

## ABOUT THE AUTHOR

Dr Onyebuchi Chris Ifediora (*MBBS, MPH, FRACGP, HMS-SEAL, FIMC, CMC, AFANZAHPE*) is an Associate Professor of Medicine based in Australia. He is the Founder and President of the OCI Foundation, an Australian-Nigerian charity organisation that advances health, education and social welfare.

He holds an MBBS degree from the Nnamdi Azikiwe University Medical School, Awka, Nigeria, as well as a Master of Public Health (MPH) degree from the University of Liverpool, UK. He is an associate alumnus of the prestigious Harvard Medical School, USA (HMS-SEAL, 2019).

Dr Chris is a practising Family Physician, and holds the Fellowship of the Royal Australian College of General Practitioners (RACGP). As at 2019, he was a 2-time elected member of the RACGP Faculty Board of Queensland, Australia. He contributes to teaching and research at the Griffith University School of Medicine, Australia, and is an Associate Fellow of the Australian and New Zealand Association for Health Professional Educators (ANZAHPE). He also supervises, mentors, educates, and examines medical registrars, other junior doctors and medical students. Some of his published, scholarly, peer-reviewed articles have contributed to major policy discussions, and influenced practices in both Nigeria and Australia.

As a medical undergraduate, Dr Ifediora served as the Secretary-General of the Federation of African Medical Students' Associations, FAMSA (the body of all African medical students) in 2001. He was also the Secretary General of the Nnamdi Azikiwe University Medical Students Association (NAUMSA), as well as the ROTARACT Club of Nnamdi Azikiwe University Teaching Hospital (NAUTH), among other positions.

During his primary, secondary and university education, all of which took place in Nigeria, Dr Chris saw first-hand the dangers of poorly funded education and ill health, and how these can limit the potentials of otherwise gifted individuals. Having overcome these obstacles himself, he is doing his best to lift others out of the challenges from these same obstacles. This is the dream that birthed the OCI Foundation, and led to the introduction of the Arm Our Youths Health Campaign, along with a number of academic scholarships for students in junior secondary, senior secondary and tertiary institutions in Nigeria.

Dr Ifediora is married to Mrs Nkem Ifediora, who is also the Vice President of the OCI Foundation. They are blessed with 4 lovely children.



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Guide To Cervical And Breast Cancer Prevention Strategies

A/PROF. C. IFEDIORA

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# Guide to cervical and breast Cancer Prevention Strategies

## For Young Women And Senior Secondary School Students In Nigeria.

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Assoc./Prof. Onyebuchi Chris Ifediora



43. Omoyeni OM, Oluwafeyikemi PE, Irinoye OO, Adenike OO. Assessment of the Knowledge and Practice of Breast Self Examination among Female Cleaners in Obafemi Awolowo University Ile Ife, Nigeria. International Journal of Caring Sciences. 2014;7(1):239.

## **Guide to cervical and breast cancer prevention strategies for young women and senior secondary school students in Nigeria.**

By

**Assoc. Prof. Chris Onyebuchi Ifediora**

*MBBS, MPH, FRACGP, HMS-SEAL, FIMC, CMC, AFANZAHPE*

Part of the comprehensive package of the  
**OCI Foundation's**

## **“Arm Our Youths (ArOY)” Health promotion campaign**

an

Evidence-based, Harvard-endorsed, anti-breast and anti-cervical cancer initiative for Nigerian senior secondary schools and young women.

*Other components of the ArOY package are*

- The Mobile Phone Application called “OCI CerviBreast<sup>®</sup>” (Freely Available on Android/Google Play Store and Apple/iPhone Store);
- Classroom teachings and examinations.

September 2019

## **ABOUT THE OCI FOUNDATION**

The Onyebuchi Chris Ifediora (OCI) Foundation is a non-governmental, non-profit and non-political organisation established with the aim of breaking down barriers to the attainment of excellence through a three-pronged action plan targeted on Education, Health and Empowerment/Charity Activities. Details are available here: <https://ocifoundation.org>.

Founded in 2016, the organization was registered with the *Nigeria's Corporate Affairs Commissions (CAC)* in the same year. Thereafter, in June 2018, it was also registered as an Australian charity organization with the Australian Charities and Not-for-profits Commission (ACNC), thereby according it the status of an international charity organization.

The headquarters of the Foundation is in Awka, the capital city of Anambra State, Nigeria. Even though the activities of the OCI Foundation started in Anambra State, it aims to eventually reach the rest of Nigeria and the African continent with time.

**Vision:** To have a society where every scholar can achieve his/her best academic potential, irrespective of his financial background, while every individual is able to access the best healthcare possible, not minding his/her socio-economic background. The ultimate, long-term vision is to contribute to all aspects of local, national, continental and global development and leadership.

**Mission:** To unlock the best potentials in the Nigerian populace through enhanced education, promotion of good health and the delivery of targeted empowerment/charity programmes in ways that will overcome the limitations posed by financial and social inequalities.

The OCI Foundation's Founder, Dr Onyebuchi Chris Ifediora (OCI) believes that “education is a great leveller,” and that “health is wealth”. These beliefs informed the following tripod of activities, on which all of the Foundation's activities are based:

### **1. EDUCATION**

The OCI Foundation aims to provide educational and financial facilities in

order to create seasoned academics, technocrats and global leaders that will contribute to the development of the Nigerian Nation and Africa at large. These scholars are groomed to be part of a “help chain” that will ultimately benefit many others in various capacities. As at 2019, the Foundation offers 4 sets of annual scholarships, including (i) the ***IFOMSSA Junior Awards*** (ii) the ***IFOMSSA Senior Awards*** (iii) the ***JAMB Awards*** and (iv) the Cyfed Undergraduate Scholarships. Full details of these scholarships are available here: <https://ocifoundation.org/scholarship/>.

### **2. HEALTH**

The OCI Foundation, in line with the ‘United Nations Sustainable Development Goals, works to foster a strategic, equitable, feasible and sustainable health system in the communities she serves. The Foundation partners with local, national and international health agencies to promote health and prevent diseases at the primary care level. Our signature health promotion activity is the “**Arm Our Youths Campaign**”, an innovative, Harvard-endorsed and evidence-based health promotion initiative that will see anti-breast and anti-cervical cancer teachings included in all Nigerian senior secondary schools using sustainable, cost-effective, all-encompassing, effective, and culturally-acceptable measures. It came into effect in 2019, replacing the annual event that was held in 2017 and 2018, and aims to reach students in all of Nigeria's 36 states and the Federal Capital Territory by 2025. Arguably, the Campaign is the first of its kind anywhere in the world, and will benefit, not just Nigeria, but all developing countries with high cancer burdens but inexistent government-sponsored preventive programs. It will save millions of lives across many countries in the years to come.

### **3. EMPOWERMENT/CHARITY**

These activities, designed to reach the uneducated (or those not in school), were borne out of the Foundation's belief that everyone has something to contribute to the society. These will become functional from 2020.

# Guide To Cervical And Breast Cancer Prevention Strategies For Young Women And Senior Secondary School Students In Nigeria

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*... We rise, by lifting others.*

## DEDICATION

This book is dedicated to all women who . . .

- **Are alive** . . . but whose lives are endangered by the duo of breast and cervical cancers;
- **Are dead, or dying** . . . as a result of illnesses arising from breast and cervical cancers;
- **Are young, or old** . . . but are at risk of developing breast and cervical cancers;
- Have to fight breast and cervical by themselves, just because there are no institutions to fight for them.

*. . . We will empower you;*

*. . . We will fight with you;*

*. . . We shall never let you walk alone.*

**OCI, 2019.**

*... We rise, by lifting others.*



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## FOREWORD

Knowledge is power, and education forms the basis of human progress. Throughout the history of mankind, successful societies have invested in young people, teaching them knowledge and skills that not only improves the chances of survival, but also enhances the quality of life.

Knowledge of health and illness is a vital part of this strategy. If we do not know the causes of ill health, we cannot take effective action to maximise our chances of staying healthy. Scientists know much about the causes of diseases, and new knowledge to counter them is generated every day.

Generating the knowledge, however, is not enough to reduce the terrible disease burdens due to preventable cancers. The knowledge must be shared. School children around the world learn to read, write and do calculations. They must also have good, basic health literacy. But too many children do not receive this, and disease burdens remain high. Cervical and breast cancers kill thousands of women in Nigeria every year.

This is why this booklet is very important. It explains what cancers of the cervix and breast are, and what can be done, either to prevent them, or to detect them at early stages when treatments are effective. The educational material in this booklet will save many lives, and we owe great gratitude to all who supported its development, and to all who will use it to empower Nigeria's youth.

**By Prof. Lennert Veerman**  
 Professor of Public Health  
 School of Medicine  
 Griffith University  
 Australia.

# CHAPTER 1

## BACKGROUND AND RATIONALE FOR ACTION

The negative impact of cervical and breast cancers in low and lower-middle-income countries are worsening, and, along with other non-communicable diseases, occur disproportionately in these resource-limited economies. Most preventive approaches to these cancers require government funding, but few countries with the most at-risk population can afford government-sponsored universal vaccination, screening, diagnostic and treatment programmes. This, along with socioeconomic issues, contributes to the poor outcomes in these mostly developing countries. An urgent need exists, therefore, to find an effective, affordable, cost-effective, culturally-acceptable and sustainable way of reducing these cancers.

Evidence from recent publications suggests that anti-breast and anti-cervical cancer enlightenment campaigns should primarily target teenagers (boys and girls) in high schools of developing countries. Integrating preventive cancer strategies into the academic curricula of senior secondary (high) school students (who are mainly in their mid-teens) in these developing countries is one area stakeholders need to pay attention to. This is vital given that, cervical cancer particularly, and breast cancer to a reasonable extent, have their roots on populations within that age bracket.

This approach may be the only accessible, affordable and realistic approach that gives millions of women in low and lower-middle-income countries the chance of survival. Empowering them early instils the self-awareness and confidence necessary for young adults to take charge of their own health. The acquired knowledge, in turn, helps them adopt positive attitudes and preventive behaviours that will ultimately prolong their lives.

The recommended approach also offers governments and concerned stakeholders an evidence-based option that allows them to deliver cost-

effective and sustainable life-saving interventions, while hoping to get around the bottlenecks that limit the large scale implementation of other effective but capital-intensive strategies.

While there are existing policies by governments in developing countries like Nigeria to prevent, screen, and treat these cancers, a significant policy-implementation gap limits their efficacy.<sup>1</sup> Even though the costs of cervical cancer preventive vaccinations in developing countries are low (thanks to the support from the *Gavi Alliance*), significant set-up costs are still needed to implement them, since the basic infrastructure required to ensure proper service-delivery (like recall and follow-up systems) are virtually non-existent in these countries.<sup>2</sup> These costs partly limit policy implementations. Unfortunately, this trend is likely to remain, given that global health funding disproportionately favours communicable diseases ahead of non-communicable ones like cervical and breast cancers.<sup>1</sup>

How long it will take for Nigeria and other developing countries to catch up with their counterparts in the developed world, with respect to tackling these cancers, may be up for debate, but what is not debatable is that, for the population at risk in these countries, time is slipping irreversibly away. Evidence exists that raising awareness to the existence of these cancers and their preventive strategies (lifestyle practices, screenings, and vaccinations) can help reduce their incidence, morbidity, and mortality rates.<sup>3,4</sup> Therefore, empowering women in these respects is an option already embraced by many enlightenment campaigns, but the **OCI Foundation's Arm Our Youths (ArOY) Campaign** aims to start from the high (senior secondary) school years, when most young adults are teenagers. This Campaign also includes boys, given that sexual pressure from men contributes significantly to the problem, particularly with respect to cervical cancer. As such, they should be empowered alongside the women, so as to be part of the solutions if long term beneficial outcomes are to be realized.

Should government-sponsored programs come up in the future, the **ArOY**

**Campaign** will complement them and provide useful adjuncts, given expert recommendations that awareness campaigns need to form key components of any national screening and vaccination programs in developing countries if they are to be effective and sustainable<sup>2</sup>. This is because, successful, national programs rely on a number of key factors, like functional recall systems, reliable registry of women and their screening histories, appropriate follow-up and treatment systems for positive results, as well as quality control measures.<sup>2</sup> These are all lacking in most developing countries like Nigeria. As such, directly empowering women would strengthen any systemic weaknesses in the health infrastructures in these areas, and allow them to actively seek interventions when they become available. The unfortunate reality though, is that, for the foreseeable future at least, the **ArOY Campaign** might remain the only option available to hundreds of millions of women in Nigeria and many developing countries.

## JUSTIFICATION FOR INTERVENTIONS AT NIGERIAN SENIOR SECONDARY SCHOOLS

About 72.8% of Nigerians aged 15 to 24 years are literate,<sup>5</sup> so any school-based program will reach a majority of young adults in the country. The ensuing paragraphs provide the rationale for intervening at young ages.

One reason for advocating interventions in senior secondary schools, which is applicable to both cervical and breast cancers, is that most teenage participants will, at some point in their lives, attend higher institutions, become mothers, get employed, and get involved in wider community activities. They, therefore, have many years and opportunities to pass on the knowledge to others, including their children, grandchildren, friends, school mates, work colleagues, and others in the society. The impact of empowering them early will, therefore, be multiplicative, and have a long-term spill-over effect in the societies concerned.

Other justifications are unique to the respective cancers, and are now highlighted for each cancer.

## Cervical Cancers:

Firstly, most cervical cancer cases in developing countries present among women in their mid-30s, an age which is up to 15 years earlier than occurrences among women in developed countries<sup>6</sup>. Given that most infections with the cervical cancer-causing *Human Papilloma Virus (HPV)* take 10 to 20 years before progressing to full-blown cancers,<sup>7</sup> a reasonable assumption is that the earliest exposures to clinically significant HPV infections would be in the mid-teens, and before or shortly after the age of 20 years.<sup>6</sup> This is consistent with the report that the age of first sexual exposure for women in Nigeria is 16.7 to 17.9 years,<sup>8</sup> which, incidentally, is the age at which most females are in the final year of their senior secondary schools.<sup>9</sup> It has also been reported that up to 12% of cervical cancer cases in developing countries like Nigeria occur in women under the age of 30 years.<sup>10</sup>

Another reason for advocating anti-cervical cancer interventions in senior secondary schools is based on the fact that the proportion of sexually active females in Nigerian tertiary institutions (like universities) range from 71.2%<sup>11</sup> to 81.5%<sup>6</sup>. This means that, for a good proportion of women in Nigerian tertiary institutions (usually in their late teens to mid-twenties), potential exposures to HPV would have already occurred. Notably, only 15.6% of 16-year-old Nigerian women (likely to be in senior secondary schools) are sexually active, while as many as 51.7% were already sexually active before the age of 20 years.<sup>12</sup> Therefore, interventions before progression to tertiary institutions, and before the age of 20 years, is justifiable, and this is the approach being advocated by the **ArOY Campaign**. Even though it has been established that women who have heard about cervical cancers are statistically more likely to be aware of its risk factors and early warning symptoms, most young Nigerian women remain unaware of the associations between sexual exposure and cervical cancer<sup>9</sup>.

## Breast Cancers:

Regarding breast cancers, it is known that the cumulative frequencies of occurrences were 0.8% at age  $\leq 20$  years and 3.3% at  $< 25$  years.<sup>13</sup> In fact, a case has been reported in a patient as young as 14 years.<sup>13</sup> Despite this small but significant risk faced by young adults, a 2017 study of teenage females in Nigerian high school students observed a poor level of knowledge on breast cancer risk factors and its early warning symptoms.<sup>14</sup> In addition, only 6.1% practised monthly breast self-examinations (BSE), with very few knowing the correct techniques and timing.<sup>14</sup> Given that breast cancer prognosis in younger patients is poor,<sup>15</sup> early screening and detection among the younger age group are vital in a developing country like Nigeria, where no other functional preventive programs are in place.<sup>16</sup> Such early detection is linked to a reduction in associated morbidities and mortality.<sup>17</sup>

## Summary of the justifications

In view of the foregoing discussions, it becomes obvious that the duo of cervical and breast cancers have their roots in early adulthood, and delaying enlightenment interventions to mid or late adulthood would come late to many, as exposure to irreversible risks might have occurred. This problem is of a huge significance in most developing countries like Nigeria, which have little to no organized, all-encompassing, government-sponsored preventive programs.

Even though targeted at young men and women, the **ArOY Campaign** will benefit women of all ages, professions, and ethnic, religious or social orientations. It will also benefit every man with a woman in his life, which in reality, means everyone, since there must be a mother, sister, wife, daughter, grand-daughter, friend, and female associates in every man's life.

## ArOY CAMPAIGN AND TECHNOLOGY THE CERVIBREAST<sup>®</sup> PHONE APPLICATION

In addition to the teachings and assessments in senior secondary schools, the **ArOY Campaign** integrates technology into its activities. To this end, a mobile phone application, called the **OCI CerviBreast<sup>®</sup> App**, is freely available on the Android/Google and Apple/iPhone/iOS App stores. Unlike other similar applications before it, this App is unique in that it can be configured to suit every single woman with respect to her monthly cycle, in such a way that a series of reminders will be received at the right time for the practice of breast self-examinations (BSEs).

The ArOY Campaign also has a video demonstration of the BSE, which is freely available online and on the **CerviBreast<sup>®</sup>** App. The App also contains lots of other anti-breast and anti-cervical cancer messages, and a link for direct communication with experts in the OCI Foundation.

This **CerviBreast<sup>®</sup>** App is, therefore, a must for everyone to have, be it male or female, young or old.

And it is free! Go to the Android Google Play or iPhone's App Store to download it now!!!

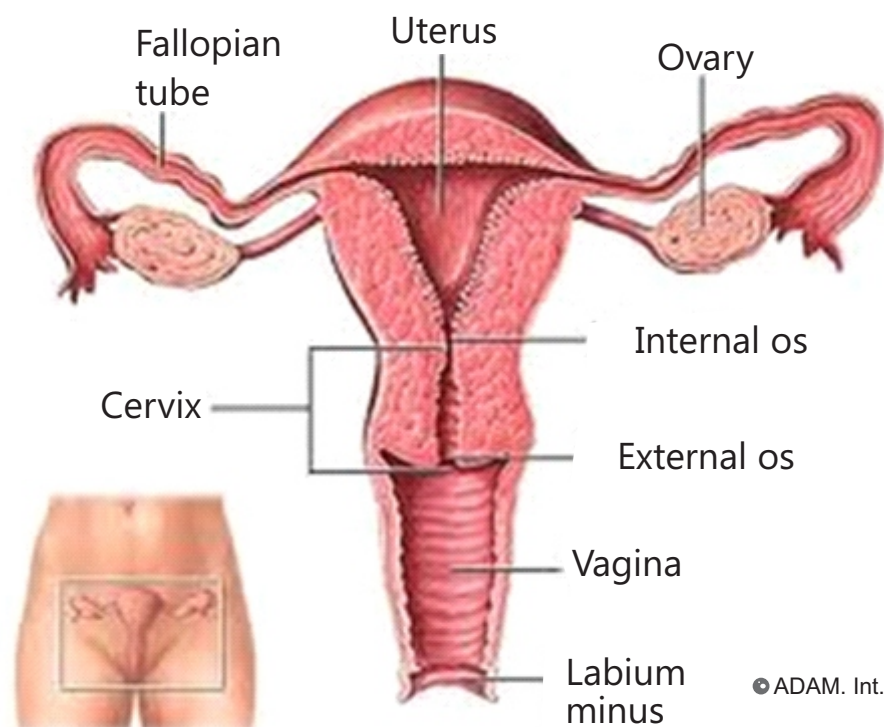
## CHAPTER 2

### CERVICAL CANCERS

#### INTRODUCTION

The **cervix** is part of the female reproductive organ. It is also called the “neck” of the womb, and is the narrow, lower part of the womb (uterus) that joins it to the top of the vagina, just like a neck connects the human body to the head (see Figure 1).

**Figure 1: The female reproductive organ, showing the cervix**  
(Courtesy: [http://oncomedclinic.com/cervical\\_cancer.html](http://oncomedclinic.com/cervical_cancer.html))



**Cervical cancer** is a cancer that affects the cervix. Even though it is the fourth most frequent cancer in women worldwide, it is the second most common in developing countries like Nigeria, particularly among women aged between 15 and 44 years<sup>12</sup> Data from 2012 revealed that, of the 445,000 new cases reported across the world, about 84% occurred in developing countries like Nigeria<sup>18</sup> In addition, of the approximately 270,000 global deaths from the cancer, over 85% occurred in these same countries<sup>18</sup>

In 2017, a total of 14,089 Nigerian women were diagnosed with cervical cancer, and 8,240 of these women died. If nothing is done, things will only get worse, as it has been projected that, by the year 2025, cervical cancer deaths among Nigerian women would rise by 63% for those aged 65 years or under, and by 50% for those above 65 years<sup>3</sup>

In developed countries, effective screening and treatment programs prevent up to 80% of cervical cancer deaths, but these are usually not available to women in developing countries like Nigeria<sup>18</sup> As a matter of fact, most developed countries have widespread, government-funded vaccination, screening, diagnostic and treatment programmes for their women. In contrast, only nine of 55 African countries have functional cervical cancer preventive programs, and Nigeria is not yet one of them<sup>19</sup> An unfortunate implication is that cervical cancers among women in Africa and other countries in the developing world are often not identified until it is in advanced stages, leading to the aforesaid poor outcomes. In view of this, empowering women in these countries to look after their health, and adopt cancer-preventive lifestyles, and identify early symptoms of cervical cancer, are the realistic measures in the concerned countries.

Recent (2017) studies have shown that, even though cervical cancers have their roots among women in their mid-teens, most young Nigerian women at that age are unaware of the associations between sexual exposure and the cancer.<sup>20</sup> Fortunately, the attitudes among these young women towards anti-



cervical cancer lifestyles are positive, meaning that interventions at senior secondary schools will be effective<sup>20-22</sup>

### **CERVICAL CANCER RISK FACTORS**

These include the factors that lead to the transmission and persistence of the Human Papilloma Virus (HPV), the virus responsible for virtually all cervical cancers. Such persistence eventually leads to cervical cancer. They include:

- a. Early age of first sexual intercourse;
- b. Having multiple sexual partners;
- c. Having many children (usually more than 4);
- d. Smoking (tobacco use);
- e. Lowered immunity (for example, HIV-infected individuals are at higher risk of HPV infection, and are also at risk of being infected by a broader range of the HPV types);
- f. Presence of other sexually-transmitted diseases (STDs) like Gonorrhoea, Herpes, Chlamydia, and so on;
- g. Poor diet and poor hygiene.
- h. Lack of regular cervical screening tests.

### **CERVICAL CANCER SIGNS AND SYMPTOMS**

- a. The majority of HPV infections do not cause symptoms or diseases, and generally resolve on their own.
- b. However, persistent infection with specific types of HPV (types 16 and 18) may lead to pre-cancerous lesions, and, if untreated, these lesions may progress to cervical cancers.
  - c. Symptoms tend to appear only after the cancer has reached an advanced stage, and may include:
    - (I) irregular, intermenstrual bleeding (bleeding between periods) or abnormal vaginal bleeding after sexual intercourse;

- (ii) pain at the lower back, leg or pelvis;
- (iii) fatigue/tiredness, weight loss and loss of appetite;
- (iv) vaginal discomfort or odorous discharge from the vagina;
- (v) a swollen leg on one side.

More severe symptoms may arise at even more advanced stages.

### **COMPREHENSIVE APPROACH TO THE PREVENTION OF CERVICAL CANCERS**

The preventive techniques are anchored on the fact that nearly all cases of cervical cancer are attributable to the Human Papilloma Virus (HPV), a sexually transmissible virus with most infections occurring soon after the very first sexual activity<sup>18,23,24</sup>. The fights against cervical cancer usually involve the trio of lifestyle modifications, vaccinations and screenings. Education campaigns are necessary in this regard, as most of these are not affordable to most women in developing countries:

- a. Lifestyle modifications aim to limit exposures to the HPV through the delay in the age of first sexual intercourse, as well as avoiding multiple sexual partners, unprotected pre-marital sex, tobacco smoking, and having more than four babies, among others<sup>18</sup>. Other measures include male circumcision and the promotion and provision of condoms for those already engaged in sexual activities.
- b. The use of vaccines presents another preventive measure against HPV. *Gardasil* and *Cervarix* have both been available in global markets since 2007-2009 for this purpose, and are recommended by the WHO for boys and girls aged 9 to 13 years, before they become sexually active<sup>3</sup>. Individuals who can afford are encouraged to approach their doctors for help on how to obtain it. Unfortunately, this is not affordable to most women in Nigeria and other developing countries due to costs, resulting in most women missing out on this life-saving vaccine. For instance, of the



estimated 118 million women targeted worldwide through these programmes in 2014, only 1% were from developing countries like Nigeria<sup>25</sup>

- c. The final major preventive approach to cervical cancer is through screenings to detect early lesions (using Pap Test, Liquid-based cytology, or HPV testing)<sup>26</sup> Women who are sexually active should be screened for abnormal cervical cells and pre-cancerous lesions, starting from 30 years of age in developing countries like Nigeria (or from 2 years after the commencement of sexual activity in most western countries). Just like the vaccines, this approach is beyond the reach of most at-risk women in developing countries, apparently due to costs, but those who can afford it, should go for it.

A doctor should be seen immediately if any symptom of cervical cancer develops (as mentioned earlier), or if there is concern with anything. As stated, there may be no symptoms in the early stages of cervical cancer, and the survival chance is higher with early detection and treatment.

## **DETAILS ON THE CAUSATIVE VIRUS, VACCINATION AND SCREENING**

### **The Human Papilloma Virus (HPV) and Cervical Cancer**

- a. HPV constitutes a group of viruses that are extremely common worldwide.
- b. There are more than 100 types of HPV, of which at least thirteen cause cancer (including non-cervical cancers).
- c. Nearly all cases of cervical cancer can be attributable to HPV infection, which are mainly transmitted through sexual intercourse.
- d. Two HPV types (16 and 18) cause 70% of cervical cancers and pre-cancerous cervical lesions. The other cervical cancers are caused by other types of HPVs.

- e. HPV is mainly transmitted through sexual contact, and most people are infected with HPV shortly after the very first sexual activity. The chance of this transmission is worse in the teenage years, when the female genitalia is not yet fully developed to resist such infections.
- f. Even though HPV is sexually transmitted, penetrative sex is usually not required for transmission, since infections can also occur by mere skin-to-skin genital contact.
- g. Vaccines against HPV 16 and 18 have been approved for use in many countries, and these help prevent cervical cancers. These vaccines are available in Nigeria, but can be afforded by only a few. It is hoped that in the near-future, the vaccine can be made affordable to all eligible individuals in the country, as is obtainable in many developed countries.
- h. Till such a time, enlightening the population at risk is the main realistic way to prevent the cancer. Even when the vaccination becomes available, an enlightened population will be more likely to engage with the vaccination program. As such, the ArOY Campaign will remain a vital component of any future progress in the fight against cervical cancer.
- i. For women with normal immune systems, it takes 15 to 20 years for cervical cancer to develop after infection with the HPV. However, it can take only 5 to 10 years to develop in women with weakened immune systems, such as those with untreated HIV infection.
- j. There is also evidence linking HPV with cancers of the anus, vulva, vagina, penis and throat.
- k. Non-cancer causing types of HPVs (especially types 6 and 11) can cause genital warts and respiratory papillomatosis (a disease in which tumours grow in the air passages leading from the nose and mouth into the lungs).

## **HPV Vaccination**

- a. There are currently 2 vaccines which protect against both HPV 16 and 18 (known to cause at least 70% of cervical cancers).
- b. The vaccines may also have some cross-protection against other less common HPV types which cause cervical cancer. One of the vaccines also protects against HPV types 6 and 11, which cause anogenital warts (but do not cause cervical cancers).
- c. Researches show that both vaccines are safe and very effective in preventing infections with HPV 16 and 18.
- d. Both vaccines work best if administered prior to exposure to HPV. Therefore, it is preferable to administer them before the very first sexual activity.
- e. The WHO recommends vaccination for boys and girls aged 9-13 years, as this timing offers the most cost-effective intervention for preventing cervical cancer.
- f. The vaccines cannot treat HPV infection (once already contracted) or established HPV-associated diseases like cervical cancers.
- g. Vaccination in boys is necessary as well, as it helps prevent genital cancers in males as well as females. One of the two available vaccines also prevents genital warts in males and females.
- h. HPV vaccination does not replace cervical cancer screening. In countries where HPV vaccine is already introduced, screening programmes may still need to be developed or strengthened.
- i. HPV vaccination also does not protect against other sexually-transmitted diseases like HIV, Gonorrhoea, Syphilis, Herpes, Chlamydia and others. As such, caution with sexual exposures and activities are still advised. The use of condoms is recommended where necessary.

## **Screening for cervical cancer**

- a. Cervical cancer screening is testing for pre-cancer and cancer among women who have no symptoms and may feel perfectly

- healthy.
- b. Pre-cancerous lesions, when detected through screening, can easily be treated and cancer can then be avoided.
- c. Screening can also detect the cancer at an early stage and treatment at this stage has a high potential for cure.
- d. Because pre-cancerous lesions take many years to develop, screening in the developed world usually starts in the early to mid-20s, and end at about 70 years of age. However, the WHO recommends screening for every woman aged 30 to 49 years at least once in a lifetime (ideally more frequently), and this age range is more applicable to women in developing countries like Nigeria.
- e. Three different types of screening tests are currently available:
  - I. Conventional test (Pap smear or Pap test), with the Liquid-based Cytology (LBC). This is the most popular and the one likely to be available in Nigeria. Not all doctors or clinics can do this. Women can discuss with their doctors where this can be done.
  - ii. Visual inspection with Acetic Acid (VIA)
  - iii. HPV testing for high-risk HPV types.

## CHAPTER 3

### BREAST CANCERS

#### INTRODUCTION

In Nigeria and other West African countries, about 37 people out of every 100,000 women in a year (3 to 4 out of 100) will develop breast cancer<sup>27</sup> Even though this is smaller than the 8 to 9 people (out of 100 per year) who will develop the cancer in countries from developed continents like Australasia, Northern Europe and North America, the death rate in West Africa and other developing countries are much higher than in these developed countries. For instance, after five years of being diagnosed, only one person out of every 10 will survive in a country like Nigeria, while at least 7 out of 10 will survive in Britain, Australia or the United States of America<sup>28,29</sup>

In view of this, there has been a recent push to empower young, teenage women from developing countries on ways to mitigate the risks of breast cancer. This is necessary because, countries like Nigeria have no national, government-funded screening and breast cancer treatment programs (as is obtainable in the developed world), and outcomes in younger patients are usually very poor.<sup>15</sup> Even when such national programs come into existence, an enlightened populace will be more likely to embrace any preventive program.

The focus on young Nigerians is also necessary given that Africans are affected about a decade earlier than their Caucasian counterparts<sup>6</sup> with 69% of the cancer in Nigeria occurring in women aged 26 to 50 years, most of which present with advanced diseases<sup>30</sup> Even though the mean age of presentation in Nigeria is 42 to 44 years<sup>30-32</sup> up to 12% are reported among those aged under 30 years, with the youngest being 14-years old.<sup>13</sup> Given the relatively young age and the late presentation, most lesions in African women are bigger, more aggressive, advanced, and with poor prospects of

long-term survivals.

Fortunately, if detected early, the treatments for breast cancers are a lot more effective. In fact, the survival rates are around 90% (9 out of every 10) when breast cancer is detected whilst still confined to the breast. Unfortunately, only 7% of affected Nigerian women present within one month of symptom discovery<sup>30</sup> with 70% delaying for at least 3 months before seeking treatment<sup>33</sup>

In view of this, all efforts should be made to ensure that every woman of child-bearing age is made aware of the early symptoms of breast cancer as early in life as possible. These should include knowledge of its risk factors, preventive measures and treatment options, and forms the basis for the inclusion of “breast awareness” measures in the ArOY Campaign.

#### BREAST CANCER PREVENTION

Two key ways to reduce breast cancer deaths are through “**breast screening**” and “**health education**”<sup>34</sup>

The main **breast screening** method is through “breast imaging”, which can be done through x-rays (called mammography) and/or ultrasound scans. In developed countries, women from the age of 40 years get these screenings every 2 years, and the costs are usually covered by their governments. Clinical breast examination (CBE) is also another screening technique, and requires a medical practitioner to examine the woman's breasts, usually in a clinic or hospital. Unfortunately, the wide-scale utilization of CBE and breast screening in Nigeria and other developing countries are still poor due to significant financial and manpower limitations<sup>17</sup>

**Health education** basically empowers women to be “breast aware” by teaching them the risk factors and early symptoms of breast cancers, as well

as the techniques to detect suspicious symptoms. Being “breast aware” means the familiarization of oneself with the normal appearances and feelings of one's own breasts, and informing her doctor of any changes once noticed. By getting to know how one's breasts normally look and feel, it makes it easier to notice changes potentially indicative of breast cancer, ultimately facilitating the use of efficient and less aggressive treatment modalities in cases of breast cancer. Breast self-examination (BSE) is a component of breast awareness.

Unlike the breast screening options, BSE offers a simple, cheap, and non-invasive technique that can be practised by virtually anyone<sup>29,34,35</sup>. It involves the woman examining her own breast tissues in her own privacy and schedule. Even though controversies exist as to the efficacy of BSE in reducing breast cancers (with a number of studies suggesting that it does not)<sup>36-38</sup> evidence indicates that, when combined with imaging (ultrasounds and x-rays) and CBE, BSE can improve breast cancer outcomes and reduce mortality by as much as 25%<sup>39</sup>. In fact, about 80% of breast lumps (along with more than 50% half of all breast cancers) are found by the affected women themselves<sup>40</sup>. Therefore, BSE provides a layer of defence against dying of breast cancer and is recommended by the OCI Foundation for women in developing countries who lack universal, government-sponsored screening programs.

Actually, a number of international bodies actively encourage the promotion of breast awareness, including BSEs, even though some others oppose it. For most women in Nigeria and other developing countries, being “breast-aware” is the only realistic tool that gives them a chance against the cancer, as no other preventive measures are affordable to most of them. As such, every Nigerian woman should consider practicing BSEs.

Unfortunately, studies reveal that young women in Nigeria are not breast-aware, with low levels of knowledge on the specific risk factors and early symptoms of breast cancer<sup>14,34,41</sup>. The studies also reported that the knowledge of BSE techniques and its actual practices are very low. Like

cervical cancers, empowerment interventions among Nigerian teenagers are expected to be effective given that these young women display positive attitudes to the required preventive techniques.<sup>14,22,42</sup>

## USEFUL FACTS ABOUT BREAST CANCER

### Breast Cancer Major Risk Factors

1. **Gender:** A woman is 100 times more likely than a man to develop breast cancer. Men can also get breast cancers, but it is rare and accounts for less than 1% of all breast cancers.
2. **Age:** The risk of developing breast cancer increases with age. The majority of women with invasive breast cancer are over 40 years of age in Nigeria (over 50 years among Caucasians) when diagnosed.
3. **Genetics:** Faulty genes that increase the risk of breast cancer can be inherited from one's parents. However, only about 10% of breast cancers can be inherited.
4. **Family history:** Having a very close blood relative, such as a mother or sister, who has had breast or ovarian cancer can increase one's risk. However, the majority of people who are diagnosed have no known family history.
5. **Race:** Caucasian (white) women are slightly more likely to develop breast cancer than Africans (blacks, including Nigerians). It should be noted that the rates among Africans are gradually increasing in recent years, possibly due to the increased adoption of western lifestyles).
6. **Personal history:** People who have had breast cancer have a greater chance of developing another cancer in the same breast, or in the other breast.

### Other factors that can increase breast cancer risk include

1. Starting menstruation (menarche) at a relatively early age (before 11 years of age);

2. Starting menopause (cessation of menstruation) at a relatively late age (after 55 years of age);
3. Not having children at all, or having a first child after the age of 30 years;
4. Not breastfeeding: the more months spent breastfeeding a baby, the lower the risk of developing breast cancer;
5. Taking the combined oral contraceptive pill (OCP), or taking the combined Hormone Replacement Therapy (HRT) after menopause, especially when taken for 5 years or longer;
6. Gaining a lot of weight in adulthood, especially after menopause;
7. Sedentary lifestyle (lack of physical activity) and eating too much fat;
8. Drinking a lot of alcohol (more than 2 standard drinks a day);
9. Smoking.

Anyone with these risk factors should discuss her concerns with a doctor.

## **HOW TO REDUCE YOUR RISK OF BREAST CANCER**

The causes of breast cancer are still not fully known, but the following healthy living tips can help reduce one's chances of developing them. By doing them, one will also be improving his/her overall health and wellbeing.

- Do not smoke;
- Eat a healthy diet: avoid high fatty or sugary diet. Eat at least 5 portions of fruits and vegetables a day;
- Increase physical activity: indulge in moderate-intensity exercises (enough to make you either sweat or pause for breath) for at least 30 minutes a day, 5 days a week (at least 150 minutes a week);
- Maintain a healthy body weight: Body Mass Index (BMI) of 20 to 25;
- Avoid alcohol;

*... We rise, by lifting others.*

- Make BSE a part of your monthly routine. As stated earlier, this does not necessarily reduce breast cancer and most lumps found may not be sinister. However, by improving one's awareness of her breasts, it increases the chances of noticing dangerous changes;
- Once one attains the recommended screening age (see below), commence regular screening for breast cancers.

## **Breast Cancer Screening Guidelines**

The following guidelines apply to women with no unusual risk factors or symptoms of breast problems.

For women age 20 to 39 (younger in developing countries):

- A monthly breast self-exam (BSE);
- A clinical breast exam (CBE) by a trained health professional every one to three years.

For women aged 40 and older:

- A monthly breast self-exam;
- A yearly clinical breast exam by a trained health professional;
- A two-yearly screening mammogram and/or ultrasound starting at age 40, if possible.

**NB:** If you have an increased risk of breast cancer because of family history or other reasons, ask your health care provider about beginning screening mammograms at an earlier age, or having more frequent exams.

## **Men with Breast Cancer**

Breast cancer in men is rare. Less than 1% of all people diagnosed with breast cancers are in men.

*... We rise, by lifting others.*

The most common risk factors are:

1. Getting older (breast cancer in men occurs more commonly in those aged 50 and older);
2. Having a strong family history of female or male breast cancer.

Less common risks are:

3. Having high oestrogen levels;
4. Some genetic disorders like Klinefelter's Syndrome

### **Some myths about breast cancer:**

- Family history is not the largest risk factor for breast cancers. In fact, 8 out of 9 women diagnosed with breast cancer have no known family history.
- There is no scientific evidence that antiperspirants or deodorants increase the risk of breast cancer.
- Trauma to the breast does not increase the risk of breast cancer. However, some breast cancers can be found due to examinations resulting from trauma.
- Breast cancers are not caused by evil spirits, and cannot be caused by evil people through black magic.
- Breast cancers are not punishments from God.

## **APPENDIX 1**

### **TECHNIQUES OF BREAST SELF-EXAMINATION (BSE)**

Even though BSEs are recommended monthly from the age of 20 years<sup>43</sup> they can be started earlier in Nigeria and other developing countries where there are no anti-breast cancer government-sponsored programs, given the facts discussed in the preceding paragraphs. As such, it will never be too early for a woman to become “breast aware”. It should be noted that breast cancer is rare in young women, and there is no need to be scared. Most lumps found in young women are not cancerous, but it is still important that you discuss any changes with a doctor. As already stated in the main text, there are doubts as to the scientific proof that BSEs actually improve survival from cancers. However, they can form part of the “breast awareness” package, and do improve outcomes when combined with other screening measures discussed earlier.

#### **3.3.1 When and How to perform BSE?**

The ideal time for a BSE is 7 to 10 days after the first day of your menstrual period. This is so because the breasts are naturally less lumpy and less tender at this time. Pregnant women or those that no longer have menstrual cycles can perform BSEs at any time, provided it is done at the same time each month. Women that are breastfeeding should also perform monthly BSEs at the same time each month, but this should be after breastfeeding the baby, not before. The **OCI CerviBreast App<sup>R</sup>** will assist every woman in remembering when, and how to carry out the steps below, and it is strongly recommended that everyone must have it. It is freely available on the Android and Apple stores.

#### **3.3.2 How to Perform BSE?**

BSE will only take a few minutes, but is best done at a time when privacy is



guaranteed.

### Steps in checking breasts (see *Figure 1 for the steps*)?

1. Stand undressed from the waist up in front of a full-length mirror. Arms should be relaxed by the sides. If one cannot stand comfortably, this part can be done while sitting. Just look at the breasts, and get to know how they look. Even a small visual change may be a significant early sign of a problem.
2. Compare both breasts by turning from side to side and looking for changes in size, shape, skin texture or colour. The changes might include redness or rash, as well as skin dimpling, puckering or retraction (pulling back of your skin). *Please see Figure 2.*
3. Look for nipple changes like scaliness, ulceration, itchiness, or pulling to one side (change in direction). *Please see Figure 2.*
4. Place hands on the waist and press inward, then turn from side to side to note any changes. If hands cannot be placed on the waist, they can be clasped together, so as to tighten the chest muscles.
5. Tightening the chest muscles beneath the breasts in other ways can also help reveal changes. Different positions should be tried, like putting your hands above the head and turning from side to side as one looks.
6. Afterwards, place hands on the waist and bow toward the mirror, letting the breasts fall forward. Note any changes in breast shape.
7. Nipple discharge can be a sign of a problem (particularly if blood-stained, or if from one nipple only). Look for such discharge or stain on the bra or clothing, but do not squeeze the nipple or try to expel any discharge by force.
8. Feel above and below the collarbone. All the breast tissues from the collarbone down to the area below your bra line, as well as under the armpits, should be checked. Applying skin cream or lotion can make this easier.
9. Feel near the skin surface and then deeper in the breasts, using the flat part of the pads (pulps) of the three middle fingers.

10. Check for lumps or thickening in the breasts or in the armpits while relaxing the arms at the side. Such lumps can be well-defined, or they may just feel firmer or harder than other breast tissues. They may or may not be painful. Reach across with one hand to feel the opposite area. Check deeply up and down the inside of the armpit, and up and forward toward your chest. Note any changes from previous self-exams.

### For the next steps, lying down on the bed is recommended:

11. Place a pillow or folded towel under the left shoulder. This helps breast tissues spread evenly across the chest wall. Bend the left arm behind the head and reach across with the right hand to the left breast. Again, a little skin cream or lotion on your fingers will make them more sensitive.
12. Begin the exam at the armpit.
13. The hand should move in straight rows to cover all the breast tissues from the line where the blouse seam would fall (mid-axillary line) to the bra line, the breastbone (sternum) and the collarbone (clavicle). *See Figures 3 and 4.* After doing this on one side with one hand, repeat the process on the other side with the other hand.

### Notes on how to place and move your fingers:

- Use the pads (pulps) of the three middle fingers, and move in circular motions (*Figure 3*). Do not use the tips or fingernails.
- Start as shown in the picture (*Figure 4*), and move up and down as shown by the arrows. Adjust the pressures to varying degrees (light, medium and firm pressures), and cover from the collarbone down to the rib lines, and from the armpit (side), to the breastbone (in the middle).
- There are other ways to move the fingers, including starting from the nipple area and moving in circles outwards till the whole breast is covered, or by dividing each breast into 4 quadrants (or wedges) and covering each wedge in turn until the entire breast is covered.

However, stick to one style, and the style described in *Figure 4* is the recommended approach.

### 3.3.3 What if I Find Something?

Most commonly, lumps such as cysts, are benign (not dangerous). However, always report breast changes to a doctor. Remember that the breasts may change during different times of the month for those still menstruating. Therefore, stick to the time of the month as described above. Breast tissues may also change with age.

Before seeing a doctor to report a breast change:

- Find out if there is any family member (including extended family) that has had breast cancer;
- Talk to the doctor about the changes noticed;
- Be confident in discussing the concerns, and respectfully ask for further investigations from the doctor there are still concerns after seeing him. For breast lumps, such investigations might include breast imaging (ultrasound and x-ray) and a biopsy;
- If unsatisfied after seeing a doctor, get a second opinion from another doctor.

Remember, the **OCI CerviBreast App<sup>®</sup>** is freely available on the Android and Apple stores for everyone to download. This makes BSE easy, and is about the only App that is configured to suit the monthly cycle of an individual. The OCI Foundation strongly recommends it for all and sundry.

## APPENDIX 2 DIAGRAMS ON THE TECHNIQUES OF BSE

### HOW SHOULD A BREAST SELF-EXAM BE PERFORMED?

Adult women of all ages are encouraged to perform breast self-exams at least once a month.



#### IN THE SHOWER

Put your left hand behind your head and using the pads of your right fingers, move around your entire breast in a circular pattern moving from the outside to the center, checking the entire breast and armpit area for anything unusual. Then do this for your right side.



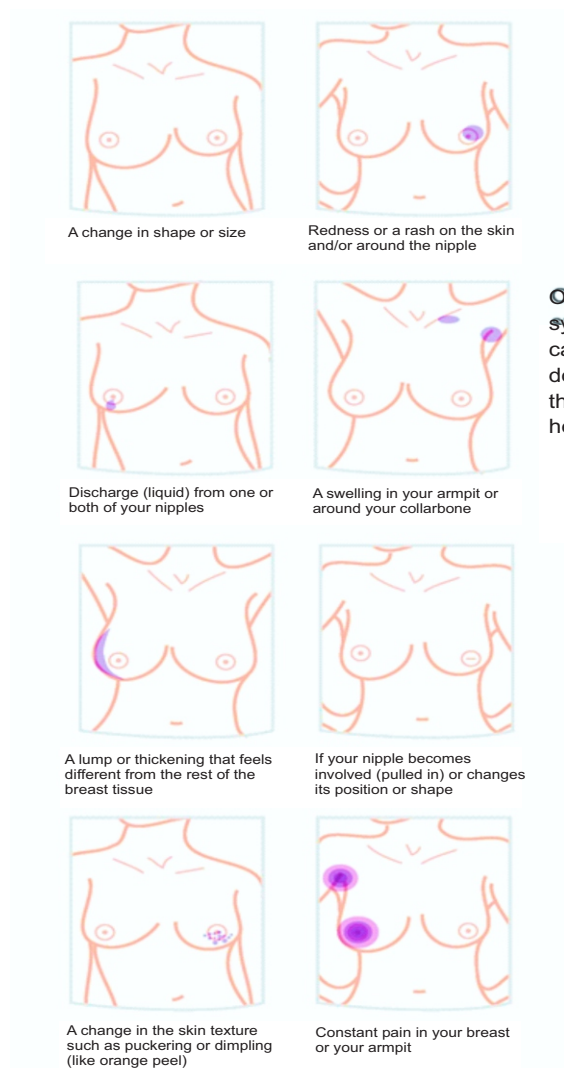
#### IN FRONT OF A MIRROR

Visually inspect your breasts with your arms at your sides. Next, raise your arms high overhead. Look for any changes. Next, rest your palms on your hips and press firmly to flex your chest muscles. Left and right breasts will not exactly match - few women's breasts do, so look for any changes, particularly on one side.

#### LYING DOWN

When lying down, the breast tissue spreads out evenly along the chest wall. Place a pillow under your right shoulder and your right arm behind your head. Using your left hand, move the pads of your fingers around your right breast gently in small circular motions covering the entire breast area and armpit. Use light, medium, and firm pressure. Squeeze the nipple; check for discharge and lump. Repeat these steps for your left breast.

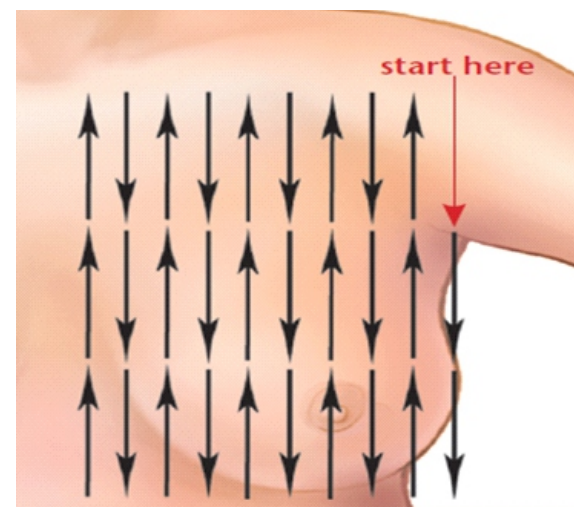




**Figure 2:** Things to watch out for during a BSE  
(Courtesy: <http://www.breastcancer.org.au/about-breast-aware.aspx>)



**Figure 3:** How to move your fingers in circular motions while doing a BSE (Courtesy: American College of Obstetricians and Gynaecologists).



**Figure 4:** Where to start moving your fingers, and the directions to move them during BSE (Courtesy: American College of Obstetricians and Gynaecologists).

## APPENDIX 3

### ArOY COMMITTEE IMPLEMENTATION

#### MEMBERS

IMPLEMENTATION COMMITTEE OF THE "ARM OUR YOUTHS (ArOY) HEALTH CAMPAIGN"

BY THE OCI FOUNDATION FOR ANAMBRA STATE OF NIGERIA (July 2019)

S/N	Name	Background	Role in ArOY Committee
<b>SPECIAL MEMBERS OF THE ARM OUR YOUTHS HEALTH CAMPAIGN</b>			
1	Prof. Kate OMENUGHA	Commissioner for Basic Education Anambra State, Nigeria	Official Sponsor (Logistics)
2	Lady Joy ULASI	Immediate Past State Chairman, PPSSC, Awka, Anambra State, Nigeria	<ul style="list-style-type: none"> <li>Official Champion</li> <li>Committee</li> </ul>
3	Dr Chioma EZENYIMULU	Executive Secretary, Primary Health Care Development Agency, Anambra State, Nigeria	Official Champion
<b>REPRESENTATIVES, POST PRIMARY SCHOOLS SERVICE COMMISSION (PPSSC), ANAMBRA STATE</b>			
4	Josephine ONUORAH	Secretary, PPSSC State Headquarters	Member
5	Sabina NDIGWE	PPSSC State Headquarters, Awka	Overseer/Desk Officer
6	Eucharia ILLIKAH	PPSSC State Headquarters, Awka	Member
7	Stella EZEKANNAGHA	PPSSC State Headquarters, Awka	Member
8	Bridget BIELU	PPSSC, Awka Zone	Member
9	Nonyelum Odenigbo	PPSSC, Nnewi Zone	Member
10	Afoma AGBAPUONWU	PPSSC, Ogidi Zone	Member
11	Florence MBAKWE	PPSSC, Onitsha Zone	Member
12	Maureen OKAFOR	PPSSC, Otucha Zone	Member
13	Ego OKPOKO	PPSSC, Otucha Zone	Member
14	Victoria UNEGBU	PPSSC, Otucha Zone (ZDE)	
<b>REPRESENTATIVES, ANAMBRA STATE GOVERNMENT OF NIGERIA</b>			
15	Roseline MBANEFO	Ministry of Health (Planning Officer and Focal Person, Health Care Financing)	Member
16	Vivian NZEWI	Ministry of Basic Education (Desk Officer for Health)	
<b>REPRESENTATIVES OF THE RELIGIOUS GROUPS AND PARENTS</b>			
17	Cannon Henry NDUKA	Anglican Faith	Member
18	Fr. Thaddeus UGWUOKE	Catholic Faith	Member
19	Rev. Sam Chukwu Eze	Pentecostal Faith	Member
20	Alhaji Yusuf Haruna	Islamic Faith	Member
21	Parents in the Committee		Member
<b>TECHNICAL MEMBER</b>			
22	Dr Emmanuel AZUIKE	Deputy CMA, Chukwuemeka Udumegwu Ojukwu University, Awka Nigeria	Consultant Public Health Physician
<b>REPRESENTATIVES OF THE OCI FOUNDATION</b>			
	Barr Onyech ONONYE	Legal Adviser	Member
	Imelda EMEKA	Domestic Liaison Officer	Deputy Chairman
	Ifeoma IFEDIORA	Administrative Officer	Member
	Njide EZEONYEJIAKU	Media Consultant	Member
	Peter Okoli	IT Officer	Committee Liaison Officer
	A/Prof Chris IFEDIORA	President	Convener

... We rise, by lifting others.

## APPENDIX 4

### THE ARM OUR YOUTHS (ArOY) HEALTH CAMPAIGN ANTHEM

I have arisen to arm with  
knowledge  
Not arms to waste, mistreat  
woman-kind  
I am not just a Child, a Youth  
I am the Future's Mother  
Even the Future's Grandma  
I am the host of all humans on my  
chest streams...

*Arm us Young...*

*Arm us All...*

*Arm us Now...*

I'll habitually do BSE  
To note any signs  
That could (en) danger my life, my  
motherhood  
I will avoid  
Habits, practices that may risk  
My fruitfulness, my happiness...

*Arm us Young...*

*Arm us All...*

*Arm us Now...*

Breast and Cervical Cancers  
Have tumbledown millions of  
women in Nigeria  
I must be healthy to raise the  
generations  
Through safe birth, safe milk and  
safe self...

*Arm us Young...*

*Arm us All...*

*Arm us Now...*

Today I stand with OCI  
Foundation  
Now I get-up-and-go with ArOY  
To practice, to advocate, to  
campaign  
And prevent, reduce, control breast  
and cervical cancers...

*To Arm us Young...*

*To Arm us All...*

*To Arm us Now...*

**Courtesy:**

Mr. Samuel Agwa (FIMC, CMC)  
Team Lead, ArOY Campaign Advocacy Group  
<https://ocifoundation.org/mr-samuel-agwa/>

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## APPENDIX 5

### ArOY ENDORSEMENT LETTER FROM THE HARVARD MEDICAL SCHOOL



3 March 2019

**Re: Mr. Chris Ifediora, MBBS, MPH**

To Whom It May Concern:

Mr. Chris Ifediora has successfully completed the Harvard Medical School Southeast Asia Healthcare Leadership (HMS-SEAL) program. This year-long intensive program was designed to provide global healthcare leaders with the expertise in leadership management, healthcare finance and human resource management they need in order to maintain excellence in service and patient care.

As part of the requirements for this one-year program, Mr. Ifediora developed a Capstone proposal titled: "New Approach for Breast and Cervical Cancer Campaigns: Model for High Schools in Anambra State of Nigeria". This project had significant input from Harvard Medical School faculty advisors at the HMS-SEAL program, and therefore has good potential for success if well implemented.

Sincerely,

Ajay K. Singh, MBBS, FRCP (UK), MBA  
Senior Associate Dean for Postgraduate Medical Education  
Harvard Medical School

Postgraduate Medical Education  
Harvard Institutes of Medicine Building  
4 Blackfan Circle, 4th Floor, Boston, Massachusetts 02115  
Email: oge@hms.harvard.edu

[hms.harvard.edu/seal](https://hms.harvard.edu/seal)

... We rise, by lifting others.

## ACKNOWLEDGEMENTS

Firstly, we give God all the glory. His grace and inspirations to the OCI Foundation led us to where we are today.

This book, and indeed, the entire Arm Our Youths (ArOY) Health Campaign, would not have been possible without the help of a number of people. The list below may not be exhaustive, but captures most of the men and women without whom we would have been nowhere today:

1. My dear wife, Mrs Nkem Ifediora, who is also the Vice President and a Trustee of the OCI Foundation. The support and environment created by her and the children allowed me to dream, and eventually live those dreams. They freed up a lot of time and resources that made everything possible;
2. Prof. Kate Omenugha, the Official Sponsor of the Campaign and current Commissioner of Basic Education, Anambra State. Without her backing, this project would not have been possible;
3. The ArOY Campaign Champions, Lady Joy Ulasi (Immediate past Chairman of PPSSC, Anambra State) and Dr Chioma Ezenyimulu (current Executive Secretary, Anambra State Primary Health Care Development Agency). Their support and readiness to intercede on our behalf helped us to successfully navigate most difficulties;
4. Members of the OCI Foundation in Nigeria, led by our indefatigable Barr Steve Onyechi Ononye, who doubles as a Trustee of the Foundation and her Legal Adviser. Others and their designation are:
  - a. Mrs Imelda Emeka: Domestic Liaison Officer and Immediate past Zonal Director of Education, PPSSC, Otuocho Zone of Anambra State;
  - b. Mrs Ifeoma Ifediora: Administrative Assistant/Office Administrator;
  - c. Mrs Njide Ezeonyejiaku: Media Consultant;
  - d. Mr Peter Okolie: IT Officer;
  - e. Mrs Ifeyinwa Erhabor: Logistics Officer.
5. All other Trustees and Directors of the OCI Foundation (not already mentioned) for the pieces of advice and support from the beginning. They include Dr Eche Umeokafor (USA), Mr John Nweze (United Kingdom), Pastor Nico Smit (Australia), Dr Henry Ikeabbah (Nigeria), and Barr.

... We rise, by lifting others.

- Obinna Ifediora (Australia);
6. Prof Lennert Veerman, a Professor of Public Health with the Griffith University;
  7. Dr Emmanuel Azuike, a Public Health Consultant and current Deputy CMAC, Chukwuemeka Odumegwu Ojukwu University, Awka, Nigeria;
  8. Chief Samuel Agwa (FIMC, CMC), the head of the OCI Foundation's Advocacy Team. This efficient and resourceful Abuja-based gentleman is the main reason our planned nationwide roll-out has already started;
  9. Dr Williams Obiozor, of the Department of Adult Education, Nnamdi Azikiwe University, Awka, Nigeria;
  10. Mr Collins Nwamora, who has done most of our printings over the years;
  11. The Chairman, Secretary and all other members of the PPSSC State Headquarters, Awka, Nigeria, as well as all the 6 Zonal Directors of Education (ZDEs) in Anambra State;
  12. The entire Staff and School Principals of PPSSC, Otuocha Educational Zone of Anambra State, under the current leadership of Mrs Victoria Unegbu. This also includes Mrs Chinelo Okoro (former Principal, CHS, Nsugbe). It all started in this Zone, and they helped nurture the entire project to what it is today;
  13. All members of the 28-man Implementation Committee, as well as the 10-man Workshop Planning Committee. They respectively ensured a culturally and technically acceptable curriculum, plus a successful 3-day workshop;
  14. Mrs Ebelle Okaro, the veteran Nollywood Star, who is the first official Ambassador of the ArOY Campaign. She contributed her skills to this Campaign at no fee;
  15. Mr Young G. Obi, a Nollywood Movie Director, Script Writer and Actor, for selflessly accepting to produce a movie in support of the ArOY Campaign, again, at no fee;
  16. Miss Jessica Chikaodi Ezeanowi, for her assistance in facilitating our message;
  17. The management of the Nnamdi Azikiwe University, Awka, Nigeria, particularly the Vice-Chancellor, Prof Charles Esimone and the Dean of Students' Affairs, Prof Stanley Udedi. Their support has been amazing;
  18. The Harvard Medical School, Boston, Massachusetts, USA, for their

- significant input in developing the entire ArOY Campaign;
19. The Griffith University School of Medicine, Australia, for the professional support they have provided for this project throughout;
  20. Others that require special mention include:
    - a. The Chairman, Innoson Vehicle Manufacturing Company, Nigeria, Chief Innocent Chukwuma
    - b. Chief Uche Nworah, the MD/CEO, Anambra Broadcasting Service, Awka, Nigeria
    - c. Prof David Iornem, the President of the Institute of Management Consultants, Nigeria, for his invaluable contribution behind the scenes
    - d. Chief Alex Addingi, the CEO, Silk Road Restaurant, Abuja.
    - e. Chief Daniel "The Bull" Amokachi (OON, MON), an ex-Nigerian soccer star, and the CEO, Daniel Amokachi Foundation, Abuja;
    - f. Mr Sunday Peter Ikechukwu, the OCI Foundation's cameraman, for your loyalty all these years;
    - g. Mr Ilemobayo J. Omogunwa (Bayo), the PA to the Commissioner for Basic Education, Anambra State
    - h. Mr Luter Ikyobo, a young Nollywood actor, for the logistical support he provided.
  21. And all others too numerous to mention, including the Cyfed Scholars, IFOMSSA Scholars and all potential beneficiaries of the OCI Foundation. This is all happening because of you.



## GALLERY

### **1. OCI Foundation's 2017 (28/9/19) & 2018 (23/10/18) health symposium Anambra State, Nigeria**



*... We rise, by lifting others.*



*... We rise, by lifting others.*



## 2. Visits to Anambra State's commissioners for Basic Education (25/04/2019) and Health (26/04/2019)





### **3. Visits to the managements of UNIZIK (05/08/19) and ABS (27/08/19), both in Awka, Nigeria**





4. **Consultations: Associates (Abuja, Nigeria; 5/8/19) & Directors (Gold Coast, Australia; 7/5/19)**



5. **CerviBreast<sup>®</sup> Mobile Phone Application; Freely available on the Google Play and Apple Stores**



6. **Recording of the ArOY Campaign's Brest Self-exam (BSE) video (Asaba, Nigeria; 08/19)**



... We rise, by lifting others.

... We rise, by lifting others.



## 7. ArOY Implementation & Workshop Planning Committees (Awka, Nigeria; July & Aug 2019)







... We rise, by lifting others.

# 8. Pictures of some officers, staff, volunteers, friends, and associates of the OCI Foundation



... We rise, by lifting others.









... We rise, by lifting others.

## 9. Recipients of the OCI Foundation's educational scholarships (2017, 2018 and 2019)



... We rise, by lifting others.









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