



## **Save Nigerian Women from Cervical Cancer: improving equitable access to preventive services**

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## **Save Nigerian women from cervical cancer: improving equitable access to preventive services**

A thesis submitted in partial fulfillment of the requirement for the degree of Master of Public Health

By

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Where other people's work has been used (either from a printed source, the internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.

The thesis "Save Nigerian women from cervical cancer: improving equitable access to preventive services" is my own work.

Signature: .....

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## List of Abbreviations

ART	Antiretroviral therapy
CC	Cervical Cancer
CHW	Community Health Workers
DTP3	Diphtheria-Tetanus-Pertussis Vaccine dose3
FCT	Federal Capital Territory
FGN	Federal Government of Nigeria
FLHE	Family Life and HIV Education
FMOH	Federal Ministry of Health
FOMWAN	Federation of Muslim Women’s Association in Nigeria
GAVI	Global Alliance for Vaccine and Immunization
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
IARC	International Agency for Research on Cancer
LGA	Local Government Area
LMIC	Low and Middle Income Country
MMR	Maternal Mortality Rate
NACA	National Agency for the Control of AIDS
NC	North Central
NE	North East
NGO	Non-Governmental Organization
NW	North West
OOP	Out of Pocket
Pap smear	Papanicolaou’s smear
PEP	Peer Education Plus

PHC	Primary Health Care
SE	South East
SRH	Sexual and Reproductive Health
SS	South South
STI	Sexually Transmitted Infection
SW	South West
TFR	Total Fertility Rate
THE	Total Health Expenditure
USD	United States Dollars
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection with Lugol Iodine
WHA	World Health Assembly
WHO	World Health Organization

## **Glossary**

**Cervical cancer:** Proliferation and spread of abnormal cells in the cervix. Changes in cervical cells are usually initiated by a virus (WEBMD, 2016).

**Cervical cancer Vaccine:** A vaccine against certain strains of HPV to protect recipients against cervical cancer (WEBMD, 2016).

**Cervix:** Cylindrical shaped tissue connecting the vagina and uterus in females (WEBMD, 2016).

**Cryotherapy:** A procedure where a cold probe is placed on abnormal areas of the cervix to freeze abnormal cells and prevent those cells from becoming cervical cancer (WEBMD, 2016).

**Human Papillomavirus (HPV):** They are a group of viruses. Certain strains are implicated in causing cervical cancer. Less dangerous strains may cause genital or cervical warts (WEBMD, 2016).

**Incidence rate:** Number of new cases per population at risk in a given period of time (BMJ, 2016).

**Mortality rate:** Number of death due to general or specific cause in a population per unit time (BMJ, 2016).

**Opportunistic Screening:** Screening done outside an organized population- based program on women visiting health services for reasons other than the screening (IARC, 2005a).

**Pap smear test:** A test where a sample of cells are taken from a woman's cervix and examined for early changes that may lead to cervical cancer (WEBMD, 2016).

**Primary Prevention:** Activities designed to prevent a disease or condition from occurring in the first place (CDC, 2016).

**Visual Inspection with Acetic Acid (VIA):** The cervix is visually inspected after staining with acetic acid to detect abnormal cells which appear whitish after staining (WHO, 2012).



## **Abstract**

**Background:** Nigeria is a low middle-income country situated in western Africa. Cervical cancer is the 2<sup>nd</sup> most common cancer and 2<sup>nd</sup> leading cause of cancer deaths among females 30-50 years in Nigeria. The age-standardized incidence rate is 29 cases per 100,000 persons per year.

**The Objective of the study:** To identify and discuss factors contributing to clients' access to cervical cancer preventive services in Nigeria in order to make recommendations to stakeholders for interventions to improve service utilization and contribute to reducing cervical cancer incidence.

**Methodology:** This is an exploratory study. A literature review was carried out using peer reviewed published and unpublished literature. Findings were analysed using a conceptual framework of patient-centred access to health care by Levesque et al.

**Findings:** Access to cervical cancer preventive services in Nigeria is influenced by existing policy, supply-side factors of approachability, acceptability and availability and demand side factors of ability to perceive and to pay. Women are influenced by social, economic and physical factors that reflect differences in access to services in Northern and Southern Nigeria.

**Conclusions:** The existing policy for cervical cancer prevention in Nigeria does not reflect the needs of women in Nigeria. Lack of access to information, inadequate infrastructure, challenges of acceptability and financial constraints are top barriers to women's access to cervical cancer preventive services in Nigeria.

**Recommendations:** Review existing policy for cervical cancer control in Nigeria, increase information dissemination, adopt public-private partnerships; and mobile outreach to rural areas while using community health workers as links between community and health system for cervical cancer prevention services.

Keywords: Cervical cancer, cervical screening, barriers, facilitators, Nigeria

Word count: 12,530

## **Introduction and organization of the thesis**

Cervical cancer remains a significant public health problem. It is the second most common cancer in women above 30 with 85% occurring in low and middle-income countries (see annex 1). It accounts for 13% of all female cancers in this region. East and West African regions have the highest cumulative risk of 3.8% (FERLAY, J et al., 2010).

Cervical cancer occurs in women between the ages of 30-50 years when most are economically active and also helping to raise families. The Life Years Lost are more than other types of cancers that present later in life (as shown in figure 6 below). In 2012, cervical cancers caused 266,000 deaths worldwide, of which 57,000 in Africa (IARC, 2012a). This is one cancer that can be largely prevented by vaccination and regular screening (AMERICAN CANCER SOCIETY, 2014).

After graduating from medical school, I started an internship in Zaria Northern Nigeria where I came across a number of women who had cervical cancer and almost all had presented late, when only palliative treatment was still possible. This aroused my interest to understand why women get the disease in the first place and also why indeed they present late to health care services.

After the internship, I continued working in general practice in Northern Nigeria. In the process, I met another doctor who runs an NGO based in Southern Nigeria that deals with cancer care. He holds awareness campaigns on cervical cancers in various states, after which he screens women of reproductive age and treats those with positive results with cryotherapy.

This doctor visited Kaduna state in June 2015 with his campaign and this time the turnout of women who needed this service was tremendous. Women even traveled from nearby states to get the services offered. This further reignited my interest in researching the factors that influence women's access to cervical cancer preventive services in Nigeria.

With the Sustainable Development Goals now in place and its emphasis on 'leaving no one behind'; It's imperative to study cervical cancer in the Nigerian context at this time since it remains a significant killer of women in Nigeria.

This thesis is a literature review and will identify and discuss factors contributing to access of cervical cancer preventive services in Nigeria in order to make recommendations to stakeholders. Findings were analysed using the patient-centred conceptual framework to access by Levesque et al.

Chapter 1 presents background information on Nigeria; Chapter 2 presents the problem statement, justification, and methodology; chapter 3 presents policy and program responses to cervical cancer in Nigeria; Chapter 4 and 5 presents findings on barriers/facilitators to cervical cancer uptake; Chapter 6 presents evidence-based interventions to increase uptake of preventive services; chapter 7 discusses findings of this study and finally chapter 8 makes conclusions and give recommendations to improve access to cervical cancer preventive services in Nigeria

## Chapter 1: Background information on Nigeria

This chapter gives some background demographic characteristics and relevant information on Nigeria. Figure 1 shows the map of Nigeria, its 36 states and Federal Capital Territory (FCT).

Figure 1: Map of Nigeria



Source: (FMOH, 2010c)

### 1.1 Demographic characteristics:

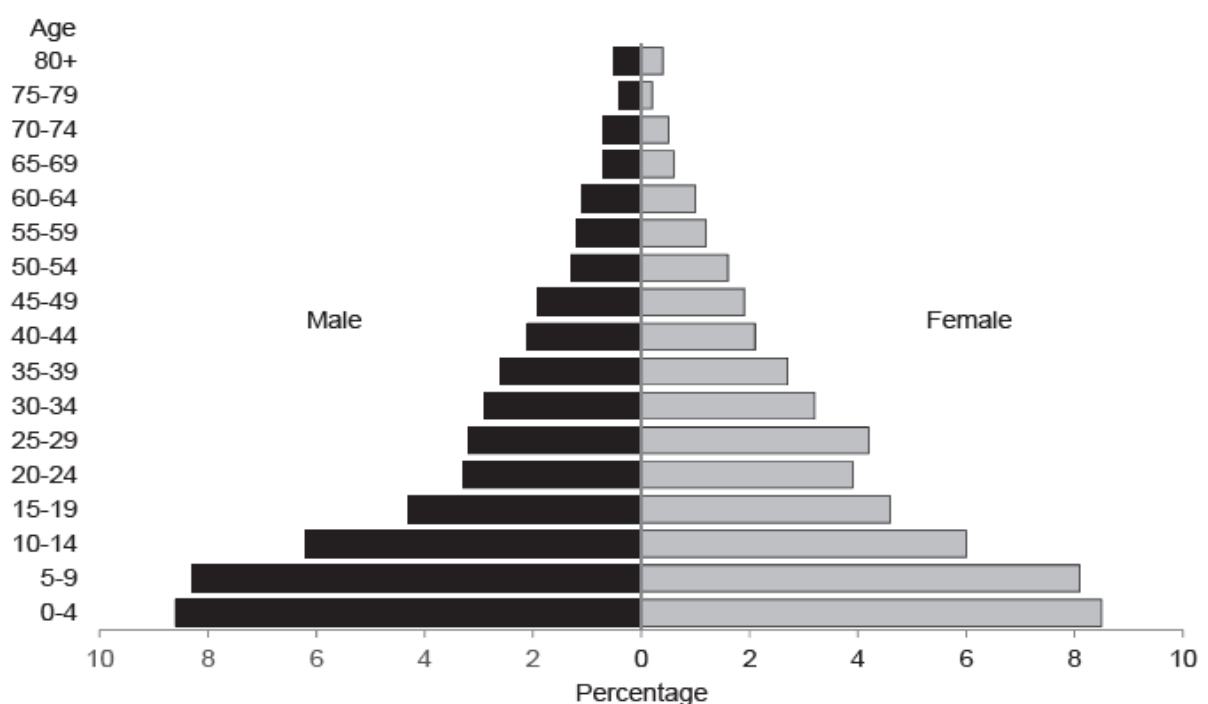
Nigeria is located in West Africa between latitudes  $4^{\circ}16'$  and  $13^{\circ}53'$  North and longitudes  $2^{\circ}40'$  and  $14^{\circ}41'$  East, it is bordered by the Atlantic ocean in the South, Niger Republic, and Chad in the North, Cameroun in the East and Republic of Benin in the West. The land mass is about  $923,768\text{km}^2$  (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b). Nigeria has a population of about 170 million (WORLD BANK, 2015). Nigeria became independent from the United Kingdom (UK) in 1960 and now is broadly divided into the Northern and Southern parts, due to wide cultural and ethnic diversity.

There are 36 states with a Federal Capital Territory (FCT), these states are further grouped into geopolitical zones these include North-Central (NC),

North-East (NE), North-West (NW), South-East (SE), South-South (SS) and South-West (SW) Zones. There are 774 Local Government Areas in Nigeria. The North occupies over 60% of the land mass and consists of 19 states and the FCT with a population of about 75million. Women of childbearing age account for up to 22% of the population and 45% are children below 15 years (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b).

Figure 2 below shows Nigeria’s population pyramid made up largely of the young.

Figure 2: Population Pyramid (2013)



Source: (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b)

## 1.2 Socio-economic context and health indicators:

The dominant religions are Christianity and Islam in the Southern and Northern parts of the country respectively. The three major ethnic groups are Hausa, Yoruba, and Igbo, among several other smaller ethnic groups. The Hausa ethnic groups dominate in Northern Nigeria. (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b).

Gross Domestic Product (GDP) per capita in 2013 was 5,601 USD. The main sources of the country’s revenue are oil, agriculture, and general services. The sharp decline in prices of oil that started in 2014 has posed a major challenge to the country’s source of income since it used to account for

close to 90% of the nation's export revenues (WORLD BANK, 2015). The latest Demographic Health Survey(DHS) showed that a significant proportion of households in the North-East and North-West were in the lowest quintiles (40% and 35% respectively) compared to 0.5% and 1.7% of households in the South-South and South-West zones (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b).

Life expectancy in Nigeria is 52 years for males and 54 for females. In 2010 the country had the 4<sup>th</sup> highest absolute number of tuberculosis cases globally (about 750000 cases) (FMOH, 2010c). Other socioeconomic and health indicators are shown in table 1.

The level of education in Northern Nigeria is lower than the South. About 54% (more than 60% of females and 50% of males) in the North reported having no form of education as compared to 16.2 % in the South (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b).

Women married on average 9 years earlier than their male counterparts; about 38% of women aged 15-49 had no formal education compared to 21% of men. Married women also earned less than their husbands. Nearly 50% of women surveyed were not involved in making decisions about their health and were usually unable to negotiate safer sex (NATIONAL POPULATION COMMISSION, 2014a).

There is a high incidence of gender-based violence in Nigeria, much of which go unreported (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b). Table 1 below reveals more demographic and health indicators in the Nigerian context.

### **1.3. Health sector context:**

There is a decentralized system with the Federal government in charge of tertiary hospitals and teaching hospitals, the state government controls the general hospital providing secondary level care while the local governments run the primary health care. Thirty-eight percent of health facilities belong to the private sector and serve over 60% of the population, traditional medicine though not part of the formal health system is patronized by a significant number of Nigerians (FMOH, 2010c). The Federal Ministry of Health makes policies, disseminates, monitors, evaluates and coordinates health issues nationally. It is the main regulatory authority on public health related issues (FMOH, 2010c).

Overall health expenditures are low, in 2013 the total health expenditure (THE) was 4% of GDP at 109 USD per capita. The government spends about 6% of its expenditure on health, failing to meet the Abuja declaration of a minimum of 15%. A large proportion of the total health expenditure (73%) is financed by out of pocket payment. This show significant inequity in access to health care (WHO, 2011; WHO, 2014). See Annex 8 for trends of health expenditure in Nigeria from 2009-2014.

Table 1: Key sociodemographic and health indicators, Nigeria.

Indicators	Year of Estimation	M	F	Total
Mid-year Population in 1000s <sup>1</sup>	2015	92,789.00	89,413.00	182202
Mean age of population (Yrs.) <sup>1</sup>	2015	-	-	17.9
Population living in urban areas (%) <sup>1</sup>	2015	-	-	48
Crude birth rates (births/1000 population) <sup>1</sup>	2015	-	-	40
Life expectancy at birth (Yrs.) <sup>2</sup>	2013	52	54	53
Under-5-Mortality Rate (per 1000 live births) <sup>1</sup>	2015	-	-	122
Density of physicians (per 10000 population) <sup>3</sup>	2008	-	-	4.1
Gross Domestic Product per Capita in 2015 (PPP int \$) <sup>4</sup>	2015	-	-	5680
Adult literacy level in % (15 years and above) <sup>5</sup>	2015	69.2	49.7	59.6
Total Fertility Rate (per woman) <sup>6</sup>	2013	-	-	5.5
MMR (deaths per 100,000 livebirths) <sup>6</sup>	2013	-	-	576
Net primary school enrolment ratio (%) <sup>5</sup>	2015	69.4	58.1	63.9
Adolescent birth rate (per 1000 girls) <sup>6</sup>	2013	-	-	122
Contraceptive prevalence among women (%) <sup>6</sup>	2013	-	-	16
Mean age at 1st sexual intercourse (Yrs.) <sup>6</sup>	2013	21.1	17.6	
Mean age at first birth (Yrs.) <sup>6</sup>	2013	-	-	17.9

**Data Sources:**

<sup>1</sup>United Nations department of economic and social affairs population division. 2015. World population prospects. The 2015 revision. Available at [https://esa.un.org/unpd/wpp/Publications/Files/Key\\_Findings\\_WPP\\_2015.pdf](https://esa.un.org/unpd/wpp/Publications/Files/Key_Findings_WPP_2015.pdf) (Accessed on May 2016).

<sup>2</sup> WHO. National Health Accounts.2013. Available at <http://apps.who.int/nha/database/countryprofile> (Accessed on May 2016)

<sup>3</sup> AHW. Human resource for health country profile- Nigeria, Abuja. Africa health workforce observatory

<sup>4</sup>World Development Indicators Database. 2015. Washington, DC, World Bank. Available at <http://databank.worldbank.org/data/reports.aspx?source=world-development-indicators> Accessed on May 2016.

<sup>5</sup>UNESCO. Institute for statistics data centre (online database). Montreal, UNESCO institute for statistics 2015. Available at <http://data.uis.unesco.org/> Accessed on May 2016.

<sup>6</sup>National Population Commission (NPC). Gender in Nigeria: Data from 2013. Nigeria Demographic and Health Survey 2014.

### 1.4 Sexual and reproductive health and rights context:

A survey conducted in 2013 among people aged 21-49 years found the mean age at first sexual intercourse to be 17.6 years for women and 21.1 years for men. Twenty-two percent of women and four percent of men in Northern Nigeria initiate sex before 15 years (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b). Women’s median age at first birth

ranged from 17.9yrs in the NW to 23.7yrs in the SE. Overall Total Fertility Rate (TFR) is 5.5, mean TFR in the Northern zones is 6.1 compared to 4.5 in the South (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b).

Teenage pregnancy poses a risk to the education and health of girls. In 2013 a national survey revealed 23% of women 15-19yrs had started childbearing. This proportion was highest in the NW zone (36%) (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b).

There is widespread knowledge of contraception; 85% of women and 95% of men reported knowing at least 1 modern method, however, unmet need for family planning among married women remains relatively high at 16%. The overall prevalence of modern contraceptive use among Nigerian women is 16% (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b). Twelve months prior to the demographic health survey in 2013, 8% of women and 4% of men reported having a sexually transmitted infection (STI). The cumulative prevalence of concurrent sexual partners among men was 9% compared to 1% among women (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b). HIV prevalence among adults 15-49 was 3.17% in 2014 (UNAIDS, 2014).

Maternal Mortality Rate (MMR) in 2013 was 576 per 100,000 live births (NATIONAL POPULATION COMMISSION (NPC) NIGERIA, 2014b). Table 2 below shows available SRH services and rights in Nigeria.

Although adolescent sexual reproductive services are available at all levels of health care, use of services by adolescents remain low. Sex and sexuality issues remain taboo in many cultures in Nigeria. Adolescents often express fear of stigmatization and feeling of embarrassment as barriers to accessing SRH services (CORTEZ, Rafael et al., 2015). Access remains limited for adolescents most of whom prefer to patronize patent medicine stores for their needs. A study found 85% of women below 20yrs in the North and 56% in the South delivered at home. The unmarried pregnant adolescent who doesn't conform to socially accepted norms faces more pronounced limitations in accessing care (RAI, RK et al., 2012). A study conducted in NC Nigeria found only 10% of adolescent girls aged 15-19 had ever visited a health facility to seek contraception, abortion, STI or pregnancy-related services (CORTEZ, Rafael et al., 2015).



The Family, Life, and HIV Education (FLHE) is Nigeria’s federal government’s initiative at bringing sexual educations to schools and reaching adolescents (NACA, 2014).

Table 2: Table showing available SRH services and attention for rights in Nigeria 2015.

SRH services/Rights	Status	Primary care	secondary care	Tertiary care	Private Health facility
Same-sex marriages <sup>1</sup>	Illegal				
Abortion <sup>2</sup>	Restricted to save mother's life				
Post-abortion complication <sup>3</sup>		No	Yes	Yes	Yes
Antenatal Care <sup>3</sup>		Yes	Yes	Yes	Yes
Skilled birth attendance <sup>3</sup>		Yes	Yes	Yes	Yes
Emergency Obstetric services (EmOC) <sup>3</sup>		No	Yes	Yes	Yes
Fertility treatment <sup>3</sup>		No	No	Yes	Yes
Family planning <sup>3</sup>		Yes*	Yes	Yes	Yes
Adolescent RH services <sup>3</sup>		Yes	Yes	Yes	Yes
Management of rape cases <sup>3</sup>		Yes	Yes	Yes	Yes
STI treatment <sup>3</sup>		Yes	Yes	Yes	Yes
HIV antiretroviral treatment <sup>3</sup>		No	Yes	Yes	Yes
Vaccination against CC <sup>3</sup>		No	No	Yes	Yes
CC Screening <sup>3</sup>		No	Yes	Yes	Yes
Mammography <sup>3</sup>		No	No	Yes	Yes
Prostate cancer Screening <sup>3</sup>		No	Yes	Yes	Yes

\* Except for permanent methods like vasectomy and tubal ligation.

**Data sources:**

<sup>1</sup>Federal Republic of Nigeria. Same-sex marriage (prohibition) Act 2013. Available at [www.placng.org/new/laws](http://www.placng.org/new/laws) (Accessed May 2016)

<sup>2</sup>Center for reproductive rights. Nigeria’s abortion provisions. 2016. Available at <http://www.reproductiverights.org/world-abortion-laws/nigerias-abortion-provisions> (Accessed May 2016)

<sup>3</sup>Adamu Yakubu. Nigeria profile of sexual and reproductive health services available at primary care. 2011. US department of Defence HIV program Nigeria. Available at [www.gfmer.ch](http://www.gfmer.ch) (Accessed on May 2016)

This program targets in-school adolescents 10-17 years, it incorporates sex education into school curricula. The program so far has reached only 13% of adolescents (NACA, 2014). The Peer Education plus (PEP) program, on the other hand, targets out of school high-risk adolescents 15-24 years of age through training peer educators. PEP is implemented by the Society for Family Health, a civil society organization (CORTEZ, Rafael et al., 2015).

## Chapter 2: Problem statement and study Justification

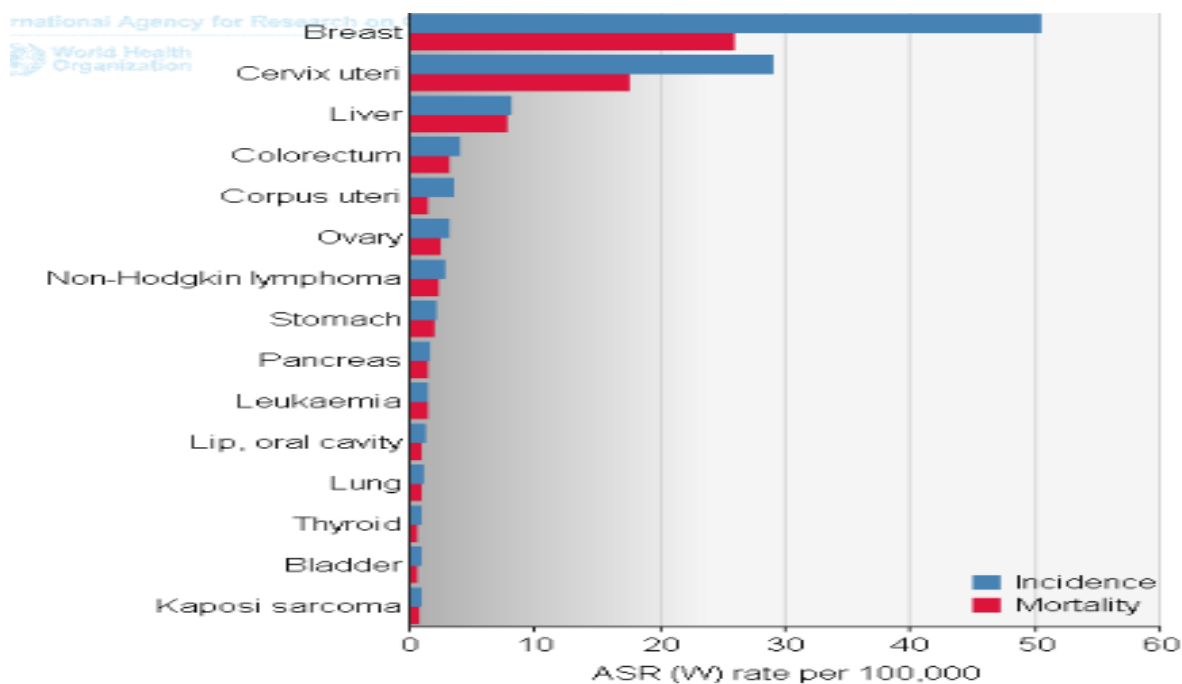
This chapter presents the problem of CC in Nigeria, the justification for conducting this study, study objectives, the methodology used, and introduces the framework used in the study analysis.

### 2.1 Problem statement and justification:

Cervical cancer (CC) prevalence remains high in Nigeria. CC is the most common pelvic cancer of women aged 30-50 years. In NE Nigeria, it represents 70.5% of all female gynaecological cancers (KYARI, O et al., 2004). Latest data showed an age-standardized incidence rate of 29 cases per 100,000 persons per year; the Age-standardized mortality rate was 17.5 deaths per 100,000 persons per year; 5-year prevalence was 75.3 cases per 100,000 persons per year (IARC, 2012b). About 50.33 million Nigerian women (above 15yrs) are at risk of CC (BRUNI, L et al., 2015).

In Nigeria, cervical cancer is the 2<sup>nd</sup> most common cancer among females of all ages after breast cancer as shown in figure 3. The figure below shows that over half of CC cases die from the disease.

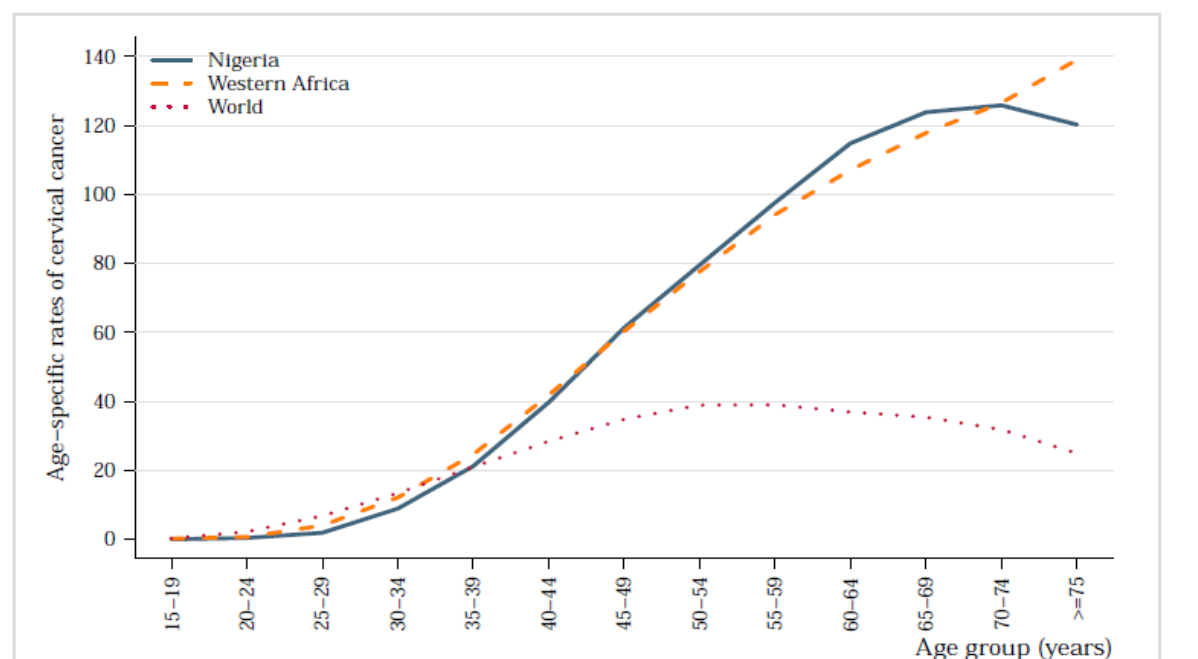
Figure 3: Estimated age-standardized incidence and mortality rates of cervical cancer in women (Nigeria 2012).



Source: (IARC, 2012b)

Figure 4 further demonstrates that the age-specific incidence rates of CC in Nigeria for ages 55-70 were slightly higher than the incidence in West Africa. It also doubles what obtains in the rest of the world for the 50-54 year age groups.

Figure 4: Age-specific incidence rates of cervical cancer in Nigeria compared to Western Africa and the world, 2012.



Source: (BRUNI, L et al., 2015)

Many cervical cancer deaths occur annually in Nigeria due to late presentation. Most cases present at advanced stages due to lack of information and poor access to care. These late cases have restricted treatment options with very poor outcomes and high mortality rates (KOLAWOLE, A, 2012; ABDUL, M.A et al., 2006; DEMARTEAU, Nadia et al., 2014). Annex 2 shows the continuum of care and potential failures at each level leading to late presentation and poor outcomes.

It is predicted that if nothing is done in Nigeria to reduce the burden of disease by 2030, CC incidence and mortality will increase by 61% and 56% respectively as shown in Figure 5.

CC have the 2<sup>nd</sup> worst effect on the quality of life of Nigerian women when compared to other cancers as demonstrated in figure 6 below.

Figure 5: Number of predicted new cases and death from cervical cancer in Nigeria by 2030 (all ages).



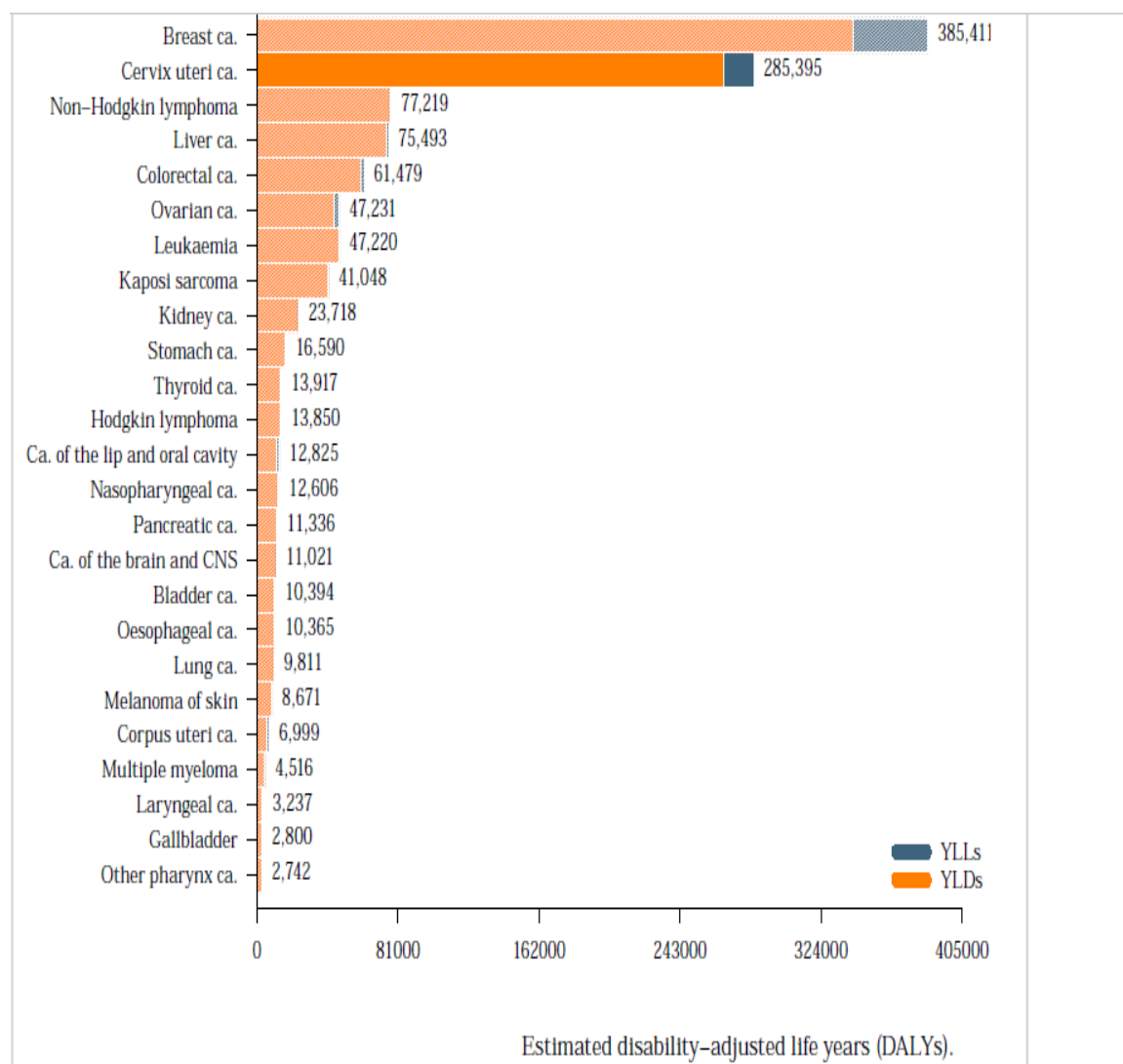
Source: (GLOBOCAN, 2012)

The years lost due to Disability(YLD) and years life lost due to premature mortality(YLL) for women with cervical cancer is the 2nd highest compared to other types of cancers as shown in the figure below.

Cervical cancer has been classified as a sexually transmitted infection and Human Papillomavirus (HPV) defined as a necessary cause. Women on first sexual experience may be exposed to this virus and if the virus is not cleared off by the innate immune system, puts at risk of CC. Risk factors for HPV infection include early sexual debut, illiteracy, tobacco use, concurrent and multiple sexual partners (KOLAWOLE, A, 2012; PDQ, 2016).

Nearly all CC has HPV as the primary infectious agents; HPV types 16 and 18 are the most common and are associated with invasive CC. HPV which is transmitted sexually is associated with early sex and multiple partners. Early sex before age 17 or having more than six partners in a lifetime is associated with 2-3 times the risk of CC when compared to first sex above age 21 or those with single lifetime partners (MUNOZ, N et al., 2002; TROTTIER, H, Franco,EL, 2006). Additional risk factors for CC in the face of an HPV infection include high parity (seven or more full-term pregnancies is associated with 4 times risk of CC compared to nulliparous women) (MUNOZ, N et al., 2002).

Figure 6: Number of annual deaths and disability from cervical cancer in Nigeria compared to other cancers among women (2008)



Source: (BRUNI, L et al., 2015)

Also, long-term use of oral contraceptive (OC) is associated with 3 times risk of CC compared to non-OC users; this may, however, be linked to OC users not using other barrier methods like condoms (MUNOZ, N et al., 2002).

In a prevalence survey carried out amongst 13 countries by the International Agency for Research on Cancer (IARC), the highest prevalence of HPV was observed in Nigeria with HPV 16 prevalence highest (CLIFFORD, G.M, Gallus,S et al., 2005). Contributing factors to high HPV infection in Nigeria apart from globally overlapping factors mentioned above are the relatively low socioeconomic status of women and poverty.

To prevent HPV infection primarily, HPV vaccination in HPV naïve people have yielded greatest results. Vaccinating young girls with HPV vaccine after the age of 12 or before first sexual experience has been shown to be effective in protecting them against CC. Vaccination against HPV 16/18 decreases the incidence of persistent HPV infection by 91.6% (95% CI 64.5-98%) and prevents invasive CC. Also, frequent use of barrier methods during intercourse decreased CC incidences (PDQ, 2016; OKOLO, C et al., 2010). Secondary prevention is done by screening for abnormal cells and treatment (see annex 3 for details on secondary and tertiary prevention).

Despite the high burden in Nigeria, CC screening and vaccinations lag behind other government priorities with insufficient resources for CC control (ISHOLA, Foluso and Omole, Oluwatosin, 2016).

Visual inspection with acetic acid or Lugol and treatment has been shown to be more effective than pap smear as a screening method for early detection (see and treat approach) in preventing cervical cancer in LMIC where resources are a challenge as the case in Nigeria (PAUL, Promer P et al., 2013).

Screening services for cervical cancer, treatment for pre-invasive lesions and vaccinations are not routinely offered through public health services in Nigeria. Screenings are done sporadically in the absence of a national control program for CC (KOLAWOLE, A, 2012). Services, when offered, are not free.

Where screening services are available in Nigeria, there is poor knowledge by the public of the existence of these services and they are usually located in secondary and the tertiary hospitals where costs are unaffordable for many (MILLICENT, Chizoma and Ofi, Bola Abosede, 2012). Hence coverage for screening is poor. Though there are 6 population-based cancer registries located in Abuja (NC region), Ibadan (SW), Ekiti (SW), Enugu (SE), Sokoto (NW) and Calabar (SE) there are no high quality regional cancer registries to guide policy makers in allocating resources for cervical cancer treatment (NSCR, 2016; JEDY-AGBA, Elim et al., 2012). Furthermore, HPV vaccines are very costly and unaffordable for many Nigerian families since it's not incorporated into the national vaccination program and social health insurance coverage is limited (KANE, MA et al., 2006; DUTTA, Arin and Hongoro, Charles, 2013).

Despite the increasing burden of disease of CC in Nigeria, there are few studies from Nigeria which explore both demand and supply side factors in

relation to prevention of cervical cancer and how they interact to make access possible.

This study, therefore, intends to fill this gap looking at the supply and demand side factors and how they interact concurrently to determine access to both vaccination and screening for CC prevention in Nigeria.

## **2.2 Study Objectives**

**Overall Objective:** To identify and discuss factors contributing to clients' access to cervical cancer prevention services in Nigeria in order to make recommendations to stakeholders for interventions to improve service utilization and contribute to reducing cervical cancer incidence.

### **Specific Objectives:**

1. To critically assess the current policy and program responses to cervical cancer in Nigeria in the light of international standards.
2. To identify and discuss enablers and barriers to clients' access to cervical cancer prevention services in Nigeria and relevant other settings.
3. To identify and discuss evidence-based interventions that can improve access to cervical cancer prevention, from Nigeria and relevant other settings.
4. To make recommendations to the Federal Ministry of Health and other Stakeholders towards improving access to cervical cancer prevention services in Nigeria.

## **2.3 Methodology:**

This is an explorative study. A review of the literature was done between March 2016 and May 2016. Databases from PUBMED, Scopus and Cochrane Library were searched. Google scholar and e-VU library search engines were used to search for published literature and find relevant websites. Articles found in English relevant to the study were selected after reading the abstract. Articles used were limited to those published between years 2004 and 2016.

Snowballing retrieval of texts using the reference lists from published article was used to get additional articles manually searched to compliment the search. Relevant articles were also identified from websites such as WHO, IARC, GAVI, Federal Ministry of Health Nigeria, AMCS and World Bank. Literature from previous master theses was also reviewed.

Keywords used and search strategy is shown in table 3 below. Keywords from the conceptual framework used to analyse study findings were adopted for the search. These words were used in combination with "AND", "OR" and "IN" to narrow down the search.

### **Inclusion and exclusion criteria:**

This study reviewed articles related to cervical cancer prevention. Articles related to the treatment of full blown cervical cancer and its complications were not included. Only literature in the English language was considered. Articles published between 2004 and 2016 were chosen. Search results blocking access to full-text versions without payment were excluded.

### **2.4 Conceptual Framework**

Access is defined "as the ease with which consumers or communities are able to use appropriate services in proportion to their needs" (LEVESQUE, Jean Frederic et al., 2013).

Many conceptual frameworks have been developed to analyse access to health care services such as developed by Andy and Anderson 1974, Panchansky and Thomas, 1981, Peters et al 2002, Levesque et al 2013 (ENSOR, T and Cooper, S, 2004; PETERS, DH et al., 2008; LEVESQUE, Jean Frederic et al., 2013).

The findings of this study would, however, be analysed using the proposed framework by Levesque et al 2013 (see figure 7).

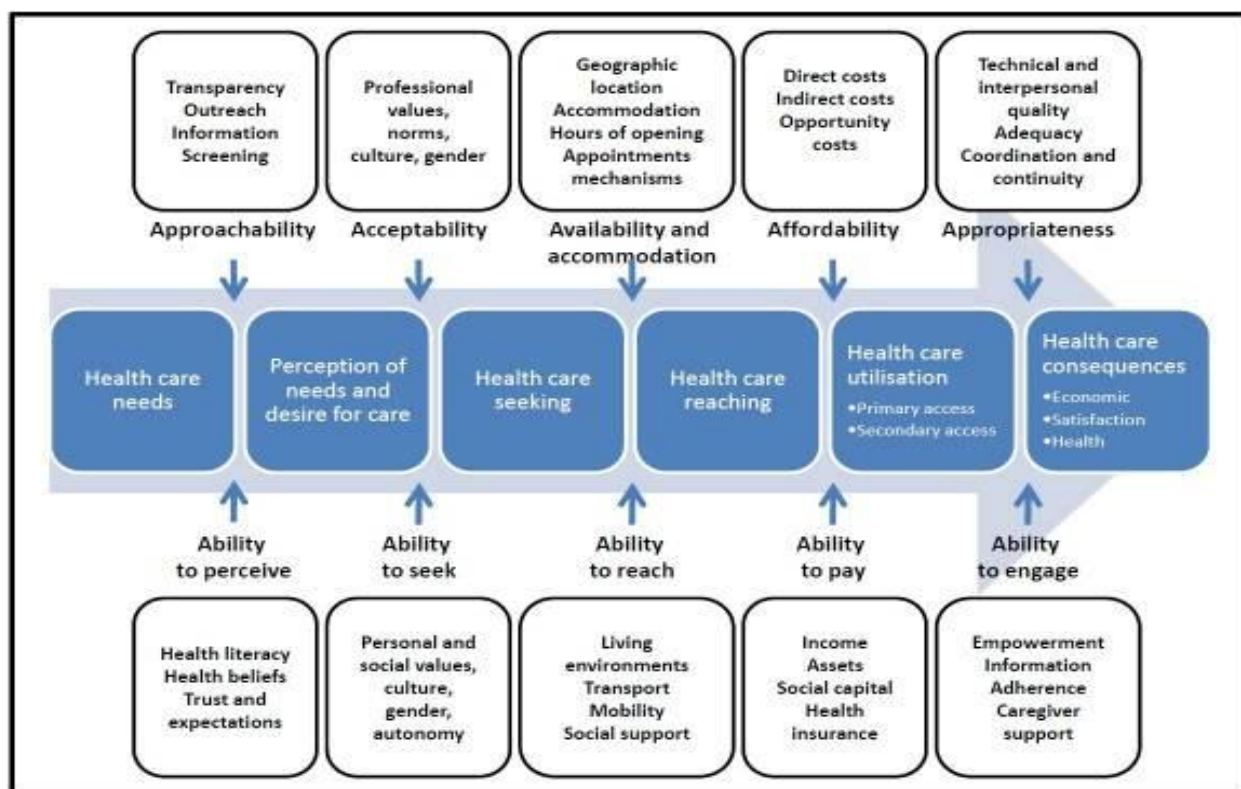
This framework unlike other frameworks mentioned above describes a broad dimension of determinants and concurrently integrate the demand and supply factor that influence access while also enabling easy operationalization of access to health care services all through the process of interactions between individuals and health services (LEVESQUE, Jean Frederic et al., 2013). Figure 7 below shows the conceptual framework used for the study analysis.



Table 3: Literature search strategy

<b>Source</b>	<b>Literature search strategy keywords used by objectives and concepts in combinations.</b>				
	<b>Sub-objective 1</b>	<b>Sub-objective 2</b>			<b>Sub-objective 3</b>
	Policy & Programs	Healthcare needs/desire for care	Care seeking, reaching and use	Care follow-up	Interventions
PubMed Scopus Cochrane Library	"Policy and cancer control in Nigeria", "programs and cervical cancer in Nigeria" "National cancer control and Nigeria"	"Information and cervical cancer in Nigeria", "Acceptability and cervical cancer screening in Nigeria", "beliefs and CC Screening", "Awareness and CC Screening in Nigeria", "gender and CC Nigeria"	"Availability and CC Screening in Nigeria", "Affordability and CC in Nigeria", "Barriers and Cervical screening in Nigeria", "social support and cervical screening in Nigeria", "Access and HPV vaccine in Nigeria", "opportunity cost and cervical screening in Nigeria", "health insurance and cervical screening in Nigeria".	"follow-up and Cervical screening in Nigeria", "Coordination and cervical screening in Nigeria, "adequacy and cervical cancer screening", "technical quality and cervical screening", "interpersonal quality and cervical screening", "empowerment and cervical screening Nigeria",	"cervical cancer and intervention in Nigeria", "improving uptake of cervical cancer screening", "Effective strategies and cervical prevention in Nigeria"
<b>Websites</b> WHO IARC Website of ministry of health Nigeria  GAVI	"guidelines for cervical cancer control"; "cancer strategic control plan"	"HPV access for girls" "vaccine support eligibility"	"National Health Accounts Nigeria"	"Cervical cancer and recommendations"	"SFH and cervical cancer in Nigeria", "Rwanda and Cervical cancer control", "Tanzania and cervical screening"

Figure 7: Conceptual Framework: Patient-centered access to health care



Source: (LEVESQUE, Jean Frederic et al., 2013)

This framework shows the functional relationship between the population being served and the health services/resources thus reflecting obstacles or facilitators experienced by the beneficiaries of health services. It captures well the demand-side and supply-side factors and how they can interact to achieve the desired outcome in terms of assessing health care, hence, its choice for analysing the findings of index study.

The framework also built on previous concepts of access and utilization to health services and based on experiences and resistances faced by users of health services (LEVESQUE, Jean Frederic et al., 2013).

Levesque defined access as an opportunity to identify the health care needs, seek health care services, reach and obtain or use services and having these needs fulfilled (LEVESQUE, Jean Frederic et al., 2013).

One weakness however of this framework is the absence of a single indicator that combines both supply and demand indicators , this would have been the best way to judge whether characteristics of services provided are aligned with people’s household or community capability. Hence a combination of evidence from mixed methods of research looking at this various aspect of access is necessary to fully explore access to

services in a given context as access in itself is a complex concept (LEVESQUE, Jean Frederic et al., 2013).

## **2.5 Limitation of study**

The thesis is a literature review that depended on available literature and not primary data collection. Literature in English alone was considered hence the possibility of missing out relevant studies and materials written in the local language. Lack of a harmonized national cancer data registry in Nigeria might have resulted in underestimation of some data analysed and reported in the reviewed articles. Articles identified were mostly from online sources, this is prone to data or publication biases.

This thesis, however, addressed quality concerns by reviewing mainly articles published in peer review journals and credible websites. Triangulation was done by comparing studies done in different part of the country and other contexts.

The next chapter will present findings on current policies and programs response to CC in Nigeria.

### **Chapter 3: Current policy and program responses to cervical cancer in Nigeria.**

This chapter seeks to identify the current policy and program responses to CC in Nigeria.

In early 2000, Nigeria had no National policy on cancer control. A national policy on cancer control was developed in 2008 following calls for countries to adopt national plans to control cancers at the WHA 2005 (WHO, 2005; FMOH, Nigeria, 2010b).

The overall vision of Nigeria's National policy on cancer control is for collaboration among stakeholders to reduce morbidity, mortality and improve the quality of life of people living with cancers. (FMOH, Nigeria, 2010b). The goals of the policy generally are in keeping with WHO guidelines for cancer control programs but they do not include the control of risk factors for cancer and do not prioritize women more at risk of CC (WHO, 2016c; FMOH, Nigeria, 2010b).

The control of risk factors for cervical cancer by health promotion to increase condom use, delay sexual debut, reduce the number of sexual partners among other is primarily a response to HIV control in Nigeria. These are implemented by the National AIDS Control Agency (NACA) and included in the ministry of health's guideline for the prevention of STI in Nigeria (NACA, 2016; FMOH, NIGERIA, 2016).

Within the framework of the national policy on cancer control, the federal ministry of health developed the cervical cancer control plan. Cervical cancer screening of women using VIA and VILI (see annex 3) and the primary vaccination of girls 9-15 years was the preferred option for control (FMOH, Nigeria, 2010a). The process for achieving these goals, however, remain undefined and not implemented due to lack of resources. The measures for control of cervical cancer were not included in the most recent national strategic health development plan for the years 2010-2015 (FMOH, 2010c).

Implementation of this policy, however, has been limited, a nationally organized prevention program specific for cervical cancer is still unavailable (ISHOLA, Foluso and Omole, Oluwatosin, 2016). Many of these government policies lacked proper planning, are often politically motivated and poorly funded (ANYIKA, Emmanuel, 2014; IJADUNOLA, K.T, 2016).

Evidence shows that having an explicit national screening program, targeted at specified age groups, with specified methods and screening intervals is crucial to reduce CC burden in countries. Countries like Finland and Sweden have achieved lowest prevalence of cervical cancer due to such national screening programs based on recall systems for women of reproductive age groups (EKINE, AA. et al., 2015; IARC, 2005b).

There is no national prevention program for CC in Nigeria, however, opportunistic CC screening and vaccinations are offered in secondary, tertiary care and private facilities (EKINE, AA. et al., 2015). Outreach-based campaigns and screening are also offered by NGO's.

Six population-based and nineteen hospital-based cancer registries exist in different parts of the country but these are not yet coordinated into a single national or regional population-based registries (NSCR, 2016).

DTP3 coverage at 12 months for infants is an indicator of immunization performance and capacity of a country to manage and deliver new vaccines in its national immunization program. GAVI alliance supports the introduction of new vaccines in countries at a reduced cost; based on 2 criteria of a 70% national coverage of DTP3 and a pilot demonstration of ability to deliver vaccine to 50% of a target population. Nigeria, however, has failed to meet the first requirement; DTP3 coverage was 66% in 2014 and currently ineligible for GAVI support for subsidized HPV vaccines (WHO, 2016b; PERLMAN, Stacey et al., 2014).

The basic benefits package of the national health insurance scheme excludes CC screening and HPV vaccination (NHIS, 2016).CC screening services are mainly outreach based organized by health facilities & NGO's; it's also offered when women come to health facilities for reasons other than screening (opportunistic-screening) (ISHOLA, Foluso and Omole, Oluwatosin, 2016).

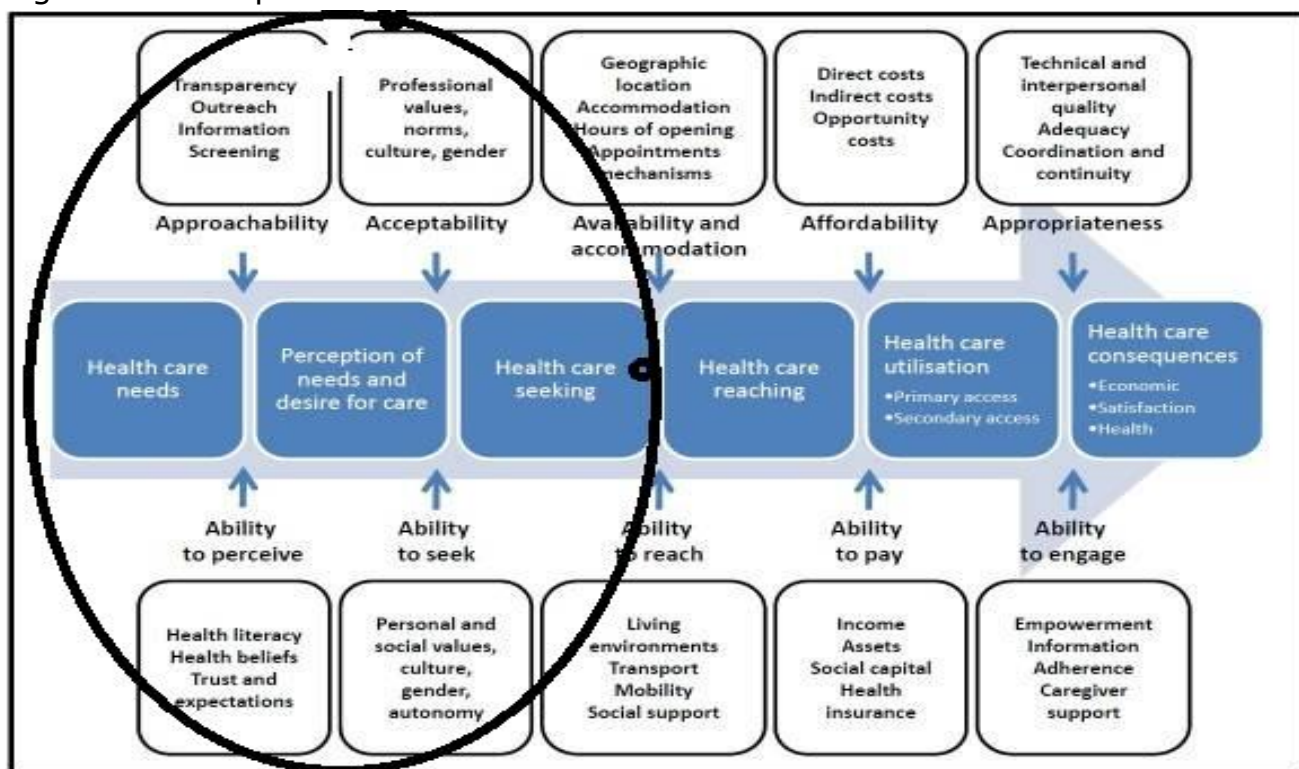
Recently, a 4-year project for CC screening and treatment in Nigeria is being funded by the Bill &Melinda Gates foundation in partnership with Marie Stopes International, Planned Parenthood Federation and Society for Family Health. This project, started in 2013, uses innovative social franchising to engage a network of hospitals and clinic in offering CC screening services and treatment to women in Nigeria. The project is expected to provide screening to 1.7 million women in Nigeria and offer

treatment by cryotherapy to another 137,000 women (MSI, 2013; SFH, 2016).

The subsequent two Chapters presents study findings on identified facilitators and barriers to CC preventive services among Nigerian women.

## Chapter 4: Healthcare needs/desire for care and health-seeking

This chapter will present findings on some aspects of facilitators and barriers to CC prevention in Nigeria. Other aspects will be covered in the next chapter. Figure 8 highlights the aspects to be covered in this chapter. Figure 8: conceptual framework



Source: (LEVESQUE, Jean Frederic et al., 2013)

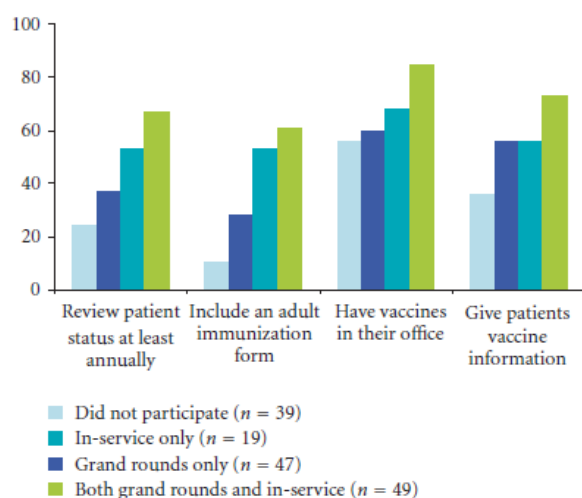
### 4.1: Supply-side factors: approachability and acceptability

Approachability relates to the fact that people needing services can identify that these services exist and when used can have an impact on their health. Factors such as outreaches, transparency, information etc. regarding treatments can contribute to making services more or less approachable to certain groups. Acceptability relates to prospects that services would be accepted by the people and this could be determined by cultural and social factors such as sex of the health care provider (LEVESQUE, Jean Frederic et al., 2013).

A study showed high awareness on HPV vaccines in Southern Nigeria however knowledge on eligibility and schedule of vaccine was low among health workers (MAKWE, C and Anorlu, R, 2011).

Another study found that doctors who attend educational lectures on CC prevention were likely to routinely provide this information than those who did not (BERNARD, Gonik, 2006). Figure 9 below showed that doctors who had in-service training on CC prevention and grand rounds were two times more likely to give their patient vaccine information and review patient status annually when compared to those who didn't have such training.

Figure 9: Intervention, participation and office practice of HPV vaccination by gynaecologists



Source: (BERNARD, Gonik, 2006)

When health professionals take on the norm or culture of integrating CC preventive services to existing services such as Antenatal care and Family planning acceptance is improved (ODAFE, Solomon, Torpey, Kwasi, Khamofu, Hadiza et al., 2013).

Furthermore, the judgment by a health worker whether or not to recommend HPV vaccine for a client may restrict or facilitate her use of the vaccine irrespective of her preferences (FERRER, Batisa, Harriet et al., 2014).

When services such as screening are recommended, the sex of the service provider determines whether these services are accessed especially in Northern Nigeria (MODIBBO, Fatima et al., 2016).

A study in Northern Nigeria showed that women did not attend screening because the sample collectors were males. The sex of the health worker



was an important consideration. Screening programs where sample collectors were male had lower uptake (ADAMU, AN et al., 2012).

#### **4.2. Demand-side factors: ability to perceive and seek services**

The client's ability to perceive risk and need for CC preventive services is influenced by her health beliefs, health literacy and knowledge about health. Whereas the ability to seek services denotes client's capacity to choose to seek care; this is related to personal autonomy, knowledge about health care options and rights and determines the expression of intention to obtain care (LEVESQUE, Jean Frederic et al., 2013).

Resistance to OPV vaccine, for instance, was highest in Northern Nigeria when in early 2000 there was distrust by Islamic scholars on the "intention of the west". There were claims that the vaccines were tainted with HIV and caused infertility with the overall purpose of reducing the Islamic population worldwide (OBADARE, E, 2005). The poor public confidence extended to other vaccines that health education campaigns are yet to fully eliminate especially in Northern Nigeria (YAHYA, M, 2006).

The level of awareness of cervical cancer and prevention is low in Nigeria. A study in an urban region in South-West Nigeria found only 15% of women between 20-65yrs had heard of CC (CURADO, MP et al., 2007). Another study among rural women 25-69yrs in SW Nigeria showed even lower levels of awareness (MILLICENT, Chizoma and Ofi, Bola Abosede, 2012). Low levels of knowledge and awareness on CC were also reported among women in the Democratic Republic of Congo, an LMIC like Nigeria (ALI-RISASI, C et al., 2014) .

When HPV vaccines and CC screening service are available it does not translate to use of service due to underestimation of risk by clients and perception of health services offered.

In a study among federal civil servants in Jos, North central Nigeria on knowledge, attitude, and practices of CC screening, there was a significant association between awareness of preventive services and its use ( $p < 0.01$ ). Evidence suggests that a belief that CC was preventable increases the awareness of pap smears and HPV vaccination. Women who come to understand that CC was preventable actively seek information on means to do so (HYACINTH, Hyacinth I et al., 2012; MUPEPI, SC et al., 2011). A

major barrier to access after health education was a lack of knowing where to go for screening and vaccination (FRANCIS, SA et al., 2011).

The hospital according to local beliefs in Nigeria is a place meant only for the sick, hence when CC prevention services are only available in hospital settings, it sends a contradictory message to women who see themselves as healthy. Making such services unacceptable to them (DARENG, Ellen et al., 2015).

A qualitative research carried out in North-Central and South-West Nigeria, identified religious and cultural beliefs influencing health-seeking behaviours of women. In a focus group discussion, among Muslim women in SW Nigeria no Muslim woman had heard of CC while most women in the other 3 FGD among Christians in SW, NC and Muslim women in NC Nigeria had heard of CC, however, they displayed poor knowledge of its cause and symptom. A Christian woman in the NC FGD had the misconception that CC could result from wizardry. Participants in the Christian women-SW FGD believe CC was caused by charms put on women by their partners who suspect they were unfaithful (MODIBBO, Fatima et al., 2016).

Among Muslim women in Northern Nigeria, there were beliefs that various vaginal practices, such as insertion of toilet paper or herbs into the vagina could cause CC. Only one woman linked HPV to cervical cancer. While most participants were aware screening allows early detection, there was also belief that spiritual and traditional methods of treatment could cure CC (MODIBBO, Fatima et al., 2016; EZEOME, ER and Anarado, AN, 2007).

Muslim women were reluctant to be screened because they perceived they were discriminated against by the health workers because of their mode of dressing and thought it was un-Islamic to disrobe themselves for pelvic exams for a male examiner, except in situations of severe illnesses. There was a strong preference for female health providers among Muslim women compared to Christian women (DARENG, Ellen et al., 2015; MODIBBO, Fatima et al., 2016).

The participants also expressed a more general lack of trust in the health care system and felt they might acquire other infections like Ebola or HIV from the screening equipment; and also concerns that health workers might disclose their status to others if screened positive (MODIBBO, Fatima et al., 2016). Other reasons stated for refusing to screen were fear of stigmatization by health workers and society, spousal disapproval and labelling of women who are positive for being promiscuous (OYEDUNNI,

Arulogun and Opemipo, Maxwell, 2012; AWODELE, O et al., 2011; MODIBBO, Fatima et al., 2016).

All Women in the FGD did not consider Self-sampling for CC screening a favourable option (DARENG, Ellen et al., 2015; MODIBBO, Fatima et al., 2016). Table 4 below shows an overview of findings from the FGD.

In Nigeria men play a crucial role in the uptake of CC screening services as most married women depend on the men for financial support, lack autonomy to make decisions and have limited roles outside the home (NATIONAL POPULATION COMMISSION, 2014a). Men are perceived as 'macho' and women 'passive'; the gender roles are such that women have limited power to negotiate safer sex. In Northern Nigeria for instance, married women are expected to get husband's approval to access SRH services such as contraception (NATIONAL POPULATION COMMISSION, 2014a). Some women felt it would be easier to discuss a potential positive test result if approval to go for screening was obtained beforehand (MODIBBO, Fatima et al., 2016; EZEONWU, M, 2014; HOSSAIN, M et al., 2014). Another study among women in Lesotho revealed improved awareness on CC screening was significantly associated with autonomy (VIENS, Laura et al., 2015). Similar findings were reported among women in Burkina Faso, an LMIC like Nigeria where women stated they wouldn't go for screening if their husbands don't support them (SAWADOGO, B et al., 2014). When husbands approve of screening, uptake of services among women increases (LYIMO, FS and Beran, TN, 2012).

A systematic review on HPV vaccination and its acceptability in Sub-Saharan Africa, showed high levels of acceptance and willingness to vaccinate girls against HPV but low levels of knowledge and awareness of the vaccine in Sub-Saharan Africa (PERLMAN, Stacey et al., 2014). A national HPV vaccination program in Nigeria may face some resistance by Muslim scholars, as was experienced with OPV if parents/guardians of prospective clients and religious leaders are not well-oriented on the vaccine beforehand (OBADARE, E, 2005).

A study among Nigerian Nurses and undergraduate students indicated reasons for rejecting vaccination. These reasons include: girls were still young and not sexually active, insufficient knowledge on vaccines, vaccine thought as promoting promiscuity, fear of side effects and fear of the unknown. Also stated were controversies surrounding vaccine, cost of the vaccine and lack of inclusion in the national immunization program (ILYASU, Z et al., 2010; MAKWE, C and Anorlu, R, 2011).

Table 4: Comparing findings on Knowledge, attitudes, and beliefs of participants in FGD of Muslims and Christian faith in North central and South West Nigeria (data collected between August 2014 and October 2014)

	Christian women		Muslim women	
	North Central (Abuja FGD)	South Western (Ondo FGD)	North Central (Abuja FGD)	South Western (Ondo FGD)
Awareness of cervical cancer	All of the women in this group had heard about cervical cancer	Most of the women in this group had heard about cervical cancer	Most of the participants in the Abuja Muslim women FGD had heard about cervical cancer	None of the women in this group had ever heard of cervical cancer
Causes of cervical cancer	Poor knowledge of the cause of cervical cancer; one of the participants in this group had the misconception that cervical cancer could result from wizardry	Poor knowledge of the cause of cervical cancer. Participants in this group expressed beliefs about the use of charms and cervical cancer being inflicted on women by men	Displayed poor knowledge of the cause of cervical cancer. Less belief in the use of charms than the Christian women	Displayed poor knowledge of the cause of cervical cancer
Symptoms of cervical cancer	Poor knowledge of the symptoms of cervical cancer	Poor knowledge of the symptoms of cervical cancer	Poor knowledge of the symptoms of cervical cancer	No previous knowledge of the symptoms of cervical cancer
Awareness of human papillomavirus	Only one participant in this group had ever heard of the human papillomavirus	No previous knowledge of the human papillomavirus	No knowledge of the human papillomavirus	No previous knowledge of the human papillomavirus
Treatment options for cervical cancer	Christian FGD participants in Abuja did not think that there was any effective traditional treatment for cervical cancer. They were of the opinion that it could be treated if diagnosed early by screening (see and treat), chemotherapy, surgery and 'spirituality'	In the Christian women FGD in Ondo, participants noted that cervical cancer could be treated if diagnosed early. They did not believe that traditional medicine could be used to treat cervical cancer	Most Muslim FGD participants in Abuja believed that cervical cancer can be treated and few participants claimed awareness of traditional treatment modalities for it	Participants in the Ondo Muslim women FGD had poor knowledge of treatment options for cervical cancer
Cervical cancer screening	Participants in this group were more aware of cervical cancer screening and more willing to engage with the healthcare system. More than half of the participants in this group had been screened. Participants were not particular about being screened by a female or male healthcare provider	Participants in this group had heard about cervical cancer screening and were more likely to accept screening. Participants were also indifferent to being screened by either a male or female healthcare provider	Participants among the Abuja Muslim women had heard about cervical cancer screening, though none had been screened. Reasons for reluctance to be screened included the need for spousal support and permission before screening, need for a female doctor or female chaperone to be present during screening procedure	None of the participants in this group was aware of cervical cancer screening
<i>Attitudes and beliefs</i>				
Perception of personal risk	Most expressed the belief that cervical cancer is becoming a significant problem in Nigeria and that anyone could be at risk of cervical cancer	Most of the women in this group believed that cervical cancer is becoming more common in Nigeria and they could be at risk of cervical cancer	Most of the Abuja Muslim women believed that cervical cancer is becoming a significant problem in Nigeria. They expressed belief that they could be at risk of cervical cancer	None of the participants in this group previously believed that cervical cancer is becoming a significant problem or that they could get cervical cancer
	Christian women		Muslim women	
	North Central (Abuja FGD)	South Western (Ondo FGD)	North Central (Abuja FGD)	South Western (Ondo FGD)
Barriers to cervical cancer screening	No barriers to cervical cancer screening were reported in this group. While some opined that they would prefer a female provider, many were happy to be screened by a male provider if a female chaperone was present	Participants in this group identified lack of awareness as a major barrier to cervical cancer screening	The Abuja Muslim women highlighted the need for husband's permission, modesty concerns, lack of awareness, cultural discrimination and discomfort as barriers to cervical cancer screening	Participants in this group identified a strong preference for a female healthcare provider before they would accept being screened
Acceptability of self- sampling	Expressed preference for sample collection in the hospital by a healthcare provider rather than self-sampling	Expressed preference for sample collection in the hospital by a healthcare provider	Expressed preference for sampling by a female healthcare provider rather than self-sampling	Expressed preference for sampling by a female healthcare provider rather than self-sampling. One participant in this group was of the opinion that healthcare providers are more capable of taking the samples correctly

FGD, focus group discussion.

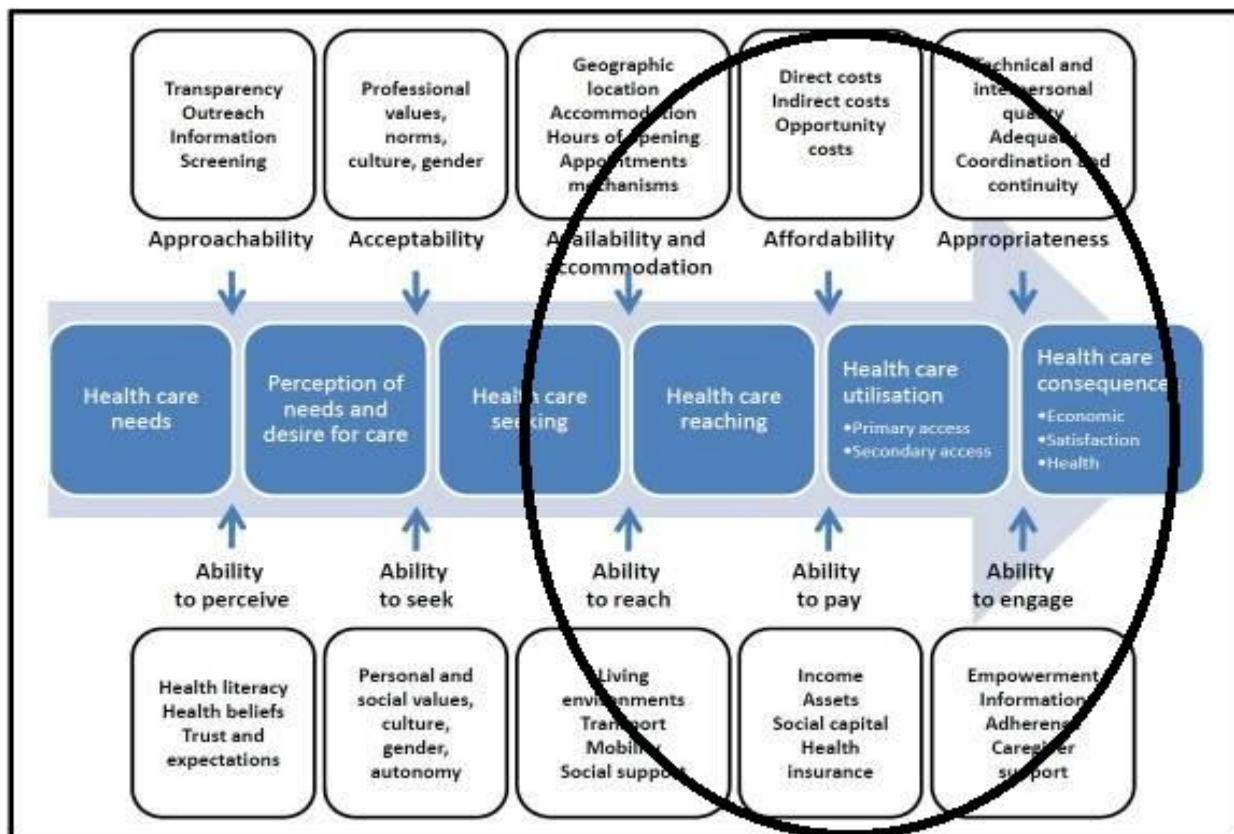
Source: (MODIBBO, Fatima et al., 2016)

This was similar to evidence from high-income Countries like USA, Canada, and The Netherlands, where some parents term the vaccine as a 'promiscuity vaccine' and thought to vaccinate their daughters will increase the chance of risky sexual behaviour (BRANKOVIC, Ivan et al., 2013; MARLOW, Laura et al., 2009; STEENS, Anneke et al., 2013). Issues affecting parents' willingness to seek HPV vaccinations for their daughters in the UK, USA and Australia, all of which have a national Vaccination program, bordered around issues of public trust relating to motives of pharmaceutical companies and governments, and the safety of the vaccine (FERRER, Batisa, Harriet et al., 2014). Misconceptions on HPV vaccines accounts for low uptake in the USA; only 37% of girls had completed 3 doses of HPV in 2014. The global coverage rate for HPV vaccine remains at 1.4% in 2014 (THE LANCET, 2016).

## Chapter 5: Healthcare reaching and Utilization

In this chapter study findings relating to highlighted aspects in figure 10, will be presented.

Figure 10: Conceptual framework 2



Source: (LEVESQUE, Jean Frederic et al., 2013)

### 5.1. Supply-side factors: availability, accommodation, and affordability

Availability and accommodation refer to the physical existence of health resources with sufficient capacity to produce needed services. It reflects the fact that services are there, can be reached in a timely manner and at flexible times. Affordability, on the other hand, reflects direct prices of services, related expenses and opportunity cost (LEVESQUE, Jean Frederic et al., 2013).

CC prevention services offered in Nigeria are usually in secondary, tertiary hospital and private setting which are usually located in urban areas. Each state has at least one tertiary hospital. Geographical access to health facilities is poor, infrastructure in public health facilities are obsolete and

often depleted (ANYIKA, Emmanuel, 2014). There are no appointment mechanisms in place in public facilities (OMOLUABI, Elizabeth, 2014). The health facility and health workforce are skewed in favour of the urban area, male sex, Southern Nigeria, tertiary care and curative services (see annexes 5, 6 and 7). There is an overall shortage of health workforce especially for radiotherapist, latest estimates shows 0.17 health workers per 1000 population (AHWO, 2008; OMOLUABI, Elizabeth, 2014), this is far below the WHO recommended 2.3 health workforce per 1000 population.

The health workforce distribution by sex is such that 25% of physician and 95% of nurses are females (AHWO, 2008). There are usually incessant strikes by various cadres of health workers, over one demand or the other. Erratic electricity supply contributes to poor medicine supply-chain; this leads to frequent essential medicine and vaccine stock outs (ANYIKA, Emmanuel, 2014). Community Health Workers (CHW), is a cadre tacitly recognized by policy to provide primary health care in rural areas in Nigeria. They perform simple tasks such as consultations and basic treatment, this, however, does not include CC screening (ORDINIOHA, Best and Onyenaporo, Chinyere, 2010; CHRBN, 2006; ADVANCING PARTNERS AND COMMUNITIES, 2014).

The cost of CC prevention services is an important determinant of use of service. The cost of screening in most government-owned facilities (pap-smear test) can be as high as 25 USD and higher in private owned facilities (AJIBOLA, Idowu et al., 2015).

For the HPV vaccines, the cost of 5 USD per dose was shown to be cost effective for most countries in Sub-Sahara Africa. GAVI, negotiated the drop in price from 120 USD per dose to 4.50 USD for LMIC in 2013 to remove financial barriers in these countries (KIM, Jane et al., 2013). Countries meeting GAVI eligibility criteria may pay as low as 4.50 USD per dose for the vaccine; this cost will be co-financed by eligible countries and GAVI. The poorest countries will pay the smallest share of this cost (YOUNGBLOOD, R, 2013; KIM, Jane et al., 2013). Nigeria, however currently does not meet these criteria, implying persistence of financial barriers to the vaccine for parents/guardians of young girls in Nigeria (YOUNGBLOOD, R, 2013; GAVI, 2016).

In a qualitative study conducted in South-West Nigeria among women on awareness of CC screening, respondents stated time wasted from long queues as a factor preventing uptake of screening. Services were considered time- consuming and since they had other pressing domestic

responsibilities give less priority to CC screening (NDIKOM, Chizoma and Ofi, Bola, 2012).

The value of an hour used for the purpose of screening for women in developing countries may range from 0.30-4.80USD. Opportunity costs account for 33-65% of total cost of screening services (GOLDHABER-FIEBERT, Jeremy and Sue, Goldie, 2006).

## **5.2 Supply side Factor: appropriateness**

This denotes a fit between services offered and client's need. It entails technical and interpersonal quality of services and the way these services are provided, it's integrated and continuous nature (LEVESQUE, Jean Frederic et al., 2013).

The see and treat screening approach for women aged 30-50 years adopted by the Nigerian national cancer control policy, is feasible with minimal infrastructural and training requirements (SANKARANARAYANAN, R et al., 2013). A demonstration project in Nigeria has shown it to be safe for women and effective however coordination and continuity of such programs are usually hampered by an inadequate number of providers, lack of sustainable supervision, power outages, poor supply and maintenance of medical equipment (WHO, 2012). Another major challenge in CC prevention in Nigeria is the weak referral and follow-up systems in the health sector; collaboration between primary, secondary and tertiary level is poor. This is aggravated by poor managerial functions in the system, the politics of federalism, autonomy and resource control (ANYIKA, Emmanuel, 2014). Interpersonal quality is often influenced by the quality of information given to clients who access services, biologic sex, communication skills and attitude of the provider. When service providers conducting screening are males, services may be deemed inappropriate (ADAMU, AN et al., 2012; MODIBBO, Fatima et al., 2016). A study among nurses in SW Nigeria, found levels of awareness and knowledge of CC was low (OYEDUNNI, Arulogun and Opemipo, Maxwell, 2012). A systematic review of qualitative evidence from high-income countries, found health care providers avoid conversations about HPV and vaccines with clients when they perceive it was culturally inappropriate (FERRER, Batisa, Harriet et al., 2014).

## **5.3: Demand side factor: Ability to reach and to pay**

The ability to reach is about the capacity of clients to physically reach health services and it relates to physical mobility, availability of transportation and occupational flexibility. Whereas the ability to pay denotes capacity to



generate economic resources to pay for health care services without incurring catastrophic expenditures (LEVESQUE, Jean Frederic et al., 2013).

The demographic distribution of the Nigerian population is such that 45% live in urban areas and 55% in the rural. The primary health care serves less than 20% of its potential clients (ANYIKA, Emmanuel, 2014). Women who live in rural areas have less access to screening services compared to urban dwellers due to the distance to health facilities where these services are rendered (EZECHI, OC et al., 2014).

A study conducted in SW Nigeria on predictors of default to follow up care after screening positive to precancerous lesions revealed that women who lived in rural areas were 2.9 times more likely to default compared to urban dwellers. Also, women residing more than 10km from the health centres where services were provided were 2 times more likely to default compared to women living less than 10km away (EZECHI, OC et al., 2014). Reasons stated by defaulters were the high cost of transportation to the health centre (48.6% of respondents), the clinic was too far (8.6%) and 25.7% said they had no time to spare from work (EZECHI, OC et al., 2014). Patients usually experience long waiting times at public health facilities (OMOLUABI, Elizabeth, 2014).

The poor public transportation system in Nigeria is a barrier for women to access health facilities where CC screening are offered majorly in urban areas (EZECHI, Oliver C et al., 2013). A study among federal civil servants in NC Nigeria reported of women who had never screened, 14.3% indicated an inability to locate health facility as a reason for not screening (HYACINTH, Hyacinth I et al., 2012).

A study in NC Nigeria found that 13.5% respondents stated financial constraints as reasons for not screening since they had to pay out of pocket (AJIBOLA, Idowu et al., 2015). This was similar to what was reported in another study in SW Nigeria (NDIKOM, Chizoma and Ofi, Bola, 2012). Also in a study among female nurses in SW Nigeria on the utilization of screening services, nurses indicated cost considerations as reasons for not screening (OYEDUNNI, Arulogun and Opemipo, Maxwell, 2012). The capacity of clients to generate economic resources for some primary and secondary preventive services poses a financial barrier to access CC preventive services (NBS, 2016).

#### 5.4. Demand side factor: Ability to engage

Ability to engage has to do with client's participation and involvement in their own care. It is influenced by the capacity and motivation to participate and commit to completion of care (LEVESQUE, Jean Frederic et al., 2013).

Women with less than secondary school education have been shown to be 3 times more likely to default from follow-up visits for CC screening compared to their more educated counterparts (EZECHI, OC et al., 2014; ANORLU, RI, 2008; BUKAR, M and Audu, BM, 2011). These women with lower levels of education are usually unlikely to be gainfully employed, less aware of the importance of positive test results and follow-up visits thus restricting their ability to engage with available services.

A study in SE Nigeria among rural women found that 95.7% of participants stated local community meetings as their source of information on cervical cancer (CHIGBU, Chigbu et al., 2013). The most important motivations for attending screening according to participants were support from husbands and involvement of community opinion leaders (CHIGBU, Chigbu et al., 2013). Table 5 below show the social capital that motivates women to participate in CC screening.

Table 5: Table showing motivating factors for participating in cervical cancer screening among rural women in South-East Nigeria, 2012.

Motivating factor	Number (percentage) of women <sup>a</sup>
Support from husband	2031 (87.8)
Community opinion leaders' support	1874 (81.1)
Peer-group pressure or support	1001 (43.3)
Encouragement from children	688 (29.8)
Encouragement from other family members	392 (17.0)
Cancer-related mortality of a close family member or friend	87 (3.8)
Media education or information	81 (3.5)
Self	26 (1.1)
No response	12 (0.5)

<sup>a</sup> Participants were allowed multiple responses.

Source: (CHIGBU, Chigbu et al., 2013)

In Northern Nigeria, especially among Muslims, women are socio-culturally expected to be sub-servant to their male counterpart. Spousal and community leader support in this context also influence women's participation and motivation for screening services (EZECHI, OC et al.,

2014; MODIBBO, Fatima et al., 2016; NATIONAL POPULATION COMMISSION, 2014a).

Furthermore, parental consent and support are necessary for young girls to be vaccinated against HPV. When parents are less educated, consider the vaccine as promoting promiscuity, harmful, or see their daughters not to be at risk, may refuse HPV vaccination for their daughters (ADAMS, M and Jasani, B, Fiander,A, 2007).

A study conducted in Southern Nigeria showed women preferred to have immediate treatment following an abnormal screening result. Reasons for this preference was to avoid a second visit, busy schedule, avoidance of anxiety associated with waiting and perceived cost of a 2<sup>nd</sup> visit (CHIGBU, Chigbu et al., 2013).

## **Chapter 6: Evidence-based interventions**

This chapter presents findings on interventions that have been shown to improve access to cervical cancer preventive services.

Introducing population-based screening programs have been shown to improve uptake and significantly reduce morbidity and mortality rates in countries using population-based programs. For example, Malawi has been able to scale up the uptake of screening when the government embraced a national program for CC screening (WHO, 2012; FORT, Victoria et al., 2011). Programs that actively invite women to screen when compared to those that screened women who visit health centres for other reasons have been shown to be more cost-effective for countries (MILLER, Anthony, Nazeer, Saloney et al., 2000). Finland's CC program is a model for organized screening programs worldwide and its success hinges on population education, quick feedback to clients on results, efficient referral systems, histologic confirmation of diagnosis and continuous quality control (MILLER, Anthony, Nazeer, Saloney et al., 2000). Evidence-based essential ingredients from a public health model for a successfully organized CC screening service are shown in Annex 4.

A pilot study conducted in Abuja North central Nigeria showed that when screening services were included in the care for HIV-positive women attending ART clinic at a public health facility, 96.5% accepted to undergo the procedure (ODAFE, Solomon, Torpey, Kwasi, Khamofu, Hadiza et al., 2013).

Similar studies of rural women in Lagos, Kenya and Mozambique found 80%, 87% and 86% respectively accepting to be screened when services were included in already existing services such as ANC and offered by health professionals (EZECHI, Oliver C et al., 2013; HUCHKO, MJ et al., 2011; AUDET, CM et al., 2012). Pilot studies in six African countries saw improved client's satisfaction and uptake of CC screening when services were integrated into existing reproductive health services and the counseling component strengthened post-screening (WHO, 2012).

A study carried out among adult women in Ogun state, SW Nigeria showed that when women in the experimental group were exposed to CC educational multimedia materials (based on a movie) there was associated rise in knowledge on CC from 2% to 70.5% ( $p < 0.0001$ ); the proportion of women who undertook screening increased from 4.3% to 8.3% ( $p < 0.038$ ) which was statistically different from the control group not exposed to such

media awareness campaigns (ABIODUN, Olumide et al., 2014). The impact of health education in this study are shown in table 6 below.

Table 6: Effect of health education among study participants, SW Nigeria, 2013.

Knowledge score (0–40)	INTERVENTION				CONTROL			
	Baseline n = 350 frequency (%)	Post intervention n = 325 frequency (%)	% change	Statistic (P)	Beginning of study n = 350 frequency (%)	End of study n = 289 frequency (%)	% change	Statistic (P)
Ever heard of cervical cancer	59 (16.9)	325 (100.0)	+83.1	(p < 0.0001*)	50 (14.3)	45 (15.6)	+1.3	(p = 0.657*)
Ever heard of cervical screening	36 (10.3)	325 (100.0)	+94.6	(p < 0.0001*)	38 (10.9)	31 (10.7)	-0.2	(p = 1.000*)
Ever had cervical screening	15 (4.3)	27 (8.3)	+4.0	(p = 0.038*)	12 (3.4)	11 (3.8)	+0.4	(p = 0.834*)
Willingness to have cervical screening	314 (89.7)	300 (92.3)	+2.6	(p = 0.283*)	320 (91.4)	270 (93.4)	+2.0	(p = 0.373*)
Mean knowledge score	1.75 ± 5.65 <sup>a</sup>	25.69 ± 6.20 <sup>a</sup>		t = 52.48 (p < 0.0001)	2.03 ± 5.77 <sup>a</sup>	2.22 ± 6.04 <sup>a</sup>		t = 0.406 (p = 0.685)
Mean perception score	1.13 ± 0.77 <sup>a</sup>	4.43 ± 0.92 <sup>a</sup>		t = 50.66 (p < 0.0001)	1.16 ± 0.83 <sup>a</sup>	1.17 ± 0.88 <sup>a</sup>		t = 0.148 (p = 0.883)

\*Fisher's exact test was used, <sup>a</sup>mean ± Standard deviation.

Source: (ABIODUN, Olumide et al., 2014)

This was similar to findings from another study conducted among market women in Lagos, Nigeria. Knowledge on symptoms, associated risk and screening for CC increased after a CC campaign by health workers hitherto the main source of information on CC were friends (WRIGHT, Kikelomo et al., 2010). When health workers created awareness on CC prevention and fears of clients allayed it made services approachable. However, health education failed to improve uptake of CC screening in a study in Kebbi NW Nigeria this was attributed to sociocultural factors such as male sample collectors and system factor of insufficient service points (ADAMU, AN et al., 2012).

Involving men and community opinion leaders in CC prevention services will improve uptake of such services especially for the Muslim women in Northern Nigeria (YAHYA, M, 2006). Evidence from Tanzania and South Africa showed extending written invitations to male partners was an effective intervention for male participation in ANC and couple VCT (MOHLALA, BK et al., 2011; JEFFREYS, Laura et al., 2015; THEURING, S et al., 2016).

Adherence to CC prevention strategies has been shown to improve when women trust providers and were given information they didn't ask for when they come for unrelated reasons (ACKERSON, K and Peterson, 2009).

Promoting the vaccine as one that prevents CC rather than an STI had improved acceptance in the contexts of high-income countries where parents may believe their daughters not to be at risk of an STI (BERNARD, Gonik, 2006).

Another study among a rural population in South Africa showed that providing CC information to clients in a non-stigmatizing manner based on a theme of self- protection increases uptake of screening. Messages introducing CC as an STI rather than caused by a virus were perceived as stigmatizing, blameful and ignoring of men's role in the transmission of HPV (MAREE, JE and Wright, SCD, 2011; BASAK, Demirtas, 2013).

Among women in Barcelona, the CRICERVA study showed evidence that actively contacting women by arranging an appointment through personalized letter with a preassigned visit with or without an information leaflet led to an overall gain of 32% in coverage compared to 6% gain in the control group that had no such intervention. The gains were highest when women receive personalized invitation with an information leaflet compared to receiving just an invitation letter to screen (ACERA, A et al., 2014). Similarly findings from a Cochrane review of available evidence from HIC showed invitation and educational interventions to be highly effective in increasing screening uptake (EVERETTE, Thomas et al., 2011). Also, systematic reviews from HIC and one LMIC showed text messaging to clients was an effective tool for behaviour change in disease prevention (COLE-LEWIS, H. and Kershaw, T, 2010).

A recent meta-analysis on effective interventions to improve access to screening among women of ethnic minority in the US indicates that access-enhancing interventions achieve the greatest impact, followed by interventions in community education and then individual-based interventions such as face to face counselling, invitation letters or reminders (HAE-RA, Han et al., 2011).

Access-enhancing interventions are described as those removing financial barriers (reducing cost or free test), structural barriers (mobile vans or transport) or linguistic barriers (making appointments or language translations) (HAE-RA, Han et al., 2011).

Community education interventions are those organized through workshops conducted by trained educators where participants are informed and encouraged to receive tests (HAE-RA, Han et al., 2011).

## **6.1 Case studies:**

Some projects on CC screening, implemented by MSI and SFH in Tanzania and Nigeria respectively and the Rwanda's National HPV vaccination program will be discussed below. These projects were all carried out in low resource settings and demonstrate the feasibility of CC preventive services in LMIC.

### **6.1.1 Cervical Cancer Screening and Preventive Therapy (CCS&PT) project in Nigeria:**

This is currently an ongoing project sponsored by the Gates foundation and implemented partly by SFH in Nigeria. The project provides services through innovative social franchising of CC screening services to private clinics in Nigeria. They provide training on screening and treatment to health workers in these franchised facilities as well cryotherapy machines. Currently, there are 48 franchising facilities across Southern and Northern Nigeria (SFH, 2016; NHW, 2015). Free screening & treatment is offered to women who access services through these franchising platform (SFH, 2016; NHW, 2015). SFH also organizes community focused sensitization using community volunteers to sensitize women on the need for screening. By 2015, the project screened over 10,000 women who would otherwise not have been screened (NHW, 2015).

### **6.1.2 Cervical Cancer Screening delivered through Reproductive Health Networks in Tanzania:**

Tanzania is an LMIC in East-Africa, ethnically diverse and similar to the context of Nigeria (WORLD BANK, 2016c). The Marie Stopes Tanzania (MST), funded by the Gates foundation implements its ongoing CCS&PT project through existing Reproductive Health Network Programs (RHNP). There are 30 mobile outreach teams which serve rural areas/urban slums and 11 clinics which act as centres of excellence for referrals. Services cover every region in Tanzania (MSI, 2016a). Community health workers & local health providers inform potential clients in the community days to weeks ahead of planned mobile outreach. The mobile team on arrival, are based in a host facility usually schools or local health centres where they offer free CC screening/treatment, HIV and family planning services. The clinic teams located in urban centres also offer screening and cryotherapy (MSI, 2016a). Advanced cases are referred to higher regional health facilities. Mobile outreach teams made up of a doctor, midwife or other health professionals and a driver for a 4X4 wheel vehicle, visit the same sites

regularly and hold interactive educational sessions on reproductive health issues. The team also makes arrangement for follow-up care when required. Uptake of CC screening increased as a result of these mobile outreaches (MSI, 2016b).

### **6.1.3 Scaling up HPV vaccination in Rwanda:**

Rwanda is an LMIC in East Africa and similar in context to Nigeria (WORLD BANK, 2016d). In 2009 a negotiation led by the first lady and the MOH of Rwanda with Merck producers of Gardasil (a quadrivalent HPV vaccine), resulted in the pharmaceutical company donating 2 million doses of HPV vaccine over 3 years. Merck also guaranteed a concessional low cost of the vaccine thereafter (BINAGWAHO, Agnes et al., 2013).

Concurrently Rwanda's MOH initiated plans and strategies in its comprehensive national program to roll out HPV Vaccines. The strategy was to vaccinate all schoolgirls in grade 6 for free on 3 designated 'health days' each year. The program commenced in 2011 vaccinating grade 6 girls in schools for free on 'health days'. Educational messages are disseminated to adolescents on these days. Two catch-up vaccination programs were organized from 2012 for 3<sup>rd</sup>-year secondary school girls to ensure all girls younger than 15 years had the vaccine (BINAGWAHO, Agnes et al., 2013). Teachers and community village leaders were enlisted in sensitization and mobilization efforts to trace out-of-school girls for vaccination. The vaccination rate for HPV was 96.6% in 2012. Due to this success, other private sector companies expressed interest in supporting Rwanda's CC control program (BINAGWAHO, Agnes et al., 2013).

Table 7 shows factors addressed by interventions implemented in the case studies discussed above.



Table 7: country examples of evidence-based interventions to increase uptake of cervical cancer preventive services

<b>Factors addressed</b>	<b>Intervention implemented</b>	<b>Project and country Example</b>	<b>Success &amp; lessons learnt</b>
Approachability <sup>1</sup> Acceptability <sup>2</sup> Availability <sup>3</sup> Affordability <sup>4</sup> Ability to perceive and seek <sup>6</sup> Ability to pay <sup>8</sup>	Social franchising to private clinics <sup>3</sup> , free services <sup>4,8</sup> , training of existing human resource for health <sup>3</sup> , provision of medical equipments <sup>3</sup> , community sensitization by community volunteers <sup>1,6</sup> , providers offering to screen clients at family planning or ANC clinics <sup>2</sup>	CCS&PT project <b>Nigeria</b>	The inclusion of CC screening & treatment into RH services. Public-private partnership improving health outcomes. Over ten thousand women screened by 2015.
Approachability <sup>1</sup> Availability <sup>3</sup> Affordability <sup>4</sup> Appropriateness <sup>5</sup> Ability to perceive and seek <sup>6</sup> Ability to reach <sup>7</sup> Ability to pay <sup>8</sup> Ability to engage <sup>9</sup>	Mobile outreaches to rural areas and urban slums <sup>1,3,7</sup> , educational sessions on RH <sup>1,6</sup> , free services <sup>4,8</sup> , regular visits to build trust <sup>6</sup> , referrals and follow-up to right levels <sup>5,9</sup> , working with local health authorities <sup>1,5</sup>	CCS&PT project <b>Tanzania</b>	Difficult to reach areas are reached. Trust building with community. Inclusion of CC screening existing RH services. Increased uptake of Screening. Sustainable.
Policy <sup>0</sup> Approachability <sup>1</sup> Acceptability <sup>2</sup> Affordability <sup>4</sup> Appropriateness <sup>5</sup> Ability to perceive/ seek <sup>6</sup> Ability to reach <sup>7</sup> Ability to pay <sup>8</sup>	MOH initiate planning phase and strategies for a comprehensive national program for CC control <sup>0</sup> Health days to target clients <sup>1,2</sup> , Health messages disseminated at regular intervals <sup>1,5</sup> Community engagement in sensitization <sup>1,6</sup> , School-based vaccination <sup>7</sup> , free services <sup>4,8</sup> , Catch-up vaccination <sup>5</sup>	Cancer Control program <b>Rwanda</b>	Strong political will is vital. Innovative partnership led to health gains. Careful planning necessary for a successful national program. Vaccination coverage for HPV reached 96.6% within 1 year.

Sources: (BINAGWAHO, Agnes et al., 2013; NHW, 2015; SFH, 2016; MSI, 2016a; MSI, 2016b).

## **Chapter 7: Discussion**

The findings in the preceding chapters show multi-dimensional and cross-cutting factors that influence women's access to CC preventive services. Such factors relating to policy; service- supply and demand for cervical cancer prevention interrelate to determine the extent of women's access to CC preventive services. The study focuses on CC prevention and not the treatment of CC and/or its complication. In this chapter, key findings of the study will be discussed.

### **7.1 Usefulness of the framework used in this study.**

The framework by Levesque used in analysing findings in this study was useful. It helped in organizing findings on facilitators and barriers to access into supply side and demand side factors. It also showed clearly the interrelation between supply and demand side factors that determines access to needed services. The limitations observed, however, was the absence of "policy" or "laws" as factors that could influence access to care. Also, the quality of available human resource health needs more attention in the framework than it gets now.

### **7.2 Key Findings**

The findings in this study illustrate how women's access to CC preventive services is influenced by the enablers or obstacles they face throughout the continuum of seeking such services. Key factors influencing access to CC preventive services, revolve around policy context, approachability, acceptability, availability, and accommodation, ability to seek and ability to pay.

The national policy on cancer control developed by Nigeria's MOH is a step in the right direction; however lack of a strategic plan for cervical cancer control hampers integrated actions for control of CC in Nigeria. Some of the most important issues affecting access to HPV vaccines and CC screening are defined at the policy level; such issues as whether or not services will be incorporated into health systems, mechanisms for delivery of services and financial arrangements influence access. The experience from Rwanda regarding the national policy for HPV vaccine should be instructive for Nigeria and nuance concerns of inadequate capacity to plan and mobilize development partners as long as there is political will.

The existing policy framework on cancer control in Nigeria ignores how risk factors associated with CC will be controlled. This may be because the

notion of screening is technical and more likely to garner support in the Nigerian context, whereas addressing issues relating to control of its risk factors would be seen as more controversial. In many cultures in Nigeria, sex and sexuality issues are perceived as taboos and not openly discussed. Such issues as child marriage, early sexual debut, sex education for adolescents and; condom use promotion for the unmarried among others are sensitive issues which often face resistance from communities due to existing social norms and religious perspectives. It is little wonder that the government's initiative to bring sex education to schools through its FLHE program in response to the HIV epidemic has reached only 13% of adolescents. Little is known about how to operationalize control of these risk factors in Nigeria.

Although promoting HPV vaccine as one preventing cervical cancer rather than as an STI has improved acceptance of HPV vaccines in high-income Countries; it's doubtful if such intervention will succeed in Northern Nigeria where beyond sexuality issues, the vaccine may be viewed with suspicions of the 'real intention of the West'. A number of policy declarations in Nigeria are politically motivated rather than to improve the quality of life of citizens. Such policy declarations are often used for electioneering campaigns and to gain political legitimacy without paying attention to scientific evidence and the actual health needs of citizens. For instance, in 2007 a governor of a state in NW Nigeria made a declaration of 'free maternal and child health services' on air just a few weeks before he ever called technocrats to work out detailed plans for implementing such program. There is a need to better understand factors influencing policy making in Nigeria.

Women's risk of CC is influenced by cultural, economic and physical factors. In Northern Nigeria, risk factors for CC such as early sexual debut, early marriages, poverty; and low socioeconomic status are more prominent when compared to Southern Nigeria. These inequities are further exacerbated by the supply side factor i.e. the distribution of the limited health system resources in favour of Southern Nigeria. Poorer women live in rural areas and have less access to information and services and are at greater risk of CC.

Having analysed the findings the top five barriers to client access of CC preventive services in Nigeria in my view, are those related to approachability (lack information/outreaches), acceptability, availability and accommodation (limited health infrastructure/human resource), ability to perceive/seek (lack of awareness, gender issues) and ability to pay.

These top five factors serve as gateways to actually reach and use of CC preventive services in Nigeria while other factors such as appropriateness and ability to engage come to play only after health services are reached and used. The five top barriers are briefly explored below while referring to effective interventions found that could be used to address the situation and improve access.

Approachability-related issues such as lack of information on cervical cancer and outreach are supply side barriers that may hamper initiation of the first step in the continuum of clients' access to CC services. To address barriers of approachability, actively inviting women to screen with letters and educational leaflets works well in high-income Countries, this approach, however, may not be feasible in Nigeria where routine civic registration data are not collected and home addresses not well structured. Sending health messages by phone text to clients has been shown to be effective for behavioural change in HIC and LMIC; this approach would be feasible for general awareness raising for CC in Nigeria where almost everyone has access to a mobile phone. Evidence from Tanzania's CCS&PT program showed working with local health authorities and community leaders in educational mobile outreaches make services more approachable; this can be adapted for Northern Nigeria where community leaders hold greater influence on members of their communities compared to Southern Nigeria. Experience from Rwanda showed labelling specific school days as 'health days' for passing health messages to adolescent addressed barriers of lack of information on CC. This approach can work for all public and private schools in Nigeria if such days are enforced by ministries of health and education.

Acceptability-related barriers such as sex of sample providers, gender roles, and professional norms are important considerations for women's health seeking behaviour for CC screening; Evidence from Nigeria and other LMIC showed improved acceptance for screening when CC screening was integrated into existing reproductive health services. Also, women in a South African community were more open to being screened when the information given by health professionals was presented in a non-stigmatizing manner based on a theme of self-protection. It's imperative that public health messages on cervical cancer intended for the general public are carefully crafted as well in Nigeria.

The sex of sample takers was also key in determining whether women would accept screening, especially for Northern Nigeria. Evidence from

Nigeria showed engaging women as sample takers improve acceptability of service. The use of only female sample takers especially for Northern Nigeria is feasible.

To address barriers to availability and accommodation of services, franchising of CC preventive services to private clinics implemented by SFH has worked well in Nigeria. In Nigeria, private facilities attract more clients than the public facilities. This is because the quality of services offered in public facilities are perceived as being of poor quality with attendant bureaucracies whereas private clinics are customer-satisfaction oriented. The private sector in Nigeria provides services to hard to reach groups such as the poorest, women and children; such public-private partnership regulated by MOH; increases coverage of CC screening, improve quality and protect from financial exploitation of the very poor in Nigeria.

Franchising provides an opportunity for integrating CC screening and treatment into existing reproductive health services; evidence from Nigeria shows this to increase acceptability for screening.

To address barriers to availability relating to geographical accessibility; the use of mobile vans, for outreach to difficult terrains and rural areas for the purpose of offering a range of reproductive health services employed in Tanzania, was successful. This approach can be adopted in Northern Nigeria. Mobile vans can be used for delivering integrated SRH, maternal and child health services such as family planning, immunization, and CC screening for hard to reach communities. At such outreaches, the task of educating communities on CC and encouraging them to get screened can be shifted to the existing cadre of Community health workers (CHW) in Nigeria. This approach will further address inequities in service distribution for the often neglected rural poor in Northern Nigeria. No woman should have CC simply because she lives where she can't access preventive services.

Issues of trust in the health system can be addressed by giving clear accessible information on screening and vaccines; community engagement strategies will be strengthened if community health workers are operationally made to serve as links between health professionals and the population they serve.

Regarding client's ability to perceive and seek are issues relating to gender roles, lack of autonomy and low socioeconomic status of women. These are important determinants of women's access to CC preventive services and

at the same time play out more prominently in Northern Nigeria compared to Southern Nigeria. Gender relations in Nigeria are such that men are seen as decision makers and macho while women are seen as passive and unable to take decisions regarding their health. Married Muslim women in Northern Nigeria are culturally expected to get permission from their husbands to use any type of reproductive health services. Evidence from Tanzania and South Africa showed that involving men by extending written invitation through their spouse improved uptake of ANC and couple VCT services. This approach for Northern Nigeria where ANC attendance rate is low compared to Southern Nigeria would mean men whose wives don't attend ANC will be systematically excluded. Inviting men to accompany their wives for screening can be done through the community leaders in Northern Nigeria. For Southern Nigeria, ANC attendance is higher, women who attend ANC can be given letters and educational materials addressed to their spouses on benefits of screening for women. It's, however, unlikely that increase in ANC attendance rate seen as a result of this approach will be replicated for CC screening since it's a biased approach targeting only women who attend ANC.

The provision of educational media materials on CC based on a movie to the general public was shown to improve knowledge, awareness and uptake of CC in Southern Nigeria. Disseminating such messages by radio and television will reach wider audiences when adopting this approach in Northern Nigeria. Evidence from a study among ethnic minorities in the US shows access enhancing interventions that remove linguistic barriers improves uptake of CC screening.

Other evidence from Tanzania and Nigeria showed regular health campaigns with messages designed in a non-stigmatizing manner and promoting HPV vaccine as preventing cancer removes barriers of low perception of risk. Such messages translated and delivered in the community's local language will enhance clients' ability to engage with services.

The client's ability to pay for services is cardinal to their use or non-use of existing services. A metanalysis of evidence among ethnic minority groups in the US showed access-enhancing interventions like the removal of user fees had the greatest impact on increasing uptake of screening services. Every woman should be able to exercise her basic reproductive health rights; when women die from CC because they can't afford screening and treatment, it becomes a human rights issue. CC unlike other cancers like

breast cancers can easily be stopped before it occurs and has a high capacity to benefit from public health interventions. Evidence from ongoing CCS&P projects in Nigeria and Tanzania removed barriers of inability to pay by offering free CC screening. Rwanda was able to offer free CC preventive service by innovative partnerships with development partners, this option can be explored by Nigeria to ensure free CC preventive services for all eligible clients. CC prevention services can be included in the current policy for free maternal and child care program in government-run public health facilities and operationalized. However, as the saying 'to get the house ready before inviting the guests'; the supply side factors of availability of services, equipment, and human resources should be addressed before such free policy for CC prevention is implemented.

The different dimensions of access in a client's experience when seeking health care are cross-cutting and both supply side and demand side barriers don't stand alone rather they interact with each other at different stages of care seeking to determine access. For example, geographical location of service infrastructure interacts with the cost of transportation and where people live to influence the ability to reach services. Socioeconomic status of clients interacts with the cost of transportation and direct cost of services to determine affordability and subsequent use of service. Likewise, cultural values interact with health beliefs of clients and information obtained to influence the perception of health risk and desire for care. The sex of service providers can also interact with culture and expectations of female clients to influence the interpersonal quality of care and ability to seek care.

Inequities in access to CC services also exist as a result of differences in levels of education among women. Client's levels of education correlate with their use of CC screening services, women with lower levels of education had lower perceptions of risk and thus were less able to engage with existing services. The proportion of women without any form of formal education is significantly higher in Northern Nigeria compared to Southern Nigeria. Focusing greater public health efforts in disadvantaged areas will reduce these inequities.

Cervical cancer control is not just an issue of equity but also a human right issue and should be approached as such by stakeholders in Nigeria.

## **Chapter 8: Conclusions and Recommendations**

### **8.1. Conclusions**

The current study was designed to identify and discuss factors contributing to clients' access to cervical cancer preventive services in Nigeria.

Findings from this study identified gaps in policy, supply-side and demand-side that limits access to cervical cancer preventive services for Nigerian women.

Though the policy on cancer control adopts feasible strategies for CC control in line with WHO recommendation for LMIC, the implementation of this policy has been limited and CC placed behind the queue of MOH's priorities. The lack of a national cancer control program and insufficient funding for cancer control in Nigeria limits Nigerian women's access to CC prevention services.

The top five barriers identified from this study, limiting Nigeria women's access to CC preventive services are: lack of access to information, challenges with acceptability, limited health resources, low awareness and perception of risk, and financial constraints.

These barriers were identified for Nigeria overall but are more prominent in Northern Nigeria compared to Southern Nigeria. This is because cervical cancer reflects health system, economic and socio-cultural (including gender-related issues) inequities; not just among countries but as well within a country like Nigeria.

In response to the top five barriers identified, this study found evidence-based interventions to address these barriers to women's access to CC preventive services in Nigeria. Evidence-based intervention to address these barriers include: Actively inviting women to screen and educational mobile outreach(improves access to information); integrating CC screening into existing reproductive health services, use of female sample takers and carefully crafting public health messages(improves acceptability of services); Use of mobile vans for outreach to rural areas and franchising of services (improves availability of health resources); Male involvement in CC prevention efforts and regular provision of educational messages to the public on CC (improves awareness) and lastly making CC preventive services free removes barriers of financial constraints.



Addressing these barriers to control CC in Nigeria will contribute towards the realization of the vision of the Sustainable Development Goals to “leave no one behind”.

## **8.2 Recommendations**

The following recommendations for policy, intervention and research are made towards improved access to CC preventive services for Nigerian women.

### **Policy (General)**

1. The FMOH to include formulated strategic plans for CC control in the National Strategic Health Development Plan (NSHDP) for 2016-2021. Such plans should reflect how to address health system and community side barriers such as lack of access to information, low levels of awareness and financial constraints among others.
2. The FMOH should design and promote a CC screening program for adoption by states in conjunction with stakeholders such as Society of Obstetricians and gynaecologist of Nigerian (SOGON), other health professional bodies, Christian Care Foundation, Muslim women association of Nigeria and Nigeria network of NGOs. The FMOH should also assist in securing co-funding via development partners including pharmaceutical companies to address financial barriers and make services free. A program approach that integrates services into the existing health systems, rather than a project approach, should be the aim of such collaborations.

### **Program/Intervention**

#### General

3. The FMOH of Nigeria should coordinate existing regional hospital and population-based cancer registries into a national cancer registry and collaborate with technical experts to build the national registry’s capacity to generate high-quality data to guide program priorities, monitor program effectiveness and make adjustments where needed.
4. The FMOH should commence public-private partnerships with private health facilities for delivery of CC preventive services. MOH should provide equipment, train health workers in selected private facilities on

the use of equipment and play a regulatory role with the aim that such facilities provide free CC screening and treatment to the public. This can be started with few private clinics that meet quality standards in each of the geopolitical zones and gradually scaled up.

### Northern Nigeria

5. The FMOH should lead a stakeholders meeting with The Federation of Muslim Women Association of Nigeria (FOMWAN), male religious leaders; and community leaders to discuss problems, women's needs, acceptable ways for CC prevention and role of men in awareness creation and decision making on CC preventive services in Northern Nigeria.

6. There should be continuous awareness campaigns by the various State's MOH using the radio and TV on cervical cancer. Messages should be more carefully crafted for the north in a non-stigmatizing manner and delivered in English and local languages.

7. The FMOH through the National Primary Health Care Development Agency(NPHCDA) should equip all primary health care centres in Northern Nigeria for CC screening and treatment. There should be mobile van outreaches organized by the NPHCDA to rural areas at least once every month. Task for awareness raising on outreaches can be shifted to the existing cadre of female Community Health Workers (CHW) who will be trained for this.

### Southern Nigeria

8. Continuous CC media messages based on a movie should be aired on National TV while at the same time Southern States' MOH actively invites women to screen via SMS. More explicit text messages on CC can be sent to an entire client base with mobile phones in Southern Nigeria to raise awareness since the topic is less sensitive here compared to the North.

## **Research**

9. There is a need for qualitative research to better understand factors influencing policy decision making for CC prevention in Nigeria.
10. There is a need for qualitative research to find effective ways of involving men in CC prevention Campaigns in Nigeria.

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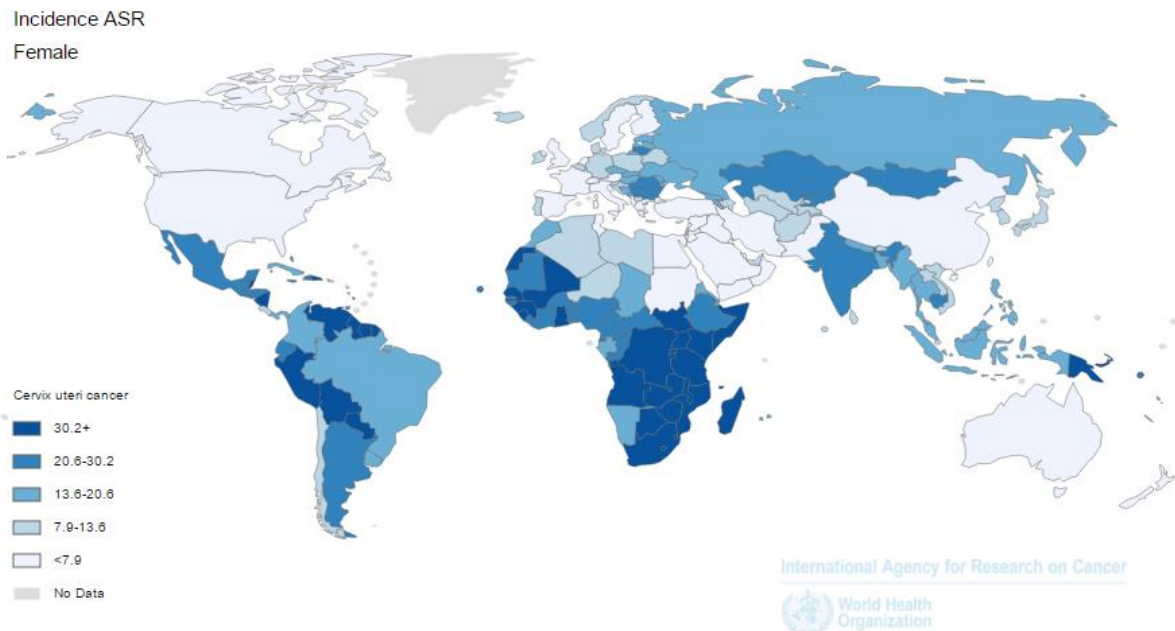
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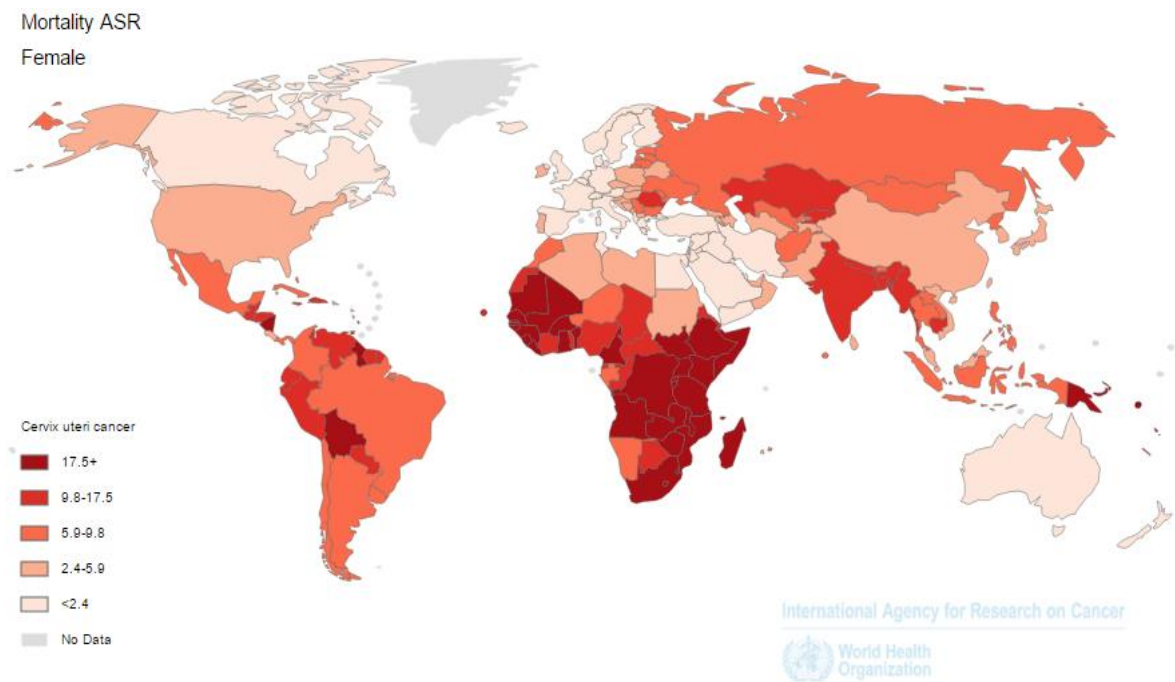
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## Annexes

### Annex 1: Worldwide ASR incidence and mortality for cervical cancer

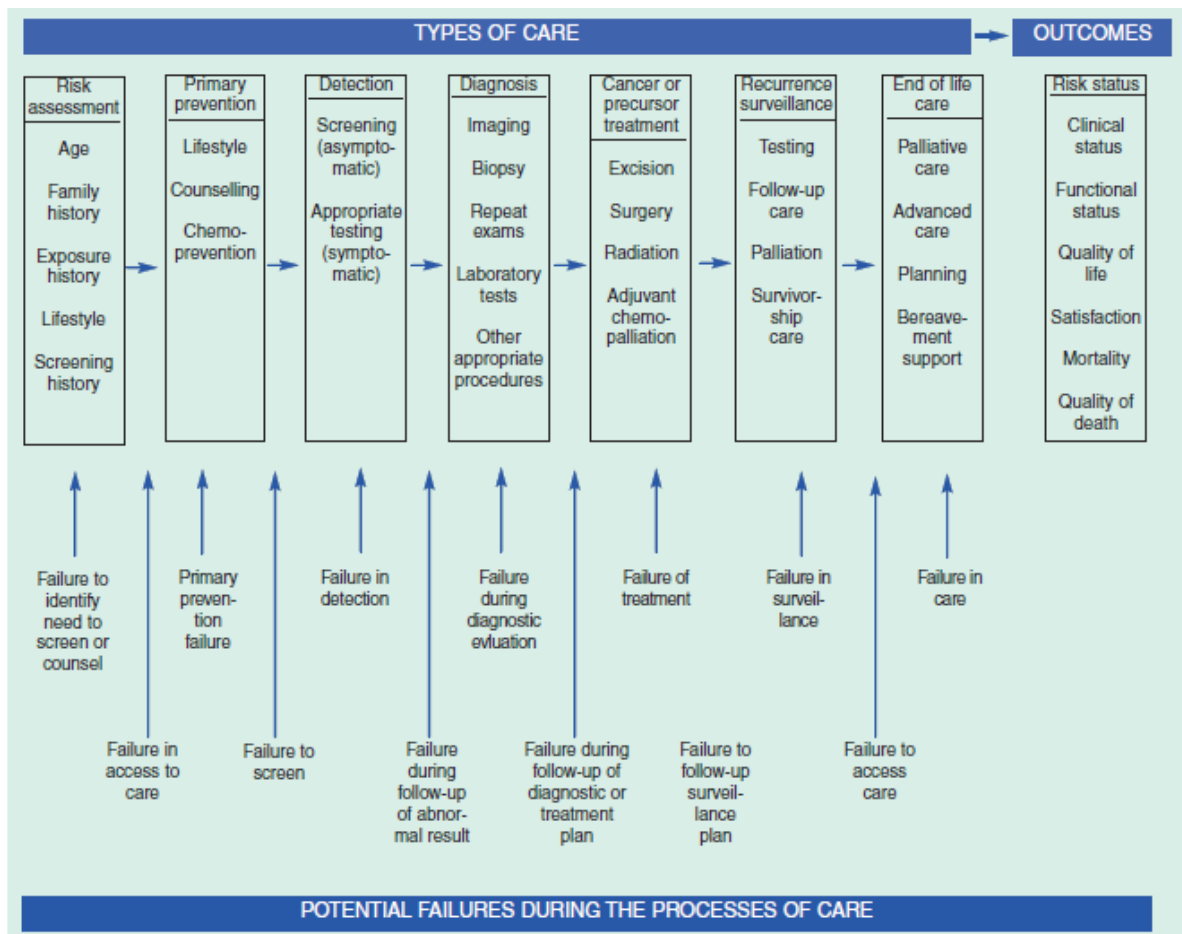


Source: (IARC, 2012b)



Source: (IARC, 2012b)

## Annex 2: Improving continuum of cervical cancer care



Source: (ZAKPA, JG et al., 2003)

### **Annex 3: Secondary and tertiary prevention**

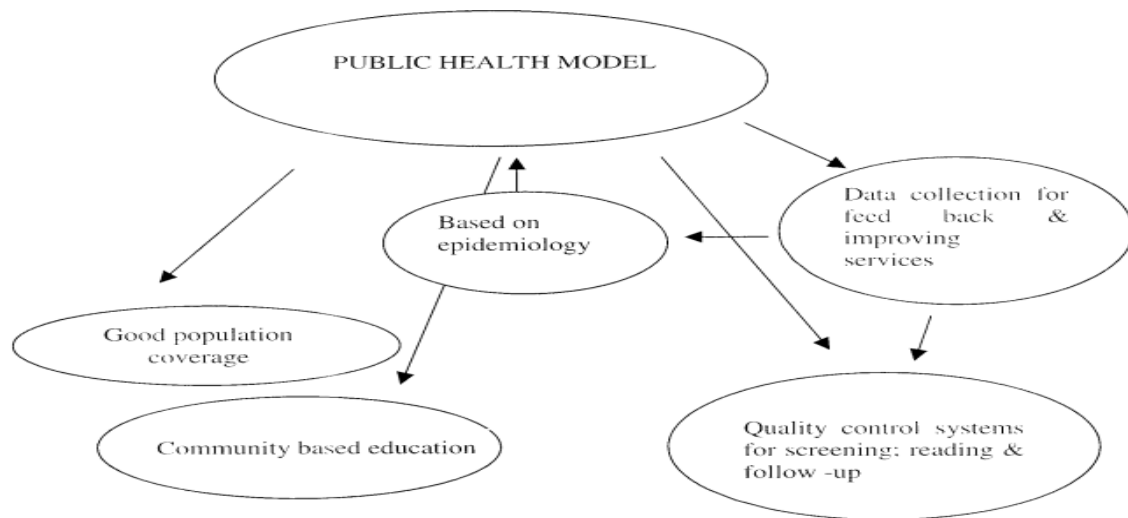
For secondary prevention, early detection and treatment have been shown to reduce the incidence of CC. Early detection can be through Papanicolaou (pap) smear, HPV DNA testing, liquid base cytology testing, to screen for precancerous cells, visual inspection with lughole's iodine (VILI) and Visual inspection with acetic acid (VIA). Abnormal cells identified through a pap smear are biopsied for histologic confirmation before adequate treatment which can be loop electrosurgical excision procedure(LEEP), cryosurgery or laser surgery is carried out to destroy the abnormal cells of the cervix (AMERICAN CANCER SOCIETY, 2014)

Visual inspection with acetic acid or Lugols and treatment has been shown to be effective as a screening method for early detection (see and treat approach) in preventing cervical cancer in LMIC where resources are a challenge and the burden of CC is still high as the case in Northern Nigeria (PAUL, Promer P et al., 2013). The abnormal cells after staining with Lugols or iodine give a whitish discoloration, these abnormal cells can then be frozen up immediately with cryotherapy preventing their further development into cancer cells.

Tertiary care is aimed for those already developed the disease and palliative treatments such as pain management, radiotherapy and chemotherapy are given. The outcome for this care for late presenters is usually very poor (ROCK, Cheryl et al., 2000)

## Annex 4: Public health model for cervical cancer screening

Figure: Public health model for CC screening.



Source: (MILLER, Anthony, Nazeer, Saloney et al., 2000)

## Annex 5: Human Resource for Health in Nigeria 2007

S/N	Type	Total No	In good Standing*	Public	Private	Unemployed	Abroad	Female	Male
1	Doctors (Nigerians)	52,408	14,000	Na	Na	Na	na	11,546	40,862
2	Dentists (Nigerian)	2,356		na	na	na	na	962	1,596
3	Doctors (Aliens)	2,968	2,968	na	na	na	na	853	2,115
4	Dentists (Aliens)	215	215	na	na	na	na	91	124
5	Alternative Medicine Practitioners	10	10	0	10	0	0	1	9
6	Nurses	128,918	na	na	na	na	na	121929	6989
7	Midwives	90,489	na	na	na	na	na	87164	7
8	Pharmacists	13,199	6,744	na	na	0	296	4,327	9,872
9	Radio-Graphers	840	600	na	na	0	47	271	528
10	Physio-Therapists	1,473	1,276	433	86	746	363	599	901
11	Occupational Therapists	29	18	10	0	4	7	13	5
12	Speech Therapists/ Audiologists	26	26	17	0	4	5	17	9
13	Health Records	1,187	367	845	342	0	5	562	625
14	Dental Technologists	505	350	382	41	38	17	92	370
15	Dental Therapists	1012	936	720	249	11	76	577	425
16	Pharm. Tech	5483		na	na	na	na	na	na
17	Environmental Health Officers	4280	1,500	na	na	na	na	1447	2833
18	Community Health Officers	19268	na	18494	279	495	0	11437	7831
19	Medical Laboratory Scientists	12703	5548	na	na	na	na	1813	3735
20	Medical Laboratory Assistants	7,044	na	na	na	na	na	na	na
21	Medical Laboratory Technicians	2936	na	na	na	na	na	na	na
22	Chartered Chemists	1503	1503	na	na	0	0	476	1027
23	Public Analysts	500	313	na	na	0	12	123	377
24	Optometrists	1415	205	1120	na	na	na	750	665

\* Renewed annual practising license  
 \*\* as at dec 2005

Source: (AHWO, 2008)

## Annex 6: Regional distribution of Health workforce Nigeria 2007

Health worker categories	Total number	North central %	North east %	North west %	South east %	South south %	South west %
Doctors	52408	9.73	4.06	8.35	19.59	14.37	43.9
Nurses	128,918	16.4	11.65	13.52	15.29	27.75	15.35
Radiographers	840	14.3	3.66	5.97	15.0	18.3	43
Pharmacist	13,199	19.94	3.8	7.79	11.74	12.39	44
Physiotherapists	1,473	10.8	2.73	8.32	8.58	7.93	62
Medical Laboratory Scientists	12,703	6.82	1.72	3.6	35.26	23.89	29
Environment & Pub HW	4,280	9.39	11.27	18.94	12.36	15.69	32.08
Health Records Officers	1,187	13.34	4.85	11.6	14.64	29.9	26
Dental Technologists	505	14.08	5.92	5.92	12.96	16.62	44.5
Dental Therapists	1,102	13.19	10.29	21.88	10.19	12.99	31.5
Pharmacy Technician	5,483	6.17	9.12	18	8.58	11.8	46

Source: (AHWO, 2008)



## Annex 7: Gender distribution of selected health workforce in Nigeria, 2008

Health Occupational categories/cadres	Total	% Female
Physicians (Nigerians)	52 408	22,0%
Physicians (Aliens)	2 968	28,7%
Nurses	128 918	94,6%
Midwives	90 489	100,0%
Dentists (Nigerians)	2 356	40,8%
Dentists (Aliens)	215	42,3%
Dental technologist/ Assistant	1 517	44,1%
Pharmacists	13 199	30,5%
Pharmacists Technicians	5 483	-
Medical Lab scientists	12 703	14,3%
Medical Lab Technicians	2 936	-
Medical Lab Assistants	7 044	-
Physiotherapists	1 473	40,7%
Occupational therapists	29	44,8%

Source: Professional Regulatory Agencies, 2008

## Annex 8: National Health Accounts for Nigeria 2009-2014

Indicators	2009	2010	2011	2012	2013	2014
General Government Health Expenditure (GGHE) as % of Total Health Expenditure	31	26	31	31	24	25
Private Health Expenditure (PvtHE) as % of Total Health Expenditure (THE)	69	74	69	69	76	75
General Government Health Expenditure (GGHE) as % of General government expenditure (GGE)	7	6	7	7	6	8
External Resources on Health as % of Total Health Expenditure (THE)	5	8	5	6	5	7
Social Security Funds as % of General Government Health Expenditure (GGHE)	-	-	-	-	-	-
Out of Pocket Expenditure (OOPS) as % of Total Health Expenditure (THE)	66	71	66	66	73	72
General Government Health Expenditure (GGHE) per Capita in US\$	23	21	29	28	26	30

Source: (WHO, 2014)