

## Chapter 40

### Building capacity to control cervical cancer in Nigeria: a case study

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Cervical cancer control in Nigeria has evolved over the years amidst several multi-dimensional challenges, which often required a multipronged approach to manage. The Nigerian government has developed strategic pathways and frameworks that will ensure the availability, accessibility, and affordability of basic services for cervical cancer care. Experts, non-governmental organizations, professional organizations, and international donors are critical stakeholders that are needed in order to set a sustainable pathway for cervical cancer elimination.

#### 40.1 Introduction

Cervical cancer remains a public health challenge in low- and middle-income countries, particularly in Africa, and it is ranked as the fourth most common cause of cancer incidence and mortality in women worldwide [1]. Cervical cancer is primarily caused by the persistence of a human papillomavirus (HPV) infection at the transformation zone of the cervix over an average period of ten years in a normal population.

According to GLOBOCAN estimates, the number of new cases of cervical cancer had increased worldwide from 471 000 in 2000 to 570 000 in 2018, giving an age-specific incidence ratio of 13.1/100 000 women-years [2]. Similarly, the mortality due to cervical cancer has increased to 311 000 annually, corresponding to 6.9/100 000. Almost 84% of all cervical cancers and 88% of all deaths caused by cervical cancer occurred in lower-resource countries [2].

In Africa, the highest burden of cervical cancer is in East Africa, followed by Southern and Western African countries [2, 3]. Nigeria has the highest burden of cervical cancer amongst the member countries in the Economic Community of West African States (ECOWAS). In 2018, 14 943 new cervical cancer cases and 10 403 related deaths occurred in Nigeria, accounting for 27.2% of the cervical cases and 20.0% of the cervical cancer deaths in West Africa [2].

#### 40.1.1 Synopsis of the key challenges associated with cervical cancer care in Nigeria

Cervical cancer is preventable by the administration of any of the three approved HPV vaccines in girls and boys before they reach the age at which sexual activity, sex education, or family life education programs take place and through screening for premalignant lesions of the cervix [4]. It is also curable with surgery and/or chemoradiation in settings where early cervical cancer is diagnosed. Although the Nigerian government has approved HPV vaccines, they are yet to be incorporated into the national immunization program. The vaccine is only available to those that can afford to pay for it. In the same vein, there is no national program to screen premalignant lesions of the cervix. Again, screening is limited to occasional outreach programs funded by foundations or other stakeholders or is self-funded by privileged women. Evidence from Nigerian studies suggests that only a few women have a good knowledge of the risk factors, prevention strategies, and treatments for cervical cancer [5]. It is also worrisome that a large number of women have misconceptions of the etiological factors of the disease.

Another challenge is the late presentation of women with cervical cancer in Nigeria. The available data suggest that more than two-thirds of Nigerian women present with advanced cervical cancer at stage 2B or above, when definitive care is no longer feasible [6]. The delay in accessing specialized gynaecological oncology care in Nigeria might be due to poor understanding of the cause of the disease and the points of care, incorrect diagnosis and treatment by healthcare providers resulting in delayed referral, and financial constraints that prevent access to specialized care [6, 7]. Despite the fact that a National Health Insurance Scheme has been implemented for more than two decades in Nigeria, only about one in five of her citizens are covered. Currently, the insurance coverage does not cover all treatment modalities of cancer, including cervical cancer. There is also the growing fear of poor care outcomes. The fear is borne out of rumours, misconceptions, and a poor perception of cervical cancer characterized by progressive weight loss, foul-smelling vaginal discharge, urinary and fecal incontinence, as well as unbearable pain [6]. Apart from all these, women also nurse a fear of the possible loss of reproductive function and damage to contiguous structures from surgical or chemoradiation treatments.

There is lack of prioritisation of investment in cervical cancer, compared to other competing health-related challenges among women [8]. The Federal Ministry of Health has a desk officer for the cervical cancer control program, the unit is poorly funded by the national health budget and many state governments in the country do not have a dedicated officer for cervical cancer control. The majority of the investment in cervical cancer control prevention in Nigeria has largely been funded by international donors, including the Clinton Health Access Initiative, USAID, JPEIGHO, and a host of other organizations. In 2018, The Federal Ministry of Health in collaboration with other stakeholders, including the Society of Obstetrics and Gynecology (SOGON) and the Gynecological Oncology Society of Nigeria (GOSON) produced the national algorithm for cervical cancer control; however, this program is yet to be supported by the Government for implementation.

The inadequacy of the human and infrastructural resources available to offer cutting-edge diagnostic and therapeutic services to women that present in different clinical stages of premalignant and malignant lesions in Nigeria remains a big challenge. For example, prior to 2015, there were only two radiotherapy machines functioning in the country that could offer brachytherapy and teletherapy. Chemotherapy is sometimes in short supply or prohibitively expensive for middle-class women with cervical cancer. The training of professionals—gynecological oncologists, colposcopists, oncological nurses, social health workers, and palliative care specialists is limited to ‘ad hoc arrangements’ between the scarce experienced specialists and a few interested mentees. The grossly inadequate number of available facilities in the country often leads to huge backlog of women with cervical cancer waiting for treatment. Nigeria has a peculiar seasonal disruption of its healthcare service due to health workers’ strike action. Sometimes, public healthcare services are shut down for weeks and only rich individuals are able to afford private care facilities.

#### **40.1.2 The effort to mitigate the challenges of cervical cancer care in Nigeria**

Over the years, there have been notable local and international efforts to mitigate various teething challenges that detract from an optimal service for the control of cervical cancer. These efforts were targeted at one or multiple key issues that need to be fixed in order to improve the quality of service delivery.

##### *40.1.2.1 Policy shift and priority setting*

Although there have been some efforts by previous governments to prioritize cervical cancer control programs through promotion of yearly awareness programs in Nigeria, none has initiated a comprehensive strategic plan of action and implemented it. However, in 2015, the Federal Government of Nigeria through the Federal Ministry of Health included cancer prevention, treatment, and care as one of the four key programs of the administration. Other key deliverables were the reduction of maternal and neonatal mortality, the elimination of mother-to-child transmission of HIV, and public health emergencies.

In order to implement the health agenda for cancer control, the Federal government of Nigeria recently rose to the occasion and made significant contributions in this regard, in particular, with the launch of the National Cancer Control Plan for 2018–2022 [9]. This policy document was added to the roadmap for general control of cancer in Nigeria and itemized the importance of advocacy, developed the national framework for cancer prevention, and adopted international best practices for cancer care. The main mission of the National Cancer Control plan was to establish a framework that will ensure access to cancer screening and cancer care, leading to an improved quality of life for people affected by cancer [9]. The guiding principles for implementation hinged on seven points: (1) ownership and accountability by the government, which resulted in the decision to provide 75% of the required funds for implementation; (2) people-centered interventions and initiatives; (3) encompassing the entire cancer care

continuum from primary prevention to tertiary care; (4) ensuring the involvement of the whole of society by understanding that multisectoral partnerships and community participation are essential to a successful implementation of the plan; (5) appropriate health system strengthening; (6) flexibility through a phased approach; and (7) continuous monitoring and evaluation of all processes [9]. For cervical cancer, the main objective was to attain 90% coverage for the HPV vaccine among the eligible population by 2022 and the main strategy is to extend the national immunization program to include HPV vaccination for children aged 9–13 years [9].

The government also provided budget to expand infrastructure, sought support from multinational companies such as SNEPCO, and collaborated with other African countries to partner with the American Cancer Society and other organizations to develop guidelines for cancer care on the continent. For example, SNEPCO paid for the purchase and installation of an Elekta linac radiotherapy machine at the National Hospital Abuja, Nigeria at a cost of one million US dollars, as part of the organization's corporate social responsibility. The arrangement also covered hands-on capacity building for the Nigerian radiation oncologists and physicists that are handling the machine. The Federal Government, through the Nigerian Sovereign Investment Authority (NSIA), funded the purchase and installation of a 3D 120 MLC Varian Vitalbeam linac radiotherapy machine, and this project was personally commissioned by President Muhammadu Buhari, Grand Commander of the Federal Republic (GCFR), during his first term in office (figure 40.1).



**Figure 40.1.** Photograph of the commissioning of the linac machine at Lagos University Teaching Hospital, Idi- Araba, 2018 by President Muhammadu Buhari, GCFR, speaking, and Hon. Professor Isaac Adewole, with red cap, Minister of Health, Federal Ministry of Health, Nigeria.

#### 40.1.2.2 Expert projects

A couple of Nigerian experts have attracted grants from international donors and foundations to fund different aspects of the cervical cancer control program in Nigeria. Whilst some have focused on research or prevention programs such as screening and vaccination, a few others have engaged in a robust continuum of care approach from health promotion, prevention programs, capacity building training in the form of surgical exposure, to the purchase of key equipment for health facilities, in order to offer composite service delivery for cervical cancer patients [10, 11]. For example, the Operation Stop Cervical Cancer Program was implemented using a science grant provided by Mobil International (2006–2009). The grant was implemented by the University of Ibadan, Nigeria, and the MD Anderson Cancer Centre, USA in seven tertiary health facilities (teaching hospitals and federal medical centers) in Nigeria. The project offered intensive in-country training in screening protocols for cervical cancer, hands-on training in colposcopy, loop electrosurgical excision procedure (LEEP), radical surgery for early disease, and the setting up a cervical cancer screening unit. Biomedical engineers were also trained in the service and maintenance of equipment; nurses received training in sample collection for pap smears and visual inspection of the cervix with acetic acid or Lugol's iodine, including cryotherapy [12]. The cyto-screeners had refresher courses on the interpretation of slides using international guidelines.

After the intensive training, which was coordinated by a team of experts from the MD Anderson Cancer Centre and British Columbia University, each of the participating seven institutions in Nigeria was given equipment with which to set up a cervical cancer control unit. The equipment included: a colposcope, a LEEP machine, cryotherapy, and a host of other consumables. After the training, different institutions offered cervical cancer-related services, including an outreach program and step-down training [10]. Other funded programs have been implemented to provide better access to the cervical cancer program. Recently, the Clinton Health Access Initiative supported SOGON to implement pilot screening programs for premalignant lesions of the cervix in different regions of Nigeria.

#### 40.1.2.3 Funding

The Nigerian government needs to make budgetary provision for cancer care, including the cervical cancer control program. It is important that government at all levels supports the HPV vaccination and screening program, procures the necessary equipment and provides scholarship for a short fellowship program for all cadres of health workers involved in cervical cancer care. Nigeria will need more investment in the procurement of radiotherapy machines to meet the IAEA requirement of a radiotherapy machine per one million people. Private organizations could also invest in cancer care as part of their corporate social responsibility. The role of non-governmental organizations (NGOs) has been well documented, and several NGOs across the country have continued to provide platforms for the screening and treatment of preinvasive cervical cancer lesions [13]. A particular NGO, the Pink Oak Cancer Trust, offers full payment for the care of indigent patients with early stage invasive cancer [14].

#### 40.1.2.4 Training

In order to meet the rising demand for cervical cancer care, it is important to design training programs for health workers. Some countries in Africa have adopted modular training courses to quickly produce a critical mass of experts. For example, nurses and community health extension workers are trained in the use of visual inspection techniques for premalignant cervical lesion screening programs. Surgical sessions could also be regularly organized as a cheaper in-country alternative to overseas scholarships for individual training. Government will need to engage tertiary health institutions and professional bodies, such as SOGON, GOSON, the National Postgraduate Medical College, the West African College of Surgeons, and medical schools to design and co-facilitate training with other renowned oncology centers.

#### 40.1.2.5 Research and data gathering

Nigerian researchers will need to refocus on the critical aspects of epidemiology and the genomics of cervical cancer. It is important that local data on women with cervical cancer are collected at the population level in order to strengthen the quality of information in the cancer registry. The information should cover the presentation mode, the referral source, the histology, and the care outcome. It may be better that these data are centrally collected and transferrable between healthcare facilities without compromising data security and confidentiality. The role of traditional medicine practitioners and beliefs will need to be explored, considering their increasing patronage due to noncommunicable diseases in Nigeria.

#### 40.1.2.6 Multidisciplinary sustainable collaboration

Nigerian health institutions will need to explore various angles of collaboration in order to tap knowledge and skills from each other and maximize the opportunity to offer optimal service. In addition, the promotion of large multicentre trials of different procedure and treatment protocols will help to generate generalizable evidence for national use [8].

## 40.2 Conclusions

There is a need to prioritize and invest in cervical cancer prevention and definitive care treatment. The provision of a policy environment that will support universal vaccination with the HPV vaccine to young girls and probably boys will assist in reducing the future burden of cervical cancer. It is imperative that a critical mass of enthusiasts are developed and promoted to offer quality care. A meticulous financing strategy that encapsulates all aspects of cervical cancer control, including infrastructural development and training, is germane to the successful implementation of this agenda. Nigeria has the potential to eliminate cervical cancer if this aim is given adequate priority and investment. It is possible and feasible, despite competing demands in the country.

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