve smooth and full integration of HIV and PHC services.

## **7.2 IMPLICATIONS OF THE FINDINGS FOR POLICY AND PRACTICE**

Against the fear that integration of HIV and PHC services will result in negative consequences based on past experiences with the preponderance of vertical HIV programmes on the health system in Nigeria in the early 90's, this study found that the integration improved access to multiple non-HIV PHC services. This implies that the reorganisation and restructuring of health manpower, infrastructure and services following the integration has not only affected the HIV services but the entire PHC system. Although the evidence points that integrated care intervention increases access to entire health services, it may also result in deleterious consequences if not

properly managed. Few participants from this study reported that the increased access from integrated care has resulted in overcrowding in the clinics, stock out of drugs and other supplies as well as shortage and burnout of staff from excessive workload. This implies that poorly managed integrated care programme may affect desired quality negatively. This information is important ingredient for policy makers and programmers, in the planning, monitoring as well as evaluation of the integrated care programme.

Another finding that is useful to policy and practice related to HIV integrated care is the innovation of examining the psychosocial outcomes of HIV patients. These outcomes are useful for monitoring the mental health and overall psychological health of the HIV patients. Studies have shown that psychosocial factors like stigma, discrimination, lack of support, drug abuse among others can contribute to mental health problems for HIV patients (Nanni *et al*, 2015; Lee, Koshan and Sikkema, 2002), which may in turn negatively affect their adherence to antiretroviral treatment (Gonzalez *et al* 2011). Identifying the psychosocial factors early will present programme managers and clinicians with the opportunity to address them before they interfere with the outcomes of patient management.

Another contribution of this study to empirical literature that is useful to policy and practice is the use of qualitative approach for exploring participants' experiences with quality of the integrated HIV and PHC services. This approach is helpful to policy makers and programmers in understanding what PHC workers and patients perceive as quality, how it can be improved and why it deteriorates. This information is invaluable in allowing informed decision making in the planning, monitoring and evaluation of the integrated care programme.

Furthermore, this study contributed novel ideas on factors that would support complete integration of HIV and PHC services. Findings like “planning for the integration, ensuring an effective framework for monitoring and evaluation, implementing the minimum service package for PHC to define services that are being integrated; and introducing the integration agenda within the curriculum of pre-service health training institutions’ are original and scarce contributions from the managers of the integration programme, courtesy of the experiential nature of the qualitative approach. These findings are invaluable to policy makers and programmers in the planning and successful implementation of the integrated care programme.

Overall, the findings from this study would be useful to practitioners and policy makers in Nigeria and the rest of the African continent to understand what needs to be addressed to maximise impact of this potentially useful strategy/approach to tackle the HIV pandemic.

### **7.3 IMPLICATIONS OF THE FINDINGS OF THE Ph.D FOR FUTURE RESEARCH**

The strength of this study is the use of a mixed methods approach to collect both quantitative and qualitative data, which complemented each other well to provide a holistic picture of what worked following the integration, why the integration and what could be done to improve. However, this study observed that there are still opportunities for further research to refine and elaborate on the novel findings.

**First**, a systematic review incorporating a meta-analysis of existing literature could help to understand the overall effectiveness of integrated HIV care, and the strength/quality of the evidence. **Secondly**, while this study presented novel ideas on factors/ activities that once

implemented would enable full integration of HIV and PHC services in order to improve outcomes, very little can be said about the effectiveness of such interventions. This study has, thus, paved a way for further research to evaluate the effectiveness of the individual and/or combined factors in promoting the integrated HIV care. **Thirdly**, researchers should, in addition, study the acceptance, modalities and levels for introduction of integration into the curriculum of pre-service health training institutions. The course content of the curriculum should also be explored and tested. **Fourthly**, this study reported the perspectives of health workers and patients on the quality of services following integration of HIV and PHC. Although there could be a difference in the way health workers and patient perceive quality from integrated care, and how it can be improved or why it deteriorates because of their difference in background, our scoping review shows dearth of studies that explain this difference. There is therefore need for further studies to refine and/or elaborate on these new findings. This study also reported improved access to multiple non-HIV services with the integrated care intervention. Bearing in mind the fact that this intervention is of no cost to the patients at the moment, there is need for researchers to study the economic implications of the increased access in order to plan for the sustainability of the programme in this low resource settings. Finally, how increased access to services relates to the quality of services rendered in this low resource setting is another area of concern for researchers. Economic modelling could also be undertaken to estimates the cost-benefit of integrated HIV care in low-resource setting.

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## APPENDICES

### Appendix 1: The search strategy used for the scoping review

- 1 (integrat\* or "integrated care" or "coordinated care" or coordinat\* or "collaborative care" or collaborat\* or "combined care" or "amalgamated care" or "assimilated care" or "added care")
- 2 (HIV or aids or "human immune deficiency virus" or "human immuno deficiency virus")
- 3 (PHC or "primary health care" or "primary care" or "delivery of health care" or decentrali\*)
- 4 (effect or result or consequence or outcome or cause or product or achievement or upshot or evaluat\* or impact)
- 5 1 and 2 and 3 and 4

## Appendix 2: Ethics approval letter from ScHARR



Downloaded: 19/07/2018  
Approved: 19/07/2018

Muhammad Umar  
Registration number: 140257313  
School of Health and Related Research  
Programme: PhD Public Health

Dear Muhammad

**PROJECT TITLE:** HIV/AIDS Treatment and Care Integration into Primary Health Care Services in Kano, Nigeria - The Case of Kumbotso Comprehensive Health Centre (KCHC)  
**APPLICATION:** Reference Number 020403

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 19/07/2018 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 020403 (dated 12/07/2018).
- Participant information sheet 1045048 version 2 (04/07/2018).
- Participant information sheet 1045046 version 2 (04/07/2018).
- Participant information sheet 1045047 version 2 (04/07/2018).
- Participant consent form 1049421 version 1 (09/07/2018).
- Participant consent form 1045049 version 4 (04/07/2018).
- Participant consent form 1049423 version 1 (09/07/2018).
- Participant consent form 1049422 version 1 (09/07/2018).

If during the course of the project you need to [deviate significantly from the above-approved documentation](#) please inform me since written approval will be required.

Yours sincerely

Jennifer Burr  
Ethics Administrator  
School of Health and Related Research

### Appendix 3: Ethics approval letter from AKTH



# AMINU KANO TEACHING HOSPITAL

P. M. B. 3452, ZARIA ROAD, KANO.

(☎:07068297399)www.akth.info/www.akth.gov.ng, E-mail: enquiries@akth.info/akthkano@yahoo.com

**CHIEF MEDICAL DIRECTOR**  
PROF. AMINU ZAKARI MOHAMMED,  
MBBS, FMCPath

**CHAIRMAN M.A.C**  
Dr. ABDURRAHMAN ABBA SHESHE  
MBBS, FMCS, FICS

**DIRECTOR OF ADMINISTRATION**  
ADAMU HUSSAINI ALIYU

**NHREC/21/08/2008/AKTH/EC/2118**

**AKTH/MAC/SUB/12A/P-3/VI/2218**

**1<sup>st</sup> November, 2017**

Prof. Muhammad Lawan Umar  
Department of Community Medicine  
AKTH, Kano.

Ufs:

The Head of Department  
Community Medicine  
AKTH, Kano.

## **ETHICS APPROVAL**

Further to your application in respect of your research proposal titled "HIV Care and Treatment Integration into Primary Health Care Services in Kano, Nigeria", The Committee reviewed the proposal and noted same as a mixed-method study.

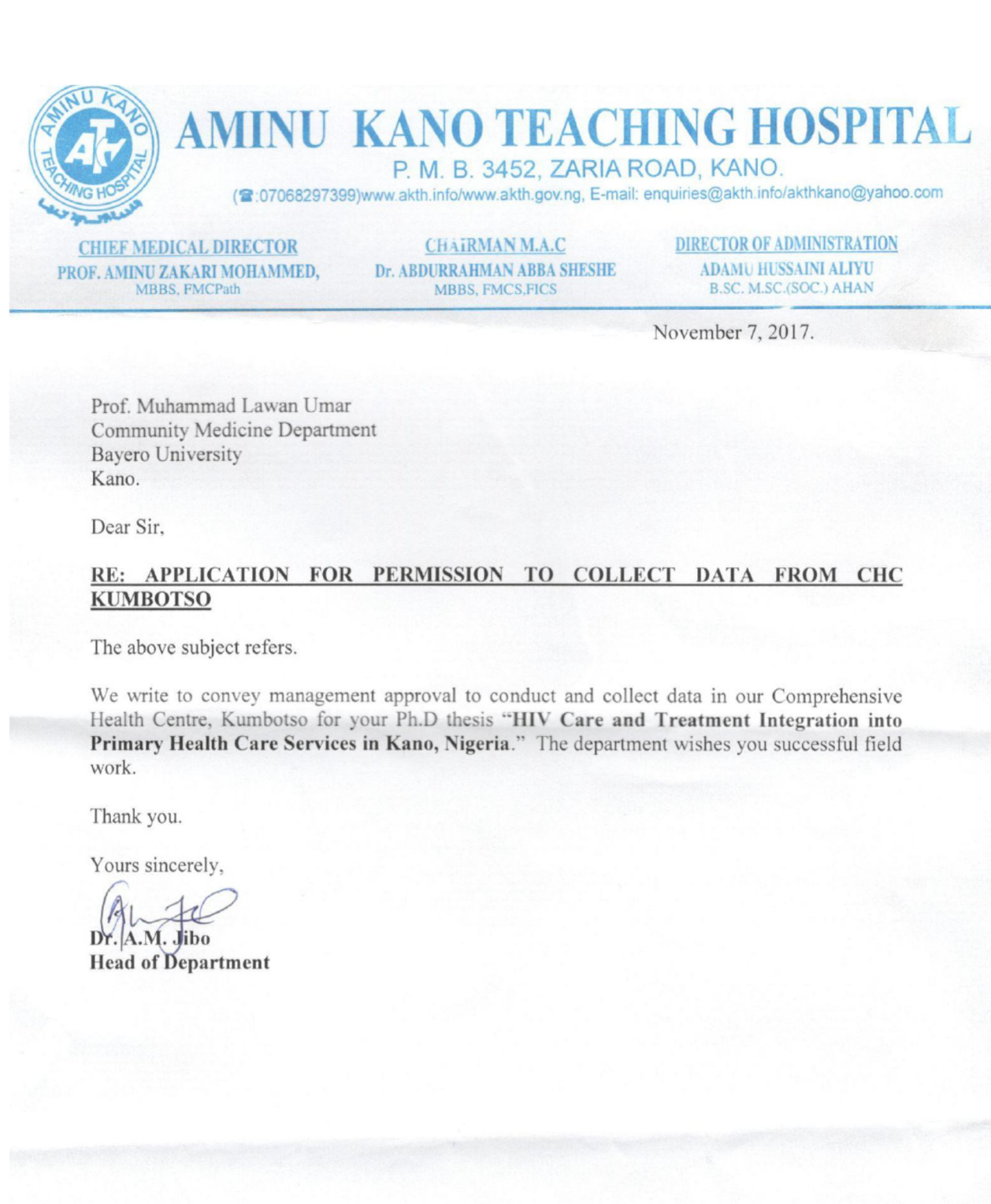
In view of the above, Ethics approval is hereby granted to conduct the research.

However, the approval is subject to periodic reporting of the progress of the study and its completion to the Research Ethics Committee.

Regards,

**Abubakar S. Mahmud**  
*Secretary, Research Ethics Committee*  
**For: Chairman**

**Appendix 4: Permission from The Chair of Community Medicine, AKTH for data collection in KCHC**







b. Aim

To assess the effect of the integration of HIV care and treatment services with PHC services in KCHC.

c. Duration of the project should be given here.

Two (2) Years

**4. Why have I been chosen?**

You have been chosen in your capacity as a member of this community who has attended Kumbotso CHC and has a lot of information and support to give to this research on impact of integrated health care on service delivery in Kumbotso CHC.

**5. Do I have to take part?**

Your participation in this research is very important because of the useful information and support that you can provide as officers coordinating the services. However your decision to participate is totally voluntary, that is, you are under no compulsion to participate and your lack of willingness to participate either wholly or partially will have no negative effects or repercussions for you. And in the event that you agree to participate, be assured that you can decide to withdraw at any moment from the research without any negative repercussions or ill feelings whatsoever. However, although you can withdraw from the study at any time, the researcher will need to retain data that is anonymised that is, striped off of identifiers.

**6. What will happen to me if I take part?**

If you are invited to participate under this category, you will take part in a survey to assess your satisfaction with the type of service you obtained from the facility. The questions in the assessment tool/ questionnaire are structured and responses to be selected range from poor to excellent for each of the items on the questionnaire. This part of the assessment is interested in understanding patients' satisfaction with services in Kumbotso CHC following the joint delivery of HIV/AIDS care and treatment services with primary health care services, a process referred to as integration of care.

**7. What do I have to do?**

As a respondent, you will respond to the questions on the different items of the interview guide. The moderator will engage you in discussions using the guide to elicit your views, perceptions and experiences with integrated care.

**8. What are the possible disadvantages and risks of taking part?**

As a respondent, you will be expected to participate in the interview and it is not expected or anticipated that this will cause harm to your health, access to health care, social interactions or employment.

**9. What are the possible benefits of taking part?**

Your participation will contribute to the understanding of integrated care delivery at primary health care level, and this will help to improve health service delivery at the PHC level.

**10. What happens if the research study stops earlier than expected?**

In the event that research is halted due to any unforeseen reason, you will be informed of the circumstances and the plan for completion.

**11. What if something goes wrong?**

Any complaint you have related to the research or regarding the conduct of any of the research team members can be reported to me (Research Team Leader - Dr Muhammad Lawan Umar - +2348034512145) and if you are not satisfied, you can report same to the Chairman of the Community Advisory Board, Kumbotso LGA, Kano (Dr Abubakar Mohammed Jibo - +2348038058232) or the Chairman of Kumbotso Development and Welfare Association (Mr Salisu Adamu - +2348091074262) and they will take up the issue by presenting it at a wider and representative forum that is, at the meeting of the Community Advisory Board, Kumbotso LGA, Kano, for action and redress if necessary.

**12. Will my taking part in this project be kept confidential?**

All audio recordings and notes of individual interviews and focus group discussions containing identifiers will be kept strictly confidential, with only the research team leader and relevant member having access to them. They will be locked up in a secure cabinet in another location that is, the departmental office, located on the guarded premises of the Aminu Kano Teaching Hospital, Kano. These audio recordings and notes will be transcribed and be kept for 18 months to allow for the completion of report writing, thereafter will be destroyed. However, the transcripts of the focus group discussions and individual interviews will be stripped of identifiers, and will potentially (in full or in parts) be available to my supervisors or the public.

**13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?**

The information you will be asked to provide is basically related to your views, perceptions and level of satisfaction with integrated health care delivery in Kumbotso CHC.

**14. What will happen to the results of the research project?**

The results from this research will eventually be published and will be available in the public domain. The contributions from you, your group members and communities will be acknowledged in such publications, but your names will not be linked to any particular aspect of the research. Anonymised data obtained from this study may be used subsequently in another study or for additional research

**15. Who is the Data Controller?**

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

**16. What is the legal basis for processing my personal data?**

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest (Article 6(1)(e)). Further information can be found in the University's Privacy Notice <https://www.sheffield.ac.uk/govern/data-protection/privacy/general>.' As we will be collecting some data that is defined in the legislation as more sensitive (information about your HIV status), we also need to let you know that we are applying the following condition in law: that the use of your data is 'necessary for scientific or historical research purposes.

For more guidance on legal bases, including the additional conditions that apply to ‘Special Category’ personal data, refer to the University’s Research Ethics Policy Note, and Specialist Research Ethics Guidance paper, on ‘Anonymity, Confidentiality and Data Protection’: <https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/further-guidance/homepage>.

**17. Who is organising and funding the research?**

This research will be mainly self-funded, but I will be applying for grants from the Bayero University Kano NEEDS Assessment Grant.

**18. Who has ethically reviewed the project?**

This project was reviewed by the Research Ethics Committee of Aminu Kano Teaching Hospital, Kano Nigeria and the Institutional Review Board of The University of Sheffield, United Kingdom.

**19. Contact for further information**

The following individuals can be contacted for further information related to this research

- a. Muhammad Lawan Umar - +2348034512145, [drlawanumarus@yahoo.com](mailto:drlawanumarus@yahoo.com)
- b. Dr. Robert Akparibo - [r.akparibo@sheffield.ac.uk](mailto:r.akparibo@sheffield.ac.uk)
- c. Dr. Julie Dickinson - [Julie.dickinson@sheffield.ac.uk](mailto:Julie.dickinson@sheffield.ac.uk)

Finally, you will be provided with a copy of this information sheet to take away with you as well as an informed consent form to sign if you decide to participate in this research.

Thank you very much for taking time to read this.

## Appendix 6: Information sheet for key informant interviews and focus groups with patients

### KEY INFORMANT INTERVIEWS AND FOCUS GROUP DISCUSSIONS

#### INFORMATION SHEET FOR PATIENTS

4. Research Project Title : HIV care and treatment integration into primary health care services in Kano, Nigeria – The case of Kumbotso Comprehensive health centre
  
5. Invitation Paragraph: My name is....., a Ph.D student at the University of Sheffield. I am here to provide you with information about the research I am planning to do for my Ph.D and to invite you to participate in order to improve health care delivery at primary health care level. Kindly read the section below which provides more information regarding this research on integrated health care within PHC and ask me, any member of my team or others if you wish so as to clarify anything you do not understand. After reading the provided information, you may wish to make a decision whether to participate or not in this research. Thank you for taking your time to read this.
  
6. The Purpose of the Project
  - d. The background

The PHC approach guarantees access to essential healthcare by making services as close as possible to where people live and work as enshrined in the Alma-Atta declaration of 1978. The Alma-Atta declaration recognised PHC as the first level of contact of individuals and families in the communities with the country's health system. However, PHC has grossly been underfunded in Nigeria over the years, especially with the recent global economic recession. In addition, the HIV/AIDS pandemic has added both physical and economic burden to the already weak PHC system. As a strategy to strengthen the fight against the HIV/AIDS epidemic in Nigeria, its care and treatment activities have been decentralised from the tertiary and secondary healthcare facilities and integrated into the primary health care facilities. It is hoped that the intervention will result in universal access to HIV/AIDS care and treatment, and improvement in the quality and outcomes of care at PHC. However, since the integration of HIV care and treatment into PHC in Kumbotso CHC in 2010, the outcomes have not been evaluated. The effect of the integration on the PHC system have also not been assessed.
  
  - e. Aim

To determine the impact of integrating HIV care and treatment services with PHC services in KCHC.

- f. Duration of the project should be given here.  
Two (2) Years

#### **4. Why have I been chosen?**

You have been chosen in your capacity as a member of this community who has attended Kumbotso CHC and has a lot of information and support to give to this research on impact of integrated health care on service delivery in Kumbotso CHC.

#### **5. Do I have to take part?**

Your participation in this research on impact of integrated care on service delivery in Kumbotso CHC is very important because of the useful information and support that you can provide. However your decision to participate is totally voluntary, that is, you are under no compulsion to participate and your refusal to participate either wholly or partially will have no negative effects or repercussions for you. And in the event that you agree to participate, be assured that you can decide to withdraw at any moment from the research without any negative repercussions or ill feelings whatsoever.

#### **6. What will happen to me if I take part?**

If you are invited to participate under this category, you will be asked as an individual or in small groups to participate in interview or focus group discussion as the case may be. The questions in the interview guide or focus group discussions guide are open ended and exploratory in nature. This approach is part of the qualitative research methodology which is interested in understanding your belief, view and perception or group dynamics in relation to HIV/AIDs and PHC integrated health care, contextual factors as well as clarifying complex social interactions or relationships.

#### **7. What do I have to do?**

As a respondent, you will respond to the questions on the different items that will elicit your level of satisfaction with the services obtained from Kumbotso CHC. If you are taking part in the key informant interview or the focus group discussion, the moderator will engage you in discussions using the guide to elicit your view, perceptions and experiences with integrated care as the case may be.

#### **8. What are the possible disadvantages and risks of taking part?**

As a respondent, you will be expected to participate in the interviews and/or group meetings anonymously and it is not expected or anticipated that these will cause harm to your health, access to health care, social interactions or employment.

#### **9. What are the possible benefits of taking part?**

Some key benefits of participation include sustainability of integrated care system and improved health service delivery at the PHC level.

**10. What happens if the research study stops earlier than expected?**

In the event that research is halted due to any unforeseen reason, you will be informed of the circumstances and the plan for completion.

**11. What if something goes wrong?**

Any complaint you have related to the research or regarding the conduct of any of the research team member can be reported to me (Research Team Leader - Dr Lawan Umar - +2348034512145) and if you are not satisfied, you can report same to the Chairman of the Community Advisory Board, Kumbotso LGA, Kano (Dr Abubakar Mohammed Jibo - +2348038058232) or the Chairman of Kumbotso Development and Welfare Association (Mr Salisu Adamu - +2348091074262) and they will take up the issue by presenting it at a wider and representative forum that is, at the meeting of the Community Advisory Board, Kumbotso LGA, Kano for action and redress if necessary.

**12. Will my taking part in this project be kept confidential?**

All audio recordings and notes of key informant interviews and focus group discussions containing identifiers will be kept strictly confidential, with only the research team leader and relevant member having access to them. They will be locked up in a secure cabinet in another location that is, the departmental office, located on the guarded premises of the Aminu Kano Teaching Hospital, Kano. These audio recordings and notes will be transcribed and thereafter will be destroyed 3 years after completion of the study. However, the transcripts of the focus group discussions and key informant interviews will be stripped of identifiers, and will potentially (in full or in parts) be available to my supervisors or the public.

**13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?**

The information you will be asked to provide is basically related to your views, perceptions and level of satisfaction with integrated health care delivery in Kumbotso CHC.

**14. What will happen to the results of the research project?**

The results from this research will eventually be published and will be available in the public domain. The contributions of you, your group members and communities will be acknowledged in such a publication, but your names will not be linked to any particular aspect of the research. The data obtained from this study may be used subsequently in another study or for additional research

**15. Who is organising and funding the research?**

This research will be mainly self-funded, but I will be applying for grants from the Bayero University Kano NEEDS assessment grant.

**16. Who has ethically reviewed the project?**

This project was reviewed by the Research Ethics Committee of Aminu Kano Teaching Hospital, Kano Nigeria.

**17. Contact for further information**

The following individuals can be contacted for further information related to this research

- d. Dr Muhammad Lawan Umar - +2348034512145, [drlawanumarus@yahoo.com](mailto:drlawanumarus@yahoo.com)
- e. Dr. Robert Akparibo - [r.akparibo@sheffield.ac.uk](mailto:r.akparibo@sheffield.ac.uk)
- f. Dr. Juli Dickinson - [Julie.dickinson@sheffield.ac.uk](mailto:Julie.dickinson@sheffield.ac.uk)

Finally, you will be provided with a copy of this information sheet to take away with you as well as an informed consent form to sign if you decide to participate in this research.  
Thank you very much for taking time to read this





- i. Duration of the project should be given here.  
Two (2) Years

#### **4. Why have I been chosen?**

You have been chosen in your capacity as a health professional working in Kumbotso CHC who has a lot of information and support to give to this research on impact of integrated health care on service delivery in Kumbotso CHC.

#### **5. Do I have to take part?**

Your participation in this research is very important because of the useful information and support that you can provide as officers coordinating the services. However your decision to participate is totally voluntary, that is, you are under no compulsion to participate and your lack of willingness to participate either wholly or partially will have no negative effects or repercussions for you. And in the event that you agree to participate, be assured that you can decide to withdraw at any moment from the research without any negative repercussions or ill feelings whatsoever. However, although you can withdraw from the study at any time, the researcher will need to retain data that is anonymised that is, striped off of identifiers.

#### **6. What will happen to me if I take part?**

If you are invited to participate under this category, you will take part in an individual Interview. The questions in the interview guide are unstructured and exploratory in nature. This approach is part of a research method called “qualitative research” which is interested in understanding factors associated with contexts as well as clarifying complex social interactions or relationships. In addition the individual interview will be audio recorded but you may decide not to participate if you are not happy to be recorded.

#### **7. What do I have to do?**

As a respondent, you will respond to the questions on the different items of the interview guide. The moderator will engage you in discussions using the guide to elicit your views, perceptions and experiences with integrated care.

#### **8. What are the possible disadvantages and risks of taking part?**

As a respondent, you will be expected to participate in the interview and it is not expected or anticipated that this will cause harm to your health, access to health care, social interactions or employment.

#### **9. What are the possible benefits of taking part?**

Your participation will contribute to the understanding of integrated care delivery at primary health care level, and this will help to improve health service delivery at the PHC level.

#### **10. What happens if the research study stops earlier than expected?**

In the event that research is halted due to any unforeseen reason, you will be informed of the circumstances and the plan for completion.

#### **11. What if something goes wrong?**

Any complaint you have related to the research or regarding the conduct of any of the research team members can be reported to me (Research Team Leader - Dr Muhammad Lawan Umar - +2348034512145) and if you are not satisfied, you can report same to the Chairman of the

Community Advisory Board, Kumbotso LGA, Kano (Dr Abubakar Mohammed Jibo - +2348038058232) or the Chairman of Kumbotso Development and Welfare Association (Mr Salisu Adamu - +2348091074262) and they will take up the issue by presenting it at a wider and representative forum that is, at the meeting of the Community Advisory Board, Kumbotso LGA, Kano, for action and redress if necessary.

**12. Will my taking part in this project be kept confidential?**

All audio recordings and notes of individual interviews and focus group discussions containing identifiers will be kept strictly confidential, with only the research team leader and relevant member having access to them. They will be locked up in a secure cabinet in another location that is, the departmental office, located on the guarded premises of the Aminu Kano Teaching Hospital, Kano. These audio recordings and notes will be transcribed and be kept for 18 months to allow for the completion of report writing, thereafter will be destroyed. However, the transcripts of the focus group discussions and individual interviews will be stripped of identifiers, and will potentially (in full or in parts) be available to my supervisors or the public.

**13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?**

The information you will be asked to provide is basically related to your views, perceptions and experiences with integrated health care delivery in Kumbotso CHC.

**14. What will happen to the results of the research project?**

The results from this research will eventually be published and will be available in the public domain. The contributions from you, your group members and communities will be acknowledged in such publications, but your names will not be linked to any particular aspect of the research. Anonymised data obtained from this study may be used subsequently in another study or for additional research

**15. Who is the Data Controller?**

The University of Sheffield will act as the Data Controller for this study. This means that the University is responsible for looking after your information and using it properly.

**16. What is the legal basis for processing my personal data?**

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest (Article 6(1)(e)). Further information can be found in the University's Privacy Notice <https://www.sheffield.ac.uk/govern/data-protection/privacy/general>.' As we will be collecting some data that is defined in the legislation as more sensitive (information about your HIV status), we also need to let you know that we are applying the following condition in law: that the use of your data is 'necessary for scientific or historical research purposes.

For more guidance on legal bases, including the additional conditions that apply to 'Special Category' personal data, refer to the University's Research Ethics Policy Note, and Specialist Research Ethics Guidance paper, on 'Anonymity, Confidentiality and Data Protection': <https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/further-guidance/homepage>.

**17. Who is organising and funding the research?**

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**18. Who has ethically reviewed the project?**

This project was reviewed by the Research Ethics Committee of Aminu Kano Teaching Hospital, Kano Nigeria and the Institutional Review Board of The University of Sheffield, United Kingdom.

**19. Contact for further information**

The following individuals can be contacted for further information related to this research

- g. Muhammad Lawan Umar - +2348034512145, [drlawanumarus@yahoo.com](mailto:drlawanumarus@yahoo.com)
- h. Dr. Robert Akparibo - [r.akparibo@sheffield.ac.uk](mailto:r.akparibo@sheffield.ac.uk)
- i. Dr. Julie Dickinson - [Julie.dickinson@sheffield.ac.uk](mailto:Julie.dickinson@sheffield.ac.uk)

Finally, you will be provided with a copy of this information sheet to take away with you as well as an informed consent form to sign if you decide to participate in this research.

Thank you very much for taking time to read this.

**Appendix 8: Information sheet – health managers/ administrators**

**INFORMATION SHEET FOR KEY INFORMANT INTERVIEWS WITH HEALTH MANAGERS/ ADMINISTRATORS**

10. **Research Project Title** : HIV care and treatment integration into primary health care services in Kano, Nigeria – The case of Kumbotso comprehensive health centre

11. **Invitation Paragraph:** My name is....., a Ph.D student at the University of Sheffield. I am here to provide you with information about the research I am planning to do for my Ph.D and to invite you to participate in order to improve health care delivery at primary health care level. Kindly read the section below which provides more information regarding this research on integration of health care within PHC and ask me, any member of my team or others if you wish to so as to clarify anything you do not understand. After reading the provided information, you may wish to make a decision whether to participate or not in this research. Thank you for taking your time to read this.

**12. The Purpose of the Project**

j. The background

The primary health care (PHC) approach is a health services delivery approach that ensures availability of services needed by the majority by providing them as close as possible to where people live and/or work. PHC is considered the first level of contact of individuals and families in the communities with the country's health system. However, PHC has grossly been underfunded in Nigeria over the years, especially with the recent global economic challenge. In addition, the increase in number of people with HIV/AIDS across the globe has added additional stress to the operations of PHC in countries that are financially weak. As a strategy to strengthen the fight against the HIV/AIDS epidemic in Nigeria, its care and treatment activities have been extended from the tertiary and secondary healthcare facilities and is being jointly delivered with primary health care services with the hope that the intervention will result in easy access to HIV/AIDS care and treatment, and improvement in the quality and outcomes of care at PHC. This type of combination of health care services is referred to as "integration of health care". However, since the integration of HIV care and treatment with PHC services in Kumbotso CHC in 2010, the outcomes have not been assessed. The effect of this integration of services on the PHC system has also not been assessed.

k. Aim

To assess the effect of the integration of HIV care and treatment services with PHC services in KCHC.

1. Duration of the project should be given here.

Two (2) Years

#### **4. Why have I been chosen?**

You have been chosen in your capacity as a health care manager/ administrator in Kumbotso CHC, AKTH, the state health ministry or primary health care board, who has a lot of information and support to give to this research on impact of integrated health care on service delivery in Kumbotso CHC.

#### **5. Do I have to take part?**

Your participation in this research is very important because of the useful information and support that you can provide as officers coordinating the services. However, your decision to participate is totally voluntary, that is, you are under no compulsion to participate and your lack of willingness to participate either wholly or partially will have no negative effects or repercussions for you. And in the event that you agree to participate, be assured that you can decide to withdraw at any moment from the research without any negative repercussions or ill feelings whatsoever. However, although you can withdraw from the study at any time, the researcher will need to retain data that is anonymised that is, striped off of identifiers.

#### **6. What will happen to me if I take part?**

If you are invited to participate under this category, you will take part in an individual Interview. The questions in the interview guide are unstructured and exploratory in nature. This approach is part of a research method called “qualitative research” which is interested in understanding factors associated with contexts as well as clarifying complex social interactions or relationships. In addition the individual interview will be audio recorded but you may decide not to participate if you are not happy to be recorded.

#### **7. What do I have to do?**

As a respondent, you will respond to the questions on the different items of the interview guide. The moderator will engage you in discussions using the guide to elicit your understanding, views, perceptions and experiences with integrated care.

#### **8. What are the possible disadvantages and risks of taking part?**

As a respondent, you will be expected to participate in the interview and it is not expected or anticipated that this will cause harm to your health, access to health care, social interactions or employment.

#### **9. What are the possible benefits of taking part?**

Your participation will contribute to the understanding of integrated care delivery at primary health care level, and this will help to improve health service delivery at the PHC level.

**10. What happens if the research study stops earlier than expected?**

In the event that research is halted due to any unforeseen reason, you will be informed of the circumstances and the plan for completion.

**11. What if something goes wrong?**

Any complaint you have related to the research or regarding the conduct of any of the research team members can be reported to me (Research Team Leader - Dr Muhammad Lawan Umar - +2348034512145) and if you are not satisfied, you can report same to the Chairman of the Community Advisory Board, Kumbotso LGA, Kano (Dr Abubakar Mohammed Jibo - +2348038058232) or the Chairman of Kumbotso Development and Welfare Association (Mr Salisu Adamu - +2348091074262) and they will take up the issue by presenting it at a wider and representative forum that is, at the meeting of the Community Advisory Board, Kumbotso LGA, Kano, for action and redress if necessary.

**12. Will my taking part in this project be kept confidential?**

All audio recordings and notes of individual interviews and focus group discussions containing identifiers will be kept strictly confidential, with only the research team leader and relevant member having access to them. They will be locked up in a secure cabinet in another location that is, the departmental office, located on the guarded premises of the Aminu Kano Teaching Hospital, Kano. These audio recordings and notes will be transcribed and be kept for 18 months to allow for the completion of report writing, thereafter will be destroyed. However, the transcripts of the focus group discussions and individual interviews will be stripped of identifiers, and will potentially (in full or in parts) be available to my supervisors or the public.

**13. What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives?**

The information you will be asked to provide is basically related to your views, perceptions and level of satisfaction with integrated health care delivery in Kumbotso CHC.

**14. What will happen to the results of the research project?**

The results from this research will eventually be published and will be available in the public domain. The contributions from you, your group members and communities will be acknowledged in such publications, but your names will not be linked to any particular aspect of the research. Anonymised data obtained from this study may be used subsequently in another study or for additional research

**15. Who is the Data Controller?**

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**16. What is the legal basis for processing my personal data?**

According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest (Article 6(1)(e)). Further information can be found in the University's Privacy Notice <https://www.sheffield.ac.uk/govern/data-protection/privacy/general>.'

As we will be collecting some data that is defined in the legislation as more sensitive (information about your HIV status), we also need to let you know that we are applying the following condition in law: that the use of your data is 'necessary for scientific or historical research purposes.

For more guidance on legal bases, including the additional conditions that apply to 'Special Category' personal data, refer to the University's Research Ethics Policy Note, and Specialist Research Ethics Guidance paper, on 'Anonymity, Confidentiality and Data Protection': <https://www.sheffield.ac.uk/rs/ethicsandintegrity/ethicspolicy/further-guidance/homepage>.

### **17. Who is organising and funding the research?**

This research will be mainly self-funded, but I will be applying for grants from the Bayero University Kano NEEDS Assessment Grant.

### **18. Who has ethically reviewed the project?**

This project was reviewed by the Research Ethics Committee of Aminu Kano Teaching Hospital, Kano Nigeria and the Institutional Review Board of The University of Sheffield, United Kingdom.

### **19. Contact for further information**

The following individuals can be contacted for further information related to this research

- j. Muhammad Lawan Umar - +2348034512145, [drlawanumarus@yahoo.com](mailto:drlawanumarus@yahoo.com)
- k. Dr. Robert Akparibo - [r.akparibo@sheffield.ac.uk](mailto:r.akparibo@sheffield.ac.uk)
- l. Dr. Julie Dickinson - [Julie.dickinson@sheffield.ac.uk](mailto:Julie.dickinson@sheffield.ac.uk)

Finally, you will be provided with a copy of this information sheet to take away with you as well as an informed consent form to sign if you decide to participate in this research.

Thank you very much for taking time to read this.



## **Appendix 9: The list of the registers used for abstracting secondary data from KCHC**

### A. HIV services

1. Enrolment register
2. Antiretroviral treatment (ART) register
3. HIV testing service (HTS register)
4. Prevention of mother-to child transfer (PMTCT) register
5. Care and support register (including pre and post-test counselling)

### B. Non – HIV services

1. Outpatient registers (New and Follow-up)
2. Admissions register
3. Health facility daily antenatal care register
4. Health facility daily labour and delivery register
5. Health facility daily postnatal care register
6. Health facility daily family planning register
7. Monthly facility immunisation summary register

**Appendix 10: patients' characteristics proforma**

<b>Patients' Characteristics Proforma</b>						
<b>S/No.</b>	<b>Month</b>	<b>Year</b>	<b>Age</b>	<b>Sex</b>	<b>HIV status</b>	<b>Service received/ attendance Purpose for</b>
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

**Appendix 11: Proforma for data collection (HIV patients)**

**PROFORMA FOR DATA COLLECTION  
HIV SERVICES**

MONTH	YEAR	GENERAL ART									PMTCT							
		HIV COUNSELLING AND TESTING (HCT)					ANTIRETROVIRAL TREATMENT				GENERAL ANC		PMTCT STATUS	DELIVERY			NEVIRAPINE WITHIN 72 HOURS	
		COUNSELL	TESTED	RECEIVED RESULTS	+VE	POST-TEST COUNSEL	NEW	F-UP	ART	CPT	COUNSELL	TESTE	+VE	TOTAL	UNBOOKED	TESTED UNBOOKED		+VE DEL
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
TOTAL																		

**Appendix 12: Proforma for data collection (non-HIV patients)**

**PROFORMA FOR DATA COLLECTION  
NON - HIV SERVICES**

		ANC		DELIVERY		FAM. PLANNING		CHILDHOOD IMMUNISATIONS										OUT-PATIENT		IN-PATIENT		
MONTH	YEAR	NEW	F-UP	NEW	F-UP	NEW	F-UP	MAT. ADMIS	BCG	OPV0	OPV3	DPT1	DPT3	HPV1	HPV2	HPV3	MEASLES	CHILD	ADULT	CHILD	ADULT	
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
<b>TOTAL</b>																						

## Appendix 13: Patients' satisfaction survey questionnaire

### SATISFACTION QUESTIONNAIRE

#### QUESTIONNAIRE FOR THE ASSESSMENT OF PATIENTS' SATISFACTION WITH INTEGRATED SERVICES DELIVERY IN KUMBOTSO COMPREHENSIVE HEALTH CENTRE (KCHC), KANO, NIGERIA

#### INTRODUCTION

Dear respondent,

This exercise is part of a research undertaken for partial fulfilment of a Ph.D degree from The University of Sheffield, United Kingdom. The questionnaire is to assess your experience(s) and satisfaction with the health services you obtained from this health facility. The information you will provide is for research purpose, and it will be treated confidentially. You do not need to write your name and address to ensure confidentiality. Please, I urge you to cooperate and answer the questions with all honesty.

Thank you.

#### SECTION 1: BIODATA

1.1 What is your sex? Male [  ] Female [  ]

1.2 How old are you? (In years) \_\_\_\_\_

1.3 What is your marital status?

Single [  ] Married [  ] Divorced [  ] Widowed [  ] Separated [  ]

1.4 What is your highest level of education?

No education [  ] Qur'anic only [  ] Primary school [  ] Secondary school [  ]  
Post-secondary school [  ]

1.5 What is your Occupation?

Civil service [  ] Private employee [  ] Self-employed [  ] Others (specify)\_\_\_\_\_

1.6 What is your ethnicity?

Hausa [  ] Fulani [  ] Igbo [  ] Yoruba [  ] Others [  ]

1.7 HIV status of respondent Positive [  ] Negative [  ] Don't know [  ]

#### SECTION 2: PATIENTS' SATISFACTION WITH INTEGRATED SERVICES DELIVERY

3.1 What is your level of satisfaction with the time spent in retrieving your folder?

Very poor [  ] Poor [  ] Fair [  ] Good [  ] Very good [  ]

3.2 What is your level of satisfaction with the waiting time before been attended to by the physician/ health worker?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.3 How would you rate your level of satisfaction with the waiting area?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.4 What is your level of satisfaction about your interaction with the doctor/ health worker?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.5 What is your level of satisfaction with the pharmacy?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.6 What is your level of satisfaction with the laboratory service accessed from this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.7 How satisfied are you that joint services delivery improves access to a variety of both HIV and non-HIV services in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.8 How satisfied are you that joint services delivery improves quality of HIV services in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.9 How satisfied are you that joint services delivery improves quality of other PHC services in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.10 How satisfied are you that joint services delivery improves access to qualitative laboratory services in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.10 How satisfied are you that joint services delivery improves access to a range of affordable and quality drugs in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.12 How satisfied are you that joint services delivery reduces stigmatisation among patients accessing services in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

3.13 How satisfied are you that joint services delivery reduces discrimination of patients Accessing services in this facility?

Very poor [ ]      Poor [ ]      Fair [ ]      Good [ ]      Very good [ ]

NB: Joint services delivery is the delivery of two or more services together or under the same setting. It is otherwise known as integrated services delivery

Thank you.

## Appendix 14: Consent form for patients' satisfaction survey

### Title of Project: HIV Care and Treatment Integration into Primary Health Care Services in Kano, Nigeria – The case of Kumbotso Comprehensive Health Centre

<i>Please tick the appropriate boxes</i>	Yes	No
<b>Taking Part in the Project</b>		
I have read and understood the project information sheet dated ----- or the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to ask questions about the project.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to take part in the project. I understand that taking part in the project will include completing a questionnaire	<input type="checkbox"/>	<input type="checkbox"/>
I understand that my taking part is voluntary and that I can withdraw from the study at any time but once data become anonymised it will not be excluded from analysis; I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	<input type="checkbox"/>	<input type="checkbox"/>
<b>How my information will be used during and after the project</b>		
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I give permission for the satisfaction data that I provide to be deposited in the shared network file store of The University of Sheffield so it can be used for future research and learning	<input type="checkbox"/>	<input type="checkbox"/>
<b>So that the information you provide can be used legally by the researchers</b>		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	<input type="checkbox"/>	<input type="checkbox"/>

Name of participant [printed]

Signature

Date

Name of Researcher [printed]

Signature

Date

Name of Interpreter (Where applicable) [printed]

Signature

Date

#### Project contact details for further information:

In case of any complaint please contact – Dr Abubakar Mohammed Jibo, Head of Department of Community Medicine, Aminu Kano Teaching Hospital, Kano. Email: [amjibo@yahoo.com](mailto:amjibo@yahoo.com)



**Appendix 15: FGD guide for interviewing patients attending KCHC**

**FGD Demographic Profile Form**

**Integration of HIV/AIDS services with PHC services in Kumbotso Comprehensive Health Centre**

**FACILITATOR:** Use this form to collect information on demographic characteristics of the participants before you begin the FGD. Make sure that they are sited in a semi-circle. Then quietly assign numbers to them, beginning from your rightmost corner to your leftmost corner. In other words, if you have 10 participants, the assigned #1 will be the person sitting at the extreme end to the right and number 10 will be the person that sits at the far end of the semi-circle to the left. Then transfer the numbers to this Form and complete the required information for each respondent. Maintain this sitting arrangement throughout the FGD and this is what you will use in identifying who said what during the discussion.

**FGD Group:**.....

**FGD Location:**

LGA:.....

Community:.....

**Moderator/Note taker:**.....

**Date of Interview:**.....

S/N	Age (Yrs)	Sex	Marital status 1=married 2=divorced/separated 3=Widowed	Highest level of Education 1=Primary 2=Secondary (Completed/Not Completed) 3= Higher Education 4=Islamiyya/Quranic 5=None	Religion 1=Islam 2=Catholic 3=Other Christians 4=Traditionalist 5=Others(specify)

## **FGD guide (Patients)**

Peace be upon you....I am .....from Bayero University/ Aminu Kano Teaching Hospital conducting a study on integration of HIV and PHC services in Kumbotso Comprehensive Health Centre (KCHC) [*Obtain Consent before proceeding*].

Thank you for finding time to participate in this study today. The aim of this activity is to understand the perceptions and experiences of patients/ clients accessing health care at KCHC, about integrated HIV and PHC delivery in the facility.

Very quickly, I want to explain what we will be doing here. A focus group is a group discussion. We want you to know that each of your views and perspectives are important to us. There are no right or wrong answers. We only ask that you be as open and honest with us as possible. You have been chosen to participate in this focus group because you are a patient/ client attending this health facility. At the end of the focus group, I will ask that you fill out this demographic form just to provide us with some more information about you.

My role is to be your guide by asking questions and keeping us on time; but this is really YOUR time to talk. You will notice that we are taping this group in order to accurately report all ideas. Your name will NOT be associated with anything you say. Also, the tapes will be kept private and safe. When the tapes are transcribed, participants will be identified by a code. At this point, I will ask that you please turn off your cell phones if you have not done so already. This will be a free-flowing discussion, so please feel free to share your thoughts, questions, and concerns throughout the process.

1. What can you say about the joint delivery of HIV and other health services in this health facility (HIV-PHC integrated care)?  
Probe about:
  - Perceived benefits
  - Perceived disadvantages
2. What is your experience with the integrated care in this health facility?  
Probe: - On patients (stigma and discrimination)
  - o On clinic operations (waiting and consultation times, patient flow)
  - o On availability of drugs and consumable (range, cost, stock outs)
  - o On laboratory services (range, cost, efficiency)
3. What is your experience with the non – HIV services (maternal health, child health, common communicable and non-communicable diseases) in this facility?  
Probe for:
  - Reception
  - Promptness of services
  - Quality of service
4. What can you say about the barriers or factors that hinder integrated care in this facility?
5. How can this integration be improved?

**Thank you for your time and goodbye**

## **Appendix 16: Individual interview guide for interviewing health professionals**

### **KII guide for interview with health professionals**

Peace be upon you....I am .....from Bayero University and Aminu Kano Teaching Hospital. We are conducting a study on Integration of HIV treatment and care services with PHC services in Kumbotso Comprehensive Health Centre (KCHC)

**[Obtain Consent before proceeding].**

Thank you for finding time to talk to me. The aim of this activity is to understand the perceptions and experiences of health workers working in KCHC around integrated HIV and PHC services in the facility, and also to understand the barriers and enablers of such integration.

A series of questions will be posed to obtain your views and views, experiences and perceptions regarding this. This information would be useful to policy makers, programme managers and researchers for packaging appropriate interventions for advancement of integrated care in PHCs. You are the expert here and no answer is wrong.

1. What do you understand by the integration of HIV care into PHC?
2. How does integration work in this health facility?
3. What do you know about the benefits of integration?
4. What can you say about the benefits of integration in this health facility?
5. What do you know about the side effects or disadvantages of integration?
6. What can you say about the side effects or disadvantages of integration in this facility?
7. What is your experience with the integration of HIV into PHC in this health facility?  
Probe: - On the health workers (number, trainings, and workload)
  - On patients (stigma, discrimination, satisfaction with services)
  - On clinic operations (waiting and consultation times, patient flow)
  - On clinic structure and facilities
  - On availability of drugs and consumable (range, cost, stock outs)
  - On laboratory services (range, cost, efficiency)
8. How does integration impact on non – HIV services in this facility?
9. What can you say about the barriers or factors that hinder the integration?
10. How can this integration be improved?

**Thank you for your time and goodbye**

## **Appendix 17: Individual interview guide for interviewing health managers**

### **KII guide for interview with health managers/ administrators**

Peace be upon you....I am .....from Bayero University and Aminu Kano Teaching Hospital. We are conducting a study on Integration of HIV treatment and care services with PHC services in Kumbotso Comprehensive Health Centre (KCHC)

**[Obtain Consent before proceeding].**

Thank you for finding time to talk to me. The aim of this activity is to understand (from the perspective of policy makers and programme managers) how HIV and PHC integration works, the impact of the integration on non – HIV services as well as to understand the barriers and enablers of the integration.

A series of questions will be posed to obtain your views and perceptions, and experiences regarding this. This information would be useful for strengthening the implementation of integrated care in PHCs. You are the expert here and no answer is wrong.

1. How does HIV and PHC integration work?
2. What does KCHC stand to gain from the integration of HIV care into PHC?  
Probe: - on the health workers (number, trainings, and workload)
  - On patients (stigma, discrimination, satisfaction with services)
  - On clinic operations (waiting and consultation times, patient flow)
  - On clinic structure and facilities
  - On availability of drugs and consumable (range, cost, stock outs)
  - On laboratory services (range, cost, efficiency)
3. How does integration impact on non – HIV services in KCHC?
4. What can you say about the barriers or factors that hinder the integration?
5. How can this integration be improved?

**Thank you for your time.**

**Appendix 18: Consent form for FGD with patients attending KCHC**

**Title of Project: HIV Care and Treatment Integration into Primary Health Care Services in Kano, Nigeria – The case of Kumbotso Comprehensive Health Centre**

<i>Please tick the appropriate boxes</i>	<b>Yes</b>	<b>No</b>
<b>Taking Part in the Project</b>		
I have read and understood the project information sheet dated ----- or the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to ask questions about the project.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to take part in the project. I understand that taking part in the project will include participating in a focus group	<input type="checkbox"/>	<input type="checkbox"/>
I understand that taking part in the project will include being audio recorded	<input type="checkbox"/>	<input type="checkbox"/>
I understand that my taking part is voluntary and that I can withdraw from the study at any time but once data become anonymised it will not be excluded from analysis; I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	<input type="checkbox"/>	<input type="checkbox"/>
<b>How my information will be used during and after the project</b>		
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I give permission for the satisfaction data that I provide to be deposited in the shared network file store of The University of Sheffield so it can be used for future research and learning	<input type="checkbox"/>	<input type="checkbox"/>
<b>So that the information you provide can be used legally by the researchers</b>		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	<input type="checkbox"/>	<input type="checkbox"/>

Name of participant [printed]

Signature

Date

Name of Researcher [printed]

Signature

Date

Name of Interpreter (Where applicable) [printed]

Signature

Date

**Project contact details for further information:**

In case of any complaint please contact – Dr Abubakar Mohammed Jibo, Head of Department of Community Medicine, Aminu Kano Teaching Hospital, Kano. Email: [amjibo@yahoo.com](mailto:amjibo@yahoo.com)

**Appendix 19: Consent form for individual interview with health professionals**  
**Title of Project: HIV Care and Treatment Integration into Primary Health Care Services in Kano, Nigeria – The case of Kumbotso Comprehensive Health Centre**

<i>Please tick the appropriate boxes</i>	Yes	No
<b>Taking Part in the Project</b>		
I have read and understood the project information sheet dated ----- or the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to ask questions about the project.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to take part in the project. I understand that taking part in the project will include being interviewed I understand that taking part in the project will include being audio recorded	<input type="checkbox"/>	<input type="checkbox"/>
I understand that my taking part is voluntary and that I can withdraw from the study at any time but once data become anonymised it will not be excluded from analysis; I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	<input type="checkbox"/>	<input type="checkbox"/>
<b>How my information will be used during and after the project</b>		
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I give permission for the satisfaction data that I provide to be deposited in the shared network file store of The University of Sheffield so it can be used for future research and learning	<input type="checkbox"/>	<input type="checkbox"/>
<b>So that the information you provide can be used legally by the researchers</b>		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	<input type="checkbox"/>	<input type="checkbox"/>

Name of participant [printed]

Signature

Date

Name of Researcher [printed]

Signature

Date

Name of Interpreter (Where applicable) [printed]

Signature

Date

**Project contact details for further information:**

In case of any complaint please contact – Dr Abubakar Mohammed Jibo, Head of Department of Community Medicine, Aminu Kano Teaching Hospital, Kano. Email: [amjibo@yahoo.com](mailto:amjibo@yahoo.com)

**Appendix 20: Consent form for individual interview with health managers/ administrators**  
**Title of Project: HIV Care and Treatment Integration into Primary Health Care Services in Kano, Nigeria – The case of Kumbotso Comprehensive Health Centre**

<i>Please tick the appropriate boxes</i>	Yes	No
<b>Taking Part in the Project</b>		
I have read and understood the project information sheet dated ----- or the project has been fully explained to me. (If you will answer No to this question please do not proceed with this consent form until you are fully aware of what your participation in the project will mean.)	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to ask questions about the project.	<input type="checkbox"/>	<input type="checkbox"/>
I agree to take part in the project. I understand that taking part in the project will include being interviewed I understand that taking part in the project will include being audio recorded	<input type="checkbox"/>	<input type="checkbox"/>
I understand that my taking part is voluntary and that I can withdraw from the study at any time but once data become anonymised it will not be excluded from analysis; I do not have to give any reasons for why I no longer want to take part and there will be no adverse consequences if I choose to withdraw.	<input type="checkbox"/>	<input type="checkbox"/>
<b>How my information will be used during and after the project</b>		
I understand my personal details such as name, phone number, address and email address etc. will not be revealed to people outside the project.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that my words may be quoted in publications, reports, web pages, and other research outputs. I understand that I will not be named in these outputs unless I specifically request this.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I understand and agree that other authorised researchers may use my data in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I give permission for the satisfaction data that I provide to be deposited in the shared network file store of The University of Sheffield so it can be used for future research and learning	<input type="checkbox"/>	<input type="checkbox"/>
<b>So that the information you provide can be used legally by the researchers</b>		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	<input type="checkbox"/>	<input type="checkbox"/>

Name of participant [printed]

Signature

Date

Name of Researcher [printed]

Signature

Date

Name of Interpreter (Where applicable) [printed]

Signature

Date

**Project contact details for further information:**

In case of any complaint please contact – Dr Abubakar Mohammed Jibo, Head of Department of Community Medicine, Aminu Kano Teaching Hospital, Kano. Email: [amjibo@yahoo.com](mailto:amjibo@yahoo.com)

**Framework matrix**

Themes	Sub-theme	Quotes from transcripts
Workers' joining of care works/	1.1 Integrated care is about co-location of services to improve access	<p>a) "What I understand by integration of HIV care into PHC care is sharing of services and resources for both HIV and non-HIV patients in the same primary health care facility. That means using the same consultation room, using the same laboratory, using the same pharmacy for both HIV and non-HIV patients. That is what I understand by integration of HIV services into PHC. (Health professional 2 (Doctor 2, Male 34 years)".</p> <p>b) "All I understand by it is that the merger of the two cases HIV and other illness in a one health care center and clinic. What I mean KCHC. When they are merged, the patients are seen together that means by integration. (Health professional (I/c Medical records, 57 years).</p> <p>c) "What I understand is a process and act of successful joining of HIV care into PHC. So, this joining HIV care into PHC before HIV care is only in teaching hospital that we do that services but now we shift it and joined into PHC to get easy access to HIV care. That is what I understand by integration of HIV into PHC care (Health professional 3 (Matron i/c, Female 45 years)".</p> <p>d) "What I will simply say is the integration of HIV care into PHC, that is the center where I am operating i.e PHC in Kumbotso, is the system where HIV care given to the patients that are having HIV is been coupled with the normal activities taking place in Kumbotso Comprehensive Health Centre, that is routine clinic, the normal attendance of the patients that come to visit hospital in such a way that they are seen under one roof. When they come to our facility we offer them that type of care including the HIV care that are incorporated in our facility here in Kumbotso Comprehensive Health Centre. (Health professional (I/c Pharmacy, Male, 43 years)"</p>



		1.2. Integrated care is about sharing resources	a) “..integration is talking about sharing of resources and services of HIV care along with the routine PHC activities which at the end will help to provide a wider coverage in terms of access for the patients because of either proximity, ..of course of the primary health care facilities are closer to them or to so many people (Health professional 1 (Doctor 1, Male 32 years)”.
		1.3. Integrated care is an opportunity for holistic approach to managing patients	a) “..Integrated care is an opportunity for a holistic management of the patients because HIV patients do not have only HIV disease as a problem, they could have other problems which might require other aspects of health care (Nurse, Female, 51 years)”. b) “My understanding is .., this brings about progress to a hospital like Kumbotso KCHC because it is not only HIV patients that will attend the facility, and in addition the HIV may come with other problems. Those with other health problems can also attend and see health workers and be treated here. This I think is a positive development. (Health professional (I/c Laboratory, Male 39 years)”.
		1.4. Integrated care is about coordination of health workers to provide quality care	a) “What I understand is a process and act of successful collaboration of different health care providers to provide quality health care for both HIV and non-HIV patients (Nurse, Female 45 years)”.
		1.5. Integrated care is about reduction of HIV stigma and discrimination	a) “..Integration is to help the patients and stop isolating the HIV clients. Then it helps in bringing them together not isolate them. (Health professional (ART CHEW, 52 years)”.
		1.6 Integrated care is part of PHC and therefore works like PHC under one roof	a) We provide all services to all that people that need them in an integrated manner and in the same facility in all units. We integrate even from the level of record keeping, the first place when a patient comes to the facility, the first point of contact is the medical records office, where we keep the patients records and information. So, even at this level, all patients go through the same units. Thereafter, they are sorted, is this going antenatal clinic, family planning clinic, nutrition clinic, or if it is an emergency it goes straight to emergency unit, and if an individual is just coming for routine checkup, then he

		<p>also goes to the outpatient's department or if he has an acute illness that needs to be seen he will be attended to. So integration occurs right as the patient comes to the clinic and there are different service points ranging from consultations, laboratory services, pharmaceutical services and any other services that we provide at the facility.</p> <p>..Yes, integration includes antenatal care services, even postnatal care services, immunisation sessions, nutrition clinic, family planning clinic and other services. Even mental health services (Administrator KCHC, Male, 34 years)</p> <p>b. So as it is, the activities of the teaching hospital here are mainly specialist care but the primary health care services are done mainly at KCHC where they have all the components taking place. So now we also have HIV/AIDS services integrated there. And generally speaking, even here the integration is such that when initially it was started we had a parallel clinic for HIV and so and so forth. Then later we had a whole complex, but there are instances in some clinics you won't even know that there is a form of integration with the general healthcare services in the facility generally here. So in the comprehensive health center where PHC services are provided, the same staff that are providing the general services there, are the one that are providing the HIV services there, and that all the components of the HIV services are also provided there including PMTCT and luckily enough the program has been a success in that we have had a lot of stories to tell in terms of screening and enrolment of HIV positive on ART, as well as of prevention of mother to child transmission. So, I think we can say that we are not doing badly as per as the integration is concerned at the level of KCHC (Administrator, AKTH, Male, 51 years).</p> <p>c. Thank you very much. I think we have to look at it from the perspective that ideally, HIV is integral part of primary healthcare, and I think this is one of the major policy push even in the country, that HIV services should be fully integrated because is supposed to</p>
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			<p>be part and parcel of PHC package. But of course for a very long time HIV program has been running as a vertical program for some reasons it was not implemented into PHC, but of course based on the number of reasons so many justification you know, national has adopted that policy that HIV should be integrated fully into primary healthcare and in Kano, we are really trying to key in to that policy and integrate HIV into PHC. Even though I have said HIV is an integral part of primary healthcare, of course we have to look at the entire package of HIV care and support, what and what can be provided at PHC, and in Kano actually these what we have been pursuing for the last 2-3 years to make sure we integrate HIV fully into PHC.</p> <p>Yes, as I said we are actually working around this integration. But of course there are still some challenges here and there and one of the major challenges I think is clearly defining what and what can be provided or can be done at every level. But again is important to mention that you can't provide any PHC service without being conscious of HIV. For example, even if we provide ANC care and now you cannot provide ANC care without the national policy now that mother being subjected to testing and counselling, and screening for HIV. So, that package of ANC cannot be complete without that HIV component integrated into it (Administrator, PHCMB, Kano State, Male, 52 years).</p> <p>d. Essentially we used the same pattern of MNCH integration into PHC level. For most PHC the bundle of package of care are usually MCH, immunisation, child care and outpatient care. So this essentially what we are achieving in HIV. HIV care is more of an outpatient care, so, we introduced the adult treatment into the outpatient care, while we introduced the PMTCT into the MCH program in the PHCs, and then for bigger PHCs we introduced the TB-HIV programme into the already existing TB DOTS. So nothing really new rather than capacity building.</p> <p>I think historically, there was used to be a lot of funding from donors to support all these until recently. Now, before this structure are</p>
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			essentially around logistics, we know of course our health system is not as good as other places so, we are funding to support samples shipment because PHC usually don't have labs and so they could not do lab so the samples have to be shifted to a hub where the PHCs are already clustered. So we provide support to ensure that such samples are moved around easily, we equally provide some support to ensure that drugs supply are maintained in an optimum environment, and we equally provide a little bit of support for communication between PHCs staff and their tertiary institution that usually hub. But that funding now is being transferred as we speak to government instead of donor funding it because in the long run is not sustainable (Administrator, Development Partner, Male, 49 years).
2	<b>Integrated care is good and a welcome development</b>	2.1 Integrated care resulted in seamless services	<p>a) "To be honest what I can say about the joint delivery of services in this facility as one of the patients, we don't encounter any problem, ...as regards to health workers they are well trained to take good care of us, they counsel us well and we don't have any problem with them and we pray for them every day". (<b>Halima, HIV female client, aged 30 years</b>).</p> <p>b) "It is a welcome development and since I came to this hospital, I have not encountered any problem". (<b>Sule, HIV male client, aged 32 years</b>).</p> <p>c) "They have enough and good doctors that attend to us all the time, we don't experience any problem any time we come to the clinic". (<b>Tine, HIV positive Female FGD P2, 32 years</b>)</p> <p>d) "There is smooth running of services and availability of qualified and high skilled medical personnel that will handle any case brought by the patients. Waiting time has also reduced due to availability of enough health workers around". (<b>Hadiza, non-HIV female client, aged 26 years</b>).</p> <p>e) "...the reception they give our patients is superb, they take their time to counsel them to understand how useful this drug treatment is to</p>

			<p>their lives, and you will see the patients accept and follow all the advice”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>f) “..there is great improvement among the patients and health workers especially we that are part of the supportive group. Any time we bring a patient that is in a critical condition they will listen us and attend the patient without any delay or problem”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>g) “..there is no waste of time in all the units and attended to us and counsel us on the way we take our drugs. At this facility I don’t have any problem”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>h) “The great improvement this integration brought is clearly seen in the pharmacy, when you go there to collect drugs they give you enough time to educate and guide you on how to use the drugs and so many things about the effects of the drugs”. <b>(HIV positive Male FGD, P5)</b></p> <p>i) “This is very wonderful because even the doctor, the health personnel will examine you very well without any sort of stigmatisation or discrimination in the health clinic”. <b>(HIV positive Male FGD, P7)</b></p> <p>j) “I feel happy and relieved when I came to this facility to access health care services because the way I was received and attended to was exceptional. I was referred from Kachia Local Government in Kaduna State and I was worried because I didn’t know anybody here or how it was going to turn out when I come because I was thinking that I will be questioned in front of everybody about my condition, but from the way that the health worker I met stepped aside and listened to me in confidence I became relieved and happy. In a well-coordinated manner, I was attended to and enrolled without anybody knowing what I came for. I am really very pleased”. <b>(HIV positive Male 32 years FGD, P2)</b></p> <p>k) “..it brings a lot of impact and improvement among us. It brings unity among the patients and health workers”. <b>(Sule, HIV male client, aged 32 years).</b></p>
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			<p>l) “Due to integrated care services there is team work among staff leading to improvement in health care delivery”. <b>(Non-HIV Female FGD, P4, 25 years)</b></p> <p>m) “..services in the hospital and the whole of Kumbotso LGA have improved with the introduction of HIV care services” <b>(Saif, non-HIV male client, aged 26 years).</b></p>
		<p>2.2 Integrated care improved health awareness and reduced HIV stigma and discrimination</p>	<p>a) “..we are receiving good counselling and more awareness on HIV and its treatment. Not like in the previous years that we experienced a lot of discrimination from the public. ...but things have now changed as a result of creating awareness on how HIV is contracted, and how to avoid getting infected with it”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>b) “..the rate of stigma and discrimination has reduced tremendously”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>c) “To be honest this is a good development because we were not aware that there are HIV patients and services in this facility, and now we know and is a good plan, this shows that you can come with your problems and no one will know exactly why you are here. The HIV patients will therefore relax among everybody and they will not be stigmatised”. <b>(Non-HIV Female FGD, P6)</b></p> <p>d) “In reality it is a good development, there is good improvement compared to some years back where some HIV persons failed to access healthcare services for fear of discrimination from public. Due to public awareness through media houses such as radio, television has brought us together and level of stigmatisation is now a history. Even in the pharmacy we also experienced a lot of discrimination but now this thing has reduced”. <b>(HIV positive Female FGD, P2)</b></p> <p>e) “It improves awareness of the disease among the general public and reduces stigmatisation”. <b>(Non-HIV Female FGD, P6)</b></p> <p>f) “It reduces stigma among patients”. <b>(Non-HIV Female FGD, P2)</b></p> <p>g) “Another exciting thing with this joint delivery of HIV and other services is what we have here, when you go to AKTH for instance,</p>

			<p>the moment somebody cites you heading towards the SSWALI centre (the HIV clinic complex) they will suspect that you are HIV positive but in this facility, everybody is together and people will not differentiate HIV positive from negative patients and this makes the environment very friendly”. <b>(HIV positive Female FGD, P8)</b></p> <p>h) “This integration has brought about remarkable progress because it has reduced level of stigmatisation. Had it been that the patients were left separate, people will pick interest in whoever goes in the direction where the patients are seen. But with this combination of care one will hardly know what my problems are and I will also not know what brought him to the hospital, and this is very important in reducing this stigma. So, the combination is a very good development”. <b>(HIV positive Male FGD, P6)</b></p> <p>i) “This integration of services is good. Before I first came to this hospital I was skeptical because I was imagining how I will be explaining my condition in the presence of other patients but when I gathered courage and came I realised that my imagination was wrong because if not the patient that I explained to, no other person will ever know my condition, and I was very happy”. <b>(HIV positive Male FGD, P8)</b></p> <p>j) “..because of the problems faced by HIV patients like stigmatisation and discrimination by public, I was not happy at all, but due to counselling and increase awareness these problems have reduced”. <b>(HIV positive Male FGD, P1)</b></p> <p>k) “..before the integration started people do not come directly to the ART clinics because of fear of stigma from other people that will see them. But when integration started it brought a lot of benefits to us, nobody will notice your presence or your reason of coming to the clinic. You will sit and discuss with the non-HIV patients freely no stigmatisation and everything. It is only the doctor that attend to you that will know your problem”. <b>(HIV positive Male FGD, P9)</b></p> <p>l) “When all patients come together to access care at the same unit points it help to reduce level of stigmatisation among the HIV</p>
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		<p>patients. Since health workers have made clear that people will not get infected by mere sitting together, the ways of transmitting the disease are also very clear. This is why all patients are seen together to reduce stigmatisation because it is only an illness and there is currently some treatment for the condition that patients do well on”.  <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>m) “This joint delivery of HIV and other services is a good development and a welcome idea in this health facility. There are disease that are more severe than HIV but people only have their attention on HIV, this integration will increase awareness and reduce stigma and discrimination of HIV patient”. <b>(Saif, non-HIV male client, aged 26 years).</b></p> <p>n) “This integration is working well, we fully interact with people now, we eat together and gist a lot with people without any problem.”  <b>(Halima, HIV female client, aged 30 years).</b></p> <p>o) “So when the clinic were combined everybody became relaxed and the stigmatisation seriously reduced. Our interactions also improved with the non-HIV patients and sometimes you will find that they are the ones advising us to be regular on drugs and so on. So are happy when we see our patients interacting well with the non-HIV patients, this I think is a good development”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>p) “I will thank God, because as a result of joint delivery of HIV and other health services in this facility the patients are now feeling free and open.” <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>q) “This joint delivery of HIV services and other health services is good because the HIV patients are not being stigmatised. So, the HIV patients will be encouraged to mingle freely with other non-HIV patients”. <b>(Non-HIV Female FGD, P2)</b></p> <p>r) “What I want to say about this integration is, it is a good process because the way and manner patients interact in this hospital is impressive in the sense that there is no stigma or discrimination against anybody. Everybody is being considered same, those with</p>
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			<p>HIV and those without HIV are seen as same. When you come with any illness be it HIV or any other the reception is very good and there is no stigmatisation in any way”. <b>(HIV positive Female FGD,P5)</b></p> <p>s) “The joint delivery of HIV and other health services in this health facility is a big progress. ..the interaction between patients in the hospital is good, no stigmatisation or discrimination, all patients attend the same clinic on first come first serve basis, and even though we all see the same doctor the patients do not know what the problems of others are. This in my opinion is a remarkable progress”. <b>(HIV positive Male FGD, P9)</b></p> <p>t) “The benefit of this joint care is the increased awareness about HIV and the counselling patients get from health workers. We are now considered as one and are also involved in every activity in the society. So this is a great relief on the part of the patient because this ailment requires peace of mind and togetherness. ....whatever you eat if your mind is not settled you will return to that unwanted state” <b>(Halima, HIV female client, aged 30 years).</b></p> <p>u) “..People are getting more aware. Before some people even get the virus and not because the virus was capable of the killing. As this facility has joined together and bring us closer to people, people now get a very lighter and understanding about it and it is not like before. ..It will enlighten people more. This first step alone enlightened people greatly especially about HIV patients. So if they are bringing more facilities like this, we get more light. You know the closer to something the closer you know the details of it. Before we only heard of it and the fear and more people exaggerating in explaining it and now that is closer to everybody is closer to us we see that there is no much deal”. <b>(Henry, HIV male client, aged 42 years)</b></p> <p>v) “..we now interact and mingle freely with everybody not like before and I think it is as a result of this integration”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>w) “There are HIV positive and non-HIV patients in this facility, and you hardly can tell who is who. If the HIV patient is regular on drugs,</p>
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			<p>they can even look better than the negative patients, it is only those HIV positive patients that do not take their drugs that will look wasted and not good looking”. <b>(HIV positive Female FGD, P5)</b></p> <p>x) “People now know that when you mingle with people, they will not get infected, even though visiting same toilet. Nobody will know what brings you to the clinic, which is one of the important achievements of this integrated care services in this facility”. <b>(HIV positive Female FGD, P3)</b></p> <p>y) “The benefits to be derived from this joint delivery of HIV services and other services is it makes the HIV positive patients to feel and mingle freely with everybody in the clinic and will make others with similar infection to access healthcare services in the facility and nobody will identify him that he is HIV patient. <b>(Ruqayya, non-HIV female client, aged 25 years).</b></p> <p>z) “Integration has improved awareness of HIV among people such that people can live and interact with them well without stigmatisation and discrimination”. <b>(Saif, non-HIV male client, aged 26 years).</b></p> <p>aa) “Yes, there is a lot of improvement on the part of the patient, there is reduction in stigma and discrimination from the society”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p><b>ab)</b> “There is no more stigma and discrimination, for me in particular it is a good development”. <b>(Sule, HIV male client, aged 32 years).</b></p> <p><b>ac)</b> “..There is no discrimination now that has stopped. Before they look at it and they cannot even sit at the same place. But by joining these services now make it easier. So the issue of discrimination has completely stopped”. <b>(Henry, HIV male client, aged 42 years)</b></p> <p><b>ad)</b> “It reduces the level of discrimination and stigmatisation among the HIV patients”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p><b>ae)</b> “Yes truly, there is improvement in this joint delivery of HIV and other services in this facility because some years back there was discrimination and stigmatisation, and I myself was part of those discriminating against people with HIV. As a result of the formation</p>
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			<p>of this joint integration services the level of this harassment have reduced tremendously”. (<b>Gwarzo, HIV male client, aged 64 years</b>).</p> <p>af) “.I know they may feel stigmatised by separating them and on that note they should be allowed among the general patients”. (<b>Non – HIV Male FGD, P6</b>)</p> <p>ag) “On the part of the patients the level of stigmatisation and discrimination has reduced. In the past people shy away from simple greetings from patients with HIV, but now they realise that these simple interactions are harmless because they noticed how the health workers interact with them in the hospitals. So the awareness is an improvement”. (<b>Shuaibu, non-HIV male client, aged 37 years</b>).</p> <p>ah) “...since all patients are being seen in the same clinic all sit together and wait for their turns. Names are called in turns and when it is yours you just enter to see your doctor and nobody will know what your problem is. In the integrated setting patients can come and go without others knowing their problem. In addition, it provides avenue where patients can discuss their problems and strengthen interactions between them”. (<b>Abdul, HIV male client, aged 29 years</b>).</p> <p>ai) “Honestly this integrated care came with benefits, among them are: we live in a semi-urban community and most of the patients will not want to be identified with their illness when they come to the hospital but if they will be treated in confidence when they come, more will be encouraged to come to the hospital and to feel freely and mingle with others. One time in this hospital there was this person from our area that met me in the hospital, I knew he is HIV patient but he didn’t know I knew his condition, we met here and he was so relaxed and I also did not show him I knew his condition. So, I don’t support that we should separate these patients because some will not come if we do that”. (<b>Non –HIV Male FGD, P7</b>)</p> <p>aj) “I support that the patients should not be separated because if separated the patients may not be coming to the hospital as required.</p>
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			The integrated care will give them privacy and encourage them to come like any other person”. <b>(Non –HIV Male FGD, P8)</b>
		2.3 Integrated care reduces missed appointments and defaults	a) “This has resulted in remarkable progress because initially the HIV positive patients were seen separately near the new theatre and we noticed we were getting a lot of missed appointments and defaulters, and sometimes when some patients notice someone they know around the clinic they will refuse to come close so that the person will not associate them with an illness being seen in a separate place in the hospital. So we realised that it is better with combined clinic so that nobody will be able to know what problem brought you to the hospital even if he/she happens to be your brother. You see we hardly see missed appointment now except in cases where people have or attending events and as soon as they sort out their programmes they come to the clinic immediately to make up for the missed appointment”. <b>(Hassan, HIV male client, aged 36 years).</b>
		2.4 Integrated care improved access to HIV care and brought development to surrounding communities	a) “From personal side, it is easier for me because when I came here November, 2016, for the test and decide there are only few tests that they sent me to do at the headquarter and the only few tests that I went there, I know how much I suffer. So bringing this closer it tells me and all of us that are coming that is very good”. <b>(Henry, HIV male client, aged 42 years)</b> b) “I support the joint delivery of HIV and other health services so that people from nearby communities will benefit from it and this will ease their getting to the hospital”. <b>(Non –HIV Male FGD, P3)</b> c) “Bringing this integrated care service in this hospital relieves patients from going far places to access healthcare and also reduce the transportation cost”. <b>(Non –HIV Male FGD, P3)</b> d) “I think this system of service delivery is good because it helps married and non-married people to get access to HIV diagnosis and treatment”. <b>(Non-HIV Female FGD, P5)</b> e) “..If you are married you can be able to come for HIV test to know your status”. <b>(Non-HIV Female FGD, P3)</b>

			<p>f) “This integration has brought progress to this hospital. In the past, this hospital was to some extent neglected, patients’ attendance was low and the hospital was not getting the required attention, talk less of having health worker but now with this integration, there are a lot of health workers here, patients are even being admitted and there is adequate drugs. Even we the HIV positive patients have drugs that we on our own cannot afford to buy, and they brought all these assistance to our door steps. You will now see that most of us are much stronger than the state we came and for this the integration is a real progress”.  <b>(HIV positive Male FGD, P3)</b></p> <p>g) “To be honest the joint delivery of HIV and other health services had brought a lot improvement and development in this hospital and the surrounding communities at large. Because patients living within the areas of Kumbotso will access the healthcare services easily without any stress of going far to either Murtala Mohammed Specialist Hospital or Aminu Kano Teaching Hospital for treatment. It also reduces the transporting cost that mostly affect patients coming to the hospital. <b>(Hadiza, non-HIV female client, aged 26 years).</b></p> <p>h) “As a result of this integrated care the health workers are relieved from too much workload because more voluntary workers usually support them in running the clinic”. <b>(Non –HIV Male FGD, P2)</b></p> <p>i) “This joint delivery of HIV and other services is a welcome development in this KCHC and it brings a lot of improvements on HIV patients in particular and the society in general because people can now access easy care at this facility”. <b>(Salihu, non-HIV male client, aged 42 years).</b></p> <p>j) “We thank God because of the assistance rendered to us because those people are our brothers and we are really happy for this development and these services are brought closer to our community it will relieve other from transporting themselves to far place like AKTH and Murtala Mohammed Specialist Hospital”. <b>(Shuaibu, non-HIV male client, aged 37 years).</b></p>
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		<p>2.5 Integrated care improved access to diverse range of services and increased patients' satisfaction with services</p>	<p>a) "It provides for attending to patients with different diseases in the same place. For instance, if I come to see a health worker together with my sick child, we will all be attended to in the same place, I do not have to go to another clinic to address his problems". <b>(Non-HIV Female FGD, P4)</b></p> <p>b) "At times, there is ignorance of distance taking somebody to somewhere the distance is not closer like this. The time the person supposed to be in the place anything can happen. So, drawing this closer, it reduces the number of people there, people were too many but as here we are not all many, we are now divided into smaller particles and easy to handle". <b>(Henry, HIV male client, aged 42 years)</b></p> <p>c) "This integration services brings easy access to health facility and also create more awareness to more people that are HIV positive to come and access care in this Kumbotso Comprehensive Centre". <b>(Salihu, non-HIV male client, aged 42 years).</b></p> <p>d) "People did not know where to take this new problem before for treatment, and now the services are brought close to our people to save them from going far distance to access health care, I see this as a very big benefit". <b>(Shuaibu, non-HIV male client, aged 37 years).</b></p> <p>e) "In my own opinion HIV disease and other diseases are all diseases, similarly blindness and leprosy are all diseases and any one of them touches the heart. As you know each person puts himself first before another. So I don't know for others but my opinion this joint delivery of HIV and other health services is good and I don't have anything to complain about it". <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>f) "...I am very happy about the HIV service as a whole, I was brought here in a very bad shape but I am now very strong. You see my son we are all very healthy and strong now and the volume of farm produce I make each year I am sure you the younger ones will not come close". <b>(Gwarzo, HIV male client, aged 64 years).</b></p> <p>g) "In my own opinion I want to thank the health workers and also show my appreciation on the way they receive and attend patients in</p>
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			<p>this hospital. To be sincere they deserve commendation”. <b>(Non –HIV Male FGD, P6)</b></p> <p>h) “I really thank God that I was brought to this hospital and well received. They have been up and about with us for about 6 years now and I am very happy with the treatment I received from this facility”. <b>(HIV positive Female FGD, P6)</b></p>
		<p>2.6 Integrated care is preventing mother-to-child transfer of HIV</p>	<p>a) “You will now see that in all the patients seen in this hospital especially among the positive mother, we have never registered a case of positive baby born to a positive mother in this facility. I see this as a remarkable achievement, is that not so?”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>b) “We just have to thank God the Almighty because you will see an HIV positive woman breastfeeding and the child is HIV negative, all thanks to this integration”. <b>(Gwarzo, HIV male client, aged 64 years).</b></p> <p>c) “I also thank God for these drugs that have changed our lives, we lost our husbands when they didn’t even know what their problems were but because of this integration we delivered our babies safe and free from this infection”. <b>(HIV positive Female FGD, P6)</b></p> <p>d) “The major progress in this integration is, in the past pregnant women do not know that they can come to the hospital and protect their babies from getting infected with this disease but with the integration by the grace of God once a woman accepts that she has this disease, she will be counselled, placed on medication and be guided throughout the pregnancy and she will be delivered an HIV free baby. Our babies don’t get infected if you go through the process”. <b>(HIV positive Female FGD, P8)</b></p> <p>e) “To be honest I felt happy the time I was brought to this hospital, because I was pregnant and in a critical condition. I was handled well and delivered my child safely and without the infection. Even myself nobody will know that I have HIV infection because I am looking much better than I was and feeling stronger”. <b>(HIV positive Female FGD, P4)</b></p>

		<p>2.7 Integrated care improved knowledge and experience of health workers</p>	<p>a) “This integration care services improves health workers’ knowledge and experiences”. <b>(Non –HIV Male FGD, P7)</b> The integrated services also contribute in improving the skill of health workers so that they can discharge their duties well”. <b>(Non-HIV Female FGD, P1)</b></p> <p>b) “Of course, the doctors will get more experience in discharging their duties by attending to different patients with different types of illness”. <b>(Ruqayya, non-HIV female client, aged 25 years).</b></p> <p>c) “On the part of health care workers there will be more experience and creating more awareness and health workers on more new skills on how to handle the patients”. <b>(Shuaibu, non-HIV male client, aged 37 years).</b></p> <p>d) “It was before when there were few health workers in the facility that you see people congested in the different units waiting to be attended to but with the integration sometimes you see up to five doctors or more at a time in this facility, so there is hardly congestion. This is a remarkable improvement. Even at the registration unit because more staff are there to assist and attend to patients so that time is saved. This is same with the pharmacy and other units in the hospital. This is a remarkable improvement as a result people are turning out en mass to the hospital”. <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>e) “Health workers have gone on trainings on HIV care to improve their practices, and sometimes as support care members we the patients also go on training. In fact, the health workers sometimes benefit from us because they ask us on things that are not clear to them and we explain to them, especially those that have not gone on a training (Yelwa, HIV female client, aged 26 years)”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>f) ”As part of the integrated care, the health workers benefited from a lot of trainings and this seen reflected in the way they treat patients. You will never see or hear that a health worker discriminates any of our patients”. <b>(Hassan, HIV male client, aged 36 years).</b></p>
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			<p><b>g)</b> “On the part of training and workshops there is an improvement. We as support group usually attend training and workshops. The health workers also attend training and workshops but not at the same time with us. Training on how to take care of ourselves and also how to take our drugs”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p><b>h)</b> “..The bigger the distribution the more the workers and the workers that are coming and the new ones that are coming they are training them and the old ones they are upgrading them so they brought development in the patients and the workers in the system”. <b>(Henry, HIV male client, aged 42 years)</b></p>
3	<b>Integrated care is a problem and should be scrapped</b>	3.1 Integrated care increases congestion in clinics and increased workload on health workers	<p>a)“...the government should expand this arrangement such that HIV patients will be seen at a different section, and psychiatric patients in another section. This in my opinion will be better because it will reduce congestion”. <b>(Non –HIV Male FGD, P1)</b></p> <p>b) “I support the opinion of my colleague that the HIV patients should be separated from the general patients so that they will get much attention from health workers, not because of stigmatisation”. <b>(Non – HIV Male FGD, P6)</b></p> <p>c) “There will be much congestion due to this integration and patients may stay longer in the hospital, but if to say the patients are separated there will be less crowd and again, they will receive much attention and care”. <b>(Non –HIV Male FGD, P1)</b></p> <p>d) “There is also likely to be congestion due to lack of enough manpower”. <b>(Non –HIV Male FGD, P3)</b></p> <p>e) “It will also add to demand in the hospital and this may lead to congestion, overwork and lack of drugs, working materials and consumables. It is possible that you may come especially in the evening when there are usually few staff on duty and the health worker might say that they will only attend to emergencies because of overwork”. <b>(Non –HIV Male FGD, P7)</b></p> <p>f) “The laboratory and pharmacy, especially lab may be overwhelmed because of increasing patient load and these unit need to be improved,</p>

			<p>expanded and upgraded with modern equipment and more manpower”. <b>(Non –HIV Male FGD, P3)</b></p> <p>g) “Due to the integration there will be too much workload on the health workers but if they are separated there will be less workload on the staff side”. <b>(Non –HIV Male FGD, P1)</b></p> <p>h) “There may be no much attention and care from health workers because of overwork and this may be problem”. <b>(Non –HIV Male FGD, P3)</b></p>
		<p>3.2 Integrated care is resulting in poor clinic attendance, lack of confidentiality and stigmatisation</p>	<p>a) “I am the Secretary for Support Group. Firstly, we are facing some problems as a result of this joint delivery of HIV and other health services in this facility. The reason is that, the positive patients that reside in this town do not like to come in, because they may likely meet with familiar faces that come from the same area. This usually makes them uncomfortable to come to the clinic to collect their drugs because they don’t want to be identified by known faces. My advice if possible is to provide a separate place for our patients such that only positive patients will come to that place”. <b>(Abdul, HIV male client, aged 29 years).</b></p> <p>b) “..In my opinion the separation is better for the sake of our patients that are from this town, I personally do not have any problem with the combination. ..Other patients will not insist on coming to see who and who are there, at worst they may stand from far and point at our direction. .. there are many technics they can use to enter the separate place that will be assigned to us without being seen by people. ..Yes, it is the reason why there are more women than men in the clinic. The women use to collect the drugs on behalf of husbands”. <b>(Abdul, HIV male client, aged 29 years).</b></p> <p>c) “.. there may be a problem in a situation whereby the HIV and non-HIV services are seeing one doctor at the same time, like we have in this facility. If the non-HIV patient expose the other patient status, there will be problem and from there stigmatisation may arise and also if other patients identified familiar person with HIV it can also</p>

			<p>be a problem and can affect the integrated care services. They may likely go back and expose such person in a community or society where they live together and this can bring stigma on the part of the patients”. <b>(Ruqayya, non-HIV female client, aged 25 years).</b></p> <p>d) “... it is the reason why there are more women than men in the clinic. The women use to collect the drugs on behalf of husbands. (KII with ART patient 5 – Male 39 years)”.</p>
		3.3 Integrated care is exposing non-HIV patients to risk of HIV infection	<p>a) “In my own opinion I suggest that the HIV services should have a separate place and separate doctor to attend them because combining us together may likely bring problems. In my opinion it should be separated just like the way we have a separate section for the psychiatric patients. Since it is HIV, it should not be combined with other sick patients, I am thinking that each of the cases will get more attention if they are handled separately. ... Sometimes results for tests from other units get mixed up, and in this case I think it will be more disastrous. <b>(Raiya, non-HIV female client, aged 24 years).</b></p> <p>b) “In my opinion the two should be separated, their ailment is different and we are hypertensive patients. I heard that the same equipment like injections are used for all patients and sometimes problems occur. This is why I do not come for injections in this hospital. I am not comfortable with this integration; may God save us”. <b>(Shamsiyya, non-HIV female client, aged 52 years).</b></p> <p>c) “People may get infected with diseases because of the exposure from the integration”. <b>(Shamsiyya, non-HIV female client, aged 52 years).</b></p>
4.	<b>Health workers’ perspectives about benefits of integrated care</b>	4.1 Integrated care improves health awareness and normalises HIV stigma	<p>a) “..Integration can also normalise HIV problems. I think we can look at it from this point where initially somebody would have to go to separate facility for health for HIV care. Those facilities usually are tagged or no matter the level they are trying to hide the identity at the point in time people will get to know that these are HIV centres for example, but for this case you are putting thing together you didn’t put a separate place for HIV care alone this is an all-encompassing</p>

		<p>health facility now, so is a bit difficult to differentiate, the patient even feels more comfortable. I think it will help in minimising the level of stigma, and I think the acceptability of services might be better”.  <b>(Doctor 1), Male 32 years)</b>  b) “There is a lot of benefit because before there is stigmatisation, there is discrimination and with this integration because there is more awareness now than before so this thing stigmatisations reducing. Some now know what HIV is, how HIV is contacted, you can eat with HIV person, you can do a lot of things with HIV person and one will not contract the disease”. <b>(Matron i/c, Female 45 years)</b>  c) “...Whoever comes to the clinic will receive the same treatment, so our patients have peace of mind. The integration has also created an environment where patients with unknown status will be encouraged to test and if found positive receive treatment without fear of stigmatisation”.  d) “...it improves patronage of the hospital by making the community more aware of HIV and the services available in the hospital, people from different places come to the hospital”. <b>(Matron ANC/ Labour room, Female 52 years)</b>  e) “...there is reduction of stigmatisation here because ours are not separate. We don’t separate this is HIV and this is OPD patients. They are all seen in one place, go to one pharmacy, go to one cashier, go to one lab”. <b>(I/c Medical records, 57 years)</b>  f) “One of the benefits is the reduction of stigma.  .. The main benefit on the side of the HIV patients is, a patient will not feel discriminated because he has a particular disease, this is not there”. <b>(Matron ANC/ Labour room, Female 52 years)</b></p>	
		<p>4.2 Integrated care provides opportunity for staffing, training and development</p>	<p>a) “On the part of the staff it reduces workload because there are more health workers involved in patient care, and there is also division of labour among the staff to make work easier and efficient”. <b>(ART CHEW, 52 years)</b></p>

			<p>b) “..and also it may serve as training opportunity for staff both on the job training, we are training our junior cadre about how to take care of our HIV patients so we are training them and the cost of at this integration. So many of our staff have went for on-the-job training and so many workshops”. <b>(Doctor 2), Male 34 years)</b></p> <p>c) “Yes, it improves services rendered because a lot of things before we don’t know even we the health workers but now we are aware. ..Because of this training and retraining and also step-down trainings. So we have a lot of knowledge about this HIV and how to care for them”. <b>(Matron i/c, Female 45 years)</b></p> <p>d) “We the staff benefited from different kinds of training, be it on HIV, ANC or on management of labour e.tc., the trainings are not only on HIV it can be on anything”. <b>(Matron ANC/ Labour room, Female 52 years)</b></p> <p>e) “we usually go for training to update our knowledge, but this training not only concentrate on HIV issues but they also talk of other problems that we need to know and even the issue of logistics and supply management of drugs and that helps us in a way that we can manage our stock not even the HIV stock. So the training do really help us in improving our capacity in knowing what is all about logistics management and improving our capacity in knowing how to treat other infections that have to do with HIV”. <b>(I/c Pharmacy, Male, 43 years)</b></p> <p>f) “..We the health workers have experiences of HIV patients and the normal sickness patients, i.e routine patients, we have that experience”. <b>(I/c Medical records, 57 years)</b></p> <p>g) “..Yes there is training, two of my staff have been trained on how to see the patients, how to fill their form, how to give monthly statistics, they were trained on how to enter it into computer, we do it with internet service, one with laptop and one with hand set that he use to feed the management on our daily activities”. <b>(I/c Medical records, 57 years)</b></p>
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		<p>4.3 Integrated care promotes efficiency and team work in the clinic</p>	<p>a) "...also waiting time reduces compared to secondary and tertiary centers because when they go there they stay longer". <b>(Doctor 2), Male 34 years)</b></p> <p>b) "...Patients that ordinarily will spend about two or more hours end up spending shorter time like one hour". <b>(I/c Laboratory, Male 39 years)</b></p> <p>c) "Integration also improves efficiency, it has improved us because we know whom to see these patients, usually our service first come first serve. We don't say wait for your doctors, as soon as you come we trace your folder and record it and say go to so so room and see doctor there". <b>(I/c Medical records, 57 years)</b></p> <p>d) "...Honestly there is progress because even the patients are happy with this combined care". <b>(I/c Laboratory, Male 39 years)</b></p>
		<p>4.4 Integrated care provides opportunity for preventing mother to child transmission of HIV</p>	<p>a) "...if we look at the concept of maternal and child healthcare, ahhh...the major goal in HIV care for example is this the issue of prevention and transmission like the PTMCT services, integrating it with PHC to provide room for more utilisation of ANC among the clients because the services are at door step now in the hospital unlike before where they have to be referred to another facility for them to access this care". <b>(Doctor 1), Male 32 years)</b></p>
		<p>4.5 Integrated care increases access to healthcare and to diverse range of services</p>	<p>a) "...it will reduce cost of transportation and care. Ahh.., cost of care in this facility is very cheap compared to secondary and primary ahh.. health care facilities. For example, we are running packed cell volume (PCV) at the cost of N50.00, urinalysis too at N50.00, which is quite cheaper than at secondary and tertiary levels". <b>(Doctor 2), Male 34 years)</b></p> <p>b) "...Somebody might come with more than one patient with different cases, and all will be attended to under the same roof". <b>(I/c Laboratory, Male 39 years)</b></p> <p>c) "...to the patients, they have less cost to in their going to see doctor, in their treatment, in their lab, in their drugs". <b>(I/c Medical records, 57 years)</b></p>

			<p>d) "...the issue of coverage, HIV integrated with PHC services will widen the scope of the coverage, more people will be covered because primary health centres are many and closer to people than other centers. This will.. like give chance to these clients more access and it is easier for them to access the health care". <b>(Doctor 1), Male 32 years)</b></p> <p>e) "...this integration increases access to care because is closer to communities, because almost all the clients and patients who are coming to the center are from this locality". <b>(Doctor 2), Male 34 years)</b></p> <p>f) "...For the patients it reduces delay of time, cost of transportation, and proximity to access health care services in the facility". <b>(ART CHEW, 52 years)</b></p>
		4.6 Integrated care improves availability of equipment, drugs and consumables	<p>a) "...and we got so many equipment, like weighing scale and is because of this integration, and even some consumables are brought in by some organisations and is because of this integration of HIV into this facility". <b>(Doctor 2), Male 34 years)</b></p> <p>b) "Because of the integrated care in this hospital, we receive a lot of equipment from donors. Recently they supplied examination coaches, palpation beds for ANC and so many other items, and you see all this equipment are not only for HIV patients but all patients coming to the hospital". <b>(Matron ANC/ Labour room, Female 52 years)</b></p> <p>c) "...It helps us with provision of more items like the equipment for viral load, CD4 count machine and drugs". <b>(ART CHEW, 52 years)</b></p> <p>e) "...this integration serves as an avenue to improve diagnostics, like our x-ray machine was bought by Institute of Human Virology (IHVN), and this x-ray machine is being used for HIV and non-HIV patients". <b>(Doctor 2), Male 34 years)</b></p>
		4.7 Integrated care strengthens PHC management systems	<p>a) "...of importance is this issue of harmonisation of data. Initially HIV data used to be run in the HIV centres collected and utilised but now is like an avenue and opportunity to harmonise the data because the routine data that is being collected at the facility level will now</p>

			include the HIV information or HIV related data which could help in planning of the health system generally”. <b>(Doctor 1), Male 32 years)</b>
		4.8 Integrated care improves PHC funding, infrastructure and facility	<p>a) “..if we look at the issue of HIV care initially, it was run like a vertical program where resources are allocated to fund such a vertical program while we have the PHC which is utilised by the majority of people lacking in basic thing. Now, Integration could help in utilising that resources which would have been used for HIV care alone now to finance HIV care and PHC services at the same time. Indirectly, PHC will also benefit from that resource’s utilisation. I think that is one aspect”. <b>(Doctor 1), Male 32 years)</b></p> <p>b) “..There are also proposals for additional structures, in fact they started construction and then stopped, but they did a lot of renovations here”. <b>(Matron ANC/ Labour room, Female 52 years)</b></p> <p>c) “...Honestly, even the current pharmacy premises where I am working is built by integration project. Has it been that there is no this integration I will be operating in one cubicle. This integration helps to get our established premises and they furnished it, is being air-conditioned and is really ok for our services”. <b>(I/c Pharmacy, Male, 43 years)</b></p> <p>e) “.. We the staff get benefits like when we are requesting for items to assist us, like tables, chairs and other consumables we get it so easily because of integration”. <b>(I/c Medical records, 57 years)</b></p>
5.	<b>Health Administrators’ perspective about benefits of integrated care</b>	5.1 Integrated care reduces stigma and discrimination	<b>a)</b> “it does improve a lot of situations, we know for instance if you are stand-alone HIV clinic and these group of people that come they go to just HIV clinic, stigma and discrimination may be very common in this group of people, however, if they are integrated they are being provided like any other patient, you come to the clinic, you are been called upon and you see a doctor and leave, then you go to the pharmacy and laboratory and you access services. Unlike it is a stand-alone clinic that when you there we know you are HIV positive and



			<p>this is likely to be stigmatised, people are likely to discriminate against these individuals”. <b>(MS, KCHC)</b></p> <p>b) “One of the thing that some people may probably fear, we have not seen that, that people will probably assume that oh now that we are mixing HIV positive and negative patients, may be the negative ones will probably want to feel why are we mixing them and probably withdraw from patronising our services, that has not been happening, more so that the personnel are well trained, confidentiality is assured, you can sit next to HIV patient and you won’t know his condition, so that did not arise at al”. <b>CMAC</b></p> <p>c) “...PHC was actually a good example of how you can make HIV as part of routine care for every patient. In the big teaching hospitals and general hospitals they have a separate clinic for HIV, but in the PHC just one OPD for everybody and that had reduced stigma because everybody is there for one disease or the other. This is a very good thing that happened for the PHCs”. <b>IHVN</b></p> <p>d) “Well in the past I think issue of stigmatisation and discrimination has been a big problem but due to combination of two or three things that happened with integration have reduced that significantly. 1) was the state government where we work made a law that essentially criminalised any form discrimination against people living with HIV. 2) all the health care workers in that PHC have been trained on how to avoid discrimination, and 3) there is significant involvement of community stakeholders, the gatekeepers: the district head, the imams, and people that actually manage the community, and now these have reduced discrimination essentially. And then the other thing that has happened in the patients’ side is that in the past when you see HIV patients they always think that they are about to die or something, and that appearance alone look stigmatising. But with the coverage of treatment, almost all HIV patients are taking drugs, they actually look probably more normal that do not have HIV, so again that had reduced visual discrimination that used to happen before. So, a combination of all these have reduced stigmatisation but most</p>
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			importantly was the fact that we have policy from government, we have capacity building of healthcare workers, and then you have community involvement all coming together to reduce stigma in HIV care”. <b>Regional Manager, IHVN</b>
		5.2 Integrated care provides opportunity for staffing, training and development	<p>a) “On the part of health care workers this tend to improve their clinical competence because many of them have been trained for one program or the other. So, they now have like improved clinical competence and skills and they will also have improved self-confidence, knowing that they can address many issues at the same time and if it is something that is beyond you, then you can easily refer to other doctors”. <b>MS</b></p> <p>b) “..the staff that work there benefitted a lot from capacity building, their knowledge and skills have been improved over time”. <b>IHVN</b></p>
		5.3 Integrated care promotes efficiency and team work in the clinic	a) “in the past you have to have a separate clinic for HIV like I said and you entirely go and spend like 2-3 hours and patients will suffer. The integration has allowed you to use your time as a clinician to see HIV patient, to see non-HIV patient, is good to plan yourself if you want run the same clinic and see everybody without having to have a duplicate effort having to go to another place to run clinic and all that. So overall, one thing like you said, the working time has reduced to 40% between 2006 and 2011, especially in that Kumbotso the waiting time before used to be, you spent close to 6 to7 hours there, but when now make it a general OPD, waiting time was reduced by almost 50%, people just spent 2-3 hours before they get seen. So overall, the integration make room for efficiency, so you don’t have to have so many health care providers posting in several places but you have 2 or 3 that can still provide the same service in multiple locations. So I think integration has improved the efficiency of the PHCs as a whole significantly”. <b>IHVN</b>

		<p>5.4 Integrated care increases access to HIV services</p>	<p>a) “It is of immense benefit to the immediate community, they don’t need to travel to long distance to access HIV care and support, and if we look at that KCHC is very far from any secondary facility. So if you have to go to the closest place, may be AKTH which may be 10-15km from there, may be you go to the other direction you have to go to Murtala Mohd Specialist Hospital, another 10-20km from the facility. So actually, is very far from any secondary hospital. And again, that place is densely populated, looking at the surrounding communities, Kumbotso itself, surrounding Panshekara and all the areas there, there isn’t any secondary facility. So, there are hundreds of thousands of residents around that area that the closest facility to them is Kumbotso health facility. So, it helps a lot making service accessible”. <b>PHCMB</b></p> <p>b) “...for those who are positive they are able to receive their drugs without having to go anywhere, is just within KCHC, in the past they had to be referred to AKTH. It would have been an additional transportation cost, and additional time wasting and an additional logistics for them to sort themselves out”. <b>IHVN</b></p>
		<p>5.5 Integrated care improves availability of equipment, drugs and consumables</p>	<p>a) “I think we are fortunate in the sense that we have very effective drug revolving fund. Whether you are HIV patients or not we have essential drugs that we procure routinely and even the government through the Ministry of Health often provides some drugs like anti-malarial free both the injectable and some are oral. For now, we hardly exhaust all the drugs that have been provided free. ...I think I have not seen, since I have been in this facility, I have not seen stock out of ART drugs. ..It is possible for non-HIV but I have not seen that, at least the essential drugs”. <b>MS</b></p> <p>b) “we have some facilities like I said in addition to drugs and consumables, for instance, we have had quite a lot of instruments that came, may be clinical instruments like BP machines, stethoscope, weighing machines and so on, even laboratory equipment we have had some supplies there”. <b>CMAC</b></p>

		<p>5.6 Integrated care strengthens PHC management systems</p>	<p>a) “And also it helps us in disease surveillance because if a unit is providing one program, an individual may come with a disease that is of importance and then that may easily be missed by the healthcare worker, but if he is an overall he has an idea of what is going in all the units and something can be easily pick and that will strengthened the services we offer”. <b>MS</b></p> <p>b) “the medical records system that was used in HIV has built them the capacity for them to actually extend to other disease areas in that particular facility. So overall, healthcare provision in KCHC would have improved because of the fact that they are actually working in the HIV program. So to a large extent, I think that the integration has favored the facility a lot more, and equally favored the community which the facility serve”. <b>IHVN</b></p> <p>c) “...before the integration stockout syndromes are challenges that were anticipated and then we are proactive to ensure that we don’t get this kind of situation where we have stock out of drugs. So we have very good appointment system in KCHC for example, so we have an idea we know exactly which patient is due to come today and which is due to come tomorrow, and we have a matching commodity utilisation to ensure that no patient comes and miss any drugs. So again it helps us to look at the workload for healthcare providers, against the expected overload never happens. If for example a doctor or healthcare worker can only see 40 patients in one day, you spread the appointment system in such a way that the patients never get to see more than what is available, including OPD. So yes, what integration has done is to allow to use a robust appointment system to keep patients numbers at minimum, to keep commodity utilisation at well efficient manner in such a way that we will not have stock out of drugs, or stock out of any commodity for that matter, so at the level of KCHC we never had a stock out of drugs since we started integration”. <b>IHVN</b></p>
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		5.7 Integrated care improves PHC funding, infrastructure and facility	<p>a) "...because HIV services also come with TB services together, so some of the funding that came along with it, it helps in great way in maintaining our power source to the facility. We also, I remember very well, there is vehicle also in the facility, a motor bike that is used for contact tracing, so these are some of the benefits that accrued to the facility". <b>CMAC</b></p> <p>b) ".. apart from staff we have receive even additional equipment, if we go to their laboratory it is called a standard lab, where they can do all the basics investigations, basic tests not only for HIV, for other conditions as well, people can be admitted and there are wards and whatever so to me it is of immense benefit". <b>PHCMB</b></p>
6.	<b>Health workers' perspectives about drawbacks of integrated care</b>	6.1 Integrated care has no drawback	<p>a) "...signing, no no no, there is no any disadvantage, what we see here is only progress. The health workers have also not complained about their tasks". (<b>Halima, HIV female client, aged 30 years</b>).</p> <p><b>b) "No, we have not encountered any problems here". (Hassan, HIV male client, aged 36 years).</b></p> <p>"There is no disadvantage". (<b>Yelwa, HIV female client, aged 26 years</b>).</p> <p>c) "Everything is going on according to schedules and time. I don't think there will be any congestion in the clinic". (<b>Sule, HIV male client, aged 32 years</b>).</p> <p><b>d) "No disadvantage, even if there would be, the advantages overwhelmed the disadvantages". (Henry, HIV male client, aged 42 years)</b></p> <p>e) "I don't have any issues". (<b>Mudi, HIV male client, aged 55 years</b>)</p> <p><b>f) "...when you get to the market you will see that some went to buy rice while others were for maize..., again when you get to any court of law you also see that some are plaintiffs while some are accused, integration is therefore a must and has no disadvantage my son". (Gwarzo, HIV male client, aged 64 years).</b></p> <p>g) "I don't think there is any problem with joining the two services together apart from progress because many procedures and equipment</p>

			<p>were not available in this hospital before, a simple scan one will have to travel to AKTH. But now this and many other things are available and I believe that there are more to come in the future”. <b>(Non-HIV Female FGD, P4)</b></p> <p>h) “This joint delivery services will not bring any problem or challenges but it brings a lot of benefits on the part of the patients and workers and the hospital in particular”. <b>(Non-HIV Female FGD, P6)</b></p> <p>i) “To be honest there is no any disadvantage”. <b>(HIV positive Female FGD, ALL)</b></p> <p>j) “To be honest we are treated well, even if you come late nobody will harass you among the health workers, and in the event there is shortage of drugs this does affect us because they make sure our drugs are reserved”. <b>(HIV positive Female FGD, P3)</b></p> <p>k) “They have enough and good doctors that attend to us all the time, we don’t experience any problem any time we come to the clinic”. <b>(HIV positive Female FGD, P2)</b></p> <p>l) “There is no disadvantage, it is even the health workers usually remind us to do our tests and other things, they usually make sure that you are being provided with all the necessary care you may require”. <b>(HIV positive Female FGD, P7)</b></p> <p>m) “There is no problem and we do not envisage any disadvantage even in the future. Our fear has been stigmatisation and this has also been cleared with the integration”. <b>(HIV positive Male FGD, P1)</b></p> <p>n) “No disadvantage”. <b>(HIV positive Male FGD, ALL)</b></p> <p>o) “Honestly I have not witnessed or experienced any problem in this health facility”. <b>(Salihu, non-HIV male client, aged 42 years).</b></p> <p>p) “There is no any disadvantages with this integration services it will only reduce the level of stigmatisation among the patients”. <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>q) “There is no any disadvantages or problems experienced as a result of integration of care services”. <b>(Shuaibu, non-HIV male client, aged 37 years).</b></p>
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			r) “I do not see any barrier to this integration”. <b>(Saif, non-HIV male client, aged 26 years).</b>
		6.2 Integrated care brings about overcrowding and increased waiting time	a) “..waiting time for non-HIV increases. I explain earlier that waiting time for HIV increases but that of the non-HIV patients also increases”. <b>(Doctor 2, male, 34 years)</b>
		6.3 Integrated cares increase workload on health workers	<p>a) “...this is a health facility that is running routine PHC services with a lot of patients, a lot of care demand and now all of a sudden there is an introduction of a component into the routine system, 1) there is overstretching of the system, more patients are to be attended by care providers”. <b>(Doctor 1, male, 32 years)</b></p> <p>b) “..Yes, there are disadvantages, 1) it added workload, because before we started seeing HIV patients we normally finish our clinics by 12.00 – 1.00 pm and now we close between 3.00pm or 4.00pm seeing patients”. <b>(Doctor 2, male, 34 years).</b></p> <p>c) “There is no much side effects. The only thing is that it increases our workload, but we are still trying but we are not much and we are trying to cope with it”. <b>(Matron i/c, female, 45 years)</b></p> <p>d) “..On the part of the health workers there may be need for additional manpower because of the increase of patients which will lead to work overload”. <b>(Matron ANC/ labour room, female, 52 years).</b></p> <p>e) “..Our biggest problem is shortage of manpower. When the afternoon nurse comes later she will be the only one that will attend to labour room, the ward, dressing and anything coming to the hospital, she is the one and only after the doctor. ..you see the work is too much for only one person”. <b>(Matron ANC/ labour room, female, 52 years)</b></p> <p>f) “..The only problem here is shortage of manpower due to increase number of patients attending healthcare services. If their numbers can be increased the services will be smoother”. <b>(i/c lab, male, 39 years).</b></p>

		6.4 Integrated care predisposes to lack of confidentiality and stigmatisation	a) “..You will see patient try to hide her identity even among themselves, when they come they will be covering themselves with this veil, something like face mask, trying to avoid notification by other people within the community, So they feel that stigma is still there but among them there are some that are socialised. They don’t feel anything about that. I am certain that even some patients they travel not more than 400km, some even come from Minna, some come from Abuja, some come from Katsina just to come and get their drugs, just to take care of that stigmatisation that they will be facing within their community”. <b>(i/c pharmacy, male, 43 years)</b>
		6.5 Integrated care compromises quality of care at health facilities	a) “.. because if you have more patients to see, that could compromise the quality because you need more time, to spent more time with your client to give the best. If you are having more patients to see that could compromise the quality of care you give. Quality in terms of your personal input to the treatment for example”. <b>(Doctor 1, male, 32 years).</b> b) “...Some of the disadvantages we encounter are occasional lack of availability of equipment and drugs on the side of non-HIV services because more priority is given to HIV clients”. <b>(ART CHEW, female, 52 years).</b>
		6.6 Integrated care distracts attention of health workers from non-HIV services	a) “.... if by whatever means, incentive comes from HIV angle of care now, ..that could be at the detriment of other PHC activities. A staff may put more emphasis on the HIV care at the detriment of routine PHC activities, so unless efforts is taken to ensure that it is blinded and integrated such that you will not say this is from HIV and not from other diseases”. <b>(Doctor 1, male, 32 years)</b> b) “.... may be that is the disadvantage because some of the patients need to have this kind of care but because of the integration focus more on the HIV patients, so our mind set has been given more devotion to take care of people that come with HIV even with respect to the pharmaceutical problems and we make sure that they get the



			best services, so the patients that are not HIV positive or that are just routine patients that come with different ailments something like malaria, typhoid we may not likely give them time in terms of pharmaceutical care”. <b>(i/c pharmacy, male, 43 years)</b>
		6.7 Integrated care breeds overdependence on donors	a) “..Another disadvantage is the issue of the routing problem of donor dependence. Still donor agencies, .. that you integrated HIV services doesn’t mean that you will stop the donor agencies from supporting the HIV activities. Now, this could make the government to compromise its support to the normal PHC system, thinking that since there is integration of services, we still expect something to come from the HIV side of it and they may reduce their form of routine input of the PHC system”. <b>(Doctor 1, male, 32 years)</b>
7.	<b>Patients’ experiences with integrated care in Kumbotso CHC</b>	7.1 Integrated care improved infrastructure and facility	<p>a) “The first time I came to this hospital it was not as developed as now”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>b) “From what I experienced with the integrated care in this facility there is improved health care services. In this facility there were only two desks but you will notice that there are a lot of new furniture and equipment, everywhere is painted and looking very neat and you will meet a doctor each time you come this facility 24 hours. Because of this integration there are many new units like eye clinic, dental unit, scanning facilities and so on, and many people even reject transfers and referrals from this facility. These are all improvements in this facility”. <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>c) “I have been coming to this hospital for about five years and I have never seen anything outside progress. Yes things have changed remarkably. In the past there were even no facilities for admission and the staffing was very poor, and now I was even admitted sometimes back, and you can see so many health workers around”. <b>(Shamsiyya, non-HIV female client, aged 52 years).</b></p>

		7.2 Integrated care improved access to health care	<p>a) “This integrated care has made access to the healthcare service closer to our communities, had it been there is no integration here they will have to travel far to get the services, may be some may not even go to the hospital, or will start to go and cease because of lack of transport money”. <b>(Non –HIV Male FGD, P7)</b></p> <p>b) “I see it growing very fast especially when you look at patients’ attendance, because sometimes patients request for transfer to this hospital from the teaching hospital”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>c) “This integration proved very important in one thing, it has increased number of patients in this hospital: if I was to be a doctor and I find only three patients waiting for my service I would become discouraged but I would be most active if I find many patients needing my service, because the integration has increased attendance to the hospital it motivates health workers by keeping them active”. <b>(Non – HIV Male FGD, P1)</b></p>
		7.3 Integrated care has reduced stigma and discrimination	<p>a) “To be honest I am not more than 2 years in this facility but up to now I have never witnessed any form of stigma or discrimination from the patients or from the health workers”. <b>(Sule, HIV male client, aged 32 years).</b></p> <p>b) “The level of stigmatisation has reduced, ..we thank God, everything is going on fine this hospital. <b>(Gwarzo, HIV male client, aged 64 years).</b></p> <p>c) “..It has also reduced the level of stigmatisation among the patients and improved their health status. You will come to the hospital with an HIV patient mingle with others and go away without anybody identifying that he is positive”. <b>(Non –HIV Male FGD, P7)</b></p> <p>d) “..Again, patients are relaxed with themselves and other normal patients, no stigmatisation. When you come to the clinic all patients, HIV and non HIV are together and one cannot be able to identify who is who”. <b>(Halima, HIV female client, aged 30 years).</b></p>

			<p>e) “..they will also not come to ask for transfer because they see their relatives attending the same health facility with them, they have stopped all that. The way they relate with other patients in the hospital is also commendable”. <b>(Hassan, HIV male client, aged 36 years).</b></p>
		7.4 Integrated care reduced overcrowding and waiting time	<p>a) “There is no congestions in this facility because everything is well organised. “There is no long waiting time at the pharmacy or when you go to see the doctor”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>b) “The issue of congestion does not arise because most old cases attend on scheduled appointment on Wednesday. Other patients can also attend on that Wednesday but you will find that the majority are our patients coming to refill drugs”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>c) “Congestion does not disrupt services, they called names from the register”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>d) “No waiting in hospital, not even much”. <b>(Henry, HIV male client, aged 42 years)</b></p> <p>e) “In consultation unit there may be congestion as a result of the joint integration with other health services. ..but one must be patient where many people come to access a service at the same time. There is no wastage of time also in the lab unit”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>f) “There is no waste of time in all the units”. <b>(HIV positive Female FGD, P1)</b></p> <p>g) “The quality of services is good, there is no delay in all the units”. <b>(HIV positive Female FGD, P2)</b></p> <p>h) “No we have not seen any form of delay in seeing the health workers because they have enough staff to support the services”. <b>(Non-HIV Female FGD, P1)</b></p> <p>i) “..There is no congestion”. <b>(HIV positive Female FGD, P8)</b></p> <p>j) “..It is the same thing, there is no waste of time”. <b>(HIV positive Female FGD, P5)</b></p>

			<p>k) “Services here are prompt and smooth, no congestion. When you compare the volume of patients in AKTH, Infectious Disease Hospital (IDH) and Murtala Mohammed Specialist Hospital (MMSH) and this hospital you will find no congestion here in KCHC. When I was attending MMSH I leave my house as early as 6am and arrive there by 8am but the earliest time I leave MMSH will be around 2pm, but since the integration in this hospital my problems become solved, I leave my house 8am come in here and within 30minutes to an hour I am done”. <b>(HIV positive Male FGD, P6)</b></p> <p>l) “I am so impressed with the way we are being treated in this hospital. We do not encounter any delay at any point especially when the Chairman of support group announces our presence to the health workers, they quick squeeze and discharge us on time”. <b>(HIV positive Male FGD, P5)</b></p> <p>m) “It was before when there were few health workers in the facility that you see people congested in the different units waiting to be attended to but with the integration sometimes you see up to five doctors or more at a time in this facility, so there is hardly congestion. This is a remarkable improvement. Even at the registration unit because more staff are there to assist and attend to patients so that time is saved. This is same with the pharmacy and other units in the hospital. This is a remarkable improvement as a result people are turning out en mass to the hospital”. <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>n) “Yes, there are many patients in the hospital but the waiting time is not long because there are many health workers to attend to people. Health workers also dedicate a lot of their times to attending patients without distractions”. <b>(Shuaibu, non-HIV male client, aged 37 years).</b></p> <p>o) “The crowd is manageable here and there is no congestion. There is good organisation of patients, you have to follow queue and it is first come and first serve”. <b>(Shamsiyya, non-HIV female client, aged 52 years).</b></p>
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		<p>7.5 Integrated care resulted in seamless services</p>	<p>a) “..Very well, the doctors take time to check patients well and attend to their problems, to be honest we are favoured patients in this facility”. “We don’t have problem with laboratory, whoever is given lab form from here is attended to immediately”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>b) “The organisation is very good and the staff will never refuse to attend to our patients even when they come late. Yes, our patients get all the desired attention. I usually wait by the door and ensure this is done well”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>c) “Everything is ok, there is no any delay in accessing services in all the units. Yes, they do, and they are trying their best to see that everybody is attended to. We don’t encounter any problems with lab services”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>d) “I am well attended to, and collect my drugs without wasting time. Everything in the lab is ok”. <b>(Sule, HIV male client, aged 32 years).</b></p> <p>e) “Yes, the doctor examined us very well and allow us to explain ourselves”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>f) “If not because of the progress in this hospital the woman I brought did not book for ANC in this hospital, she was attending another hospital for ANC but her neighbor who has been attending this hospital advised her to come over to this place because of the reception and good service they are getting from the health workers here”. <b>(Non-HIV Female FGD, P2)</b></p> <p>g) “Honestly this is my first time here but I was so impressed with the reception and the way things are being conducted here. In fact, when we were waiting outside my sister whispered me that this is where she is coming to do her booking for ANC, just from what she saw also. You see now my patient has delivered safely and we were allowed to see her without any form of maltreatment from the health workers”. <b>(Non-HIV Female FGD, P6)</b></p> <p>h) “..The doctor examined us very well and also allowed us to narrate our problems to him. <b>(Non-HIV Female FGD, P4)</b></p>

			<p>i) “I am the 7<sup>th</sup> HIV patient enrolled in this hospital but we are now more than 400 in number because of the very good reception you get from the health workers when you come. There is no waste of time in all the units; records, pharmacy, laboratory and consultation etc. This is good progress”. <b>(HIV positive Female FGD, P4)</b></p> <p>j) “My experience is, the health workers in this hospital are specialised in counselling once you are diagnosed to be HIV positive, they have a way of making feel relaxed and back to your senses again”. <b>(HIV positive Female FGD, P4)</b></p> <p>k) “I also experienced the warm reception and the counselling skills of the staff, when I was brought to the hospital for the first time I was crying and the health worker had to drop me at home, counselling me all the way until we reached home”. <b>(HIV positive Female FGD, P6)</b></p> <p>l) “If you happen to miss clinic appointments the staff will follow you home and enquire about your health and keep on encouraging you to go to the hospital. There was a time when they sent me a vehicle to transport me to hospital”. <b>(HIV positive Female FGD, P7)</b></p> <p>m) “In this facility we (the support group members) get involved into marriage affairs when any of our patients is getting married, we ensure that they marry the right person as per their status and we make sure that cross marriages with non-HIV patients do not happen knowingly or unknowingly”. <b>(HIV positive Female FGD, P8)</b></p> <p>n) “There is no much delay before you see health workers here, they are very receptive and the doctor gives you enough time to listen to you and also to explain your problems to you”. <b>(HIV positive Male FGD, P8)</b></p> <p>o) “With integrated care that is going on in this facility, service is excellent because I brought a diabetic patient and he was well received and attended by health personnel and now he is on treatment and this is of great benefit. That is why people from neighboring areas are accessing the facility as result of good services they are rendering”. <b>(Salihu, non-HIV male client, aged 42 years).</b></p>
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		<p>p) “As a result of the integration this hospital is now busy and the workers are very receptive”. <b>(Shuaibu, non-HIV male client, aged 37 years).</b></p> <p>q) “The way and manner patients are handled in this health facility has remarkably improved. For instance, I brought a patient to the dental unit of this hospital and I made a mistake at the point of registration where I did not collect the card I was supposed to take to the dental unit, on arrival the health worker at the dental unit asked for the card, and when I told her I did not have it she politely explained to me to get the card from the registration unit and upon arrival at the registration desk they also listened to me well and corrected the mistake without any maltreatment. This is a remarkable improvement on the reception at hospital all due to the integration”. <b>(Saif, non-HIV male client, aged 26 years).</b></p> <p>r) “On patients flow, yes, they have arrangement, they are calling names one by one depending on who comes first. In the places like GOPD or consultation room no much time is wasted there. The health workers and doctors listen and allow us to explain our problems and as well, they take time to examine us thoroughly”. <b>(Hadiza, non-HIV female client, aged 26 years).</b></p> <p>s) “Clinic operations are arranged well, the doctors are punctual and arrangement is come first and come serve. The health workers have enough time to examined patients very well, they are trying their best and making sure they listen to your problems and check you very well”. <b>(Salihu, non-HIV male client, aged 42 years).</b></p> <p>t) “Once they get to the facility and experience the reception there they will also encourage others to come to the facility. I just witnessed an incidence where some group of women brought a convulsing child to this facility, the mother and grandmother were so worried and confused to the extent that the mother could not withstand the situation so she went out of the hospital. When the matron heard about the case she quickly rushed and instructed that the child be taken in, the attending doctor also rushed out by himself looking for the mother</p>
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			<p>to get the history. Now the child is stable and no more convulsing, is this not progress?”. <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>u) “Clinics are arranged well. The doctors are punctual and arrangement is come first and come serve. Health workers accord enough time to listen to your problems and intervene appropriately”. <b>(Saif, non-HIV male client, aged 26 years).</b></p>
		<p>7.6 Integrated care increased availability of drugs, consumables and increased adherence to HIV care</p>	<p>a) “Drugs are always available, even during industrial strike we the support group come out to ensure drugs are available”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>b) “..it has resulted to the state where our patients will not start drugs and fail to continue, they have stopped all that. In addition, whatever advice they are given on their health in the hospital, they stick to it. There is no shortage of drugs in this facility. I have never heard of any complain of drugs shortage in any section”. <b>(Lami, HIV female client, aged 36 years).</b></p> <p>c) “There is availability of drugs even during worker’s strike action. Yes., there is enough drugs”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>d) “The drugs are adequate; we don’t have problem”. <b>(Sule, HIV male client, aged 32 years).</b></p> <p>e) “Some years back we experienced shortage of equipment and working materials in the lab, but with coming of this organisation that support us, there was a time when items were supplied on the same day they got finished. Even the laboratory staff were very excited and said that if this was the way things are being handled in this facility we would have attained much greater level by now. Drugs are available all the time now except when you talk about second line drugs, possibly because we have only two patients on these drugs”. <b>(Abdul, HIV male client, aged 29 years).</b></p> <p>e) “drugs are available. The only drugs that we do have challenge on is Seprin, ..normally we ask from the pharmacy they will say it is not</p>



			<p>available. That is the highest place we can go. Apart from Septrin, we have never had a challenge of any other drugs”. (<b>Henry, HIV male client, aged 42 years</b>)</p> <p><b>f)</b> “There is no shortage of drugs in this facility since I started coming here”. (<b>Mudi, HIV male client, aged 55 years</b>)</p> <p><b>g)</b> “Drugs are available here, you will get any drugs prescribed in the pharmacy, and there are no problems here”. (<b>Non-HIV Female FGD, P3</b>)</p> <p><b>h)</b> “Since I came here there was not a day that I will not get the drugs from the pharmacy unless if you don’t have money to buy the drugs, and the drugs are affordable”. (<b>Non-HIV Female FGD, P4</b>)</p> <p><b>i)</b> “There is availability of drugs in the pharmacy unit, in fact drugs are given in excess”. (<b>HIV positive Female FGD, P3</b>)</p> <p><b>j)</b> “There is no a day that I came here and there was no drugs”. (<b>HIV positive Female FGD, P4</b>)</p> <p><b>k)</b> “Everything is ok in the laboratory unit”. (<b>HIV positive Female FGD, P4</b>)</p> <p><b>l)</b> “Drugs are available most of the times. It was only once that I came and could not get the drugs prescribed to me by a doctor but the prices of the drugs here are much cheaper than the price outside the hospital, it is just next to free. I have not witnessed any problem with laboratory services”. (<b>Saif, non-HIV male client, aged 26 years</b>).</p>
		7.7 Integrated care has prevented mother to child HIV infection	<p><b>a)</b> “...we make remarkable progress because we have never delivered a positive child in this facility. Once a positive mother gets pregnant, she becomes one of my closest friends until she delivers and weans off her baby. I continue to guide her all the time, to the extent that I follow them home, and by the grace of God all the ones we advised maintained them well, and they come to deliver well. This is a good achievement”. (<b>Halima, HIV female client, aged 30 years</b>).</p> <p><b>b)</b> “...if you remember I told you that we have never had a positive baby from our patients in this facility”. (<b>Hassan, HIV male client, aged 36 years</b>).</p>

		7.8 Integrated care promoted community development and involvement in health care	<p>a) ” Since we have good relationship with TB/Dots staff and patients because they are our allies, when I came across a friend from my village who started coughing and I noticed it was getting more and more, I advised him to come with me to the hospital for examination, and when we came he was found to be positive and as I am speaking to you now he has already started medications. I see this as progress. .. Each time I come across any suspicious patient from my village, I bring him here outright because of my contact with them, all due to this combined care”. <b>(Abdul, HIV male client, aged 29 years)</b>.</p> <p>b) “This integration has brought positive development, not only on the hospital but the town itself is now being respected more because of the services in the hospital. I think this is a good development, we are happy and we will want more of this if there are more available”. <b>(Non –HIV Male FGD, P3)</b></p>
		7.9 Integrated care improved patients’ satisfaction with health services	<p>a) “I am happy with the way they carry out with their services”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>b) “I am happy and satisfied with the services we received here and there is a lot of improvement. <b>(Non-HIV Female FGD, P8)</b></p>
		7.10 Integrated care increased workload and lack of commitment of health workers	<p>a) “...Because of the crowd sometimes you may not be seen by the health workers especially in the evenings. There was a day when about 20-30 of us came in the evening to see the doctor and when he came out from the wards he selected only three patients and asked the others to come back in the morning because he has alone and genuinely busy. I am hypertensive and having severe headache that time but we had to reluctantly go back home. There is need for more workers”. <b>(Non –HIV Male FGD, P7)</b></p> <p><b>b) “The health workers do not abide by the rules they lay, they ask patients to come at early enough but they hardly show up to attend to them. Ideally workers are to report 7-8am but sometimes they fail to show up to 10-11 am. This in my opinion is the cause of the congestion and the delay in care”. (Non –HIV Male FGD, P6)</b></p>

			<p>c) “I have seen and experienced some many things, there is negligence and I don’t care attitude played by health workers when you bring patient especially a woman in labour the nurses/midwives used to shout at them or asked them to go back home in an impolite manner”. <b>(Ruqayya, non-HIV female client, aged 25 years).</b></p> <p>d) “My experience here is that I have been coming to this facility up to the third time before I got attended to even though it was during strike action by the health workers, but when they attended to us, we were happy because they did that well”. <b>(Raiya, non-HIV female client, aged 24 years).</b></p>
		7.11 Integrated care resulted in occasional stock out of drugs and consumables in the hospital	<p>a) “There is no much delay in the laboratory but the only problem is lack of enough working materials to carry out their assignment on time. There is a complaint from patients that they visited the laboratory for a test but returned back because there was no container available to collect samples from patients”. <b>(HIV positive Male FGD, P6)</b></p> <p>b) “..with this integrated care services there is shortage of drug in the pharmacy because of the large number of patients around to collect drugs and not all drugs are available, we bought some drugs outside the hospital. <b>(Ruqayya, non-HIV female client, aged 25 years).</b></p> <p>c) “I have been to the facility on several occasions and was asked to get drugs from outside because they were not available”. <b>(Non –HIV Male FGD, P7)</b></p> <p>d) “As regards to availability of drugs at times there will be shortage or inadequate supply of drugs”. <b>(Non –HIV Male FGD, P6)</b></p>
		7.12 Integrated care resulted in congestion, time wasting and reduced health worker – patient contact time in clinics	<p>a) “No there is no congestion in the clinic but there is congestion and queue at the laboratory. Yes, the combined care may have contributed to the congestion in all the places”. <b>(Raiya, non-HIV female client, aged 24 years).</b></p> <p>b) “Because of the large number of patients as a result of this integration people waste too much time like 3 hours. I think this is</p>

			due to the shortage of staff to handle the crowd”. ( <b>Ruqayya, non-HIV female client, aged 25 years</b> ).
8.	<b>Health workers’ experiences with integrated care in Kumbotso CHC</b>	8.1 Integrated care improved infrastructure and facility	<p>a) “They carried out some minor expansion and renovation in the facility”. (<b>Matron ANC/ labour room, female, 52 years</b>)</p> <p>b) “There are now new units that were not existing here, like the dental unit, ultrasound scanning unit and others”. (<b>i/c lab, male, 39 years</b>).</p> <p>c) “..Structure and facilities have improved, what I mean now new equipment was brought to the hospital. In the lab we have new equipment, in the pharmacy we have enough drugs and in the records we have cards and our folders, table and chairs are all available. Talk less of electricity, it has increase. Before they give us only one hour light between 10 and 11 am, but now if we put on the generator it will work up to 4.00pm”. (<b>i/c medical records, male, 57 years</b>).</p>
		8.2 Integrated care improved access to health care	<p>a) “..workload increases because of increase in access of care and quality of care because more and more patients are coming not only for HIV services but for other non-HIV services”. (<b>Doctor 2, male, 34 years</b>).</p> <p>b) “..Well, the only experience I have here in Kumbotso CHC is the progress made. The way number of patients is increasing because of the quality of service here. If for instance one will assume that the number of patients that attended this facility last year was 20 then it will now be assumed to reach 50 patients. This increase includes both HIV and non HIV patient”. (<b>i/c lab, male, 39 years</b>).</p> <p>c) “What I experience here is that before integration of this HIV in this clinic, we don’t have enough patients but now the number of patients has increased”. (<b>i/c medical records, male, 57 years</b>).</p>
		8.3 Integrated care reduced stigma and discrimination	<p>a) “Stigma has reduced, there is no any stigmatisation in the hospital. ..They mingle together you will not even know that the person is HIV positive because we just do it the way you will not understand”. (<b>Matron i/c, female, 45 years</b>).</p>

			b) “.. there is no stigmatisation among our patients”. ( <b>Matron ANC/ labour room, female, 52 years</b> ).
		8.4 Integrated care reduced congestion and waiting time	a) “..Yes, there is no congestion why because we have appointment system. ..All because of integration”. ( <b>i/c medical records, male, 57 years</b> ).
		8.5 Integrated care resulted in seamless services	a) “..So, patients flow is smooth and organised. They are not crowded and there are no any disrupted services”. ( <b>Matron i/c, female, 45 years</b> ).
		8.6 Integrated care improved availability of drugs and consumables	<p>a) “..The availability of drugs has increased because most at times you hardly find out that our ANC drugs are out of stock. We always have it, may be one or two patients may complain of anything...They have this revolving fund, so they will look at the patients turn over and buy drugs accordingly”. (<b>Matron i/c, female, 45 years</b>).</p> <p>b) “..There is availability of drugs and consumables on the part of both HIV and non-HIV services. ..The HIV drugs are always been supplied by donors, but on the other side it is a revolving fund that if the drugs is out of stock the pharmacists will go and source it outside. We don't experience shortage of drugs for all sides in this health facility”. (<b>Matron ANC/ labour room, female, 52 years</b>).</p> <p>c) “..Honestly, we have been having sufficient supply of drugs that is constant. The supply is very constant and smooth. It is only when we have issue of the workers strike, that is the only time if care is not taken we will be having some drugs about to be going out of stock, and we have been managing that because we are making some arrangement to make sure even during the strike we come and make sure that the patients are on drug”. (<b>i/c pharmacy, male, 43 years</b>).</p> <p>d) “..For drugs are free and are available at all times and the same for non HIV patients there is regular supply of drugs but there are certain drugs that may not be available there”. (<b>ART CHEW, female, 52 years</b>).</p>

		<p>8.7 Integrated care improved patients' satisfaction with health services</p>	<p>a) "... about 80% are satisfied with the services and 20% are not satisfied". <b>(Matron ANC/ labour room, female, 52 years).</b></p> <p>b) "...Yes, our patients are satisfied with the care we give them. ..At least 90% of our patients are satisfied with the services we render, even though you still have those that complain for no reason but they will still be among the 10%". <b>(i/c lab, male, 39 years).</b></p> <p>c) "Yes our patients are satisfied...The HIV patients are more satisfied because there is no waste of time when they come, if they have problems we counsel them and give them good adherence. They are very happy with us... ..The non-HIV patients are also happy with our reception. Let me give you an example, a woman came with an anemic baby one morning, and as part of our routine checks on the patients in the morning before we start clinic I came across the baby, called out the mother and filled forms for her before the doctor came from ward round. When he came he attended to her immediately, and the mother was very happy. You needed to have seen how she was thanking me and saying that we have changed her misconception that all health workers were bad and pompous. So you see our patients are happy, they are always cheerful and they even brought commendation letters for some of our staff. So you see nobody is left out, whoever requires attention from us in this facility gets it 100%". <b>(ART CHEW, female, 52 years).</b></p>
		<p>8.8 Integrated care provided opportunity for staffing, staff development and training</p>	<p>a) "...The number of staff has increased, ..before we were only few with the integration they have added some few nurses but still we are not much". <b>(Matron i/c, female, 45 years).</b></p> <p>b) "...ahh.., in the area of capacity building a lot of training and retraining of staff has been organised usually in support of HIV but you are doing it to the same staff that provide the services at the primary health care level". <b>(Doctor 1, male, 32 years)</b></p> <p>c) "...The good thing is that we have more opportunity now on training than before. Because the IHVN they used to do a lot of</p>

			<p>training after each three months they call for training and it is really helping us because we are now learning more on how to take care of HIV patients than before”. <b>(Matron i/c, female, 45 years)</b>.</p> <p>d) “..Well we have also experienced progress here with this integration. Remember there were only CHEWS in this facility seeing few patients, but now we have many doctors to attend to many problems any time. Our problem is only at night”. <b>(Matron ANC/labour room, female, 52 years)</b>.</p> <p>e) “we may not say that we have increased number of staff but rather in terms of like seminar conducted by the program to uplift the status in terms of capacity of staff offering the services is been on-going, and we have like not less than 3 or 5 seminars, and that seminar has improved our capacity”. <b>(i/c pharmacy, male, 43 years)</b>.</p> <p>f) “Yes, there is improvement on the part of health workers training, ...Yes, our workers participated in workshops, I even attended seminar on HIV collection, processing, protection and assembling of samples. ..Apart from workshops on HIV, there is also training on TB. <b>(i/c lab, male, 39 years)</b>.</p> <p>g) “The numbers of health workers have increased. Ahhaa.., In the lab, they have employed more people to assist the lab people, in the pharmacy usually in the clinic days there are people usually that use to come for that work, here in our OPD record side, on Wednesdays we have somebody that we attach to that clinic that will make the clinic run smoothly. So, in the staff activities, there is improvement”.</p> <p>h) “..Training was done by the.. PEPFAR or NACA and sometimes we have activity more than we do for that training, when a new form is initiated, they call us and show us how to do it, days training, 3 days training.. In a year, sometimes one time, sometimes two times”. <b>(i/c medical records, male, 57 years)</b>.</p> <p>i) “...The integration has resulted in increased health workers to provide health care. Before the integration it was only the doctors seeing all patients in this facility and the workload was too much for them. With the integration other health workers were also involved in</p>
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			the care of HIV patients and the delay in seeing patients has reduced a lot now. ...Yes, we went for several trainings”. ( <b>ART CHEW, female, 52 years</b> ).
		8.9 Integrated care increased workload	<p>a) “..There is increased workload because in this facility only one person is doing night shift and evening shift, the rest we are doing morning shift because of this lack of manpower. There of our staff went for training then one is on maternity we are only to enter all our new clients that we do ANC in the morning and if that nurse happened to have patient in labour and there is may be in-patient on admission, she will be very busy and she cannot have time to sit down and enter all our records”. (<b>Matron i/c, female, 45 years</b>).</p> <p>b) “..There is too much workload here for instance we only (4) on morning shift in this facility today, and in the scanning room the doctor wants to attend to only 2 patients but we had more than 50 patients waiting for scan. So, one of our nurses was there to attend to those requiring scanning and also to give another appointment to those that will not be attended to today; another nurse is at the antenatal unit attending to more than 60 pregnant women, I am attending to labour cases and in-patients and so on, this shows that the work is too much for us”. (<b>Matron ANC/ labour room, female, 52 years</b>).</p>
		8.10 Integrated care resulted in occasional stock out of drugs and consumables in the hospital	a) “...Sometimes the drugs and consumables are shortage in supply. It affects all the two categories; HIV and non-HIV patients but mostly affects the non-HIV patients”. ( <b>i/c lab, male, 39 years</b> ).
		8.11 Integrated care resulted in congestion, time wasting and reduced health worker – patient contact time in clinics	a) “..before the integration the time they spent before this to see the doctor is quite minimal compared to what is obtainable today, because they have to wait a bit longer depending on who comes first even though we don’t say these are HIV patients or these are this, is the issue of everybody is important, issue of first come first serve. People that normally come to wait for a shorter time to be attended to now



			<p>have to come either earlier or they have to wait longer because the number of patients have now increased”. <b>(Doctor 1, male, 32 years)</b></p> <p>b) “Of course, as the number of patients is expected to attend to increase, he will want to speed up so that he can be able to cover that number otherwise some might be left unattended to. So the increasing number of patients has now lead to the reduction of the contact time between the clients or other patients and health care provider”. <b>(Doctor 1, male, 32 years).</b></p>
9.	<p><b>Patients’ perspective of impact of integrated care on Non-HIV services</b></p>	9.1 Integrated care improved access to all services	<p>a) “We access healthcare services from every unit in this hospital and there are no problems everywhere”. <b>(Halima, HIV female client, aged 30 years).</b></p>
		9.2 Integrated care resulted in seamless and standardised health care services	<p>a) “The reception is good and services are just same everywhere. ..I will always say the truth for the sake of God, things are the same allover”. <b>(Halima, HIV female client, aged 30 years).</b></p> <p>b) “Everything is going well with non-HIV services, there and they attend each patient equally. There is no any complaints from any patient meaning all is going on well”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>c) “There is no problem with non-HIV services, they treat us well like other people, ..with regards to services, all the two are doing their best”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>d) “..we receive good care from the health workers on other non-HIV services”. <b>(Sule, HIV male client, aged 32 years).</b></p> <p>e) “I have not heard any complaint from everybody. ..Yes, everything is well, and patients coming for other services are getting the required attention, there is no partiality. If there is partiality, I must be one of the victims. Everybody is being treated equally either HIV or any condition. Yes everybody is happy”. <b>(Henry, HIV male client, aged 42 years)</b></p>

			<p>f) “..I have not witnessed any complaints or problems against the health workers and the services they are rendering”. <b>(Mudi, HIV male client, aged 55 years)</b></p> <p>g) “They treated us equally in all units”. <b>(Gwarzo, HIV male client, aged 64 years).</b></p> <p>h) “There is no difference in reception, all patients are treated equally. I have been a regular customer here but I have never seen any difference in the way and manner patients are handled in this facility”. <b>(Non –HIV Male FGD, P1)</b></p> <p>i) “All patients are treated equally”. <b>(HIV positive Female FGD, ALL)</b></p> <p>j) “All patients receive the same treatment in the hospital. The reason why some of the negative patients feel that we are being given preferential treatment is our patients come to the hospital early, but the other patients refuse to come early, they sometimes come between 11am and 12 noon for no reason, sometimes they come when the doctors are on break, and if at that time they are asked to wait for the next shift of health workers they begin to complain about preferential treatment. But when you come early the reception is good and services are prompt”. <b>(HIV positive Male FGD, P6)</b></p> <p>k) “The health workers are trying their best and they take good care of patients effectively. They render quality service and that is why people are coming. I and my family come all the way from Sharada (about 10km), and I was introduced to this hospital by my wife when I saw the way she was received and treated when she came here for antenatal and delivery in the past”. <b>(Non –HIV Male FGD, P6)</b></p> <p>l) “To be honest the quality of services provided is good and I am satisfied. I have NHIS but due to the quality of service we receive here I only patronise this facility”. <b>(Non –HIV Male FGD, P7)</b></p> <p>m) “The quality of service is good”. <b>(Non –HIV Male FGD, P8)</b></p> <p>n) “Honestly they are receptive to all. When I came today to the facility at the point of registration I realised I forgot my hand card at home, by the time I went back home to fetch it when I returned I knew</p>
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			<p>it was very late because the registration was over, but when I explained to the man he listened to me and considered my case, and when I went to the health workers doing the antenatal they also received me well and attended to me without any form of maltreatment”. <b>(Non-HIV Female FGD, P3)</b></p> <p>o) “I feel impressed with the services they rendering in this health facility compared to what I am seeing in other hospitals. Other health workers in another hospitals treat patients badly”. <b>(Non-HIV Female FGD, P2)</b></p> <p>p) “There was a time I had to cry when I took my sister for her first delivery in one hospital and the nurses refused to even look at our direction despite her pains because they were handing over, the woman eventually had to deliver on the floor at that waiting area. So I was very happy about the treatment here”. <b>(Non-HIV Female FGD, P6)</b></p> <p>q) “I was very impressed by the way I saw the health workers physically supporting the patient, I didn’t know when I said ..the staff in this hospital are very caring. If it were in other hospitals, I have seen them shouting at patient relatives that accompany pregnant women for delivery to allow her to walk to the labour room by herself. I was surprised and even had to talk to the woman that was sited next to me about their behavior here”. <b>(Non-HIV Female FGD, P2)</b></p> <p>r) “I have been to this hospital several times for services other than HIV and I have never encountered any problems with either the reception, drugs or the laboratory”. <b>(HIV positive Female FGD, P7)</b></p> <p>s) “There was a time I came with malaria and even the medicine was given to me freely, everything is ok there is no problem”. <b>(HIV positive Female FGD, P3)</b></p> <p>t) “Reception for non-HIV patients is also very good, patients are not being maltreated or ignored except if you come late when they about to change duty. They have good arrangement at the GOPD the way they are conducting their services is first come and first serve. The quality of services rendered is very good and I am satisfied with the</p>
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			<p>services here in this health facility”. (<b>Rakiya, non-HIV female client, aged 29 years</b>).</p> <p>u) “I have never seen any difference in the way patients are being received or treated in this facility. Both HIV and non-HIV patients get the attention they desire according to their needs without any preferential treatment. The quality of service here is superb in whatever dimension”. (<b>Shuaibu, non-HIV male client, aged 37 years</b>).</p> <p>v) “All patients are attended to equally without any discrimination. Patients are seen on first come first serve basis and all are being treated well and promptly. The quality of service here is good, I have never heard anybody complaining”. (<b>Shamsiyya, non-HIV female client, aged 52 years</b>).</p> <p>w) “I have not seen any difference in the care rendered to HIV and non-HIV patients in this facility, the reception is very good and services are rendered promptly. All services are satisfactory. Last week my daughter was on admission here and she required blood transfusion. It was the health workers that were explaining to us the importance of the treatment and urging us to get a donor on time”. (<b>Saif, non-HIV male client, aged 26 years</b>).</p>
		9.3 Integrated care improved availability of drugs and laboratory services	a) “There are enough drugs and good laboratory services”. ( <b>Halima, HIV female client, aged 30 years</b> ).
		9.4 Integrated care improved patients’ satisfaction with general health care services	<p>a) “Patients are generally satisfied with the services they receive here”. (<b>HIV positive Male FGD, P6</b>)</p> <p>b) “Yes we are satisfied with the services rendered in this facility”. (<b>HIV positive Male FGD, P4</b>)</p> <p>c) “Honestly they gave us prompt service, as soon as we arrived they attended to her straight. In fact one of the nurses was the one that supported the patient to the labour room. I am satisfied with quality of services rendered in this hospital”. (<b>Non-HIV Female FGD, P2</b>)</p>

		9.5 Integrated care bred poor attitude among health workers	a) “The health workers are not always punctual at work, if they are very punctual there will be no much congestion in the clinic. <b>(Non – HIV Male FGD, P6)</b>
		9.6 Integrated care is skewed towards HIV care	a) “...Sometimes non-HIV patients complain that we being given preferential treatment but they also receive good attention and care just like every other person, ..I can say they are satisfied with the care they receive since I have never come across any one of them who complained about the care they received, though I cannot say their mind”. <b>(Abdul, HIV male client, aged 29 years).</b> b) “..We are given more attention and concern than other patients”. <b>(Mudi, HIV male client, aged 55 years)</b> c) “Our appointments for refilling drugs are usually on Wednesday, so Wednesday is our day unless if one has a complaint or is a new patient for enrollment then one can come on any day, perhaps it is the reason why they think we are given preferential treatment when we present to the clinic”. <b>(HIV positive Male FGD, P3)</b>
10.	<b>Health workers perspectives of impact of integrated care on non-HIV services</b>	10.1 Integrated care improved availability of equipment, drugs and consumables	a) “... I explained earlier that we got x-ray machine because of this integration and that x-ray machine is not only for HIV services, they are using it for all patients... there is one food called plumpy nuts, is for HIV patients, but when we have a case of severe malnutrition we use it on them because majority of those patients that normally come with severe malnutrition they don’t have money and poverty is one of the cause of that conditions. ..Also, some drugs that are brought for HIV patients are used on non-HIV patients if they don’t have money to buy such drugs”. <b>(Doctor 2, Male 34 years)</b>
		10.2 Integrated care improved attendance on non-HIV services	a) “..The integration has not affected the non-HIV services in any negative way but has even improved clinic attendance”. <b>(Matron ANC/ Labour room, Female 52 years).</b> b) “..The attendance for both HIV and non HIV has increased”. <b>(I/c Medical records, 57 years).</b>

		10.3 Integrated care is skewed towards HIV care	<p>a) “..To be honest there has not been any direct benefit or additional tests meant for HIV patients that will benefit the non-HIV patients”. <b>(I/c Laboratory, Male 39 years)</b>.</p> <p>b) “..Well I wish the integration cater for all the services not only the HIV because is giving some preference to one and leaving the other ones with less attention. So there is really a need for other services to be taken care of so that the patients will get the best from their healthcare personnel because the integration give much preferences to HIV patients and the HIV patients enjoy most of this advantage with respect to free drugs and there is this patients that come that they cannot afford drugs for the certain diseases and because the system has not covered their cases, so they are left on their own to take care of their personal problems they have to source money for their issues”. <b>(I/c Pharmacy, Male, 43 years)</b>.</p>
11.	<b>Health administrators perspectives of impact of integrated care on non-HIV services</b>	11.1 Integrated care improved access to comprehensive package of health services	<p><b>a)</b> “For the non-HIV patients, I think we need to understand that HIV care is not only for HIV patient, is equally for those who are not infected. So, 1) we have been able to prevent mother to child transmission by making sure that pregnant woman who visit PHC in KCHC get their status, and those who are negative they are counselled to remain negative that is one health benefit”. <b>IHVN</b></p> <p><b>b)</b> “I see it positively, because you can’t provide many non-HIV services only without that HIV component like I gave example, sometimes you go and see the ANC clinic so full at Kumbotso, sometimes you see hundreds of pregnant mothers there and they are expected to go through HIV counselling and testing. So, if that service is not there that means you have to refer them to another facility just to do the testing and bring the result”. <b>PHCMB</b></p>
		11.2 Integrated care improved availability of equipment, drugs and consumables	<p><b>a)</b> “.... HIV care and support services are being driven by donors in the sense that they provide us with certain drugs, even laboratory consumables. And not only that, recently they donated a lot of materials to us ranging from BP apparatus, weighing scales and even screens to use when we want to see patients, to cover. So, I think it</p>

			<p>serves to strengthen not only the HIV program or the TB services that are being provided but the entire services. They donate to the entire facility not only to the ART clinic or that this should only be used for HIV patients”. <b>MS</b></p> <p>b) “Well ahh.., there are a lot, quite alright in the first instance HIV/AIDs services came along with some things as the services came along with certain supplies, our supplies improved actually in terms of drugs and consumables. So, the general health service also benefit from this supply that the HIV/AIDS programs brought along”. <b>CMAC</b></p> <p>c) “...at the beginning of the integration there were some hospital commodity equipment that was purchased for the HIV program but is allowed that you can use it for other services, things like weighing scales, BP apparatus, routine hospital basics stuff that PHCs now have gotten from government made available for PHCs, if they can now use for every patient irrespective of HIV status. That is one other benefit that the program has done for the PHCs”. <b>IHVN</b></p>
		11.3 Integrated care provided opportunity for managing HIV related morbidities	<p>a) “Is not all our HIV patients that are TB positive, in fact is about 30% or so that are co-infected, however they strengthen TB services in the facility to make sure all patients whether HIV infected or not they receive adequate TB care”. <b>MS</b></p>
		11.4 Integrated care improved attendance on non-HIV services	<p>a) “..If you look at our attendance register you will see that patient attendance is remarkable, it has not been going down. If last year it was 20,000 may be this year it will be like 30,000. By extension I will not say that has reduced the number of attendance, if anything I would say that the facility is being overstretched now”. <b>MS</b></p> <p>b) “Well, emm.., I can say I will look at it from positivist perspective in the sense that generally because of the HIV activity going on, the place is becoming busier and people now see the place as a big place, so other people also come there to access other services. We record more deliveries than we used to, that has improved, our ANC service</p>

			has improved significantly, and we can say may be perhaps because of the improvement in our laboratory services also they now feel that ok we can now do these much test, so people are coming. And by the time one person come and able to access one or two tests the news goes around the community and they keep coming. So, we can say the HIV AIDS services because it has brought a lot of patients, and some patients probably would not want to go for any other reasons they don't want to go to a big center, they prefer a smaller center, so our own center is also growing big, so that improves the patient's turnout, so generally people that are not HIV positive now see the center as a busy facility that they can access service from". <b>CMAC</b>
		11.5 Integrated care strengthened the PHC system	a) "My belief is that the integration has positively impacted on non-HIV services. One thing that we all know before we go to all these PHCs is that record keeping was actually poor, generally not just for HIV, but when we brought HIV services record keeping for disease entity has improved, we have a kind of a band wagon effect, you find that HIV has insisted in transparency and good records to show what you are doing. Over time it has spread to other services, so that is one impact that it has had, it has allowed management PHC to actually make a better plan on how to manage the patients now because they now have a robust records system including electronic medical records which really does not exist in PHCs before, but because HIV has brought use of electronic medical records even in PHCs, and some PHCs have extended it every other patient in respect of diseases status. So that health information system now allows PHCs to be better managers, to be more efficient in their operations. That was a significant impact that HIV has brought to PHCs". <b>IHVN</b>
		11.6 Integrated care breeds stigma among patients	a) "...of course there are some other challenges that can be associated with this, like stigma is still there, of course a lot of progress has been made but still there are other stigmatisation around, HIV patient care



			and support is there. Still even there are some health workers that are not comfortable managing HIV patients”. <b>PHCMB</b>
		11.7 Integrated care is skewed towards HIV care	<p>a) “Unfortunately, No. the support for lab has always been for HIV related services only. It doesn’t split on non-HIV lab, although as it is now the donors have reduced their laboratory support even to the HIV patients, and only one or two labs are now being supported which is viral load and CD4 count. Others investigations like chemistry, full blood count are now left to the patients to pay. So essentially, there is no direct support now that even the non-HIV patient can benefit from”. IHVN</p> <p>b) “Well emm..., not necessarily, there is no direct support of non-HIV drugs or consumables from HIV program. So whatever comes, but of course if there are cleaning agents, cleaning materials that was supplied to the facility it does not mean that we cannot clean everywhere we use it for the whole facility. ..there were other drugs that are supplied with HIV drugs for instance cotromoxazole, for those that will benefit from co-trimoxazole, they are supplied along with it. There is also isoniazide, that one is supplied with anti-TB. So, those things that are supposed to be provided for HIV positive, I remember there was a time they brought some anti-tussive, a huge quantity of it that almost we had to struggle to exhaust it. So these are some of the things that came along with HIV drugs. But from other programs, we have received, supplies of anti-malaria drugs, may be they have support from the National Malaria Control Program, I don’t know which partner is supporting that but I know they supply us with anti-malarial drugs as well as RDT kits for malaria test. In the laboratory is the same thing, the range of services is HIV related but of course like if s glove is supplied to the laboratory it will be used any test. <b>CMAC</b></p>

12.	<p><b>Patients’ perspective of barriers to integrated care at PHC setting</b></p>	12.1 No barrier to integrated care	<p>a) “I have never seen any barrier to this type of care”. (<b>Halima, HIV female client, aged 30 years</b>).</p> <p>“There is no any factor that hinder this joint delivery of services in this facility, there is no problem what so ever in all the units, except if what is required is not brought to the attention of the matron or administrators”. (<b>Hassan, HIV male client, aged 36 years</b>).</p> <p>b) “There is no any factor that will hinder integrated care in this facility”. (<b>Yelwa, HIV female client, aged 26 years</b>).</p> <p>c) “To my knowledge there is no any barriers or factors that hinder integrated care in this facility”. (<b>Sule, HIV male client, aged 32 years</b>).</p> <p>d) “I have not come across any barrier, especially as we are always here to support our people when they come to the facility, we have added to the number of available staff”. (<b>Abdul, HIV male client, aged 29 years</b>).</p> <p>e) “The state of the matter is I came from Benue State and I am an indigene of Benue State and the challenges that are there, what I saw there and what I see here the improvement is even more then 100%. So everything is well here”. (<b>Henry, HIV male client, aged 42 years</b>)</p> <p>f) “There is no any barriers to this care, everything is going smoothly”. (<b>Non-HIV Female FGD, P2</b>)</p> <p>g) “Everything is going normal.” (<b>Non-HIV Female FGD, P6</b>)</p> <p>h) “I have not seen any barrier also”. (<b>Non-HIV Female FGD, P8</b>)</p> <p>i) “There is no any problem, I am not aware of any barrier. Everything is going smoothly”. (<b>HIV positive Female FGD, P2</b>)</p> <p>j) “Everything is going normal”. (<b>HIV positive Female FGD, ALL</b>)</p> <p>k) “I have never come across any barrier or factor that hinder integrated care services in this facility”. (<b>Hadiza, non-HIV female client, aged 26 years</b>).</p> <p>l) “Everything is ok, there is no any barrier”. (<b>Raiya, non-HIV female client, aged 24 years</b>).</p>
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			<p>m) “I have not seen any barrier for this integration”. (<b>Saif, non-HIV male client, aged 26 years</b>).</p> <p>n) “To me I don’t think there is any barrier or factor that hinder the integration, but is good to find additional ways that improve the integration service in this health facility”. (<b>Salihu, non-HIV male client, aged 42 years</b>).</p>
		12.2 Poor hospital attendance	a) “Lack of attendance to hospital is a big barrier to this integration. The government has the intention to support but the negligence of from patients to frequent the hospital discourage the good intention. Even partner agencies only support hospitals with good attendance”. ( <b>Non –HIV Male FGD, P6</b> )
		12.3 Disregard for normal clinic procedures	a) “Lack of respect for normal clinic procedure to see a doctor is a big barrier to this integration. Sometimes patient book and at point of consultation you will find that they are not at the clinic and this distraction causes a lot of delay”. ( <b>Non –HIV Male FGD, P1</b> ) “Disregard for clinic procedures may be a barrier”. ( <b>HIV positive Male FGD, P8</b> )
		12.4 Stigmatisation	a) “Patients from this locality still feel stigmatised and refuse to attend clinic and this may be a serious barrier to this integration”. ( <b>HIV positive Male FGD, P6</b> )
		12.5 Lack of privacy and confidentiality	a) “I have never come across any barrier or factor that hinder integrated care services in this facility but I know that lack of confidentiality and stigmatisation will be serious problems because they will lead to non-attendance”. ( <b>Rakiya, non-HIV female client, aged 29 years</b> ).
13	<b>Health administrators’ perspective of barriers to</b>	13.1 Inadequate staffing	a) “...the issue of manpower is a problem. Ahh of course with integration of services, even though this is likely to increase the clinical competence of all the staff but then that means more work. So, we are not only looking at HIV patient alone, we look at this

	<p><b>integrated care at PHC setting</b></p>		<p>patient that came, does he have nutritional problem? Does she require postnatal care services? How do I link up this child to immunisation services? How do I ensure that nutrition services are provided or nutrition counselling is offered to this child? So, it takes more time. Of course, you can see that we have few health workers being a primary health care centre”. <b>MS</b></p> <p>b) “..the major challenge is the capacity of the PHC system not only in Kano State but generally across Nigeria is very weak, and that could be a major barrier. Weak because many PHC centres are understaffed. Many of them they are already overwhelmed by what they provide, may be 2-3 health workers providing antenatal care, taking deliveries, providing malaria services, nutrition services, TB care treatment, growth monitoring, you know among care for common ailments and whatever”. <b>PHCMB</b></p> <p>c) “Well, the drawbacks probably like I said which we are trying to cope is the fact that the same staffing that we have, we have to contain with it with increasing load of patients. The same nurse or midwife on duty in the evening has to attend to may be HIV positive woman that come to deliver and HIV negative woman that is also delivering. That could be herculean because we are really really short staffed, but apart from that I think we are managing to provide the services for both HIV infected and non-infected patients. I think is the workload that is more of a problem to us”. <b>CMAC</b></p>
		<p>13.2 Knowledge gap</p>	<p>a) “on the issue of training, sometimes when the partners come for instance the last training they has on prevention mother-to-child transmission we had like 11 nurses but they can only be able to train two”. <b>MS</b></p> <p>b) “There was a dogma or rather a believe that oh, care of HIV can only be done by a specialist, so that knowledge gap becomes a barrier when you go to a PHC and you want to integrate HIV, they say no, no, no we cannot do this, this is much more than our capacity”. <b>IHVN</b></p>

		13.3 Inadequate/ lack of funding	<p>a) “Funding is also a problem for example if you will to conduct outreach services we need funding and that may not be forthcoming”. <b>MS</b></p> <p>b) “PHCs in Nigeria are well well underfunded, and well understaffed. As at the time we actually started PHC KCHC only two nursing staff and one lab scientist, I think two or three chews, and the number of patients they see in weekly basis was around 400-500 patients on outpatient basis, so they were grossly in adequate, they could not even do a shift at that time”. <b>IHVN</b></p>
		13.4 Lack of privacy and confidentiality	<p>a) “like I said earlier we have just two consulting rooms and then the issue of confidentiality, when you are seeing 2 or 3 patients in the same room and you cannot ensure that information does not pass from one patient to another”. <b>MS</b></p> <p>b) “It is not uncommon when you have two healthcare workers consulting in the same room. I think personally this is an issue I noticed over the years, the issue of confidentiality, because you are consulting two patients for instance we have two consulting rooms here and we have like four, five healthcare workers consulting at the same time, .. the issue of confidentiality will really be a problem”. <b>(MS)</b></p>
		13.5 Inadequate facility for counselling and testing	<p>a) “if we can seriously liberalise this counselling and testing thing such that at the point of consultation the healthcare provider should be able to counsel you and test you so that one does not need to go out with another paper for someone else to counsel that person. Going to that place for counselling, it raises some concern. So if it can be done at the point of care just the first person that sees the person should be able to provide some counselling service, and even test the person and the person goes out knowing his or her status. I think this one will help this integration proper”. <b>CMAC</b></p>
		13.6 Inadequate diagnostic facility	<p>a) “...many of our PHCs that do not have even a lab, the minimum laboratory structure that can be able to do this screening and whatever”. <b>PHCMB</b></p>

		13.7 Inadequate infrastructure	<p>a) “..the infrastructure in those PHCs, and we have got PHC that do not have portable water, they do not have light, they do not have power and they do not have even enough rooms to see patients. So we have these infrastructural barrier that becomes very difficult to add to an already stressed system”. <b>IHVN</b></p> <p>b) “...but from my own observations and feedback we get from the facility the major challenge is actually about the space of the hospital, maybe patients requiring admission and stuffs like that, often times the beds are full, so sometimes they are the ones referring to other facilities”. <b>PHCMB</b></p>
14.	<b>Patients’ perspective of facilitators/enablers of HIV-PHC integrated care</b>	14.1 Strengthened medical records system	<p>a) “The success or failure of patient care starts from the records unit because it is point where the patient learns where to go, who to see and what their problems are. The records unit should therefore be improved. For instance, if I come as early and 7am and you delay me up to 1pm before I get attended to while there are less than 30 people waiting to be attended to in the facility, then it becomes a big issue of concern. The delay is not because of the patients load but because cards are being misplaced”. <b>(Hassan, HIV male client, aged 36 years).</b></p>
		14.2 Motivation of health workers	<p>a) “The government should try and always provide entitlements of workers. Health care will never succeed when you always have industrial action by workers. For instance, when the nurses went on strike we were left alone with only doctors here and it was not easy, and the same thing when the doctors also went on strike we were left alone with the nurses here, and it was not easy, I think this should be avoided”. <b>(Hassan, HIV male client, aged 36 years).</b></p> <p>b) “To improve on worker’s welfare and provision of adequate working materials in the clinic”. <b>(HIV positive Female FGD, P5)</b></p>
		14.3 Improve availability of drugs at health facilities	<p>a) “Other non-HIV services with other ailments like high BP, diabetics and other diseases we appeal with government to provide us with free drugs like they do to HIV patients because among us there</p>

		<p>are less privilege people”. <b>(Salihu, non-HIV male client, aged 42 years).</b></p> <p>b) “Yes, they attend to us well. For us coming for ANC, they give us coartem free of charge, but I think those coming with hypertention and diabetes should also benefit from similar assistance with drugs. I know HIV drugs are given free of charge but I think it is because they are being encouraged to come out and attend clinics en mass so that the illness will be controlled. I think the same should be done for serious non HIV conditions to improve on their control. Some of them do not have the money to buy drugs”. <b>(Rakiya, non-HIV female client, aged 29 years).</b></p> <p>c) “The government should come in and contribute with the supply of ART drugs free of charge”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>d) “..the government should provide adequate supply of drugs in the facility”. <b>(Sule, HIV male client, aged 32 years).</b></p> <p>e) “The government is trying in supplying equipment but to improve on the availability of drugs”. <b>(Non –HIV Male FGD, P6)</b></p>
	14.4 Improved availability of equipment at health facilities	<p>a) “One of the problems we face is the lack of some laboratory equipment and tests, patients will have to go down to AKTH to get some tests done. In addition, even if the patients get down to AKTH most cannot afford the amount charged for the tests. If these tests can be done in this facility at an affordable cost it will make things easier and better”. <b>(HIV positive Male FGD, P4)</b></p>
	14.5 Improved availability of health workers at health facilities	<p>a) “The government should improve in providing adequate medical doctors at hospitals”. <b>(Gwarzo, HIV male client, aged 64 years).</b></p> <p>b) “To improve manpower in the laboratory section and pharmacy unit because of congestion”. <b>(Non-HIV Female FGD, P4)</b></p> <p>c) “There is need for additional health personnel especially medical doctors in the consultation room in order to minimise time wasting in the consultation room”. <b>(Salihu, non-HIV male client, aged 42 years).</b></p>

		14.6 Demand creation	<p>a) “..To create more awareness and counselling to HIV positive people”. <b>(Yelwa, HIV female client, aged 26 years).</b></p> <p>b) “Creating awareness in our community on the risk and prevention of HIV”. <b>(Non –HIV Male FGD, P1)</b></p> <p>c) “I also suggest that they should intensified community awareness through media houses and outreach”. <b>(Non –HIV Male FGD, P7)</b></p> <p>d) “To organise community awareness campaign about HIV disease”. <b>(HIV positive Male FGD, P1)</b></p> <p>e) “As a patient living with HIV virus, I am advising that we should be supported to serve as champions to educate barbers and nail cutters on the need for sterilising their equipment before and after use. This is my own opinion”. <b>(HIV positive Male FGD, P6)</b></p> <p>f) “..since we are somehow familiar with patients coming with HIV disease, if we come across any person that shows sign of the disease, we should advice or bring them to the hospital for necessary check-up”. <b>(Abdul, HIV male client, aged 29 years).</b></p>
		14.7 Planning for integration	<p>a) “I am advising the different units in this hospital to develop plan by objective on this integrated care”. <b>(HIV positive Male FGD, P3)</b></p> <p>b) “We are appealing to the local government authority to be involved in this integration from planning, to implementation of the programme, and to also work closely with the HIV support group in this agenda”. <b>(HIV positive Male FGD, P9)</b></p>
		14.8 Capacity building	<p>a) “To improve more on their services and to be able to further their education”. <b>(Hadiza, non-HIV female client, aged 26 years).</b></p> <p>b) “In order to make integration be improved, the health workers should be trained on effective communication with patients. The incidence last week was a clear example, a patient came late to the clinic and the health worker refused to attend to her complaining that she went to finish her errand before coming over, and the patient misconstrued the health worker as implying vulgar. This created a lot of chaos in the clinic”. <b>(HIV positive Male FGD, P6)</b></p>



			c) “Communication skills will help to promote good relationship with health workers and clients”. <b>(HIV positive Female FGD, P6)</b>
		14.9 Upgrading the PHC infrastructure	a) “The government should expand the structures of the hospital to accommodate more services. Also, to provide adequate manpower within hospital”. <b>(Non –HIV Male FGD, P7)</b> b) “Services in the scanning unit should be improved, to expand the number of people being attended to. <b>(Non-HIV Female FGD, P1)</b> To make sure that viral load results are provided on time”. <b>(HIV positive Female FGD, P8)</b> c) “The government should provide a standby vehicle for tracking of defaulter patients”. <b>(HIV positive Male FGD, P5)</b> d) “The government should expand the structures in the facility by building more”. <b>(Rakiya, non-HIV female client, aged 29 years).</b>
15.	<b>Health workers’ perspective of facilitators/ enablers of HIV-PHC integrated care</b>	15.1 Improved availability of equipment at health facilities	a) “..Another important thing is improvement in terms of laboratory services - all the relevant things you need in terms of gadgets that will help you, the equipment that you will need to conduct the basic tests required should be provided and with capable hands to handle them, because if you have equipment and you have personnel that are not trained on it they cannot operate them”. <b>(Doctor 1, Male 32 years).</b>
		15.2 Improved availability of health workers at health facilities	a) “in order to have successful integration we need to 1) have enough hands to handle the rising number of patients so we need adequate staff”. <b>(Doctor 1, Male 32 years)</b> b) “..by increasing number of doctors and health workers, we experience over burden because of lack of enough health care workers”. <b>(Doctor 2, Male 34 years).</b> c) “..We need adequate manpower and working equipment”. <b>(Matron ANC/ Labour room, Female 52 years).</b> d) “..Provision of adequate health personnel and adequate supply of working materials”. <b>(I/c Laboratory, Male 39 years).</b>

			e) “..Provision of adequate skilled manpower, provision of adequate working equipment and consumable’s in the facility”. ( <b>ART CHEW, 52 years</b> ).
		15.3 Demand creation	a) “...We can improve it in many ways, by intensifying health talks, by advocacy visit to the communities to have more knowledge and awareness in order for them to come to the hospital especially hospital delivery, then outreach, we can even use media to have a forum to enlighten the community about HIV”. ( <b>Matron i/c, Female 45 years</b> ).
		15.4 Scale up basic HIV services to all PHCs	a) “..I think is important for policy makers to make it compulsory for all the PHCs to integrate HIV services into all the PHCs because it increases access and quality of care also improves, so is very important to make it a policy that all PHCs can run HIV clinics”. ( <b>Doctor 2, Male 34 years</b> )
		15.5 Capacity building	a) “..we need training and retraining of the staff, we need to build their capacity”. ( <b>Doctor 1, Male 32 years</b> )
		15.6 Effective framework for monitoring and evaluation	a) “..the other area of monitoring and evaluation of services must be taken into consideration. Because you cannot implement and you will not monitor and you cannot pick the wrong things and correct”. ( <b>Doctor 1, Male 32 years</b> ).
		15.7 Upgrading the PHC infrastructure	a) “..the issue of space (consultation room), we need more consultation rooms for privacy”. ( <b>Doctor 2, Male 34 years</b> )
		15.8 Funding for the integration programme	a) “..we need to have enough funding for this integration services, because with fund you can expand the facility, you can even expand the services itself”. ( <b>Doctor 1, Male 32 years</b> )

16.	<b>Health administrators' perspective of facilitators/enablers of HIV-PHC integrated care</b>	16.1 Effective framework for monitoring and evaluation	a) "On the part of government is to ensure that there is an effective framework for monitoring and evaluation, not only planning and implementation there must be a follow up system where we ensure the right thing is being done at all levels and all the time". <b>MS</b>
		16.2 Planning for integration	a) "When we have for instance, let me use the word unintegrated programme coming for the first time, I think it is important to involve the facility, members of the community as well as individuals that have interest on health or other stakeholders, the community groups to ensure that these services are not provided stand alone, or they are vertical programmes because the issue of sustainability will always come to bear, that if these services are provided as unintegrated services, if the programme has five or two years plan, if it exited, what is the effect of the programme? If right from planning it has been taken into consideration that these services will be integrated into the main system sustainability will not be a problem". <b>MS</b>
		16.3 Capacity building	a) "For health care workers, the issue of capacity building, training and development is essential". <b>MS</b> b) "we must at any given opportunity when we have may be in form of seminar, meetings or whatever, let every primary health care service provider feel, be equipped or empowered to also provide some HIV/AIDS service, be it counselling, be it testing, be it post-test counselling. Like now malaria, every PHC provider can provide any service for malaria except the one that is complicated, so if that is done so we are over with integration". <b>CMAC</b>
		16.4 Implementing minimum service package for PHC	a) "Few weeks ago Kano State finalise the domestication of the minimum service package and that document has already been approved by government and really going to be of immense benefit

			as a policy guide to Kano State in the implementation of PHC including services, including of course HIV care and support”. <b>PHCMB</b>
		16.5 Demand creation	a) “On the issue of patients, I think is all about awareness, creating enough awareness, ensuring effective social mobilisation for all services ranging from immunisation, HIV and even family planning. If the communities are well mobilised, they are likely to utilise and improve the health outcome of the community”. <b>MS</b>
		16.6 Scaling up basic HIV services to all PHCs	a) “... as it is now not every PHC facility has HIV services integrated. So, if it is possible to scale up to cover certain level from PHC, they should be able to provide certain form of HIV services if not all, they should be able to provide counselling and testing which you can train every primary healthcare provider to do that. It will help integration”. <b>CMAC</b> b) “The patients themselves I think as much as possible the patients should try to access and accept these services anywhere because insisting that I must go to so-so place now makes other people feel that there is something you are trying to hide, but if you can access service anywhere with any other person that now help to de-stigmatise yourself and before you know nobody knows what you are coming to access”. <b>CMAC</b>
		16.7 Introducing integration into the curriculum of health training institutions	a) “...go back to the human resource production for PHCs, most of the staff that tend to work PHCs are trained from School of Health Technology as an example, so we now have to include in the curriculum of those schools HIV care and HIV integration services. So as soon as we create a pool of staff that will work at PHC they will look beyond the routine that are already used to”. <b>IHVN</b>
		16.8 Implementing task shifting policy	a) “..second thing now we probably need to do is probably to do some form of policy or legislation that allows low cadre but skilled staff to

			take care of HIV just like we allowed low carder staff to take care of pregnant women, because in some places people still believe that HIV should never be taken care of in PHCs, so they will never allow that, so maybe that policy need to change”. <b>IHVN</b>
		16.9 Upgrading the PHC infrastructure	a) “..strengthen the system in our PHCs, is the closest unit to the consumers, if you could just upgrade the structures, buildings and provide basic amenities like power and water, it becomes easy to integrate any form of service not just HIV in PHC is going to work”. <b>IHVN</b>

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<sup>i</sup> Primary Health Care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process. WHO (1978). Report of the International Conference on Primary Health Care, Alma-Ata, USSR, 6 – 12 September 1978. World Health Organization, Geneva. Available from: [http://www.unicef.org/about/history/files/Alma\\_Atata\\_conference\\_1978\\_report.pdf](http://www.unicef.org/about/history/files/Alma_Atata_conference_1978_report.pdf).

<sup>ii</sup> Key objectives and features of qualitative analysis: defining concepts, mapping range and nature of phenomena, creating typologies, finding associations, providing explanations and developing strategies. Ritchie J and Spenser L. (2002) qualitative Analysis for Applied Policy Research. In: HUBERMAN MA and MILES MB (eds) *The Qualitative Research Companion*. London: Sage Publications, 30-329.