Introduction

WHY MY TOPIC? DREAM IT! SEE IT! DO IT!

Early in my career, I discovered that there was a call on my life to be A CHANGE AGENT/CHANGE MAKER!, and that once I conceive a thing in my heart (which remarkably is always bigger than myself), I do not focus on the difficulty of doing it, no matter how Herculean it may seem. Instead, I focus on my firm faith in the God that will do it. But, unlike former President Barrack Obama of USA, who is an Ashoka fellow, like me, and whose renowned doctrine/mantra was: "The Audacity of Hope", I found that mine was; "**The Audacity of Faith"**. Literature says if the dream is not bigger than you, then God is not in it.

THE 'DREAM IT': Discern Problems You are Called to Solve in Each Season of Life

THE 'SEE IT': Understanding the Problem and System Change Needed to Plan the Dream

To Fulfill the Purpose of Your Life

To Identify the Spaces Where You are Called to Play the Role of a Change Maker

THE 'DO IT': Implementing Solutions to Effect the System Change and Monitoring and Evaluation

It is my prayer that as I attempt to carry us through the protean multiplicities of my life's journey in these 43 years of being a medical practitioner, and 18 years as a Professor, you will agree with me that I dreamt it, saw it and did it. Due to the prolific nature of the registered milestones I accomplished in my career, I was divinely guided, after listening to an online ministration at the daily early morning prayers of the Living by God's Design International Ministry, where I serve as an

Associate Pastor. It was a *Kairos* moment for me as well as a Eureka Day. Though I started planning my inaugural from that day, I still underestimated the volume of work that God had, in His infinite mercy, found me worthy to do.

"She has a knack to start working on projects as they drop in her mind. She knows how to mobilize people banking on their strengths, to bring to life 'minute seeds of ideas' and before you have the chance to blink, the idea blossoms into 'an institution".

- *Dr Elizabeth Akin-Odanye, Clinical Psychologist, University College Hospital, Ibadan*

I basically focused my professional life, on two areas, Cancer and Clinical Trials, ***though as I wrote this inaugural, evaluating my actual involvement in clinical trials, besides; leading advocacy and raising political will, to influence policy, it showed that my work was skewed to Oncology Clinical Trials.***
Thus, I decided to focus my lecture on work done in the Cancer Space, Clinical Trials, and my contributions to the profound human/physical infrastructure that has put UNTH on the Global Oncology Map and soon in the Nuclear Medicine Enterprise.

My Personal Ethos
Cicero wrote, "Non nobis solum natisumus"– meaning "Not for ourselves alone are we born."
I have always been caring, generous and passionate to contribute my bit to ensure that people who need help are taken care of, whether physically or mentally…. and in making a difference in my community, and sphere of influence, as best as I can. I have thus been a veritable signpost, pointing people to the right direction, looking beyond my comfort zone, and asking myself always, "How can I impact my immediate

environment and perhaps beyond"? I have nurtured this passion through advocacy, legislative lobbying, influencing political will, counseling, mentorship, upskilling and capacity building. I have been inexorably drawn to the infrastructural challenges and gaps in the healthcare infrastructure and systems of my country and have in my life journey initiated/innovated systems and structures to assist to solve them.

Why the Need for Disruptive Mechanisms in Repositioning Nigeria's Oncology Systems for Closing the Care Gap?

In my pursuit of ensuring quality healthcare, I was immediately drawn to the critical impact non-governmental organizations can make, in addressing the complex challenges surrounding cancer care in underserved communities. Over the past 43 years of practice as a healthcare provider, my focus on Cancer Control has armed me with a profound understanding of the pressing need for comprehensive cancer control strategies in low and middle-income countries (LMICs), added to my academic background, professional experiences, and unwavering commitment and passion, I have become aka PINKY PROF, a soldier committed to closing the Cancer Care Gap in LMICs.

Cancer is a disease that sparked my intellectual curiosity during my training as a medical doctor; a quest that informed my decision to specialize in radiology - a discipline that provides a major avenue for early detection, diagnosis and, sometimes, treatment interventions of cancer. Driven by this passion, I was spurred into action upon completion of my medical career, to join the cancer prevention efforts of our Medical Women Association. One major area of my focus was cancers in women, including, but not limited to, breast and cervical cancers. I since have recognized the pandemic nature of this disease, especially the critical role of 'LATE

DETECTION', as a driver for Nigeria's high cancer mortality and morbidity rates.

Operating the Power of One: Is the Potent Tool to Move Cancer Control to the Next Stage in Nigeria and Other LMICs.

Yes, I am a strong believer in; '**THE POWER OF ONE'**

"Cancer starts as a single cell, so small that you cannot see it. If it can grow and spread into something so big, ***just imagine what "one person can do".*** *"Breast cancer and, indeed, any cancer, starts small, as just one cell, but then grows, spreads and suddenly a very small force becomes, a very big problem.*

(Culled from: Susan G.Komen- where the end of breast cancer begins.*)*

I believe in the "Power of One", that a single motivated individual is capable of igniting profound change, each one, touch-touch-one, is ironically analogous, the fact that cancer starts as a single cell validates that radical change in the cancer control landscape, that through a motivated stakeholder, a motivated professional, a motivated organization; considerable paradigm change can be achieved….***and this underscores and crystallizes my steadfast and tenacious passion and commitment***.

Ogunbiyi et al.[1] documented that; 'few cancer advocates and trained community health workers' exist in the African region, to inform the public and policy-makers about cancer, and that despite cervical cancer being a leading cause of cancer death for women in 40 of 48 countries in sub-Saharan Africa, many countries have limited screening services (PAP test) and HPV vaccination. Thus, the paradigm is that more than 80% of patients in Africa are diagnosed at advanced stages of cancer [1], with 26 avoidable deaths from cervical cancer still recorded

daily, and African literature is replete with evidence of low mammographic uptake (as low as **9% uptake of mammography** amongst Female Health Workers in a Tertiary Health Institution in Northern Nigeria documented by Oche et al [2] in 2012).

The drivers for these existing care gaps, are: ignorance in knowledge (defined by superstition, and cultural biases, spousal rejection and stigmatization), prevailing mindset of 'Cancer Is A Death Sentence", (fueled by late presentation of majority of our patients), procrastination (which, perhaps, can be equated to health-seeking hesitancy, poor health-seeking behaviour, poverty of pocket, unaffordable medical bills, that is usually the bane of late cancer, out-of-pocket payment of medical bills, absence of in-country germane data *that would be capable of directing policy and assigning scarce resources appropriately).*

In early October 2021, I was the keynote speaker at an Asia Pacific Medical Women International Association Summit, speaking on the same conviction of "The Power of One" being the required strategy that can lift LMICs out of the fundamental knowledge/care gap, underscoring late cancer detection and thus poor morbidity/mortality indices. This view received such wide engagement and interest that I was invited, in the same month, by the Medland Hospital in Zambia, to replicate the same topic, by Zimbabwe: National Aids Council, with the First Lady of the country being physically present and highly enthused with the suggested strategies. In February of 2023, I expressed the same opinion at an e-Cancer meeting in Tanzania, and got into collaboration with over 600 Tanzanian Cancer Control Advocates, in Academia (who are determined to join me in replicating these strategies in other African countries – A strategy we have called: '**Globalizing Go Pink Day"**! All these collectives, including the ICW, constitute a unique force and milieu of expertise, which collectively

strengthen our voices at the national and global levels, with fresh perspectives. On-going discussions with these networks are beginning to yield strategic frameworks, to utilize this, '**Continent-Wide Footprints' Muscle**, to advantage, to close the knowledge/care gap.

The Power of One, Each One Touch One, when combined with sustained awareness, education and taking the message and the service to the people, no matter how remote their location, can erase or denude wrong perceptions, cut through the people's reticence to screen (screening hesitancy) and ultimately delete, 'it's not my portion syndrome', improve survival statistics, successfully yield higher numbers of survivors to share their story and change the negative narrative. With this firm belief, mobilizing each individual in LMICs to become part of a synergistic mass action, '***all hands on deck' thrust***, flagging the doctrine of: ***'Leaving No One Behind', Being Our Brother's Keeper***, (which are the typical behavioural mindset, of majority of Nigerian populace), will be a sustainable way of ensuring, that we can close the cancer-prevention, screening, medical management, infrastructural palliative/hospice care gap.

DREAM IT! SEE IT! DO IT! IN CANCER CONTROL

NICRAT: *NIGERIAN INSTITUTE FOR CANCER RESEARCH & TREATMENT*

(The idea for this was kicked off by me and the House of Representative Member,(Senator Mao Ohabunwa), who was the first to propose the bill on National Institute for Cancer Research and Treatment (NICRAT))

Though what we had recommended as we pushed political will with our Lead Advocate: Senator MAO Ohabunwa, who proposed the bill in the National Assembly for the creation of

NICRAT, was ‘A NATIONAL INSTITUTE FOR CANCER RESEARCH & TRAINING’, & not ‘Treatment’, to match with the National Cancer Institute in the US (NCI), nothing has gladdened my heart so much in the recent times, as the actualization of the vision of having such a citadel to drive oncology research in the country! This augurs well for cancer control in Nigeria!

Below, is a short speech I gave at the Landmark Event, of the Official launch of NICRAT.

“I see NICRAT providing profound direction for Oncology Research/Output & forging a robust & formidable research agenda for NICRAT’s first 5 years march! Both the development of the agenda & framework for implementation are already housed within the current 5yr CCCP (Cancer Control Plan), to be launched in October!

All that is needed is to leverage the strengths & political will muscle of NICRAT, to forge more strategic partnerships with, Consortia, International Research Institutions (especially institutions, where Nigerians in the Diaspora are domiciled), into mutually beneficial collaborative relationships with Stakeholders on ground in Nigeria!

One of the low hanging fruits, to immediately pluck & to infuse funds from abroad, is to engage with the AGCPN - initiated ‘African Clinical Trial Consortium’ (ACTC), & CaPTC (Prostate Cancer Transatlantic Consortium), to improve the Clinical Trial Readiness Index, of all in-country Tertiary Healthcare Institutions (already structured for Oncology management by the FMOH or MOH) by guiding /mentoring them to create QME-CTUs (Quality Management Echo System

Clinical Trial Units)! This will engender vibrant Multi- Centre Oncology Clinical Trials & increase confidence in Global Pharma, to site Clinical Trials (CTs), in these institutions.

The disease burden of Africa endows it with huge potential to contribute profound data on several disease areas & what is left for NICRAT, to hit the ground running on providing Data Management Systems, that will ensure efficient data retrieval! Upgrading existing Cancer registries and up-skilling their staff, will also improve data efficiency! This data availability will change the paradigm and narrative of low CT volume in Nigeria!

I am making an argument to industry (such as Pfizer & Roche) to utilize data directly from Hospital-Based Cancer Registries to drive clinical trials and pathology AI software. NICRAT can double down on this by ensuring Nigeria's oncology registries are optimally functioning, as they provide a strong sampling frame for clinical trial recruitment, which directly will attract Industry investment in Nigeria via clinical trials."

'SETTING THE RECORD STRAIGHT', BY THE LEGAL AID OF SENATOR MAO OHABUNWA,

This message from, [Leo Oko Ogba, PhD, Senior Legislative Aide to Senator Mao Ohuabunwa who served in the 8th Senate and was also the Chairman Senate Committee on Primary Health Care and Communicable Diseases], actually comes as the icing to the cake of evidence that sets history and records straight. "National Centre for Cancer and Treatment (Est. etc)

Bill 2015 (SB 10) passed into Law by the 8th Senate, Sponsored by Senator Mao Ohuabunwa.

RE: We want to use, the Occasion of your inaugural Lecture, to set the records straight on the birthing of the Act (National Institute for Cancer Research and Treatment & give honour to whom honour is due!! Congratulations on this milestone! It is my pleasure to publicly acknowledge your immense contributions in the birthing of the Act and Nigerian Law that frontally and formally address the growing menace of Cancer ailments in Nigeria. That Law is now referred to as "The National Institute for Cancer Research and Treatment Act, 2015".

Roles and Contributions to Cancer Control Nationally/Globally

"Dream it, see it, Do it".

"This lecture title exemplifies your legacies of turning dreams into reality". Your dream of ***'the International Cancer Week' (ICW) in Nigeria in 2009****, is now the biggest oncology event in Nigeria and the entire Africa.*

- ***DG: National Institute for Cancer Research and Treatment (NICRAT)***

Breast cancer has overtaken lung cancer as the world's most diagnosed cancer according to statistics released by International Agency of Research on Cancer (IARC) in December, 2020.

As much as 2.26 million cases were recorded in 2020 (WHO, 2021). Breast cancer was also the 5th leading cause of cancer deaths worldwide in 2020, with 685,000 deaths attributed to it. (WHO, 2021).

In Nigeria, breast cancer is the leading cause of cancer deaths, currently representing 23% of all cancer cases and approximately 18% of deaths (Globocan, 2020). Projections suggest that the number of people being diagnosed with cancer will increase further in the coming years and will be nearly 50% higher in 2040 than in 2020.

Every 68 seconds, a woman dies from breast cancer, and excluding cancers of the skin, breast cancer is the most common type of cancer in women accounting for 1 out of every 3 cancers diagnosed. A woman's chance of developing invasive breast cancer at some time in her life is approximately **1 in 8 (12%).** About 40,000 American women die from breast cancer each year.

Breast cancer death rates have declined significantly since the 1990s, especially for women younger than age 50. There are currently more than 2.5 million breast cancer survivors in the USA, and the records at UNTH showed that the prevalence of breast lesions is increasing.

About 350,000 - 500,000 women are diagnosed with breast cancer in Nigeria annually, and 83-87% of them come in at late stages, increasing death rate by 70%. 1 in every 25 women dies of breast cancer in Nigeria. The five-year breast cancer survival rate in Nigeria is less than 40% (compared to 86% in the USA) This fortified the narrative that breast cancer is a death sentence, and continues to make it difficult for us to convince our populace otherwise.

Breast imaging in the form of mammography was the only available radiological tool in the 1980s and 90s and was domiciled in tertiary hospitals in the western part of the country - Lagos and Ibadan. *Here in Enugu, our modality for breast screening remained Clinical Breast Examination and teaching women how to do their monthly Breast Self Examination (BSE),*

which we were stoically looking for creative ways to metastasize, both the knowledge and the access. We agonized that we did not have a Mammography Unit to work with and assumed that having one will be a quick fix for the late detection of breast cancers, whose prevalence in women was 83-85%.

With the upgrading of many tertiary hospitals in the country through the VAMED project, UNTH became a beneficiary of a mammography machine in 2007 (25 years after I started residency programme - typical of how doggedly slow our governments respond to efforts to hold them accountable in provision of extra imperative, medical equipment, and how insensitive/aloof, the organized private sector and high networth individuals, amongst us are to Investment in Healthcare). *For instance, is it not shameful that UNTH, one of the 3 first generation premiere teaching hospitals in Nigeria is today still without an MRI. I have wept in the office of our representative Senators from the SE, in the National Assembly, for them to come over to Macedonia and help us*…. yet no result! Sonomammography also came on board about the same time - and combined with the BI-RADs Breast Reporting System, the quality of practice became close to international best practice.

A lot of personnel training took place, enabling us to boast of 'Subject Expert' mammographers and radiologists who can confidently perform mammograms and accurately interpret/report them, respectively. As I said earlier, there was the need to foster collaborations, with both in-country' and global faculty/institutions, to strengthen the skills of our radiologists and experts in different fields of radiology and clinical trials. Some of such profound collaborations/exposures, with great impact, include:

- ❖ On-going multinational breast radiology education with MD Anderson Cancer Center team, led by Dr. Toma Omofoye, that addresses breast cancer control planning, prevention, early detection, diagnosis, treatment, palliative care and survivorship.
- ❖ Prof Obajimi's mammography training of both the radiologists and radiographers in UNTH
- ❖ Prof Tahir who first exposed the resident doctors to hands-on ultrasound - guided breast biopsy
- ❖ Collaboration with Roswell-Park Cancer Institute led by Professor Chumy Nwogu, an alumnus of our institution.

Currently, Nigeria boasts of an average of two mammography machines per state, working out at 74 Mammography Machines for the 49.46% of Nigeria's over 200 million population, that were reported to be female in 2022. (World Bank collection of development indicators, compiled from officially recognised sources.). A few stereotactic biopsies are available in a few centres, with sonomammography being comparatively more widely available, but the issue here is expertise, because even as a radiologist, one must have scanned several breasts to be adept in this skill.

Breast MRI is available in less than 10 tertiary hospitals in the country. It is available in some private hospitals in a few cities, and even when available, the cost is usually prohibitive.

Unfortunately, despite concerted efforts at publicity, mammography in Nigeria is still mainly diagnostic with a small proportion of screening mammograms; little wonder, Oche et al. [2] in 2012 documented as low as 9% uptake of mammography amongst female health workers in a tertiary health institution in Northern Nigeria. Another literature evidence also showed that the uptake of mammography, even among female healthcare professionals, is as low as 3-8%.

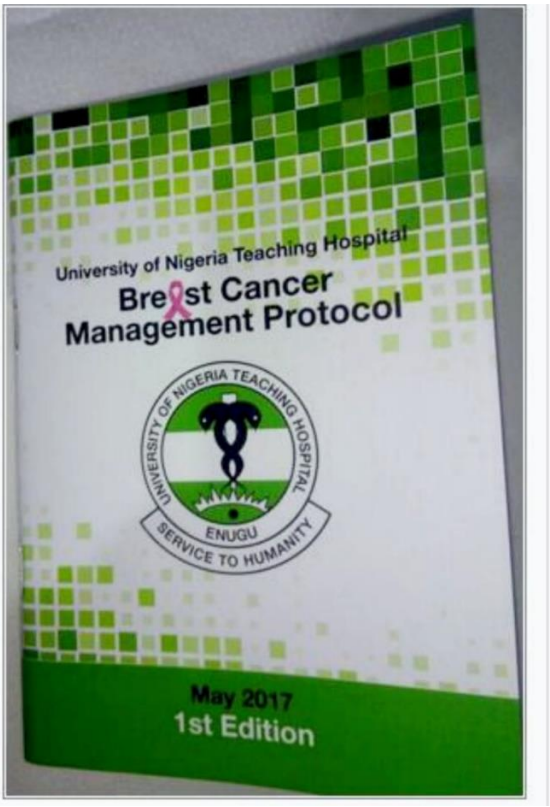
(compared to 'best practice' of 99.9%). All these are sure indications that we are still battling with the basic targets 5 and 6, which are aimed to address reduction of stigma and dispelling of myths about cancer, and universal access to screening and early detection for cancer, respectively.

It became obvious to me that abolishing hesitancy about subscribing to cancer early detection strategies will be the game changer.

Thus, we set up the following initiatives in my department to address these KAP and GAPS.

- We wrote an MTN Grant and was privileged to get a mammography machine (2013) and with the VAMED Mammo (2007) we upskilled both radiologists and radiographers and partnered with my NGO, BWS/ MWAN (doing community outreaches) to increase the throughput of patients coming for both diagnostic follow up studies, or coming for screening.
- Over the years of operating mammography services, we knew that we had to protocol our imaging as guideline, to enable standardized management.

UNTH Radiodiagnostic Protocols for the Management of Breast Cancer (Breast Cancer Imaging in Low Resource Settings)



The UNTH Oncology MDT, developed a handbook of Breast Cancer Management Protocol-[UNTH Guidelines for Breast

SCREENING QUESTIONNAIRE (CLERKING)

1. BIODATA

NAME:
AGE:
SEX:
STATE OF ORIGIN:
TRIBE:
OCCUPATION:
RESIDENTIAL ADDRESS:
PHONE NO:

2. BIOPHYSICAL:

a. HEIGHT:
b. WEIGHT:
c. BUST SIZE:
d. HIP:
e. WAISTLINE:
f. BLOOD SUGAR:
g. BLOOD PRESSURE:

b. REVIEW OF SYSTEMS AND RISK FACTORS

- LMP:
- MENARCHE:
- AGE AT MENOPAUSE:
- PARITY:
- AGE AT FIRST PREGNANCY:
- WERE THE CHILDREN BREASTFED?
- DURATION OF BREASTFEEDING:
- TYPE OF BREASTFEEDING:
  a. Exclusive…..
  b. Bottle feeding….
  c. Both……

3. HISTORY:

a. BREAST COMPLAINT?

YES	NO

If yes,
PATIENT'S HISTORY:

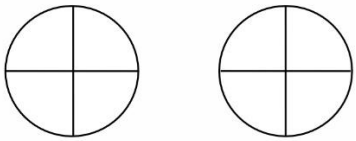
I. PAIN?
II. DISCHARGE?
III. SCAR?
IV. SKIN THICKENNING?
V. OTHER COMPLAINT:

- HISTORY OF FERTILITY DRUGS/ ORAL OR INJECTABLE CONTRACEPTIVES/HORMONE REPLACEMENT?.....
- HISTORY OF TERMINATION OF PREGNANCY AND NUMBER.....
- ALCOHOL INTAKE/SMOKING?
- HAS THE PATIENT EVER BEEN DIAGNOSED TO HAVE BREAST CANCER?
- HAS ANY FAMILY MEMBER EVER BEEN DIAGNOSED TO HAVE BREAST CANCER?
- ANY HISTORY OF OTHER CANCERS?
- IS THE PATIENT LOSING WEIGHT?
- HAS THE PATIENT EVER HAD BREAST SURGERY?
  - IF YES, WHAT WAS THE DIAGNOSIS?.....
- HAS THE PATIENT EVER HAD A BREAST ULTRASOUND OR MAMMOGRAM BEFORE?
  ……..

4. PHYSICAL EXAMINATION

BREAST	RIGHT	LEFT
BREAST SYMMETRY, IF ASYMMETRICAL, WHICH IS BIGGER?		
SKIN		
TEMPERATURE		
COLOUR		
DIMPLING		
THICKENING		
ULCERATION		
KELOIDS		
WARTS		
OTHER LESION		
ANY TENDERNESS ELICITED?		
NIPPLE- Everted? Inverted? Retracted?		
DISCHARGE		
COLOUR OF DISCHARGE, IF ANY		
MASSES		

INDICATE SITE:



RIGHT LEFT

INDICATE SITE OF ANY ABNORMALITY NOTED ON CBE:

- NATURE:
  - APPROXIMATE SIZE:
  - MOBILITY:
  - TEXTURE:
- OVERLYING SKIN:
  - NORMAL:
  - ULCERATED:
  - DIMPLING:
  - THICKENED:
- AXILLA: ANY MASSES?
  - LEFT:
  - RIGHT:
- OTHER SIGNIFICANT FINDINGS:

Patient Details & Consent	
Patient Name	First Name Family Name Initials : |__|__|__|
Informed Consent I hereby give consent for the screening and for my results to be used for research purposes.	Yes No Signature
	Date

MAMMOGRAPHY QUESTIONNAIRE (CLERKING)

1. **BIODATA.**

   NAME:
   AGE:
   SEX:
   HOSPITAL NUMBER:
   STATE OF ORIGIN:
   TRIBE:
   OCCUPATION:
   RESIDENTIAL ADDRESS:
   TELEPHONE:
   X-RAY NO:
   CLINICIAN:

2. **CLINICAL DIAGNOSIS WITH RELEVANT DETAILS:**

   .....
   .....
   .....
   .....
   .....

3. **BIOPHYSICAL:**

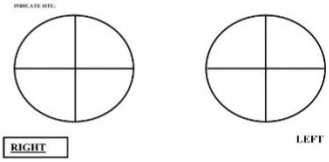
   a. **HEIGHT:**
   b. **WEIGHT:**
   c. **BUST SIZE:**
   d. **HIP:**
   e. **WAISTLINE:**

4. **HISTORY:**
   a. **SCREENING MAMMOGRAPHY?**
   b. **BREAST COMPLAINT?**
      i. **PATIENT'S HISTORY:**
      ii. **PAIN?**
      iii. **DISCHARGE?**
      iv. **SCAR?**
      v. **SKIN THICKENNING?**
      vi. **OTHER COMPLAINT:**

5. **REVIEW OF SYSTEMS AND RISK FACTORS**
   - **LMP:**
   - **MENARCHE:**
   - **AGE AT MENOPAUSE:**
   - **PARITY:**
   - **AGE AT FIRST PREGNANCY:**
   - **WERE THE CHILDREN BREASTFED?**
   - **DURATION OF BREASTFEEDING:**
   - **TYPE OF BREASTFEEDING:**
     a. **Exclusive…..**
     b. **Bottle feeding….**
     c. **Both……**
   - **HISTORY OF FERTILITY DRUGS/ ORAL OR INJECTABLE CONTRACEPTIVES/HORMONE REPLACEMENT? .....**
   - **HISTORY OF TERMINATION OF PREGNANCY AND NUMBER……..**
   - **ALCOHOL INTAKE/SMOKING?**
   - **HAS THE PATIENT EVER BEEN DIAGNOSED TO HAVE BREAST CANCER?**
   - **HAS ANY FAMILY MEMBER EVER BEEN DIAGNOSED TO HAVE BREAST CANCER?**
   - **ANY HISTORY OF OTHER CANCERS?**
   - **IS THE PATIENT LOSING WEIGHT?**
   - **HAS THE PATIENT EVER HAD BREAST SURGERY?**
   - **IF YES, WHAT WAS THE DIAGNOSIS? .....**
   - **HAS THE PATIENT EVER HAD A MAMMOGRAM BEFORE? ……..**

6. **PHYSICAL EXAMINATION.**

	RIGHT	LEFT
BREAST SYMMETRY. IF ASYMMETRICAL, WHICH IS BIGGER?		
SKIN		
TEMPERATURE		
COLOUR		
DIMPLING		
THICKENING		
ULCERATION		
KELOIDS		
WARTS		
OTHER LESION		
ANY TENDERNESS ELICITED?		
NIPPLE: Everted? Inverted? Retracted?		
DISCHARGE		
COLOUR OF DISCHARGE, IF ANY		
MASSES		



- **NATURE:**
  - APPROXIMATE SIZE:
  - MOBILITY:
  - TEXTURE:
- **AXILLA: ANY MASSES?**
  - LEFT:
  - RIGHT:
- **OVERLYING SKIN:**
  - NORMAL:
  - ULCERATED:
  - DIMPLING:
  - THICKENED:
- **OTHER SIGNIFICANT FINDINGS:**

Cancer Management, 1st edition, 2017], for navigating patients suspected of having breast cancer, with the;

Goal: To improve clinical outcomes in breast cancer management through;

- Encouraging multidisciplinary team work and
- Minimizing delay in diagnosis and treatment

- The breast unit of Radiology Department took charge of compiling the diagnostic and screening content with the broad Objectives to strengthen and enhance the planning, management and operational capacity of breast cancer diagnosis and imaging modalities at UNTH, for the provision of efficient and quality service
- The central purpose is to provide a road map for strengthening and improving the provision and delivery of radiodiagnostic services to our patients.

Collaboration with Breast Imaging Society for Nigeria (BISON).

BISON breast Imaging Guideline for Nigeria (*I justified and chaired the Committee that produced this*)

DRAFT ON BREAST IMAGING GUIDELINES FOR NIGERIA

1. PREAMBLE
2. RISK FACTORS FOR BREAST CANCER
3. CHALLENGES IN BREAST CANCER DIAGNOSIS AND MANAGEMENT
4. RECOMMENDATIONS:
    a. SCREENING AND EARLY DETECTION
    b. PATIENT-CENTRED APPROACH IN BREAST CANCER MANAGEMENT
    c. THE MULTIDISCIPLINARY BREAST TEAM

PREAMBLE

In sub-Saharan Africa, breast cancer incidence (33.8 per 100,000 women per year) currently ranks only second to cervical cancer incidence (34.8 per 100,000 women per year), with only a small difference between these rates.[1]

In Nigeria, breast cancer is the leading cause of cancer mortality, making up 23% of all cancer cases and responsible for 18% of cancer deaths.[1] More worrisome is that presentation at an advanced stage is the norm, with more than 70% presenting at stage III or IV in some cases.[2] This is attributable to late presentation and sometimes, health provider delay.

A recent publication,[3] pegged the age-standardized rate (ASR) of breast cancer in Nigeria at 54.3%. The need to reduce the economic impact of such adverse statistics and to promote early detection of breast cancer, is the main thrust of this document.

RISK FACTORS FOR BREAST CANCER.

The risk factors for breast cancer are very complex. Genetic and environmental factors have been implicated. Lifestyle modification has been found to play a role in reducing some established risk factors and thus the promotion of this is vital in primary prevention with a view to reducing the incidence and subsequent mortality and morbidity associated with breast cancer.

Preventable Risk Factors: Obesity or being overweight, lack of exercise, alcohol consumption and smoking. Hormone replacement therapy and the use of hormonal oral and injectable contraceptives are well-known risk factors. History of previous radiation therapy to the chest, especially in those with history of lymphoma is a risk.

Non-preventable Risk Factors: Genetic mutations involving the BRCA I/II genes predispose to breast and ovarian cancers and these contribute to 5% of breast cancers regarded as hereditary. Early menarche and late menopause, late childbirth, infrequent breastfeeding increase the risk for breast cancers.

Other risk factors include history of benign breast disease and past history of breast cancer.

CHALLENGES IN EARLY BREAST CANCER DIAGNOSIS

Studies have identified absence of an effective cancer screening and interventional programme, scarcity of mammography machines, lack of awareness of the usefulness of mammography and cost of screening, as barriers to breast cancer screening.[4]

1. Lack of breast (cancer) awareness- e.g., performing breast self-exam (BSE) amongst women, leads to late presentation. Raising awareness on BSE through audiovisuals such as pamphlets (print) and social media platforms, is strongly recommended.
2. Lack of education for health workers at the primary health care level, on the characteristics of breast cancer presentation. This leads to significant health provider delays.
3. Lack of collaboration between primary and secondary health care providers which prevents expedited patient navigation to tertiary centres with the required tools and expertise for breast cancer diagnosis.
4. The need for health insurance for oncological diseases cannot be overstated. NHIS does not yet cover most oncological investigations and treatments. As we lobby policy makers to extend insurance cover to oncology, cancer patients should be encouraged to register with NHIS.

RECOMMENDATIONS

A. Screening and early diagnosis recommendations: [5]

Normal Risk-

- 16- 39 years:
    - Clinical breast exam by a health professional once a year.
    - Sonomammography every year.
    - Breast awareness.
- 40- 49 years:
    - Annual clinical breast exam.
    - Annual mammogram +/- complimentary sonomammography.
    - Breast awareness.
- 50- 69 years:
    - Annual clinical breast exam.
    - Annual Mammogram +/- complementary sonomammography.
    - Breast awareness.
- 70- 74 years: Annual mammogram.
- 75 years and over: Annual mammogram until life expectancy is less than 5 years.

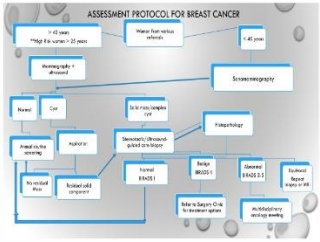
Increased risk- Prior history of breast cancer; pedigree suggestive of known cancer or genetic predisposition; prior thoracic radiotherapy for patients younger than 30 years:

For women with known high risk for breast cancer:

- Initiate monthly BSE and biennial CBE as soon as the breast buds appear.
- Annual sonomammogram from age 20 years.
- Annual MRI till age 39.
- Annual mammogram from age 40.
- Any positive finding will follow the outlined pathways elaborated below.

B. Patient-centred approach in breast cancer diagnosis.

The objective is to provide a road map for strengthening and improving the provision and delivery of diagnostic services to patients.



** Simple cysts normally do not require aspiration. Cystectomy, if symptomatic or on patient's or surgeon's request.

- The radiologist should call up previous mammograms (up to 5 years prior) before reporting a new mammogram.
- Following breast screening or after presentation, diagnosis of breast cancer should be made the by triple assessment (clinical assessment, mammography and/or ultrasound imaging, and core biopsy and/or fine needle aspiration cytology). It is best practice to carry out these assessments at the same visit.
- FNAC or core biopsy to be done routinely and turnaround time to be less than 48 hours. Follow up immunohistochemistry is encouraged. This will mitigate presentation-intervention delay.

C. The provision of multidisciplinary tumour (MDT) boards: Every tertiary institution is strongly encouraged to have a multidisciplinary breast team: Women with breast cancer should have access to multidisciplinary and multi-professional care. Literature has shown that optimal care for breast cancer can only be obtained through MDT boards.[6]

a. Core MDT members: Breast surgeon, breast medical oncologist, breast radiologist, radiographer, breast pathologist, breast radiation oncologist, breast nurse.
b. Extended MDT members: The above plus psychoncologist, pharmacist, physiotherapist, Interventional Radiologist, pain and palliative care physician, plastic surgeon, etc.

REFERENCES.

1. Health Think Analytics. Breast cancer and the Nigerian woman. http://healththink.orgbreast cancer-and-the-nigerian-woman/amp/. Published April 2021. Accessed on 19th September 2021.
2. Abdulrahman(Jnr) GO, Rahman GA. Epidemiology of Breast Cancer in Europe and Africa. J Cancer Epidemiol. 2012;2012:915–610.
3. Jedy-Agba E, Curado MP, Ogunbiyi O, Oga E, Fabowale T, Igbinoba F, et al. Cancer incidence in Nigeria: a report from population-based cancer registries. Cancer Cancer Epidemiol. 2012;36:e271–e8.
4. Olasehinde O, Alatise O I, Arowolo O A, Mango V L, Olajide O S, Omisore A D et al. Barriers to mammography screening in Nigeria: A survey of two communities with different access to screening facilities. Eur J Cancer Care (Engl). 2019 Mar; 28(2): e12986. Published online 2019 Jan 6. doi: 10.1111/ecc.12986.
5. UNTH Guidelines for Breast Cancer Management, 1ST edition, 2017.
6. Biganzoli L. et al. The requirements of a specialist breast centre. The Breast 51 (2020):65-84.

Research Publications and How the Results Aligned With My Community Work

In the bid to improve the diagnostic yield of different imaging modalities, we instigated a number of studies on sonomammography, mammography and mammographic breast density. I want to focus my discussion on our Mammographic Density studies, as it has charted for us, new vistas of research efforts that should characterize the contribution of our Breast Unit to the body of knowledge.

Though mammography is the standard of reference for the detection of breast carcinoma, yet 10%–30% of breast cancers may be missed at mammography. Possible causes for missed breast cancers include dense parenchyma obscuring a lesion, poor positioning or technique, perception error, incorrect interpretation of a suspect finding, subtle features of malignancy, and slow growth of a lesion. Recent studies have emphasized the use of alternative imaging modalities to detect and diagnose breast carcinoma, including ultrasonography (US), magnetic resonance imaging, and nuclear medicine studies. However, the radiologist can take a number of steps that will significantly enhance the accuracy of image interpretation at mammography and decrease the false-negative rate. These steps include performing diagnostic as well as screening mammography, reviewing clinical data and using ultrasonography to help assess a palpable or mammographically detected mass, strictly adhering to positioning and technical requirements, being alert to subtle features of breast cancers, comparing recent images with earlier mammograms to look for subtle increases in lesion size, looking for additional lesions when one abnormality is seen, and judging a lesion by its most malignant features.

We did two studies that showed the diagnostic quagmire of the Breast Density challenge.

1] An Audit of the First Three Years of Mammography and Sonomammography Services at the University of Teaching Hospital was a research paper written in 2012. *Published in International Journal of Medicine and Health Development, Vol 17 No. 2 [2012],and the authors are; P Okere, A Aderigbigbe, N Iloanusi, D. B. Olusina and I Okoye.*

A Precis:

This paper which involved the analysis of results from 443 patients seen in our centre was the first and ground-breaking research paper on mammography written by any author in the South- East and South -South of Nigeria.

It represented the first experiential data of work done in mammographic imaging after the introduction of X-ray mammographic services for the first time in the University of Nigeria Teaching Hospital, Enugu, Nigeria. In our institution, the lower age limit for mammograms is 40 years, though most times, complimentary sonomammography is also deployed, and in this research work we found among others that majority of the women who presented to us were in the mid-forties. This represents the age where most breast cancers unfortunately cluster. Breast pain was the leading complaint (54.8%). This was closely followed by complaints of breast mass (34.5%).

The predominant breast pattern we encountered was the fibro-glandular type. *As you may be aware, fibro-glandular predominance in middle-aged to older women represents a four-fold risk-conferring variable in the development of breast cancer.*

Having earlier carried out community sensitization and pressured management to effect cost reduction, we were happy

to find from our data that these measures, namely reduction in cost of mammographic imaging combined with awareness campaign appeared to improve/ encourage health-seeking behavior amongst women.

We also found from the study, a significant number of women complaining about nipple discharge. Sadly, beyond basic imaging, we were concerned that these cases of suspicious nipple discharge, unfortunately were not able to benefit from any further definitive radiologic work up, such as ductulography, in order to establish diagnosis and guide treatment. *A few years later, under my inspiration, we were able to remedy this deficiency by conducting and publishing a paper on the first ductulographic examinations of patients with suspicious nipple discharge*. Again, this, to the best of our knowledge, was the first work and publication of this type in the South-East and South-South of Nigeria.

The conclusions, in part, from the index mammographic research showed clearly that the culture of breast imaging for diagnostic and screening purposes is evolving in the South-East Nigeria, where the breast imaging unit now named after me has played a pioneering role.

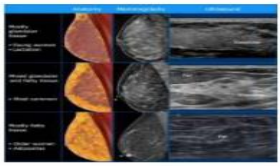
Sensitization advocacy to the general public about breast diseases, which I pioneered, and the awareness of the local availability of breast imaging services, impacted positively on service utilization amongst our women.

Breast composition on mammography, sonomammography and MRI

Breast density on mammography

https://www.cancer.gov/types/breast/breast-changes/dense-breasts

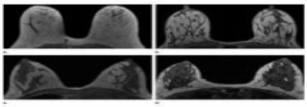
Breast composition on gross anatomy, mammography and ultrasound



https://radiologyassistant.nl/breast/ultrasound/ultrasound-of-the-breast

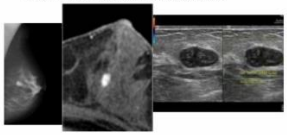
Breast composition on MRI

- Examples of varying amounts of fibroglandular tissue (FGT) on breast MR images, as assessed retrospectively, with observers blinded to known mammographic densities
- Axial T1-weighted images show examples of breast composition described as:
  - (a) almost entirely fat
  - (b) scattered fibroglandular
  - (c) heterogeneous
  - (d) extreme amount of FGT

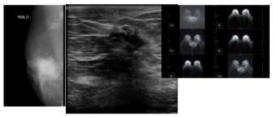


Breast lipoma

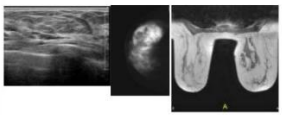
FIBROADENOMA mammo , MRI and ultrasound



Breast cancer



Breast hamartoma



2] **Mammographic Density Pattern in Enugu, South-Eastern Nigeria: An Audit and Review of the Literature**. *Published in West African Journal of Radiology, April 2010 Vol 17 No. 1. The authors are Okere, P. C. N., Aderigbigbe, A. S. O, Iloanusi, N. I., Itanyi, D. U. and Okoye, I. J.*

A Precis:

The radiographic appearance of the breast on mammography varies among women across age brackets. These differences as seen on well-exposed mammographic films, are reproducible critical determinants reflecting differentials in breast tissue composition. While the fatty-replaced breast appears radio-lucent, the breast stroma, which is composed of epithelial and connective tissue, appear radio-dense.

Apart from these density differences affecting the visualization or non-visualization of breast lesions, (which confers the reduced specificity of mammography, below the age of 40 years), researchers have, over the years, found that, there are women, whose mammographic breast density defies the glandular replacement that is naturally meant to take place with age, and posited that this persisting, high breast mammographic density, is strongly associated with breast cancer risk. This 'risk-conferring, persisting' mammographic density', is currently projected to be more prevalent in populations of women of black descent.

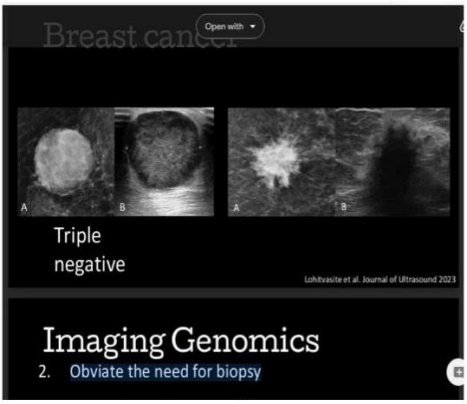
Due to these projections and worrisome breast cancer data coming out of Nigeria, especially from the South-East of the country, I conferred with my consultants and we decided to use our local data to audit the mammographic breast density variations in patients we had seen over four years, and find out if those with persisting Mammographic density, after 40 years, had increased predilection of a confirmed breast cancer pathological diagnosis.

In our study, we found that the predominant breast mammographic density pattern in our patient population is the fibroglandular type. As a matter of fact, 66% of women in our cohort, up to the age of 50 years, still retained the fibroglandular breast type. This is also unfortunately the age group where the largest first-time cancer diagnoses are made. Realizing that the finding of a persisting dense breast alone may not explain the prevalence of breast cancer in this cohort, we added this, to our pre-knowledge, that early menarche (as early as 9-10 yrs), with late menopause (50-55yrs), is documented in literature, as also risk conferring, and we immediately saw the need of; a]strengthening our departmental, 'Pre-mammographic Clerking Questionnaire', Utilization of the; Pre-Breast Screening Clerking Questionnaire, Screening Recommendations by BISON, and our UNTH Breast Management Protocol, b]being more vigilant with deployment of sonomammography as a complimentary examination for most women receiving service at our UNTH/shopping Mall, mammography clinics and c] expert utilization of the BI-RADs reportage system, to ensure we can be more intentional, with tracking/maping these relationships, more accurately. With the strong emergence of AI technology in Imaging, and current evidence, that it enables utilization of images in Genomic predictions, I have recently done the following:

1) Established a research collaboration between the UNTH and researchers in Stanford University and already have a publication about to be submitted on Digital Medical Twins exploring its adaptation for use in low-income settings and its potential role in mitigating disparity and closing manpower gaps. My excitement knows no bounds as their studies confirmed that 'Imaging Genomics' obviates the need for biopsy. *Imaging genomics: data fusion in uncovering disease heritability. Katherine Hartmann 1 @, Christoph Y. Sadée 2 @,*

Ishan Satwah 3 @, Francisco Carrillo-Perez 2 4 @, Olivier Gevaert 2 @, published in Trends in Molecular Medicine.

[Published:December 02, 2022DOI:https://doi.org/10.1016/j.molmed.2022.11.002



Imaging genomics: data fusion in uncovering disease heritability
panelKatherine Hartmann 1 @, Christoph Y. Sadée 2 @, Ishan Satwah 3 @, Francisco Carrillo-Perez 2 4 @, Olivier Gevaert 2 @

Collaboration with CAPTC

(1) A prospective study on breast density using mammography films.

We have used the opportunity of this 187th Inaugural to kick off this study. One hundred Women will benefit from free mammogram and genomic studies on blood samples obtained from them.

(2) In September 2023, we will embark on a massive outreach on cancer screening for men and women aged 40 years and above. This will be in collaboration with the Anglican Communion and other faith-based organizations. We are currently working out the budget.

(3) Breast cancer germline sequencing study. (This is to be led by Dr Lasebikan.)

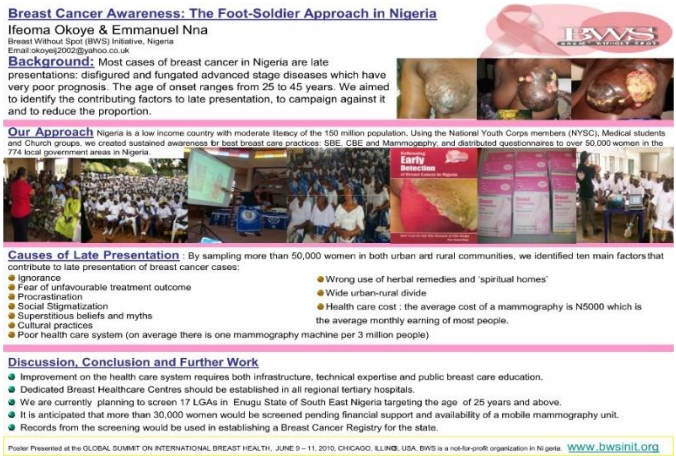
Collaboration with Osita Chidoka Foundation

BWS has facilitated the screening of 820 Women and 50 men for the Chief Osita Chidoka Foundation. Since our collaboration in May 2023, 220 in Obosi, 300 in Onitsha and 300 in Enugu have been screened and they have followed up the screen positives to pay for their follow up (free mammography, ultrasound, hormone profile, lumpectomies, biopsies, radiology interventions, herrnioraphy, procedures, and supply of pharmaceuticals medications). Each woman got screened for breast and cervical cancers and each man was screened for prostate cancer.

Profound Outcomes from These Studies

Since advocacy for breast awareness and early detection forms an important tripod of my life's work, this added impetus to my desire to scale up my awareness campaign for early detection, through screening Sonomammography and mammography. Little wonder, I innovated the NYSC-BWS CDS, in 2009/2010, to scale and cascade community awareness to practically, One-in-One communication, down to grassroots. These efforts of creating an army of advocates, to complement my NGO, BWS efforts to; take the message and service of CBE/Cervical VIA Screening/Qualitative PSA evaluation, for early detection of the three most prevalent cancers in Nigeria, namely breast, cervical and prostate cancers), assisted in improving the throughput of utilization of the mammography machines. A poster presentation titled, "Breast Cancer Awareness: The Foot-Soldier Approach in Nigeria" earned me a sponsored trip to the 4th Breast Health Global Initiative (BHGI), Global Summit, held in association with SLACOM-

Sociedad Latinoamericana y del Caribe de Oncologia Medica, in Chicago, Illinois, on June 9-11th 2010.



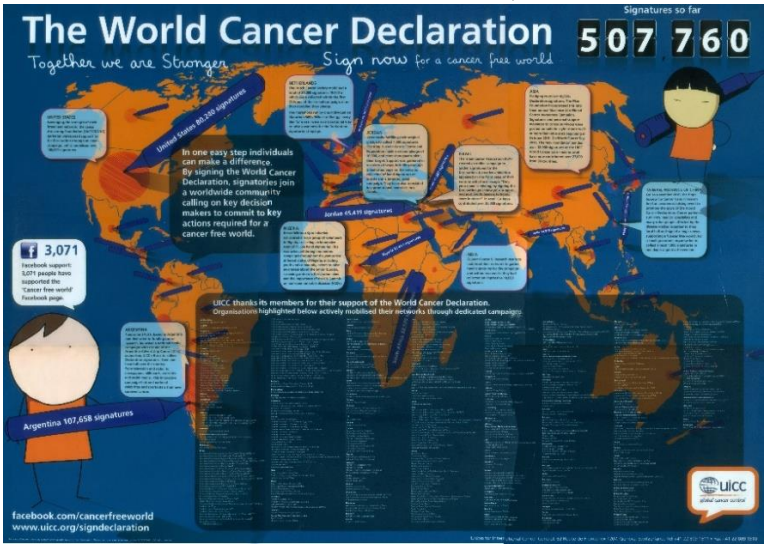
This 'Foot-Soldier Model' was appreciated by ***'The Breast Health Global Initiative (BHGI)'and gave me the first opportunity at Global Visibility through an accepted Poster Presentation, which earned me the attention of a UICC Deputy Chief Executive, Dr Julie Torrode. This was followed by obtaining a Travel Grant to UICC Congress in Shenzhen and again in Montreal to share my model as a Template at Symposia organized to mentor other NGOs under UICC Umbrella.***

This collaboration eventually resulted in three very important outcomes.

- I became Nigeria's Government Delegate to the UN HLM in 2011 on the strength of UICC strong recommendation to the FMOH [When I obtained the inclusion as a FGN delegate, UICC decided to refund my ticket when they heard that I was self-sponsored]
- BWS won, ***'the Organization, with the highest Signature contribution,*** in Africa [2nd globally], to Global Advocacy

to make NCDs A Global Priority @ the UN 2011 HLM. I received copy of the banner acknowledging this feat in NY and was informed that a similar copy hangs in the UN Secretary General's Office.

- I became appointed to the **BOARD OF UICC** ***(Union for International Cancer Control) As, Observer to their BOD, on 24th October 2012. This appointment gave me the status of being the*** the First African to seat on Board of Union For International Cancer Control, as an Observer



I fostered several 'Cancer Research Collaborations' that have led to either published papers in peer-reviewed journals or successful grant applications. These include: Roswell Park Cancer Institute, Buffalo, Hochschule Hannover – University of Applied Sciences and Arts, Prostate Cancer Transatlantic Consortium (CaPTC), International Center For The Study Of Breast Cancer Subtypes (ICSBCS) with Weill Cornell, formerly with Henry Ford, Clinical Research Centre of The University of Cape Town (UCT-CRC), the Healthy Sunrise

Foundation, USA, Stanford University Human Centered Ai Department, Ongoing '*Multinational Breast Radiology Education*' with MD Anderson Cancer Center team

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Other Breast Related Research Work /Collaborations

The International Center for the Study of Breast Cancer Subtypes (ICSBCS) - Status: Ongoing

The International Center for the Study of Breast Cancer Subtypes (ICSBCS) is headquartered at New York - Presbyterian and Weill Cornell Medicine, and the founding medical director and executive director, Prof Lisa Newman, and her multidisciplinary research team study how and why breast cancer outcomes vary by patients' race and ethnicity. Dr. Newman's research ***has shown that triple-negative breast cancer is associated with African ancestry, and in particular with Western Sub-Saharan African ancestry***. This defines the expansion of the study to encompass working with a network of physicians and researchers in several sites, in Canada, Haiti, Barbados and in Africa, including Nigeria, Ghana, Ethiopia, Uganda and several more countries in the continent. Some of the highest incidences of triple-negative breast cancer is seen in Ghanaian women, where more than half of the breast cancers, are triple-negative. ICSBCS is tasked with enhancing breast cancer prevention and treatment through advances in research and delivery of care to diverse populations worldwide, and the Pan-African teams ***are conducting further investigations to try to identify what it is about Western Sub-Saharan African ancestry that predisposes African American women to these patterns of breast cancer***.

I connected the UNTH-ICSBCS Team with this project, in 2017, through my mentee, Dr Blessing, who was working with Dr Kofi Ghan, to coordinate the African Centers. I convinced them, through an application to Prof Newman, that UNTH site

was capable of playing the needed role and convinced Professor Emmanuel Ezeome to become the principal investigator, while I became one of the co-investigators. Since joining, our team has benefited from various forms of capacity building, both in Nigeria and outside Nigeria. We have also been sponsored to attend conferences in Ghana and also hosted a big ICSBCS conference in Enugu which was attended by over 15 international faculty.

Multinational Breast Radiology Education with MD Anderson Cancer Center [Lead: Dr Amaka Nnamani]

Ongoing '*Multinational Breast Radiology Education*' with MD Anderson Cancer Center team led by Dr. Toma Omofoye. Through a monthly radiology-pathology ECHO case review meeting and online courses the team is building breast radiology subspecialty across low and middle income countries. The LMIC radiology program addresses breast cancer control planning, prevention, early detection, diagnosis, treatment, palliative care and survivorship. Each ECHO session includes: *presentation of relevant clinical information on the breast cancer cases under review, review of radiological breast images and pathology report and an in-depth discussion on patient management with the aim of achieving incremental improvements across the continuum of care to achieve the best possible patient outcomes at each resource level.*

Completed Research Support

Operation Rid Rural Enugu of Late Cancer Detection and Vaccinate Young Girls.

Sponsor: Irish Embassy.

Role: PI

Project Title: Operation Rid Rural Enugu of Late Cancer Detection and Vaccinate Young Girls.

- Project Duration: Seven (7) months
- Project Start Date: 1st November, 2017. Project Status: Ongoing
- Project Award Amount/Sponsor: Irish Embassy: €10,000.00
- The project is expected to: reduce breast and cervical mortality, to reduce late-stage cancer presentation, to protect girls between the ages of 9-14 years against cervical cancer.
- Project Objectives:
- To provide ultrasound breast cancer screening for 400 women
- To provide VIAA/Colposcopy cervical cancer screening for 400 women
- To provide HPV vaccination for girls between 9-14 years for 150 girls
- To provide cryotherapy treatment for women with precancerous lesions

The Vaccine4Cancer project

This was a school-based cervical cancer vaccination project funded by GSK and ACS at various points to increase awareness and uptake of HPV vaccines.

BREAKING BAD NEWS (BBB) PROJECT

Train-the-Trainers Workshop Series on "Breaking Bad News" and Mentorship of Stakeholders to Create Patient Support/Navigation Teams aka: the "Breaking Bad News" BBB Project.

The BBB Project is one of the very recent projects undertaken by me which aptly epitomizes the "Dream It, See It, Do It!" Philosophy. At a Cancer awareness webinar, I heard for the umpteenth time, a patient advocate, complaining bitterly about the trauma suffered due to how abruptly and brutally, the bad news had been communicated, and something clicked in my head, that enough was enough, and instead of folding my hands and continue listening to the complaints year in, year out, I should mobilize action to scale conversation around the problem, and make it a hot burner. So, I proceeded to engage with some critical stakeholders and held a webinar focused on finding a way to close the gap.

This webinar gave rise to a consortium of interested partners and resulted in the Breaking Bad News (BBN) Series of Workshops/Trainings which have been on since 7th May, 2023. What started as a Dream to Bridge the obvious Communication Gap which exists between medical experts and their patients, who are confronted with debilitating news (especially that of a cancer diagnosis or poor prognosis), has grown rapidly to become a programme with nationwide impact. BWS teamed up with many other NGOs in Nigeria (notably Nigeria Cancer

Society) and the Nigerian Medical Association (NMA), to conceptualize a series of trainings on breaking bad news with the Broad theme: "Building Strategic Frameworks for Strengthening Cancer Patient Support Groups". These series of workshops were targeted at the key people usually involved in breaking bad news to cancer patients: medical professionals (especially doctors and nurses) as well as patients themselves, with the aim of forming a critical mass amongst these populations, who will serve as trainers of others within their sphere of influence across the country, and be consistent with their participation in patient navigation, in all cancer centres.

DREAM IT! SEE IT! DO IT! IN CLINICAL TRIALS

Enhancing The Clinical Trial Environment:

Roles and Contributions to Clinical Trial in Nigeria/Africa

As a person that has led so many firsts over the course of your career, the title of your lecture is apt, and one can only look forward to the lecture in anticipation. Among your firsts that I wish to acknowledge is ***your role in facilitating the establishment of what is now Nigeria's National Health Research Ethics Committee****.*

- ***Alaigbe Dr. Ngozi Azodoh, Director/Head, Dept. of Health Planning, Research and Statistics' Secretary/ NHREC***

In 2006, in an effort to accomplish the vision of URF (The UNTH Resource Foundation), with motto, 'Saving The Lives We Can Save', we fund-raised country-wide and only accomplished a donation of 2 million naira from Mobil Oil Producing (which we used to buy a mobile ultrasound machine,

to assist us with giving prompt bedside service to non-ambulant patients) and a donation of two container loads of hospital equipment and consumables, targeted to assist UNTH movement from the old site, to the our current site, at Ituku Ozalla. Just as I was getting despondent and my usual optimistic nature/I can do all things-mindset, was about to fail me, I stumbled into the knowledge of clinical trials and how we can leverage it to become less of cap-in-hand beggars, to organizing our absolutely unique medical data and use it in a kind of 'trade by batter" strategy to improve our Clinical Trial Attractive Index. This was how I got truly interested in Disease Protocoling and Data Management.

The Association for Good Clinical Practice (AGCPN), a non-profit research capacity organization, was thus founded in October 2006, by me (Professor Ifeoma Okoye), at a critical juncture in the evolution of the Nigerian Pharmaceutical and Healthcare Sectors, with the vision: "*To promote a thriving clinical research landscape that adheres to the highest research and ethical standards while protecting human participants"*, and with the mission to**:**

1. Be the leading strategic initiative for creating, shaping and advancing institutional framework that promotes clinical research capacity in Nigeria.
2. Facilitate knowledge sharing and transfer through discussion, training, seminar, conferences, and summits, publications, partnership and co-operations.

AGCPN's motto is to: **"**promote excellence in clinical research in Nigeria".

It was somewhat sobering to realize that Nigeria until 2005/2006, pretty much lacked requisite regulatory infrastructure to host a standard clinical trial, and consequently was not a common destination for clinical studies sponsored by most global pharmaceutical companies. Undoubtedly, the implication of such a structural deficiency

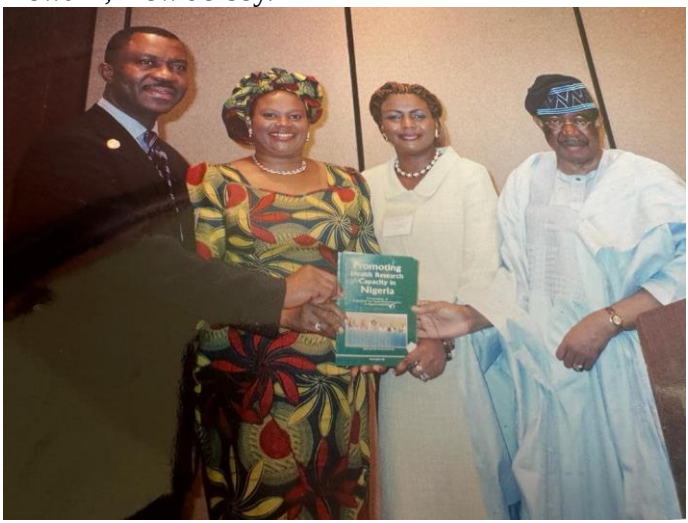
was a stunting of medical and scientific creativity, with significant broad consequential societal adverse health and economic impacts. And this disparity would continue for a much longer period unless scientists, researchers, policy makers, and other stakeholders were awakened from complacency. And, according to one of AGCPN's Faculty, **Kelechi Lawrence, PhD, MBA, (President, WaterHead Investment Group, Inc,Wilmington, Delaware, USA),** "'awaken' was what Professor Ifeoma Okoye did so well, using various vehicles like AGCPN", and according to the Late Prof Uford Inyang – the Director General of Nigerian Institute for Pharmaceutical Research and Development [NIPRD], 'Everyone was thinking about clinical trials, "but Professor Okoye came, and took the bull by the horn".

One of AGCPN's Faculty, Dr Kelechi Lawrence, introduced me to the then Nigerian Ambassador to Mozambique, Amb. Ozor Nwobu, who had had the unusual experience of being invited to 'The Africa First Ladies Cervical Cancer Conference' in July 2013, hosted by the Mozambican First Lady, Her Excellency Maria Gaz Dia Guebuza and attended by most of the first ladies of the Southern Africa Development Community (SADC). He recounted that a session of the conference was devoted to the issue of Africa as a Clinical Trial Destination and **subject matter experts gave very insightful advantages and benefits that would accrue to any country that would be designated as a favoured clinical trial destination**. He was astonished at the disclosure that the growth of India's pharmaceutical industry was spawned largely from its status as a global clinical trial destination. The conference delegates were informed that **clinical trials would bequeath countries with technology, equipment, research set skills and laboratories, human capital training, and** patients benefiting from manufacture of generic drugs**. He became interested and wondered why Nigeria would not**

key into a sector that offered such opportunities to leapfrog our pharmaceutical sector and indeed our health sector into modernity. His inquiries led him to me, as the Go To Expert, who has been in the vanguard in the advocacy to designate Nigeria as a clinical trial destination.

The 1st Annual Conference of AGCPN held on 24th to 25th of May, 2006 at Transcorp Hilton Abuja, with the theme: ***Promoting Health Research Capacity In Nigeria Within An African Context: Toward the Development of "National Good Clinical Practice Guidelines***, brought to the table, Representatives of Federal Ministry of Health, the Legislature (Senate and House Committee Chairmen on Health), Nigerian Agency for Food and Drug Administration at Control (NAFDAC), Leadership of Nigerian Institute For Medical Research (NIMR), Nigerian Institute For Pharmaceutical Research (NIPRD), all Major Health Professional Groups (NMA,PSN, MLSCN), Organized Private Sector, Representatives of Global Pharmaceuticals, Media, State Ministries of Health, Universities, Teaching Hospitals and Africans in Diaspora (notably America, Canada and the UK). The conference produced a communique recommending the formation of A National Health Research Ethics Committee, **to oversight Institutional IRBs**, which were seen as being compromised, because they were poorly oversighted, constituted and mostly compromised, as most of them had the hospital chief executives as chairmen of the ethics committee. The FMOH accepted this recommendation and shortly in 2007, NHREC (National Health Research Ethics Committee) was created. Thus **Nigeria's 'National Ethics committee' was a policy outcome from 2006 AGCPN Summit.**
On the strength of the recommendations from that meeting, ***AGCPN excitedly published its first paper (Promoting Health Research Capacity in Nigeria), which was placed on***

Amazon.com, by ITSL-Biosciences LLC , and launched at the ANPA (Association of Nigerian Physicians in America) meeting in the US, in 2007, where I was the guest lecturer, [The 6th Dan Nwankwo Memorial Lecture], at ANPA Annual Scientific Conference, June 24, 2006 at Hyatt Regency Newark, New Jersey.



In its '17-years-old' existence, AGCPN has played a significant role in promoting the distinctive value of clinical research in Nigeria. Through its engagement with the regulatory body, NAFDAC, and capacity building, through the NHREC - accredited training and certification programs, AGCPN has been instrumental in fostering the development and promotion of good clinical research practices that adhere to the highest international ethical and scientific values and standards, and lobbying to improve the political will of influencers of policy in Africa..

AGCPN **recognizes the crucial link between an enduring clinical trial culture and the key elements of a thriving public health system** which include: access to medical care,

improvements in medical facilities and infrastructure, continual enhancements in standards of medical practice, knowledge transfer and skill development, growth of indigenous pharmaceuticals, and improved capacity to address local neglected diseases.

AGCPN's work **has addressed the professional development, educational, and networking needs of clinical research professionals and others involved in clinical investigations**. By creating a forum for clinical research practitioners, AGCPN facilitates the exchange of ideas and encourages best practices in the responsible conduct of human research. AGCPN, in promoting a thriving clinical research landscape that adheres to the highest research and ethical standards provides conferences, industry updates, and capacity-building programs on various aspects, including **Good Clinical Practice (GCP), health research ethics training/registration,** , Annual Clinical Trial Summit, the Collaborative Institutional Training Initiative (CITI) virtual training**, bio-statistics for non-statisticians, Manuscript writing and publication, Systematic Review/Meta-analysis, Protocol and Grant Writing** [and recently has fostered a partnership with an International Training Organization- **Turacoz HealthCare Solutions**.]

In addition to its role in capacity building, AGCPN has been proactive in lobbying to improve the political will of influencers of policy in Africa. Recognizing the importance of raising awareness, AGCPN also educates the media about the value of clinical research and its impact on public health.

AGCPN's historical contribution to the development of clinical trials in Nigeria is noteworthy and reflects its dedication to advancing the field of clinical research. The organization continues to strive towards collaborative efforts to tackle the pressing public health challenges faced by the region.

Operating the Grant from European and Developing Countries Clinical Trial Partnership (EDCTP)

AGCPN has invested in training programs to enhance institutional capacity within the private and public sectors. In 2012, AGCPN received a grant from the European and Developing Countries Clinical Trial Partnership (EDCTP) to provide health research ethics training for 36 Institutional Review Board (IRB) members from 18 institutions across northern and southern Nigeria. The aim was to train the participants on health research ethics for clinical trial monitoring and to enable participating institutions to register their Local/ Institutional Health Research Ethics Committee (LHRECs) with the National Health Research Ethics Committee (NHREC). AGCPN, under this umbrella, had several trainings on health research ethics. This project was completed and four (4) institutions were assisted to register their LHREC with NHREC. These institutions are as follows: Federal Medical Centre, Gombe, Federal Medical Centre, Jalingo, Abubakar Tafawa Balewa Teaching Hospital, Bauchi and Benue State Teaching Hospital, Makurdi.

An outcome publication was the published training manual, which the grant had specified should be a compilation of the workshop teachings. The publication was titled "AGCPN's training workbook on Health Research Ethics", and many researchers have found the publication useful. Several Tertiary Health Institutions/Educational Institutes, including NAFDAC, now buy large numbers of the publication for their Ethics Committee members, researchers and libraries.

As bringing Africa's natural product development with medicinal potentials to the marketplace is high on my list of priorities, I engaged with the Nigerian Natural Medicine Development Agency (NNMDA), of The Federal Ministry of Science and Technology, and other Stakeholders like IHP, to

slate a High-level Meeting in 2017, to bring Natural Medicine Developers/Practitioners to dialogue with Clinicians from several Tertiary HealthCare Institutions in Nigeria [Sponsored by Professor Maurice Iwu's company, IHP]. This resulted in some Investigator-Initiated Clinical Trials of 'Low-Hanging' Nigerian Natural products**.**

Operating as Consultant to NAFDAC on Clinical Trials and Birth of the Clinical Trial Technical Working Group

On being appointed consultant to NAFDAC, AGCPN was immediately commissioned by the Director General of NAFDAC with the task of assisting the agency in its resolve to transform the Nigerian clinical research sector by creating a business friendly, transparent, and predictable regulatory environment guided by appropriate laws and regulations for clinical research, aligned with the Nigerian overall drug development and healthcare objectives, and meet the best international legislative and regulatory frameworks.
To this end, the Director General of NAFDAC in a letter dated December 3, 2009 invited AGCPN to assist in this transformational process. The letter specified the terms of reference for AGCPN's role and specifically mandated AGCPN to:

- Collate the gaps and deficiencies within the Nigerian clinical trial sector hindering the development of the sector.
- Proffer solutions to the identified gaps and deficiencies
- Create a roadmap/action plan for the implementation of the proposed solutions.
- Present a final report to the NAFDAC leadership with findings and proposed action plan for their consideration.

• Provide assistance with implementation of the action plan as needed.

- As a first step in executing this mandate, I leveraged my engagement with key 'Clinical Trial Stakeholders', who were mostly 'Nigerians in Diaspora', (working in various areas of Clinical Trials, in Greece, Brussels, the UK, Canada, and the US ... including Health Canada, and the FDA), for:
- AGCPN to organize a capacity building workshop for NAFDAC Regulatory Staff at Abuja in April 2010. The theme of the workshop was **"Towards the Transformation of the Nigerian Clinical Trial Sector."** The workshop's main objectives, among others, were to:
- Identify key gaps in the Nigerian clinical research regulations and the necessary measures for fine-tuning it to be in alignment with international regulatory standards.
- Equip NAFDAC staff with the knowledge and skills needed to regulate clinical trials in Nigeria.
- Highlight the key steps that must be taken to bring Nigeria to the level where they become major players in the global clinical trial enterprise.
- Examine cutting edge clinical trial regulatory practices.

The workshop outcomes were:

- After a thorough review of the workshop proceedings, both the participants and the faculty made certain observations, which led to the setting up of a Task **Force to embark on the following strategic actions for transforming Nigeria's clinical study sector**:

  a) run a capacity building workshop for NAFDAC Clinical Trial Unit Staff in 2010

  b) Review NAFDAC Clinical Trial Regulations, with recommendations in 2010 [The full recommendations are available on reques]

c) and follow up by **conducting a Gap-Analysis for the Clinical Trial Unit of NAFDAC**, to review their compliance with the 2010 recommendations, in 2012.

- All three of these assignments were done, so satisfactorily, that stakeholders under the aegis of the AGCPN/NAFDAC, *were united in agreeing that Nigeria was ready to actively engage through Clinical Trial Summits (like China, did), to let the world know that Nigeria was battle ready to engage in Clinical Trials.*
- All these milestones of AGCPN for NAFDAC, gave breath, to NAFDAC committing to being a full partner, to AGCPN's Innovative Clinical Trials Summits. I thus staged the first and 2nd Clinical Trial Summits in 2012 and 2014, as the decision was to do Bi-annual Summits'.
- The 'Seating DG' was thus so enthused with the profound 'in roads' being made by these Summits, that in 2014, he, not only launched and purchased a hundred copies **of AGCPN's training workbook on Health Research Ethics (outcome of AGCPN's Training grant from EDCTP**) but advised for the Summits to transit from bi-annual Summits to annual Summits.

The Nigerian Clinical Trial Technical Working Group (CT-TWG) is Borne

On, Wednesday, 29th April, 2015 @ 12 noon, in Ladi Kwali Conference Centre, Sheraton Hotel, Abuja, the DG of NAFDAC took what he has severally confessed, considered, as his most impactive strategy to ensure Nigeria's significant involvement in the clinical trial industry, by inaugurating a 30 - man TWG, which he called, the Nigerian Clinical Trial Technical Working Group (CT-TWG), and pronounced, yours truly, Professor Ifeoma Okoye, the Chairman of the Nigerian Clinical Trial Technical Working Group (CT-TWG)!

The creation of the NCT_TWG was considered the game changer, because years of facilitating discussions and tracking the success of the efforts towards increasing the volume and quality of clinical trials in Nigeria, saw many stakeholders at the AGCPN conference, convinced of the need for regulators and clinical research professionals, to have a platform to work together in a collaborative manner to sustain the continual improvement of the standard and quality of clinical research in Nigeria. Setting up the Nigerian Clinical Trial Technical Working Group (CT-TWG) on April 29, 2015, was the apt response, Dr. Paul Orhii, then the Director General of the National Food and Drug Administration and Control (NAFDAC), gave to that yearn. Part of the mandate of the NCT-WG includes:

1. Reviewing all current and past efforts at transforming the Nigerian Clinical Research sector and synchronizing these efforts into one.
2. Make clear actionable recommendations to the Director General, NAFDAC on the way forward in transforming and promoting clinical research in the country.
3. Create clinical trial awareness to both the lay and medical communities in Nigeria on issues dwelling on the research of medicines, old and new.

The appointment letter received by each member and signed by the DG of NAFDAC, specifically stated that *"**Prof. Ifeoma Okoye, as consultant to NAFDC, will liaise and report directly to me on the work and needs of the CT-TWG**."*

THE AGCPN CLINICAL TRIAL SUMMITS (2012, 2014, 2015, 2016)

The outcome of the GAP ANALYSIS, conducted in 2012, to evaluate the extent of implementation of the recommendations

pooled together by global experts in 2010, informed the initiation of the Annual Clinical Trial Summits in 2012, by the AGCPN, thus emulating china and India's strategy of increasing their global visibility through clinical trial summits, AGCPN also launched its first clinical trial summit. These summits have been successfully conducted to date with participants drawn from Nigeria and other African countries. The attendees included representatives of National Regulatory Agencies in Africa, the leadership of major health professional groups, representatives of global pharmaceutical companies, the Federal Ministry of Science and Technology and their agencies, state ministries of health, universities, teaching hospitals, Africans in the Diaspora (notably America, Canada, and the UK), the Board of Trustees, and members of the Association for Good Clinical Practice in Nigeria, among others.

- **1st clinical trial summit held in Lagos, 28th June 2014**
- **2nd clinical trial summit held in Lagos in 2014**
- **3rd Nigerian annual clinical trial summit, June 2015.**
  Theme: Advancing Global Clinical Trials in the West African sub-region

  - **4th Clinical Trials Summit June 6 - 8, 2016** at Nicon Luxury Hotel, Abuja

  Theme: Clinical Research and Public Health Emergencies in Sub-Saharan Africa

  Sub-theme: Role of the Private Sector in Public Health Emergencies

  - **5th Clinical Trials Summit, June 6 - 8, 2017** at The Civic Centre, Victoria Island, Lagos. This 5th Clinical Trial Summit was the first of the clinical trial summits being convened under the auspices of the New Initiative - CTA VISION 2020

INITIATIVE, whose nomenclature changed to: African Clinical Trial Consortium

Theme: Next Frontier for Growth and Revolution in Clinical Trials: AFRICA IS READY!

AFRICAN CLINICAL TRIAL CONSORTIUM IS BORNE

With signatories from Cameroon, Benin, Ghana and Nigeria, from the 4th Clinical Trial Summit, the AGCPN–Clinical Trial Africa (CTA) Vision 2020 Initiative, was established in 2016, to provide a platform for sustained advocacy, networking, and engagement of relevant stakeholders to nurture African development of African solutions to Africa's health challenges, for both communicable and noncommunicable diseases.

After the 4th Clinical Trial Summit, in June 2016, at Abuja, AGCPN, noting that the African clinical trial sector needed to apply a coordinated, collaborative, continent-wide strategy that mirrors the African Union vision for a developed and economically integrated Africa, staged a high-level meeting, at Enugu and mobilized stakeholders to dialogue and nurture collaboration between bench scientists, medical doctors and natural product developers. The major focus of the dialogue was to encourage bench scientists to hear about the low-hanging fruit, that natural medicine practitioners were already working with, encourage them to take interest in working on these natural products with medicinal potentials, and on how to take the profound work that bench scientists were already doing on the bench to the bedside. A decision to create 'A Clinical Trial Consortium (CTC)', made up of both clinicians, bench scientists and natural medicine practitioners was borne at this town-hall meeting. Subsequent on forming this, they were placed in a WhatsApp group to operate/implement the vision of the AGCPN–Clinical Trial Africa (CTA) Vision 2020 Initiative.

The created 'AGCPN-Clinical Trial Consortium (CTC)' Members, hit the ground running, catalyzing dialogue between sponsor organizations, companies, African governments, and other relevant influencers and eventually led to navigating, the AGCPN–Clinical Trial Africa (CTA) Vision 2020 Initiative to become ***the African Clinical Trial Consortium (ACTC)*** at the 2017 Summit.

Similar to the AGCPN-CTA Vision 2020 Initiative, the mission of ACTC is to promote, nurture, and sustain a continent-wide advancement of health research through the efficient use of local knowledge garnered from the public and private sectors. ***ACTC focuses on addressing the low number of clinical trials occurring in Africa and developing innovative models for the certification and strategic oversight of clinical trial sites on the continent.*** ACTC prioritized the creation of dedicated clinical trial units in African Countries, as the model to leapfrog the CT enterprise and the growth of Africa's natural medicinal product development. The latter effort was fostered by engaging with Nigeria's Natural Medicine Development Agency within the Federal Ministry of Science and Technology, natural medicine developers and practitioners, and research clinicians to explore investigator-initiated studies on Nigerian natural products. Beyond the rigorous assessment of natural medicines, other anticipated benefits of ACTC include the expansion of Africa's cost-effective clinical capabilities that meet global standards, acceleration of clinical trial timelines in Africa, incorporation of a translational research mentality into Africa's research institutions, and additional definition and institutionalization of the continent's regulatory systems.

The African Clinical Trial Consortium (ACTC) currently has a membership of 104, representing around 33 medical disciplines and operating in approximately 30 institutions, in Africa. The ACTC is the most far-reaching initiative undertaken by AGCPN. Through 2017 to date, it has made

some inroads into its quest to seek collaboration with reaching out to regulatory authorities of all 54 countries in Africa,

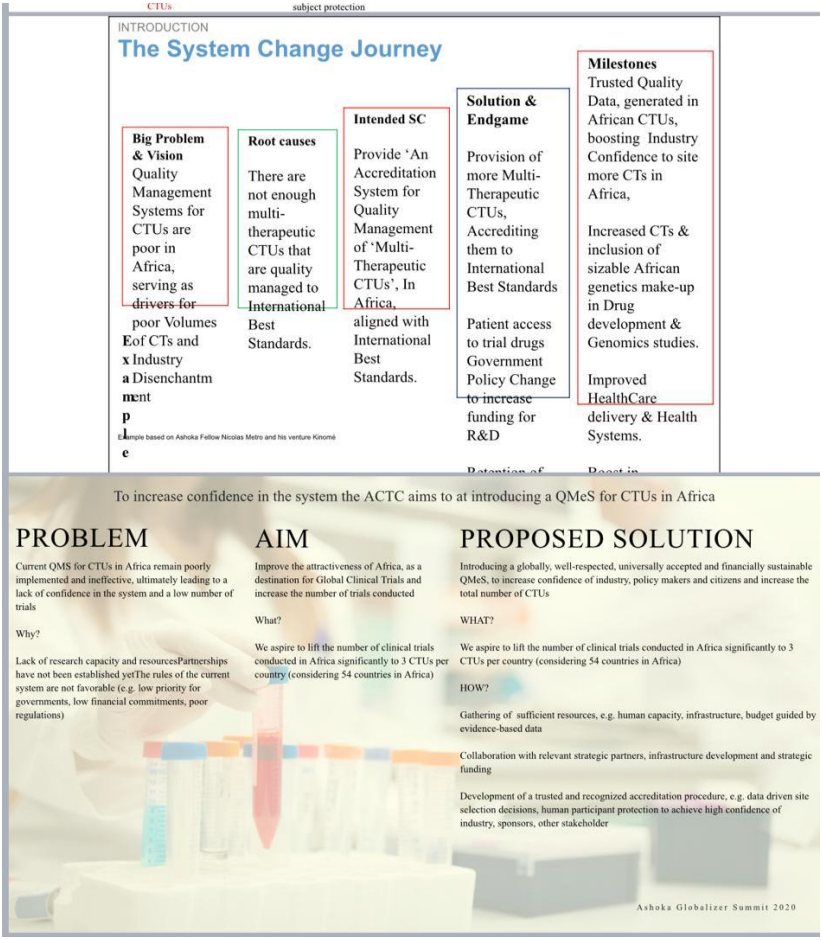
Developing Strategies for Scaling the ACTC-CTU Solution (An Ashoka Globalizer Project Funded By Phillips)

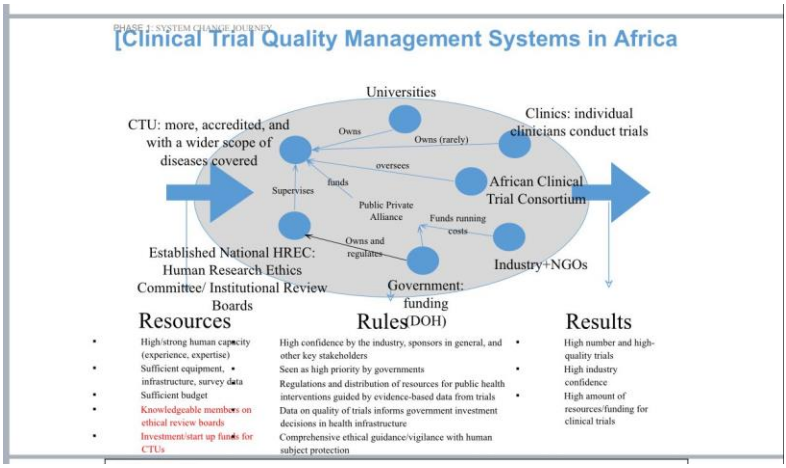
The essence of the Phillips supported Ashoka Globalizer Training, was 'A SYSTEMS CHANGE ACCELERATOR, that develops practical wisdom on strategies for scaling social impact, by challenging participating organizations, such as mine, AGCPN/ACTC, to think beyond growth, in the traditional sense. Rather than merely expanding operations, social entrepreneurs consider how to open up access to their ideas and truly improve systems, for long-lasting widespread impact. , to assist me to strengthen our CTU Solution, as a leading Ashoka Social Entrepreneur, to improve Health Systems throughout the world

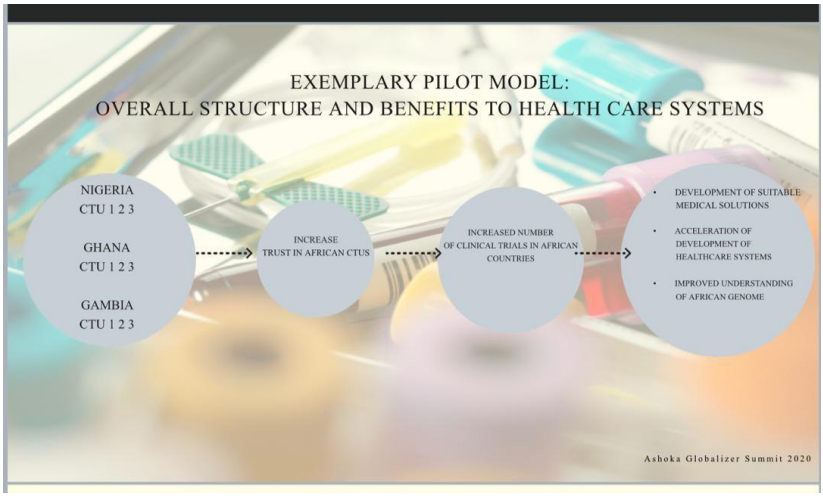
About the program*: Ashoka's Globalizer Program is '**A Systems Change Accelerator'** that develops practical wisdom on strategies for scaling social impact by challenging participating organizations to think beyond growth in the traditional sense. Rather than merely expanding operations, social entrepreneurs consider how to open up access to their ideas and truly improve systems for long-lasting widespread impact.*

Accounts to tag: *You can tag @Ashoka and @Philips Foundation, Thought Partners and Ashoka team members who took this journey with us, and the STPS we were connected with.*

Hashtags: *#social entrepreneurship, #systemschange, #acceleratinghealthcareaccess, #scalingimpact*


CTUs
subject protection
INTRODUCTION
The System Change Journey
Big Problem & Vision
Quality Management Systems for CTUs are poor in Africa, serving as drivers for poor Volumes of CTs and Industry Disenchantment
Example based on Ashoka Fellow Nicolas Metro and his venture Kinomé
Root causes
There are not enough multi-therapeutic CTUs that are quality managed to International Best Standards.
Intended SC
Provide 'An Accreditation System for Quality Management of 'Multi-Therapeutic CTUs', In Africa, aligned with International Best Standards.
Solution & Endgame
Provision of more Multi-Therapeutic CTUs, Accrediting them to International Best Standards
Patient access to trial drugs
Government Policy Change to increase funding for R&D
Milestones
Trusted Quality Data, generated in African CTUs, boosting Industry Confidence to site more CTs in Africa,
Increased CTs & inclusion of sizable African genetics make-up in Drug development & Genomics studies.
Improved HealthCare delivery & Health Systems.
To increase confidence in the system the ACTC aims to at introducing a QMeS for CTUs in Africa
PROBLEM
Current QMS for CTUs in Africa remain poorly implemented and ineffective, ultimately leading to a lack of confidence in the system and a low number of trials
Why?
Lack of research capacity and resourcesPartnerships have not been established yetThe rules of the current system are not favorable (e.g. low priority for governments, low financial commitments, poor regulations)
AIM
Improve the attractiveness of Africa, as a destination for Global Clinical Trials and increase the number of trials conducted
What?
We aspire to lift the number of clinical trials conducted in Africa significantly to 3 CTUs per country (considering 54 countries in Africa)
PROPOSED SOLUTION
Introducing a globally, well-respected, universally accepted and financially sustainable QMeS, to increase confidence of industry, policy makers and citizens and increase the total number of CTUs
WHAT?
We aspire to lift the number of clinical trials conducted in Africa significantly to 3 CTUs per country (considering 54 countries in Africa)
HOW?
Gathering of sufficient resources, e.g. human capacity, infrastructure, budget guided by evidence-based data
Collaboration with relevant strategic partners, infrastructure development and strategic funding
Development of a trusted and recognized accreditation procedure, e.g. data driven site selection decisions, human participant protection to achieve high confidence of industry, sponsors, other stakeholder
Ashoka Globalizer Summit 2020





The University of Nigeria Centre of Excellence for Clinical Trials (UNNCECT)

It is my expectation that the ripple effects of UNNCECT success will help to move our country Nigeria to enviable heights in drug development globally.

- *Professor Benjamin C. Ozumba. (Former Vice-Chancellor of UNN, Former Provost, Former Dean of Medicine and Dentistry, College of Medicine**).***

Due to my persistent advocacy with the UNN, the seating Vice-Chancellor, Professor Benjamin Ozumba, finally enabled the UNN to be the first University in Nigeria to launch a Clinical Trial Unit [which is specialized in Biomedical Research Units, which design, coordinate, and analyze Clinical Trials and other studies], which we named; **University of Nigeria Centre of Excellence for Clinical Trials (UNNCECT).**

The primary aim of UNNCECT is to increase clinical research output and drive institutional capacity development, by creating a research community with shared values and purpose. Secondary aims include:

- The development of a core facility for UNN investigators in terms of research support and services from the point of project conception to project closure and within National and International standards. UNNCECT's investigators have initiated study services and have collaborated with the following sponsor and CROs, Pfizer, GSK, Astrazeneca, Roche, Clinitrad Inc
- The establishment of a world-class clinical ward for the express purpose of research activities.
- To ensure the development of core capabilities and a marketing strategy in order to secure industry commitment to running trials within the UNNCECT. Having expertise in clinical trials in the following fields; Oncology, Infectious disease, Respiratory, Cardiovascular diseases, Rheumatology, Dermatology, Haematology, Urology, Nephrology, Endocrinology etc

Following my appointment, as Director of **UNNCECT**, I was privileged to visit the Clinical Research Center (CRC) University of Capetown, South Africa, with Professor Ozumba. We were received by the principal officers of the University of

Capetown, chaperoned by Professor Delva, who had initiated this CRC (an ideal template of an efficiently run Clinical Trial Unit), and had run it as Director for over 5years.
UNNCECT, was the brain child of ACTC, as a template CTU (Clinical Trial Unit), to emulate the footprints and milestones of the CRC! Professor Delva followed our visit to CapeTown, with her own visit to the UNN, a few months later. She visited both Campuses of the University to ascertain how best she will play the role of mentor. **She was subsequently appointed a Visiting Professor to the UNN, to enable her efficiently mentor the UNNCECT**!

I innovatively mobilized private funds and strategic collaborations to obtain a physical building and furnish UNNCECT to functionality. Seeing that a befitting accommodation was not forthcoming from the University, I did advocacy and obtained permission from the Central Bank for the un-utilized Skye Bank Building (now Polaris Bank) on the Enugu campus to be released to us by Polaris Bank. The handover ceremony of the building to the UNN was merged with the formal launch and introduction of the UNNCECT, to the University community. It was a huge ceremony that started with a formal launch at the UNEC Main Hall, with the current Vice- Chancellor, Professor Charles Igwe, in attendance, with the entire University Senate and Principal Officers of the University, the media, staff and students. Subsequent on this launch, I had to source partners to fund the remodeling the building to align with the needs of UNNCECT, and also to furnish it to the stage that we have today.
UNNCECT, today is a ONE-STOP SHOP, with everything, including fast speed internet, friendly/attention to details staff, plus Edge Software to manage personnel, facility and participants, in a serene University atmosphere, with proximity to all services one needs. We provide unparalleled cloud

storage of data and best computing experience, including data entry and scanning of documents in real time. **We need more partners to come to our aid.**

Clinical Trial Efforts in UNNCECT: These are some of the studies that we have been able to initiate/do, through UNNCECT.

Involvement in Clinical Research and Clinical Trials in Oncology

1. CaPTC (an NIH-supported consortium), Phase 11 Familial Cohort Study: **Status:** On-Going Multicenter. The purpose of this study is to develop a cohort for studying the genetics of Prostate cancer among West African men.

Role: Site PI

2. Participation in the iCCaRE for Black Men Consortium

Inspired by America's drive, a generation ago, to put a man on the moon, ***the University of Texas MD Anderson Cancer Centre, launched an ambitious and comprehensive action plan, called the Moon Shots Program***, a lofty monumental effort to make a giant leap in specific research areas to find treatments and cures, including Prevention and cancer vaccines: Develop, evaluate, and optimize safe vaccines, targeting unique features of individual cancers! Through my advocacy, UNN/UNTH UNNCECT, has become a part of the Research Consortium and project, termed; 'Inclusive Cancer Care Research Equity' (***iCCaRE***), under HEROICA, ***that are listed as one of Moon shots projects.***

A key strategy of the **iCCaRE for Black Men Consortium** is to address the disproportionate burden of prostate cancer seen in African American men via increased access to life-changing, scientific prostate cancer discoveries, especially those with implications for primary and secondary preventive interventions, as well as ***information that will enhance access to prostate cancer clinical trials***.

Details of this project, is currently in public domain in Proceedings of the 15th AACR Conference on the Science of Cancer Health Disparities in Racial/Ethnic Minorities and the Medically Underserved; 2022 Sep 16-19; Philadelphia, PA. Philadelphia (PA): AACR; Cancer Epidemiol Biomarkers Prev 2022;31(1 Suppl):Abstract nr A033

Background: Globally, Black men suffer the greatest prostate cancer (CaP) burden. **Blacks are diagnosed more at advanced stages of CaP, greater morbidity and mortality and poorer survivorship outcomes**. Blacks are exposed to adverse, discriminatory societal determinants. How these determinants impact the CaP disparities, in particular survivorship and health related quality of life inequities are understudied. Studies examining patient-reported outcomes of Black CaP survivors reveal heightened negative HRQOL sequelae, and depression, family, work and living situation instability due to cancer treatment and societal determinants of health (SDOH). SDOH is used mostly in Public Health to predict population health risk and outcomes, but rarely integrated into HRQOL research and practice. This project is novel by incorporating SDOH into the assessment and relief of HRQOL threats. Despite the Black CaP disparities in survivorship, there remains unacceptable lack of focus and prioritization to provide comprehensive relief. **Methods:** In

response to this noticeable scientific gap, our requisite multidisciplinary investigatory team including Survivor-Advocate Investigators joins forces to achieve the study goal. We are employing community engaged research practice to create a CaP survivorship care plan (SCP) template targeted to Blacks. Our SCP will provide a comprehensive best-practice roadmap to document medical information with treatment history and status, along with relevant resources and health advisories to provide relief for unfavorable sequalae due to cancer and its treatments as well as improve quality of life for CaP survivors. We are building upon the Science of Survivorship, and Contextual Socioecological and the Behavioral Precision Medicine Models with full survivor-advocate partnership to create the SCP. This project to develop a SCP template employs an informative consensus panel to inform the initial SCP. **Results:** Based on advocate-survivor input and guidance, the SCP will include resources and tools focused on SDOH, treatment adherence, treatment side effects and symptom relief, co-occurring chronic conditions, cardio-protective strategies, and physical, emotional and social wellbeing towards improving in patient outcomes and HRQOL in Black CaP survivors. Data from the Engagement Core and Survivor-Advocate Community Advisory Board, and the preliminary SCP CaP for Black men will be presented at the meeting.

Conclusion: The Consortium builds upon the work of the multidisciplinary PIs, (of which the UNN/UNTH Team are included, comprising, Prof Ifeoma Okoye, with Drs Olusina, Lasebikun, Mbadiwe, and Nnamani) and provide team science approach with robust scientific methods to better understand and address the HRQOL needs of Black CaP survivors. Importantly, this research will make

available a patient-centered SCP for CaP survivors, focused on Black men. The iCCaRE Consortium will use this SCP_CaP to inform the development of Artificial Intelligence interventions addressing medical, follow-up care, surveillance, social and emotional support, SDOH and health advisories that will be deployed on popular mobile platforms for greater reach and on-demand use.

Citation Format: Kimlin T. Ashing, Folakemi T. Odedina, Cassandra N. Moore, Che Ngufor, Getachew A. Dagne, Fornati Bedell, Diana Londoño, John McCall, Arnold Merriweather, JoAnne S. Oliver, Rotimi Rotimi Oladapo. The iCCARE Consortium for Prostate Cancer in Black men: Creating a survivorship care plan for Black prostate cancer survivors [abstract].

- IRONMAN:

IRONMAN: The international registry for men with advanced prostate cancer. UNTH is one of the CaPTC sites recently, through my persistent advocacy, accepted to be one of the operating sites for this study involved. I am coordinating all the CaPTC research projects at the UNTH, as the Site Pi, and the Pi for the IRONMAN STUDY, is Dr Olusina. Enugu site just

Background: Men with advanced prostate cancer (APC) experience high mortality and severely impacted quality of life due to the disease itself as well as its therapies, with Black men facing the highest disease burden. The treatment landscape for APC is rapidly changing; however, little is known about the real-life experience of men receiving new therapies. There is an urgent need to identify disparities in treatment patterns and outcomes in advanced disease, based on patient and country demographics. The International Registry for Men with Advanced Prostate Cancer (IRONMAN) is uniquely equipped to meet these

needs. **Methods:** IRONMAN is a population-based prospective cohort of men with newly diagnosed metastatic hormone-sensitive (mHSPC) and castration-resistant (CRPC) prostate cancer aiming to enroll 5,000 men across 16 countries (Australia, the Bahamas, Barbados, Brazil, Canada, Ireland, Jamaica, Kenya, Nigeria, Norway, South Africa, Spain, Sweden, Switzerland, United Kingdom, Untied States). Patients are followed prospectively for overall survival, clinically significant adverse events, changes in cancer treatments, biomarkers, and Patient-Reported Outcome Measures (PROMs). Data is collected via longitudinal electronic questionnaires from patients and providers as well as blood samples and medical records. IRONMAN is currently enrolling in 10 countries at 103 sites. Sites were selected to create a diverse cohort across race/ethnicity, rural/urban populations, socioeconomic factors, and geographic regions. Of the first 1,865 men enrolled to date, 60% have mHSPC and 40% have CRPC; overall, 9% of men (18% in the US) self-identify as Black and 82% identify as white (78% in the US). 60% (N = 1,111) of this cohort has been enrolled outside of the US, and the median age at study entry is 70 years. The distribution and demographics of patients are continuously monitored to inform ongoing enrollment efforts. The IRONMAN Diversity Working Group meets monthly to discuss barriers and strategies to enhance enrollment of a racially and ethnically diverse population (which defined UNTH recent inclusion). ***The Low- and Middle-Income Country Working Group*** addresses the unique needs of men being recruited from the Caribbean and African sites in addition to supporting broad oncology efforts in these regions.

These efforts support IRONMAN's larger goal to investigate disparities in the care of patients with APC,

having potential implications for decreasing racial disparities in survival outcomes. Clinical trial information: NCT03151629

3. **Vitamin D Clinical Trial in Nigerian Prostate Cancer Patients: Sun Exposure and Prostate Cancer in Black Men**

The UNN Center of Excellence for Clinical Trial (UNNCECT) is the site handling an on-going Vitamin D Study, which is an interventional therapeutic clinical trial evaluating the prevalence of vitamin D deficiency and potential beneficial immunological effects of vitamin D replacement on Black patients with prostate cancer (localized and metastatic) from the community. The Study aims to: (1) Evaluate the differences in Vitamin D deficiency and peripheral blood immune cell function between Black patients in the US and Black patients in Nigeria; and (2) Assess whether vitamin D replacement is associated with improvement in the patients' quality of life.

Despite the advances in medical treatments of prostate cancer, death due to prostate cancer among the black community continues to increase. This observation has been validated by several scientific reports that have documented a huge disparity in the burden and outcome of prostate cancer, with the black men being at disadvantage. What continues to puzzle medical experts is the extent to which the biology of prostate cancer is different between blacks and whites.

4. **STUDY:** Small $1,000 pilot grant- titled; Piloting capacity-building for in prostate cancer management and control in Nigeria

SPONSOR: CaPTC West Africa, funded by University of Florida

Client: UNNCECT

Role: Principal Investigator

Status: Completed. Manuscript for publication titled: ' "Assessment of knowledge, attitude, and perception of nurses on prostate cancer in Nigeria' is on-going

5. **Study: ''International Registry of Healthcare Workers Exposed to COVID-19 Patients (UNITY Global Stud**y)''

Sponsor: 54gene
Client: UNTH (UNNCECT ATTRACTED)
Role: Principal Investigator
Status: Completed. (The study was aimed at generating real-world evidence of the risk of infection in Health Care Workers exposed to Covid-19 infection and to inform recommendations and policies on prevention measures.

6. **Study: COVID Vaccine Trial LVRNA0090-01**

Sponsor: AIM
Client: UNNCECT
Role: Co-Investigator
Status: Terminated in Dec 2022: Termination activities NIGERIA. Because of late approval by NHREC even after they had agreed on terms at AVAREF Meetings

7. **Study:** COVID Vaccine Trial. (In Nigeria and Uganda) **Sponsor:** Inovio

Client: UNNCECT
Role: Co-Investigator
Status: Monitoring Board (DSMB) meeting was convened to review the INO-4800 data against the Omicron variant, as the clinical trial application was recently submitted to other countries and approved. As a result, they issued a recommendation to pause further enrollment to inform all

current and future participants that INO-4800's neutralizing antibody responses against the Omicron variant were below the limit of detection and as such, it is unlikely to protect against all symptomatic disease due to Omicron. Discontinued in January 2022: as AVAREF review process was going on. All documents had been submitted to NAFDAC and NHREC.

8. **Study**: COVID Vaccine Trial VAT00008

Sponsor: Sanofi
Client: UNNCECT
Role: Co-Investigator
Status: were terminated because NAFDAC approval came late. March 2021 Close out visit.
N/B: The Sanaofi-GSK COVID-19 Vaccine sold under the brand name VidPrevtyn Beta, is a Covid-19 vaccine, developed by Sanofi Pasteur and GSK. The Sanofi Pasteur-GSK COVID-19 Vaccine was approved for medical use, in the European Union in November 2022. ATC Code: JO7BX03 (WHO). Other names: VAT00002, VAT00008, Routes of Administration: Intramuscular

9. **Study:** Investigator-Initiated Study on: ““Serologic survey of SARS-COV-2 antibodies amongst asymptomatic blood donors in Nigeria.
Sponsor: Roche Diagnostics International Ltd.
Client: Biosystem Laboratories [client introduced to Roche by UNNCECT).
Role: Co-Investigator
Status: Completed. Manuscript for publication is on-going.

10. 'A Biospecimen Collection and Analysis Project to assess samples from Nigeria Patients with SARS COV2"

The African Behavioral Research (ABeR)

I am an ABeR fellow, who has participated in 2 Behavioural and Implementation Science Research trainings and its accompanying research work, held by ABeR. They consist of a) Didactic training on the principles of behavioral research, community engagement, research ethics, grant writing and oncology project development on Nov 4- 17, 2018.

B) Behavioural Intervention trials for cancer prevention and Control In West Africa- Nov 29 - Dec 10 2021

The focus of the training program is on developing clinician scientists in the area of translational behavioral research. This will allow the program to effectively address cancer control in Nigeria and bridge the translation of behavioral research to patients, clinical practices and communities.

As one of the Training Advisory Committee (TAC) members of the *Mayo Clinic-ABeR Center Behavioral Research Training Program*, we wrote an expression of interest for the training grant titled: "Strengthening Behavioral Oncology Research Capacity for Africa: The African Behavioral Research (ABER) Center Research Training Program**"**. The grant was to strengthen oncology behavioral research capacity in clinical and community settings through two outstanding programs.

My breakout team, for the Behavioral Intervention trials for cancer prevention and Control In West Africa - are rounding up a manuscript for publication, currently based on a funded pilot behavioral intervention study we did in 4 centers in Nigeria, UNTH, being one of them.

Embracing Innovative Technologies, Strenthening Health Informatics, Setting Up of Disease Protocols and Focused Virtual Registries

1] African Virtual Platform For Oncology Clinical Trials [Mayo Clinic/University Of Florida] and Collaboration With Uburu Health: Unifying Access To Research Data In Nigeria: By Dr Joel:

Being CaPTC West Africa, Director of Clinical Trials and the UNN Principal Investigator, I anchored the development of a web platform, designed and deployed by Uburu Health; to provide a centralized online registry for oncology trial in Africa. Over the course of 4 months (December 2020 - March 2021), Uburu Health worked with the UNN CaPTC team in developing and evaluating the African virtual platform for oncology clinical trials. The platform greatly simplifies the process of accessing or uploading clinical trial related data in the field of oncology, happening all over Africa. Once an idea, but now a reality and can be accessed at: www.oncologytrials.africa.

A total of 299 trials were uploaded and published on the web platform www.oncologytrials.africa and it allowed users to create an account and upon verification by administrators, submit data on the trials they are involved with. Administrators can accept or reject either an account creation or trial information upload requests made by a user.

Collaboration with James Daniel Consulting: Recount by Mr Emeka Ibe

Due to my unwavering commitment to excellence in healthcare delivery, I engaged with James Daniel Consulting, to foster my dream of; spearheading the transformation of traditional paper-based record-keeping systems into modern, digitized platforms, setting up standardized disease protocols that I believe will revolutionize healthcare practices in Nigeria and beyond, as well as significantly enhance the quality and efficiency of patient care/outcomes. The transition will streamline administrative processes and improve communication among

healthcare professionals and allow for more comprehensive and accurate patient data analysis.

My Journey into Radiology

I was abroad after my NYSC, pursuing some investigations, into my wilderness experience with Infertility, when the interview for the residency program took place, and I missed it. Usually, this is not a problem, as you can be interviewed, whenever one turns up with a request. This was because residency, in those days, were not popular, as the remuneration was poor, compared to the more attractive perks of private practice, and "Jappaing" (then called brain-drain). You can imagine my surprise and consternation, when I came back into the country and presented myself for employment into the residency program, in Internal Medicine, only to be informed that it was not going to be business, as usual. The federal government had placed an embargo on employment… not sure it was only for federal teaching hospitals; I was frozen with disappointment. In serious denial, I embarked on consultation with all the senior citizens of influence that knew either my father or husband and met with a dead end. The only window, I was informed, was to choose the subspecialties, which I had no appetite for. I wallowed for a while in déjà vu, recalling that I had the same experience, when I was one of the set of having JAMB cancelled and opting to go and do A-level, only to have to eventually take the option of Chemistry/Zoo, as I never heard in time, when candidates were asked to go and engage with individual Universities, to seek admission with their scores. After my first year, I sought a degree change, which was going to be benchmarked on one's grade point average. When the day of reckoning came, there were three of us with the highest-grade point average, amongst those seeking this change (2 females and one male)! It had to be God that

divinely intervened, for there was a window to take two candidates, and by scores, I was number three! A government decree to favour and prioritize females for university admission, especially, in the sciences, suddenly became available and I sailed through. So, I held on trusting my God will swerve and orchestrate the current embargo to favour me. This never happened and prevailed for two years. In the interim, I was convinced by some elders to take up any of the sub-specialties. God used Professors Umerah and Okechukwu, both late, to navigate me from residency in anesthesiology to residency in radiology.

My arrival at Radiology, fortuitously turned me into a celebrity in the field, even nationally - as I became the first resident in our Department of Radiology, and one of the few females in Nigeria pursuing a career in radiology. In those 1980s, there was a dearth of radiology residents, as well as the trainers. There was barely any interest in pursuing radiology residency, not by me, definitely. Thus, I took up the opportunity just to mark time and await the lifting of the employment embargo. By the time it was lifted in two years, I was reluctant to move to Internal Medicine, simply because, I would be junior to my mates who graduated in 1980, and who had had the good fortune (I assumed), to go on to the specialties of their choice. I, therefore, demurred on moving to Internal Medicine, and 1stayed put. Professor Umerah and Dr Ude celebrated that they had succeeded with enabling me to fall in love with radiology, little did they know about my immature infantile reasons for staying. Having to contend with the radiology physics, being taught by a pure physicist, with no clinical background of radiology, did not help. It took another year of coming to terms that I was there for good, and change of our radiology physics trainer, into the more efficient hands of Professor K. K. Agwu (who navigated us out of the pure physics that was drowning us), for me to begin to appreciate the discipline, I was going to

spend my lifetime in. ***God also lifted my captivity of infertility, and I waded through my Part 1 and part 2 Radiology, in the same, 31/2 years, it took me to contribute four children to the world.*** Hallelujah. In those 31/2 years, In 1988, I did 6 months self-sponsored attachment, at Brompton Hospital and Royal Marsden Hospitals, (London and Surrey) to gain expertise in Ultrasound. Professor B. C. Umerah took me in his wings and exposed me to attending radiology conferences, and to preparing his draft public lectures, and contributing to journal articles, he was writing. I made my first conference paper presentation at Lagos, ARAWA (Association of Radiologists in West Africa, Conference), a day before my Part 2 exam. I also became the sub-editor of the West African Journal of Radiology (WAJR), at the same meeting, before I became a fellow, the very next day. I gave birth to my fourth and last child barely two weeks later on 16th July, 1990. This baby is now a grown man of 33 years. During my interview for Lecturer 1, I had enough papers to be employed as Senior Lecturer, but that kind of jump was not permissible. I, thus, became senior lecturer and professor, years earlier than my colleagues in other departments in the college, who taught me as a medical student, when they were already senior registrars and consultants.

POST RESIDENCY TRAINING APPRENTICESHIP

I became a consultant at the UNTH shortly after, as the entire UNTH administration came to the department to inform me that the management wanted to appoint me a consultant, in 1991. I felt indeed cherished and needed and soaked myself, into the service, taking over residency supervision and becoming the chief servant of my senior consultants/mentors, Professor B. C. Umerah and Dr Ude. I was dedicated to pass on skills I learnt to the residents and guide them as best I could, in gratitude to my own mentors.

A number of things happened in quick succession. In the ensuing decade, I became appointed a lecturer with the UNN, won a travel grant by Pfizer (to attend RSNA-***Radiological Society of North America***, in Chicago), became a Faculty Board of Radiology Member, co-supervised residency dissertation/reviewed dissertation and Book of Case Reports (under the oversight of Professor Umerah), and formed a 'Publication Team', under the tutelage of Prof Umerah, which turned out a number of publications and conference papers, and proceeded to attend a number of International conferences, such as the **British Medical Ultrasound Society** (BMUS) congresses in Britain. Shortly after, I was appointed consultant, I embarked on a number of upskilling attachment programs viz:

1) ***Update Ultrasound Course in Obstetrics and Gynecology,*** 1991 (Nov)
    - ❖ Birmingham Maternity Hospital, Birmingham Britain (Self sponsored)
    - ❖ To build capacity in Foetal Anomaly Scan
2) ***Informal Clinical Attachment in Radiology Department***
    - ❖ 3 weeks in 1995. (Self-sponsored)
    - ❖ Medical University of South Carolina (MUSC)
3) Mayday Hospital in Croydon, Britain
    - ❖ ***A training Course in Computerized axial tomography***
    - ❖ 1997 (Feb.), sponsored by the Federal Ministry of Health
    - ❖ so I could come back and man the CT Unit, in UNTH, which was one of the beneficiaries of the first twelve CT scans installed in Nigeria.
4) ***Informal Clinical Attachment in Radiology Department***

- ❖ Howard University Hospital, Washington DC. (Self-sponsored)
- ❖ 1 week in 2001

5) Cancer Imaging Course in London, Nov. 2001 by
   - ❖ The International Cancer Imaging Society (Self sponsored)
6) ***Formal Clinical Attachment In MRI and CT*** (Self sponsored)
   - ❖ Royal Infirmary of Edinburgh and Western General Hospital {July – Aug 2002}
7) Nuclear Medicine Training in Innsbruck Medical University Hospital, Austria.
   - ❖ (Sponsored by the UNN)
8) *GATES Training for University Professors*
   - ❖ Wright State University Ohio
   - ❖ sponsored jointly by NUC and UNN [July 13th -24th 2015
9) NNRA-accredited Radiation Safety Training (Twice)
10) Training in CRYOTHERAPY, for treatment of premalignant changes in the Cervix

Teaching, Training, Administrative Positions, Service to Postgraduate College-Faculty of Radiology/Professional Bodies, Authorship and 'Milieu of Accomplishments', as Staff of College of Medicine UNN and UNTH:

I have held several administrative positions, including;

- Served as Associate Dean Clinical, Faculty of Medical Sciences (FMS) with the Dean Professor Emeritus Bede Ibe (together, we devised innovative strategies to raise funds for the FMS)
- 5 un-consecutive tenures as HOD of Radiation Medicine Department First Advancement officer, College of Medicine, and Initiator of the University of Nigeria Nsukka College of Medicine Alumni (UNNCOMA UNN).

- Member of Steering Committee that developed a 5-year Strategic plan for University of Nigeria (2015-2019)
- Served on Federal Ministry of Health and IAEA Committees to operationalize; Radiotherapy and Radioimmunoassay/Nuclear Medicine in Nigeria
- Member, National Health Research Committee, and National Committee for Developing/Implementing all 4 of the existing 5-year National Cancer Control plan.
- My promotion to; '**Professor of Radiology'** at the University of Nigeria, Nsukka, College of Medicine and University of Nigeria Teaching Hospital, Nsukka, both located at ItukuOzalla Campus of the University of Nigeria, in Enugu, Nigeria, was in the year 2005.
- I was also appointed 'The Director of the University of Nigeria, Centre of Excellence for Clinical Trials – UNNCECT.

Strenthening Clinical/Research/Admin Systems in Radiation Medicine Department

Encouraging and Creating Enabling Environment for Scholarly Pursuits

I leveraged the upgraded skills/experiential exposure, to scale my involvement with Residency Training (Mentorship, orientation of New Residents, Preparing Residents for Exams, Supervising Dissertations, creating enabling environment for scholarly pursuits to go in tandem with clinical duties of the residents, through upgrading the library and lecture room at the new UNTH site, creating Consultant Units and Unit Days/Research Days for each unit.

As Editor of The West African Journal of Radiology [which was the only radiology journal in Sub-Saharan Africa and 2nd one in the African Region for several years], I succeeded in nurturing among my radiology mentees, a culture of research,

presenting papers at conferences and publishing scholarly scientific, peer reviewed publications. I also ensured I mentored them into spending their resources, to attend international conferences, such as; West African College of Surgeons conferences and RSNA (Radiological Society of North America)**.**

Introducing System Changes and Lifting Infrastructure in the Department

I was very intentional and proactive about tenaciously building a new generation of Radiologists and Radiographers in Africa. Thus, I optimized my 'horned skills' and experiences, acquired during short 'capacity building attachments' at different periods, in medical facilities in HICs, as chronicled earlier in this historical review, ***to infuse new ideas in radiology residency and medical radiography training, including introducing and changing paradigms in the administrative systems in Radiation Medicine.***

I proceeded to introduce and put in the following structures in place:

- Unit system/consultant units
- Weekly clinical timetable for units
- Compulsory weekly departmental seminars
- Management commitees in the department (especially Education Committee, Equipment Monitoring Committee, Staff Disciplinary Committee, Academic Committee, Welfare Committee, Radiology Ethical Committee, and Radiation Safety Committee)
- Creation of chief resident position
- Call system and roster for radiologist.
- Call rooms and lounge rooms for residents, radiographers and other category of staff.
- Ensuring medical students rotation in the department are aligned to our unit system: thus, during rotations in the

department, students are shared to different consultant units and this introduces better oversight and impact.

- Centre for continuing education and research in radiology [and kick-started this with a privatized Business center/IT Hub, headed by Dr Augustine Onuh and run by Chinelo Eneh, now Mrs. Chinelo Nkwont - both at the old/new UNTH site, which became central focus for both UNTH/College Staff, to produce their documents, power point presentations, and also served as the production room of the West African Journal of Radiology].
- Upgrading departmental seminar room to have state-of-the-art equipment, *with 'a fixed roof projector/wall screen', Seminar benches, air conditioners (**accomplished with raised funds**).*
- Developing and equipping of departmental library: *[The departmental library was improved with shelves, reading tables and chairs, and air conditioners. A lot of, CD/DVDs, sub-specialty textbooks and journals were bought for the department. Additionally, I applied to the RSNA and Alumnus in Diaspora, and we got cartons of Radiology Textbooks/ CDs/DVDs sent to us as donations. Since the textbooks were much, they were distributed to each batch of residents free, for as long as they lasted.*
- Upgraded first, our analogue data records [*sent a staff for training at UCH Ibadan*] and then scaled up to digitak records, [*Including obtaining computers to ensure our clinical reports are typed*]
- Intentionally sought Nigerian-based/International faculty and teams to facilitate a number of on-site upskilling workshops for radiology residents and radiographers [Most were hands-on, and on Interventional Radiology procedures .. these lifted the standard of practice and services in the department]

- Streamlined better system of running the department's commercialized structure.
- Created protocols for obtaining data from patients for ost of our imaging and reporting [with Dr Iloanusi, *in order to ensure easier retrieval of patient's records and data, for research purposes, as I understood that Germaine data would yield informed decisions, and guide policies*]
- For the UNTH as hospital
    - Initiated URF (UNTH Resource Foundation), during Professor A. U. Mba's tenure, on his instruction, with the motto: 'Saving the lives we can save', and fundraised, plus led advocacy, that yielded, 'A workshop that resulted in the formation of AGCPN -Association For Good Clinical Practice In Nigeria A Respiratory Equipment donated by Dr Ukabiala(a UNTH Alumni in America), A Mobile Ultrasound Machine from Mobile, and two container loads of Medical equipment/Consumables, aimed to assist with movement from UNTH old site, to ItukuOzalla.

Fostering Computer Literacy, Exam Preparations and Establishing Collaborations

I envisaged a need to build special skill sets, on the then emerging cross sectional modalities, of Ultrasound and CT. Once the CT was functioning and running**,** I realized that radiologists, more than any other specialists needed to be computer literate, to navigate efficiently, the cross-sectional imaging modalities that were now the new paradigm, in diagnostic imaging, so I organized to have an expert, give us a week computer literacy training and pay him through our individual contributions. *I also insisted and made compulsory, the owning of a computer by each Resident, I didn't want to*

know how you afforded it. Though they *couldn't see the link between a computer, ICT and radiology, they all had to comply.* Thus, our radiologists were the first to be adept at many aspects of modern ICT, reviewing patient images/writing radiology reports from remote locations, facilitating teaching cases for residents and medical students, working at the cutting edge of modern radiology/ teleradiology, resulting in ability to intervene in real time emergencies, with resultant optimal patient management.

Fellowship examinations preparation entailed a lot of intentional drilling through images of most parts of body, simulating the way the actual exams go, and helped to evaluate residents' level of preparedness and abolish gaps before the actual exams. UNTH became notorious for residents passing fellowship exams, parts 1 and 2 at the first sitting.

I also saw early, the need to foster collaborations, with both; 'In country' and global faculty/institutions, to strengthen the skills of our radiologists, experts in different fields of radiology and clinical trials. Some of such profound collaborations/exposures, with great impact, include;

- ongoing multinational breast radiology education with MD Anderson Cancer Center team, led by Dr. Toma Omofoye, that addresses breast cancer control planning, prevention, early detection, diagnosis, treatment, palliative care and survivorship.
- Prof Obajimi's mammography training of both the Radiologists and radiographers in UNTH.
- Prof Tahir who first exposed the resident doctors to hands-on Ultrasound guided breast biopsy.
- Collaboration with Roswell-Park Cancer Institute led by Professor Chumy Nwogu, an alumnus of our institution.
- Training visit of Dr Chinedum Anosike, a gastrointestinal radiologist, at Manchester who is an

instructor with the Royal College of Radiologists. During his visit, our diagnostic skills in gastrointestinal radiology was strengthened.

- Tutorials in clinical radiology anchored by Dr Ominini Harold Horsfall - an Interventional Radiologist from Leeds university

A number of these enriching collaborations yielded in some instances clinical research and publications.

Contributions to Developing Radiotherapy in Nigeria

To address the complete absence of Radiotherapy Center in the Eastern part of Nigeria, Professor Sunday Adeyemi Adewuyi, the Director General of Nigerian Atomic Energy Commission (NAEC), Professor Erepamo Ossasaii, Prof. Felix Obioha and I instigated action, that resulted in the International Atomic Energy Agency (IAEA) sending Professor N. Kizilbash to the eastern part of Nigeria to assess the possibility of siting one in the East. Initially, the center was meant to be in Awka, Anambra State but because of the failure of the then Government of Anambra State to follow the guiding principle of IAEA, it was relocated to Enugu State where Professor Obioha and I grasped the offer with both hands.

In 2004, when I hosted ARAWA conference as the '1st Female President of the Association of Radiologists of West Africa', I advocated with, the younger generation of radiation oncologists /radiologists in Nigeria, to vote unanimously for radiology centers across the country, to shun Cobalt 60, in favour of a Linear Accelerator, for the ongoing VAMED Turnkey Project. This decision was hotly opposed, by our senior colleagues, who strongly held on to the opinion, that majority of Nigerian cancer patients will always present late, but we voted them down, for we held the proactive opinion that we should navigate patients out of such narratives, instead of accepting it as a never-ending paradigm. I literally escaped being lynched

by older professors for championing this advocacy. *It was in order to effectively fulfill this pledge, to navigate patients out of late cancer detection narrative, that I set up MWAN Cancer Screening Center and also started a Cancer and NCD NGO, Breast Without Spot (BWS).*
So it came to pass that; as part of federal government intervention in the care and management of cancer in Nigeria, four radiotherapy centres were approved and constructed at UNTH, Enugu, LUTH, Lagos, UDUTH, Sokoto and UBTH, Benin. The centres in UNTH and LUTH were the first among the four to come onboard in 2007.

Contributing To Radiation and Clinical Oncologists
Subsequent on UNTH being a beneficiary of the VAMED Linear Accelerator, I was advised by Late Professor Lagundoye, who was in the national committee of The Turnkey VAMED Project, that a radiation cncologist, of Igbo origin had just graduated, as a Fellow from LUTH, and ***that I should swiftly swoon on him and entice him with the prospects of returning back to the East, and Marry a wife for him if need be. Every other person laughed, but not me. I did exactly that…. but fell short of marrying a wife for him.*** Professor Obioha and I literally carried his application from table to table, until he became fully engaged at the centre.
I also conceived in my heart and proceeded to initiate the idea of mentoring radiology residents to convert to radiotherapy residency and, when I succeeded with the advocacy, we sent them to UCH as supernumeraries ***and, today, we have with us the iconic Drs Amaka Lasebikun and Vitalis Okwor as our trophies.***

Therapy Radiographers
Another critical manpower needed for the Radiotherapy take off were, Therapy Radiographers, and my solution was

simply to head-hunt and poach, this workforce from other centres and dangle the same carrot, of being of Igbo extraction. Two of them that succumbed even had to take a salary cut. Such was the strength of my advocacy skills. (Lol). The late Dr Ude used to say, that he doubts that anyone would ever be able to say no to me once I set my mind on getting it. However, rather than get upset, the facilities I hemorrhaged their staff found my exploits amusing and took it in good faith. Rather than continued attachment in established centres, we encouraged UNTH to absorb the two Medical Physicists and two Radiation Oncologists, as Visiting Consultants, to oversight our staff on ground, in order to gain accreditation/authorization to operate from the Nigerian Nuclear Regulatory Authority (NNRA).

Strategic Plan to Produce a Pool of Medical Physicists to Support Radiotherapy in Nigeria

I enthusiastically and selflessly deployed the skills obtained from these additional international professional exposures to ***play a critical role nationally, in developing Radiotherapy in Nigeria and being in the Vanguard of creating a Curriculum/Strategic plan to produce a pool of Medical Physicists, to support Radiotherapy in Nigeria***.

Medical physics, the application of physics principles in medicine is imperative in radiodiagnosis, radiotherapy, nuclear medicine, and general clinical instrumentation, certainly, 'A Must Have', for Radiotherapy to be operative. We came to understand that there was a world-wide glut of medical physicists, especially, those with Masters in Medical Physics. University of Nigeria, Nsukka was one of the 3 universities at the time, with NUC accreditation to award Master's degree in Medical Physics, but the programme had met with challenges associated with brain drain, which had halted the programme. Not discouraged by the numerous challenges facing the

Medical Physics postgraduate program in the UNN**, I pushed boundaries, with Prof Obioha and K. K. Agwu, to ensure the reactivation of the postgraduate medical physics programme in UNN, and to have the four prospective masters students, who were already staff of UNTH, become students in the 2007/2008 academic session of the reactivated programme, thus forestalling any temptation** to travel abroad.

We remain ever grateful to the Department of Physics and Astronomy in University of Nigeria, headed by Prof C.M.I. Okoye under the Professor F.N. Okeke's faculty of Physical Sciences, for agreeing to the proposal for collaboration with the College of Medicine for the postgraduate program in Medical Physics. **Since this admission, up till date, the number of candidates pursuing Masters and PhD in medical physics has been on the increase in UNN.**

When I communicated this feat, during one of our meetings at the FMOH, a meeting of stakeholders was called on January 17th, 2008 by 'The Presidential Project Implementation Committee' (PPIC,) at the conference room of the Honourable Minister of Health, under the chairmanship of Professor O. Akande. The objectives and rational of the meeting were to develop a comprehensive plan of action for radiotherapy personnel that will map out very clear and time-bound plan of action. **I was asked to chair a PPIC Committee on "Strategies for Capacity Building to implement the VAMED/Federal Government Tertiary Hospital Modernization Project".** Some of the terms of reference were: -

- To Prepare further strategies to facilitate capacity building to ensure that; '**already commissioned, but yet to be registered and authorized by NNRA'** Radiotherapy Centers in LUTH, Lagos and UNTH, Enugu.

- ❖ To propose the way forward for the yet-to-be installed Radiotherapy Centres in UDUTH, Sokoto and UBTH, Benin.

The Okoye-led Committee's report was completed and submitted to the PPIC and deliberated upon at its meeting on Wednesday, the 27th of February, 2008.

Our strategy was adopted nationally and the only two qualified Clinical Medical Physicists in Nigeria, Professors Ige and Bala, where invited to take over the training and develop an official curriculum for the candidates.

As a first step, a local training **[the 2007/2008 academic session],** on **the Basics of Radiotherapy Physics** was scheduled to take place at the National Hospital, to be directed by Dr J K Audu and I, Professor Okoye, **were given the responsibility to recruit the staff that were to benefit from that training. This training has generated a lot of medical physicists.**

Radioimmunoassay/Nuclear Medicine

It has been said that I dreamt and conceptualized nuclear medicine into existence in the South-East, *and that* ***It will be an*** *understatement to say that all the initial successes in nuclear medicine are attributable to my* ***doggedness. That Nuclear Medicine in the S, was my Brain Child.***

My understanding that nuclear medicine is an integral component of diagnostic and therapeutic medicine in patient management, benchmarked my unapologetic tenacity to attract the attention of the International Atomic Energy Agency (IAEA).

I stumbled on the information that IAEA was unhappy with our UNTH, because the Radioimmunoassay Unit**,** which was meant to be a forerunner project to UNTH qualifying for assistance to set up a Nuclear Medicine Unit with full Gamma camera, had been derailed, by being diverted to Department of

Medicine, under endocrinology, where it was being used to facilitate thyroid/iodine studies. On further inquiries, I was directed to go and pay a visit to the Lagos office of the Nigerian Atomic Energy Commission (IAEA/NAEC). **I sponsored myself to Lagos and had the pleasant surprise that one of my 'Big Uncles', Professor Iloeje (Brother of my secondary school classmate, Barrister Justina Iloeje Offiah. SAN), was the DG.** I had intense dialogue with him about my mission, and he summoned the relevant staff, who recounted how they had become frustrated with several efforts for us to attend meetings and understand the huge opportunity, we were carelessly losing out on. They armed me with all the information to lead advocacy for release of this facility back to Radiology department.

At the UNTH, everybody thought I was speaking Greek, and wanted to thrust me aside, but where shocked to find that though much younger than my contenders, I stood my ground, defying all the enmity and intimidation, to wrestle that Radioimmunoassay back to Department of Radiation Medicine. **It was no mean feat, I was not in the good books of some of my favorite senior colleagues, after that**. Shortly, after, we had an Expert Visit, and conversations opened up, about upgrading the project to the next level. An initial project was commenced at UNTH termed NIR 6018 titled "Upgrading radioimmunoassay services at UNTH" with the late Prof Fidelis Iheanyi Obioha as the project coordinator. Another project RAF 6030 titled "Diagnosing diseases using clinical nuclear medicine" was also commenced. The Federal Ministry of Health was required to be the counterpart, for these projects.

Several staff of the hospital were trained under these projects. For example, in 2010, Prof Okere and Dr Emmanuel Modebe were beneficiaries of the trainings, with support of my nomination, and both **became the first medical radiologists, to be formally trained in nuclear medicine in UNTH.** Dr

Emmanuel Modebe, is currently **one of the few Nigerians with a Masters degree in Nuclear Medicine, from the prestigious University of Stellenbosch in South Africa**.

Not satisfied with this feat, as soon as Prof. Okere returned to Nigeria, I literally sat on his head, until we produced a manuscript which formed the basis of a book in nuclear medicine. That book, '**Synopsis of Nuclear Medicine',** which has me as lead author, is to the best of our knowledge, **the first and so far, the only indigenously written book on the subject of nuclear medicine.**

I later, served on the Federal Ministry of Health and IAEA Committees to operationalize **Radiotherapy and Radioimmunoassay/Nuclear Medicine** in Nigeria, and worked with the Pioneer Chief Executive and Director General of NAEC; Erepamo Osaisai. **The full content of our application to NAEC, chronicles the history of radiotherapy and nuclear medicine for the UNTH. It led to the support of the Ministry of Health for these projects and a** gigantic building funded by the ministry is still ongoing at UNTH.

Again, later on, Prof Njeze and I, were privileged to be sponsored during Prof Bato Okolo's tenure as Vice-Chancellor to do an attachment at the Nuclear Medicine Department of the Medical University of Innsbruck, Austria, with Prof. Irene Virgolini, whose research interests are mainly based on oncological radioisotope therapy. The exposure during the visit convinced me more about the imperative need to develop this area of functional imaging in our sub-region.

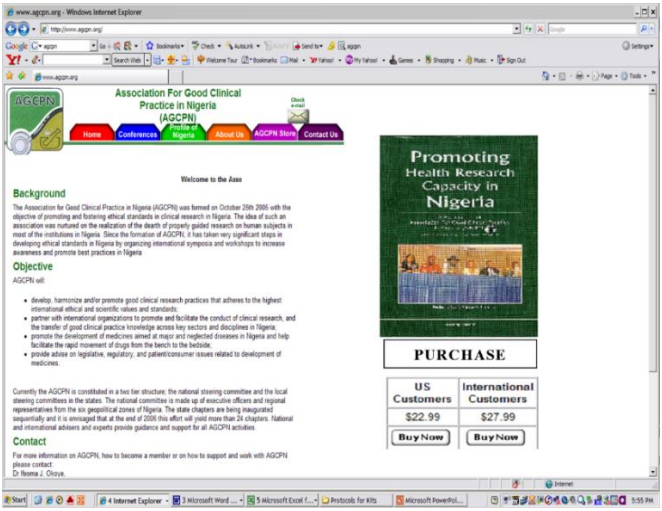
Other Milestones

Collaborations with ITSI-Biosciences, LLC.

In my early years of scientific research I collaborated with Dr Richard Somiari, President and Chief Scientific officer, ITSI Biosciences, LLC Johnstown, PA, USA in several ways:

A. Establishment of AGCPN

ITSI-Biosciences played key roles in development of the training courses, programmes, design of the logo, development of the content and hosting the AGCPN website for many years, developing the official comments from AGCPN on the National Agency for Food and Drug Administration and Control Act (as amended) draft clinical trial regulations in 2007 and production of the first publication of AGCPN (Promoting Health Research Capacity in Nigeria) which was available for purchase on Amazon.com.



B) My very first breast research study was with ITSI.

This study was informed by AGCPN's thrust and intentional efforts and programmes to promote studies that include specimens from Nigeria, and it was sponsored by ITSI-Biosciences.

Environment and Breast Cancer Study

(ITSI) Biosciences provides affordable proteomics services to academics and after I visited their Johnstown Laboratory, ITSL decided to fund a breast cancer study, which involved collecting peripheral blood and surplus surgical tissue for the discovery and evaluation of biological markers**,** in order to prognosticate diagnosis and management of breast cancer more precisely. The rationale and objectives for the study were benchmarked on identified existing gap, that studies designed to identify biological markers at the systemic level, that might underlie the differences in BC risk among various ethnic/racial populations, exist in HICs. However, in contrast, there were little or no studies aimed at characterizing the molecular character of breast tumors from Nigeria at multiple levels. Such studies include blood levels of estrogens and other hormones, markers of nutritional deficiencies and even of oxidative stress, thus leaving gaps in knowledge on how diet, lifestyle and environment may influence the time-of-onset, severity, and prognosis of breast cancers in LMICs, such as Nigeria. Sadly, 17 years down the line, we are still battling with such gaps.

Each individual 'Case of Breast Cancer' in the study needed 'Materials and Data" comprised of the following components:

(1) One (1) frozen breast cancer tumor specimen.

(2) One (1) formalin fixed and paraffin embedded breast cancer tumor specimen; and

(3) Complete and accurate associated Data, including the Case History and Pathology Reports.

As part of the sponsorship, ITSI-Biosciences supplied the following items (see table below), which were of great benefit to our Pathology Department:

S/N	Description	No.
1	Surgical Recovery Protocols Manual	1
2	Large (40cm x 57cm) Richard Allen Scientific Dissecting Board (White)	1
3	Jensen Scientific Stainless Steel-Cased Dewar	1
4	Thermo Electron Corporation 7751 Stainless 25cm Blade Cutting Knife	1
5	Fisher Brand small forceps	1
6	Thermo Medium forceps	1
7	Fisher Brand Large forceps	1
8	Thermo Scissors	1
9	BP #6 Scapel Holder	1
10	SurgiPath Brand Rounded Tip 22B Scapel blades – non-Sterile	100
11	Blue Frozen Tissue Cassette (F) with Barcode (40mm x 29mm x 7mm)	81
12	White Fixed Block Tissue Cassette (B) with Barcode (40mm x 29mm x 7mm)	81
13	White Cassette Box (13cm x 13cm x 5cm)	6

The Sickle Cell Disease Care and Research Programme (SICREP) UNTH, Enugu:

I especially appreciate Professor Agnes N Anarado for calling to memory most of the recount below.

The Sickle Cell Disease Care and Research Programme (SICREP), UNTH Enugu, was established by the late Emeritus Professor Chukuedu Nwokolo of the College of Medicine. The SICREP goal was to promote primary and secondary prevention of Sickle Cell Disease (SCD) through screening and counseling, establish a specialist clinic at UNTH for continuing support and care for the youths/adults living with SCD and capacity building for SCD care and research. With other

members, such as Professor Eze Magulike, Late Professor Esther Ofoegbu, *Professor Agnes N Anarado* Nwokolo and two other nurses, we helped to enable the take-off of the adult SCD clinic and in 1999 organized a workshop on SCD prevention and care for Primary Health Workers in Enugu state. By 2003 all the three nurses working with SICREP received advanced training and experience in Specialist Sickle Cell Centres in the UK with support grant from the Tropical Health and Education Trust (THET). *One of the greatest achievements of SICREP was when Professor Nwokolo, working with local technicians, developed the mobile SICREP machine that enabled haematologists do sickle cell screening in rural areas in the south-eastern states of Nigeria where there is no electricity*.

- **MOU with University** of **Applied Sciences** and **Arts** - **Hochschule Hannover, (**HSH) **Germany** and UNN.

Important positive achievements are:

*Observing the profound footprints of AGCPN online. Professor Gerd Fortwangel decided to reach out to me to establish a collaboration between the two universities, to further assist our knowledge base in the Clinical Trial process***.** My accepting his offer opened up a profound journey that has lasted over eight years.

Since the implementation of the UNN-HsH MOU in 2015, for exchange and cooperation programme, remarkable benefits have been recorded with regards to:

1. Multidisciplinary, multi-institutional research output and publications,.
2. Participation and presentation of research papers at scientific conferences.

3. Staff mobility, and student exchange programmes
4. Capacity building in clinical trials.
5. Grant applications for drug development that addresses local health challenges.
6. Career development of early and mid-career researchers

Staff Mobility and Student Exchange Programmes:

In the last five years, staff of the UNN have been hosted as guest Professor/researcher at HsH as follows:

- During the winter terms of September 2015 - February, 2016, and September – December, 2018, November 2019 – January, 2020.
- UNN Professors have been invited as guest lecturers for the International Summer programme at HsH from 2016 - 2019.
- Staff of the HsH have visited the UNN and have given public lectures to the university community on clinical trials.
- One student from HsH was accepted at the UNN, into the student exchange programme in 2016, while another one accepted for the spring term in 2019, could not make it.

Capacity Building in Clinical Trials

Over the past eight years of our collaboration, 14 staff and students of the UNN and affiliate federal government agencies in Nigeria have been trained in clinical trials at the HsH. **Members of the ISP include: in** 2015: Azodoh Chisom – 5th Year Medicine and Surgery, Nwokike Ifeanyi – 5th year Dentistry, Ekpemiro Amarachi - 4th Year Physiotherapy,. In **2016:** Amarachi Destiny Ezuma – Physiotherapy, Ogochukwu Forchu Robert – Dentistry, Imomon Augusta Ebinonlen – Medicine and Surgery, David, Isaac Mayowa – Medical Laboratory Science, Agwa, Amarachi – Physiotherapy: In

2017: Dr Lasebikan Nwamaka Ngozika – Consultant Clinical and Radiation Oncologist, Dr Chibuike Ukeje – Medical Doctor, UNN, Kayode Olaoluwa Olaniyan - Nigeria Natural Medicine Development Agency (NNMDA of the Federal Ministry of Science and Technology (FMST): **In 2018:** Chinenye Cynthia Odo – Medicine and Surgery, Uloma Cynthia Ezuma – Nursing Science; In **2019 ;** Onyeani Chijioke Obiwe - Dept. of Medical Laboratory Science (400 L)**,** Arua Mercy Nneka - Dept. of Nursing Sciences (300 L)**,** Ume Adaeze - Dept. of Physiology (400 L)**,** Ogwo Blessing Chidinma - Dept. of Physiology (400 L).

Grant Applications for Drug Development that Addresses Local Health Challenges

- Staff members of both universities have collaborated to develop protocols and submitted grant applications for the EDCTP calls on drug development under the North-South cooperation initiative.
- Development of Ethnomedically Derived Phytotherapeutic Agents as Adjunct in Treatment of HIV/AIDS.

Career Development of Early and Mid-Career Researchers:

One of the success stories of the UNN-HsH MOU is Professor Sam Chidi Ibeneme, who was promoted to a Professor in 2018. He leveraged the platform of the MOU to triple his creative output including:

-30 scientific publications, - 8 published abstracts, while - 4 research papers are currently undergoing peer-review with, different international journals. Up to 30 papers were presented at international conferences, and 4 papers at local conferences. He also leveraged the training he gained under the clinical trials component of this MOU, to: be a key resource person in

eight train-the-trainer national workshops in Nigeria, establish '***a multidisciplinary research team in HIV and bone health between the UNN and - the University of the Witwatersrand, Johannesburg, South Africa***' (where he was awarded a KIC Fellowship in 2018), became the Co-PI of an ongoing study on HIV and Bone Health in South Africa, UNN and Hannover University were jointly awarded ERASMUS Mobility Grants because of his joint application with Professor Fortwengel.
Many other staff and postgraduate students of the University of Nigeria, who were trained under the existing MOU between UNN and HsH, and have successfully conducted diverse studies on cancer and other non-communicable diseases, with ***works were published in high impact journals and presented at various international conferences***, including:
- PT. Amarachi Ezuma – her MSc project was awarded the Elsevier Journal Prize for the Best Platform presentation at the World Physiotherapy Congress in 2021.

Collaboration with Project Pink Blue:
My collaboration with *Runcie C.W. Chidebe, Executive Director, Project PINK BLUE [PPP]*, **as a Trustee and BOD member, was a scientific journey that yielded the following enormous impact:**
In 2014, I shared the Union for International Cancer Control (UICC) and Pfizer Oncology grant call for SPARC Metastatic Breast Cancer Challenge and not only, encouraged them to apply for the; ***Breast Cancer Navigation and Palliative Programme (BCNPP)***, but worked with them to submit it. They were awarded the $57,320 grant to implement Nigeria's first patient navigation programme, which promoted patient navigation across Nigeria. As of today, patient navigation exists in over 10 states of Nigeria. Part of the results were published in the Journal of Cancer Education

(https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7788275/. A similar grant, under my mentorship, also gave rise to the patient navigation programme at the UNTH by Dr Okwor and another publication.

2. I was in the steering committee that secured a series of grants to implement Upgrade Oncology - a programme that brought two U.S.-based medical oncologists to Nigeria to train 44 clinical oncologists in 2018, and two U.S.-based oncology pharmacists to Nigeria, to train 36 pharmacists in Nigeria. [Upgrade Oncology: U.S.- Nigeria Science and Technology Exchange Program $29,911.70 grant from the U.S. Embassy Abuja in 2018, ACT Foundation (N10 million) in 2021: Learn more: https://pubmed.ncbi.nlm.nih.gov/35838882/]

3. Apart from ***playing a pioneering role in co-drafting the establishment bill for the*** National Institute for Cancer Research, Treatment ***with Senator Mao Ohuabunwa,*** I also joined Project PINK BLUE and other Stakeholders in the Cancer Control Space in sustained advocacy for this bill to be passed in 2016 and its eventual signing into law by President Muhammadu Buhari in December 2017.

4.I supported Project PINK BLUE's cancer control initiatives, such as; World Cancer Day walks, Pink October Walk and played leading roles in most of the research publications of the organization, including the most recent paper on one of the world's leading journals – The Lancet Oncology: https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(22)00692-1/fulltext

Collaboration with Anambra State: Dr Akabuike Joe, Commissioner for Health Anambra State (2014 To 2019):

Hon. Dr Joe Akabuike (who is currently the Chief Medical Director of Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Awka), was kind enough to remind me of the catalogue of work I did in the Health system of Anambra

state. I worked with the Honourable Commissioner for Health Anambra State from 2014 to 2019, to engineer and/implement the following activities in Anambra state:
(1) Under the aegis of BWS, created awareness on cervical and breast cancers and their screening for Anambra State Women, at a Women Summit held at Dora Akunyili Women Development Centre Awka in 2015.

(2) Under the aegis of BWS, facilitated the training of healthcare workers from randomly selected Primary Health Care Centres and General Hospitals in Anambra State on cervical cancer screening, using visual inspection with acetic acid (VIA) in 2017. (Sponsored by an international organization - American Society of Clinical Oncology and Association for Clinical Oncology (ASCO), with Dr kelechi Eguzor as team lead) that provided medical services and transfer of skills to Anambra Healthcare Providers from the different LGAs.
4) **Helping Babies Breathe** was a hands-on programme aimed at building the expertise of Anambra workforce to resuscitate new-born babies and prevent birth asphyxia, brain damage and death. The program was implemented in Enugwu-Ukwu, Anambra State by me (Professor Ifeoma Okoye) in collaboration with Dr Udo Asuonye and Association of Nigerian Physicians in the Americas (ANPA).

5) I succeeded in getting the commissioner to represent Anambra State in: a] AGCPN 2015 Clinical Trial Summit and b] 2nd All Africa Clinical Trial Summit in Cape Town in 2019, by the Pan-African African Clinical Trial Consortium (ACTC), which currently acts as consultants to mentor; African Institutions and Governments to create model Clinical Trial Units (CTUs).

According to Hon Dr Joe Akabuike, **"**Professor Ifeoma Okoye is passionate and committed to cancer control and empowering African governments to leapfrog their clinical trial industry and upskill the research capacity of African scientists. ***She has indeed been an asset to Anambra State, the health Sector, for decades! Recently, last year 2022, she attracted a WHO/CHAII Cervical Cancer Screening Initiative, to Anambra!"***

Milestones Leading Professional Organizations:

1. Association of Radiologists in West Africa (ARAWA)

As a former President of the Association of Radiologists of West Africa, I had the opportunity of assessing at close quarters Dr. Ifeoma Okoye's unique organizational ability when she led in hosting the association at its annual Scientific Conference in Enugu. She introduced some innovations into the program, including ***the widely welcome 'hands-on training in Ultrasonography****, and also* ***pioneered what must be the first use of teleradiology in Radiology practice in Nigeria****.*

- **Prof. Funsho Komolafe, FMCR, FWACS, FICA, FRCR**

I was privileged to be the '1st Female President of the Association of Radiologists of West Africa' (ARAWA). First, as LOC Chairman of ARAWA conference, during Professor Komolafe's tenure as President, I innovated the idea and implemented the first Pre-ARAWA conference workshop, complete with onsite ultrasound machines (which companies willingly brought as demo), to enable real-time hands-on training. A number of radiologists attested that, as soon as they left that meeting, they proceeded to purchase their own personal ultrasound machines. The equipment companies also

gleefully sold off their demo machines during the workshop at huge discounts.

In 2004, I hosted ARAWA as President, and it was at that meeting, I championed radiation oncologists /radiologists in Nigeria to vote unanimously for radiology centres across the country, to shun Cobalt 60 in favour of a Linear Accelerator. This decision was hotly opposed, by our senior colleagues, who strongly held on to the opinion that majority of Nigerian cancer patients will always present late, but we voted them down, for we held the proactive opinion that we should navigate patients out of such narratives, instead of accepting it as a never-ending paradigm. It was also at the conference that I introduced Teleradiology Services as an option to build capacity of Nigerian-based radiologists, in-house, by connecting them to radiology centres in HICs to mentor them through upskilling their knowledge of cross-sectional imaging modalities, that had just emerged in more than 12 centres in the country, under the VAMED Turnkey project. This was because, we found out that most training available were knobology training and not the needed clinical radiology trainings. Through sustained advocacy with the First Foundation, they eventually succumbed and sent a number of radiologists for attachment training. I was one of such radiologists.

2. Medical Women Association of Nigeria (MWAN), Old Anambra and Enugu

"I vividly recall your tenure as the President of' the Medical Women's Association of Nigeria, Enugu. You had a vision of a strong association to impact society. For this, you appealed to the government of Enugu State while I was governor for a permanent center from which to carry out the many programs the association had for our people. I am happy that I approved the building on Abakiliki Road in G.R.A Enugu, which the association still utilizes today. The center has continued to pull

on the knowledge and cooperation of medical professionals to address the health needs of women and children in society".

- ***H.E Dr. Okwesilieze Nwodo, Former Governor of Old Enugu State***

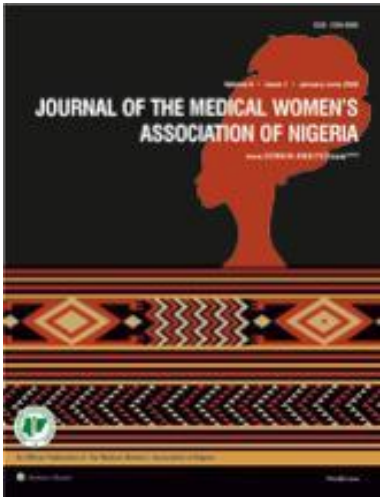
Once I took up the baton of leadership of MWAN Anambra, and less than a year later, became president of Medical Women Association, Enugu State, I hit the ground running. In the two years of this tenure, I was able to establish what I branded, 'Well Women Centre', and the edifice is standing tall and still operative till date at No 27 Abakiliki Road, Enugu, with its renamed appellation: MWAN Screening Centre.

God was on my side, as when I applied for a Centre for MWAN from His Excellency, I obtained the letter of approval from him, I proceeded with great hopes, to Housing Corporation in Enugu State secretariat and surprisingly met one of those my HOD's, Dr Ude's, constant guests or brethren (both demised), on the decision seat of our being given the accommodation. Seeing him there was the game changer; he smiled benevolently at me, "Nwangbo, what are you here for?". And when I showed him my paper of approval, he burst out laughing**.** *He informed me that, one million people are custodians of such a piece of paper.* Long and short, was that through him, God broke protocol for me, and the current Medical Women Centre is one out of the three government facilities offered to MWAN to choose from. On the trip with me to make that choice, when I was given the allocation, were two of my respected senior colleagues, Emeritus Professor Nenne Obianyo (The immediate past state President, who later became National President of MWAN) and Professor Ngozi Ibeziakor. The facility was in a sorry state, so I mobilized action with other enthusiastic MWAN Members, Dr Ebele Chinwuba and Professor Uche Agunmadu, to raise funds across the country to restore the building to functionality and

remodel it to suit the purpose for which we got it. We had a tenant in the Boy's quarters who was great at maintaining the landscaping, thus his free services became his rent, and Professor Henrietta Okafor was able to get a matron that volunteered her time at the centre for years, thus ensuring screening services were maintained. My tenure also registered a holiday camp for teens at Queens School Enugu (to keep children occupied and out of mischief), A novelty football match, with 3 sitting governors in attendance, the GOC and General Garba as guest of honour, two high profile fundraiser balls and dinner, (at Nike Lake with celebrity artists; Oliver De Coque and Nelly Uchendu to ensure Naira rain… except it rained mostly into the hands of the artists) etc. Enugu metropolis was awake to the fact that an organization to be reckoned with was in existence.

3. Journal of Medical Women's Association [JMWAN]

I was given the assignment to revive this journal, by the President, Dr Mini Oseji and her Exco. As Editor-in-Chief, I accomplished this task creditably, with the help of a number of outstanding people: Drs Evo, Nneka Iloanusi, Magdalene Irozuru, and Oseji. Since its rejuvenation in April 2020, under the able National MWAN leadership of Dr. Mininim Oseji, the journal has published a substantial number of widely read articles, case series, communiques and conference proceedings from the 2019 MWAN BGM and the 2021 MWIA NEAR Congress. It does this at a low cost to researchers and with a minimal turnaround time of 4 - 8 weeks. This is done to ensure that researchers from LMiCS, such as Nigeria, have a cost-effective platform to publish their valuable work, to inform and educate the world.



MOTHER OF UNNCOMA:

4. Advancement Officer of The College of Medicine, UNN

"While I was the Provost of the College of Medicine, she earned the distinction of being nominated as the first academic to develop and run the University's Advancement Centre, a novel establishment in the Nigerian University System. That centre was proposed by the Nigerian Higher Education Foundation, an initiative of the McArthur Foundation of the United States of America. Her people skills and public spiritness, made her a natural candidate for the assignment".

- *Professor Benjamin Chukwuma Ozumba; Former Vice-Chancellor of UNN, Former Provost, Former Dean of Medicine and Dentistry, College of Medicine*

I was assigned by Prof B. C. Ozùmba, who was the provost to found a College Alumni Association. I coined the name and the acronym, and worked with Dr Obinna Maduka (who was at that time heading the UNTH Alumni Association) to have the college own the alumni due to the promise of McArthur

Foundation to match any funds the alumni raise. Professor Ozùmba sent me to Ibadan to understudy their structure and I came back and established the first Advancement Office of The College of Medicine, UNN, and Mrs Uche Ohuegbu was assigned to head it as head of administration. I then became the foundation advancement officer of the college, from where we birthed UNCOMMA.

I was at ANPA meeting a couple of times to speak to our alumni on the need to cooperate and build the organization, first with Ozumba, then with Professor Onwubere. The 100 Igbos, especially anchored by Drs Acho Emeruwa and Udo Asuonye, facilitated a lot of the early discussions. Dr Nwogo Agbasi sponsored a lunch at ANPA meeting.

I shouldered the responsibility to keep UNNCOMA alive with Drs Nkem Chukwumerije, Charmaine Emelife and Chinyere Anyaogu, ensuring alumni were assisted to get their transcripts in time, facilitated it personally, ***even up to going to drink dust at UNNEC, to unearth documents from piles of hard copy docs stored over several years, and paying for courier***. That was how we started the journey to digitize the records.

It was a long story and a long journey, which duties, I gratefully, handed over to the capable hands of Prof Bond Anyaehie, after several years of meritorious service.

The entire journey to forming UNNCOMA NIGERIA/UK/US, and the different activities done to improve visibility and buy in of our Alumni should really be documented for posterity!

Drs; ChairmaineEmelife Former UNCOMMA and later ANPA President, Nephrologist in Atlanta, Georgia and Nkem Chukwumerije MD, MPH, FACP, Former UNCOMMA and later ANPA President/President and Executive Medical Director. The Southeast Permanente Medical Group, Atlanta, Georgia. Both recount the following milestones.

- She was the first alumni liaison for the University of Nigeria College of medicine alumni association

(UNCOMAA). I met her through UNCOMAA and ANPA - association of Nigerian physicians in the Americas.

- She was instrumental when a few of the USA Univ of Nigeria College of Medicine alumni sought to rearrange, galvanize and motivate other alumni to be more effective and efficient in helping the school.
- Sacrificing her time, lending her goodwill, effort and relationships she swung into action and helped set up the alumni office at the college thus offering up the sprint board for UNCOMMA (University of Nigeria College of Medicine Alumni Association) to firmly set off.
- With hers and some others, collective oversight, we were able to initiate and complete several educational and structural projects at the university school of medicine. Including the planning and execution of the installation of an audio-visual system in the lecture hall.

- Prof was fully committed and did everything she could to ensure that the alumni association was successful.

H.E Dr. Okwesilieze Nwodo, Former Governor of Old Enugu State, also recalled my UNNCOMA acts in these words*; "I recall your, dynamic efforts with the University of Nigeria College of Medicine Alumni, UNCOMA, to provide infrastructure for the College of Medicine at the University of Nigeria teaching hospital at Ituku - Ozalla. The design you and your team prepared for the hostels, classrooms, and shopping plaza remains a goal for the alumni. Since then, various class groups have had interventions in the college, but we need to pull together to achieve more.* ***I do not doubt that you will use the opportunity of this inaugural lecture to motivate the University community and the alumni to "Dream it, see it, do it for the overall development of our alma mater and "restore the dignity of man.***

About the West African Journal of Radiology (WAJR)

"Since her appointment as editor, ***she has significantly boosted the quality and ranking of the Journal".***

- ***Prof. Funsho Komolafe, FMCR, FWACS, FICA, FRCR***

The *West African Journal of Radiology* is a peer-reviewed Print and online semi-annual publication of the Association of Radiologists of West Africa (ARAWA). ARAWA was founded in 1963 by a unique group of professionals led by Professors H. Middlemiss and W. Peter Cockshott in University College Hospital (UCH), Ibadan, Nigeria. Other African Radiologists such as Dr. Michael Ogakwu, Dr. Bayo Banjo, Professor Ben Umerah (all of blessed memory), Dr. Juma of Ghana and the Doyen of Radiology in Nigeria, Professor Suleiman B. Lagundoye later joined them. The main objective then was to have a common ground where most local research work could be presented, discussed and shared. This helped in identifying conditions peculiar to the West African sub-region and fostered an excellent relationship among radiologists. The efforts of the aforementioned pioneers have produced close to two thousand fellows in Radiology and for these we remain grateful to them and will endeavor to keep the flag flying.

WAJR was established in 1994 by the above luminaries to promote research in the field of Radiation Medicine in the West African sub-region. In 2012, the journal entered into a memorandum of understanding with Wolters Kluwer Pvt. Ltd (previously known as Medknow Pvt Ltd, Mumbai, India). With the help of long-term digital preservation through two primary partnerships, Portico and CLOCKS (Controlled Lots of Copies Keep Stuff Safe), the journal allows free access (Open Access) to its contents and permits authors to self-archive final accepted version of the articles on any OAI-compliant institutional / subject-based repository. The journal is registered

with some abstracting partners like, CNKI (China National Knowledge Infrastructure), EBSCO Publishing's Electronic Databases, Ex Libris – Primo Central, Google Scholar, Hinari, Infotrieve, National Science Library, ProQuest, TDNet, amongst others. The journal is indexed with; 'Emerging Sources Citation Index (ESCI), Index Copernicus and Web of Science'. **We publish twice a year and are currently at Volume 29, Issue 1.**

Once I finished my residence as both the Assistant Editor and managing Editor of WAJR,

I determinedly set my sight like a flint to the task of restoring the defunct West African Journal of Radiology, and the assignment to become the editor-in-chief had been put on the shoulder of my Professor of Radiology, Professor B. C. Umerah, by the Association of Radiologists of West Africa. We needed funds, so I raised funds, we needed articles and I expanded the authorship domain, and led advocacy with not only radiologists, but with other doctors in other specialties', in Nigeria, other African countries, and Nigerians in the Diaspora. I expanded the editorial board again to include doctors from other specialties, to ensure we had enough hands to speedily review the articles and meet up with our publication deadlines. I put together a team of Professor K. K. Agwu and Professor Agwu in 1992, and in 2012, I moved the journal from analogue to digital format. Earlier, we had subscribed to AJOL (African Journals on Line), and had to digitalize our articles to have them on AJOL. This time, Professor Isiaku advised us about increasing the efficiency of the journal by engaging the services of Wolters Kluwer-Medknow. This was when we included more digitally knowledgeable radiologists, such as Dr Iloanusi, who is currently the phenomenal managing editor of WAJR. She has been an Aaron to me on sustaining the journal for the past 2 decades, assisted by; Assistant Managing Editors: Professor Okere and Dr Amaka Nnamani, and Mrs Chinelo

Nkwonta, as Business and Publication Manager.

The Bone Marrow Donor Registry, Nigeria [BMRN]

God must have marked me out to play a role in this space, as whilst a medical student, I joined a mentorship research club, called Nobel Medical Club. One of the areas of our focus was on the sickle cell disease, whose driving trait expresses itself most in the Nigerian population and associated with high morbidity and mortality, and whole families helplessly watched as SS took a heavy toll of prematurely abbreviating the lives of members of their family.

Thus, when in 1998, I heard that Professor Chukwuedum Nwokolo was putting together an organization, SICREP, to pay a focused attention on how to mitigate against this genetically modulated disease, that was being propelled to such proportions, mostly by the ignorance of the population, I did not hesitate to volunteer my time and services.

A decade after, September/October 2011, I was not surprised that God chose me to accept Seun's and UICC's appeal to assist in domiciling BMRN, as a legal/viable structure in Nigeria, even though my hands were already pathetically full. Thank God for the absolutely hardworking and proactive collaborators, Seun and Professor Sunday, that he bequeathed to BMRN. I only needed to literally donate my brain space. Professor Sunday was very hands-on, and ready to run any kind of errand, without complaining, not to talk about his profound professional acumen he brought to the table. Please, see Professor Sunday and Seun's recount that doesn't deserve any elaboration.

Bone marrow transplantation can treat over 70 different potentially fatal diseases. For any bone marrow transplantation, there must be a donor. For many patients, a marrow transplant is the only treatment option that provides a cure for several benign and malignant haematological disorders as well as

several life-threatening non-haematological disorders. It is extremely difficult to get a donor that matches a patient. Donor searches are organized by bone marrow donor registries all over the world. Before February, 2012, there was only one bone marrow donor registry in Africa, located in South Africa
Functions of the BMRN:

- Organize Donor Drives around the country to recruit volunteer Donors.
- Do HLA typing on the Donors and add their details to the Donor Registry Database
- Add the Donors to the International Registry of the Bone Marrow Donors Worldwide
- Perform searches in the local BMRN donor database as well as International Donor Registry Databases around the world to find suitable stem cell donors for any patient anywhere in the world.

Contributions to Science, Journal Publications, Books and Manuals

I have over 80 published papers in peer-reviewed journals, and I am the author/contributing author of 7 books (such as 'Fundamentals of Chest Roentgenography'and 'Synopsis of Nuclear Medicine). My Complete Bibliography is available at: https://scholar.google.com/citations?view_op=list_worksand hl=enand authuser=2and user=yH61aPAAAAAJ

I have also been involved in some clinical trials implementation of several grants, delivery and implementation science, some of which has led to 7 books, 3 training manuals and one book in production.

Books

1. Fundamentals of Chest Roentgenography (Felix U. Uduma, Prof Ifeoma Okoye)

(Contributed a chapter in radiology) in book: Applied Basic Clinical Diagnosis (Emeritus Prof. NwakoF.A. , Prof O.O Ajayi, Emeritus Prof. O.O. Mbonu, Prof.N.E.N.Agugua-Obianyo)

2. Synopsis of Nuclear Medicine: Okoye IJ, Okere PCN, Obioha F

3. Enthroning Early Detection of Breast Cancer in Nigeria. Okoye IJ, Ezeome ER, Nwankwo KC, Saidu SA, Umdagas H, Udeichi C, Iloanusi NI, Modebe E, Okere PCN, Maduabuchi JM, Aderibigbe ASO, Dawatola, Agunwa EU, Anarado AN, Epega S, Ozigbo U, Rhyce Kerex Publishers, Enugu, 2008.

4. A Handbook of Health Research Ethics (Compiled and Edited By Prof Ifeoma Okoye, and Dr Emmanuel Nna)

5. Promoting Health Research Capacity in Nigeria (An Association for Good Clinical Practice in Nigeria, AGCPN publication.)

6. General Considerations for Clinical Trials and Guidelines for Good Clinical Practice (An Association for Good Clinical Practice in Nigeria, AGCPN publication.)

7. Living A Vibrant and Healthy Life, Inspite of Diabetes (Coordinating Authors: Prof Ifeoma Okoye AndMrsIfy Nebo; Contributing Authors: Mrs Grace Nwokike, Ms Eunice Nwonu, Dr Esther Ofoegbu, Dr Chika Ndiokwelu, Prof John Oli)

8. Top of FormChartingA Course for Clinical Trials in Nigeria ((An Association for Good Clinical Practice in Nigeria, AGCPN publication.)

9. Age and Disease Appropriate Physical Exercise (In process of Publication)

10. Ultrasound Teaching Manual for New Residents Orientation (In process of Production)

11. Facts On Cancer In General/Cancers of The Breast, Cervix, and Prostate (compiled by Professor Ifeoma Okoye, Professor Ugwumba , et al.).

12. A Public Health Information Publication (dedicated to all those who have dies from breast cancer and other cancers).

13. Cervical cancer vaccination awareness: And You Saved Our Girls Too (A BWS Publication by Lola James and Prof Ifeoma Okoye)

Conclusion:
CONCLUSION

In 2008, the World Cancer Declaration was launched, setting 9 targets, which sets out the priorities for; cancer prevention, early detection, diagnosis, treatment, and care, needed to align with the global ambition of a 25% reduction in premature mortality from NCDs by 2025, in every country.

The fact that Literature shows that the uptake of Mammography, even among Female HealthCare Professionals, is as low as 3-8%. (compared to 'best practice'

of 99.9%) & that the five-year breast cancer survival rate in Nigeria is less than 40% (compared to 86% in the USA), are sure indications that we are still battling with the basic targets 5 & 6, which are aimed to address; Reduction of stigma and

dispelling of myths about cancer, & Universal access to screening and early detection for cancer, respectively!

Thus, the Game Changer, will entail abolishing 'Screening-Hesitancy', to achieve better, more sustainable, 'Cancer Early Detection' & downstaging our tumours, through; implementing template solutions, of concerted mass action, each one touch one, creation of an army of 'Cancer Prevention advocates (Agents Of Change), implementing mobile solutions, (to Take Both The Message & The Screening, to the people, where they reside). This should furnish the LMICs with Survivors, who can share their stories and change the current narrative.

I plan in the coming years to leverage all my profound experiences passionately, to ensure that Public Health Systems of LMICs, not only achieve the basic targets 5 & 6, but also participate in the four main areas of activity, that the; United Nations (UN) High Level Meeting in 2011, & the non - communicable disease (NCD) community, have identified as, needed to help drive progress at the global, regional and local levels. These four main areas which are; advocacy, accountability, capacity development, and knowledge exchange/sharing, fortunately are my forte.

I always impress on National governments, and the cancer community, the need to embrace, address, & put in place, 'a coordinated national response', that will involve, deploying all hands on deck , into a cohesive effort that will ensure, synergy, supported by strong monitoring & evaluation mechanisms, that will continuously provide a mapping of all 'in-country' activities, connecting the dots on what a number of collectives,

are doing annually, in the cancer space. This will ensure that the remaining gaps to be filled are made glaring!

We have also, identified that Data collection & management is an area of weakness, for the different NGOs, who are on ground in the communities, increasing awareness, dispelling myths, offering screenings! With this realisation that 'Data is King', I purpose to engage with; Developmental Agencies, who should have no difficulties providing us with technical partners, to work with us, in taking critical steps to improve on our data collection and analysis! I have started this effort already with some International/National Institutions, whose bureaucracy will be easier to navigate, & its yielding a rich harvest.

Further recommendation is that; on a country level, that we aim at putting in place, a database structure, that will have standardized data fields and collection! This will enable us to have concrete data to make informed decisions, identify areas of Strength and improvement, & churn out measurable outcomes! Availability of such Organized & reliable data, will attract, higher volumes of Clinical Trials, with improved participation in Genome wide studies, If we are able to add on, creating sustainable means of funding Cancer care, we will be nearer to ameliorating the increasing cancer burden in Nigeria/other LMICs, change survivorship statistics positively, and thus the narrative, with impact on Late Presentation.

My journey so far, has gleaned for me, invaluable insights into the challenges faced by low and middle-income countries in delivering effective cancer care. I have had the privilege of

working closely with diverse stakeholders, including government agencies, healthcare providers, NGOs, and community organizations, to design and implement cancer control programs, tailored to local contexts. These experiences have honed my ability to navigate complex health systems, 98 identify barriers to access, and develop sustainable solutions in resource-limited settings.

I am looking for opportunities to leverage my skills and expertise to contribute to Pan-African Cancer Control for health systems in low and middle-income countries as a consultant, in order to nurture my visionary aspirations to implement evidence-based strategies, strengthen health systems, empower communities, power global health initiatives, implement, roll out national policy plan effectively, manage projects, advocate for governmental financing, lead community data research and analysis, and improve health security preparedness.

In all my previous job experiences, and committee/board participation, I have shown commitment to probity, integrity, witty initiatives/innovations, and results-driven work ethic, with great attention to high standards of statutory regulatory compliance. To acknowledge & reward my resourcefulness, the hospital, UNTH, were I have worked in for the past 42+ years, honoured me last year, by naming our Mammography Suite, after me: **PROFESSOR IFEOMA OKOYE MAMMOGRAPHY SUITE**

I believe now is the time to harness the collective energy and commitment, of LMICs, ALL HANDS-ON DECK, EACH ONE TOUCH ONE, to drive forward progress to, at least,

achieve these TWO TARGETS, out of the nine visionary, ‘World Cancer Declaration targets’, as we March towards 2025.

A Little Drop Goes A Long Way & Can Save A Life! And Each Life Saved Makes A Difference.

GOALS I HAVE SET MY EYES ON, IN THE COMING YEARS:

Already Dreamt, Thought of, & Being Done

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 TO UPSKILL MY SERVICES AS A MINISTER OF GOD & LEVERAGE MY SOCIAL CAPITAL AS TARGETS FOR MY EVANGELISM

 BE MORE OF; ‘AN AVAILABLE WIFE/COMPANION’ TO MY BELOVED HUSBAND, ENGR SIR CHRIS OKOYE

 TO INCREASE THE NUMBER OF SCIENTIFIC PUBLICATIONS COMING OUT OF THE AFRICAN REGION WITH TURACOZ AS PARTNER

 TO MAKE SCREENING HESITANCY & LATE PRESENTATION OF CANCER, HISTORY

o MOBILE SCREENING SERVICES (OSITA CHIDOKA FOUNDATION, NATION-WIDE MOBILE SCREENING/VACCINATION CLINIC - Operated by BWS)

o SCALE THE NYSC-BWS-CDS PROGRAM

o MAKE NATION-WIDE ‘GO PINK DAY’ CONTINENT WIDE ... GLOBALIZE IT

o ENSURE BETTER PATIENT EXPERIENCES

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DURING CARE

 RAMP UP CLINICAL TRIAL VOLUME, GENOMIC/IMAGING GENOMICS IN AFRICA

o CONSULTANCY SERVICES

o PROMOTE GLOBALIZATION OF PRODUCT : MULTIPLY CTU'S IN AFRICA

 CONTRIBUTE TO NATIONAL HEALTHCARE DELIVERY SYSTEM DEVELOPMENT, TOWARD REVERSING HEALTH TOURISM :

 At the national level, on September 1, 2014, I made significant contributions in developing the current 'National Health Policy and Blue-print' for the All- Progressive Governors Congress led government in Nigeria, where I was,

'THE GOVERNANCE LECTURER ON HEALTH' @ the Owerri Progressive Governors' Forum strategic Conference. I delivered to them, a 63-page technical paper on the way forward to restructure the Health System. I further chaired technical sessions, which held in Sokoto in 2014, to midwife the document. This was widely reported by various national dailies including The Tide.

https://www.thetidenewsonline.com/2014/09/01/imo- hosts-apc-lecture-series/

In order not to just remain a sitting duck, looking at the solutions, which I proffered in that 63 page document, I have found veritable partners, that will change that dynamics;

1) XODUS-MD DIGITIZED MEDICAL INDUSTRY MARKETPLACE PLATFORM BY PHYMUS

With Vision to Digitize the healthcare market of the future to reverse medical tourism.

Currently, the MEDICAL MARKET AS-IT IS, is a Low Activity industry with a Slow Turn-around Rate, thus Investors are yet unaware, that Healthcare is big business.

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XODUS-MD will aggregate and schedule specialist doctors from around the world for medical missions that get facilitated through medical facilities that operate on a "Time-Share" basis, wherein patients aggregated via primary doctors will be scheduled to receive treatments from their preferred specialty doctors.

INDUSTRY CHALLENGES AND IMPACT:

• The world is now a global village, and the talents are moving to countries where they can derive the highest value for their skills and talents.

• Nigeria and many African countries failing to measure up with the developed world in terms of amenities, and infrastructure, and consequently are losing their talent pool;

If we sum up, the worsening availability of Specialist doctors, due to brain drain, Low Asset Utilization by Medical Facility Operators/potential Clients (dissuaded by both the high cost of the service delivery & 'Out of Pocket' payment of Medical bills) , added to High Medical Tourism (the population of people with the resources to pay for optimum private care are all engaged in Medical Tourism), we find that we have a 'Catch two two' situation on our hands in our beloved country [LOW CUSTOMER BASE, LOW COMMERCIAL VIABILITY, LOW CAPACITY UTILIZATION & LOW INVESTMENT] MEDICAL AirBnB AND IMPACT

XODUS-MD digitized Healthcare Market Platform will, utilize its Medical AirBnB, to shift the industry into a market with a HIGH ACTIVITY TURN-AROUND RATE as seen on the GREEN SIDE. Indeed, the digitized marketplace platform will enable the Medical industry, witness an influx of more customers/patients being served in the local market, so that the capital flight is curbed aggressively. This will lead to a WIDENING OF THE BLUE PYRAMID in the middle, as more patients are retained locally.

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So a Rapid Industry Growth for Nigeria's healthcare industry and indeed that of many other countries is very possible!

2) UBURU HEALTH

Uburu Health developed a software infrastructure that harnesses data for facilities for research and development purposes.

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I partnered with them to supply the social capital leverage, they needed, by leveraging my network in forging relationships/access between Uburu Health and the Federal Ministry of Health, NAFDAC, Ghana FDA, CMDs of various institutions -UNTH, UCH, AKUTH, UDUTH (to mention a few), & global Institutions such as; University of Florida, Mayo Clinic, & recently a novel A.I research partnership between Stanford University's biomedical informatics department and 2 Nigerian Dermatology Centers.

I see the synergy that these two solutions; 'Digitized Medical Industry Marketplace Platform' by XODUS-MD, & the Software Infrastructure, by UBURU HEALTH, that harnesses data for facilities for research and development purposes, as a Gamechanger that is already playing out; in the Cancer Control Space[with the dignified entrance of NICRAT], multiple research collaborations, partnerships that will scale community engagement [Genomic/Ai-enabled: Imaging Genomics & Digital Medical Twins, Mobile Cancer/NCD Screening Clinics, optimized utilization of our Change Agents [NYSC-BWS-CDS/Women Health Army] and concerted efforts to improve Clinical Trial Attractive Index of our sub region, through QMes CTUs, I believe we are set to enable 'welcome disruptions' in the Healthcare System, soon.

Forty three years down the line, in my long career, as a Medical doctor, I look back at the efforts I have made to reach my goal as a change maker, and I am happy, and fulfilled when I see, and hear/read several endorsements, (some of which I have enclosed here), that I have in some way, made an impact in my profession, environment, & in the lives of my populace. I intend, as I retire from full-time employment, next year, to expand my Change- Maker influence globally, consolidating the in-roads I have made in Cancer Control & Clinical trials, nationally & in the African region. I also have, intentionally, started upskilling.

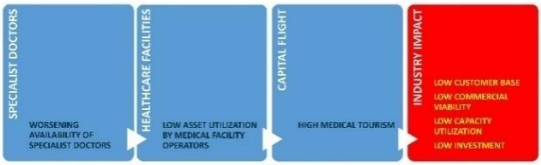
In all my previous job experiences, and committee/board participation, I have shown commitment to probity, integrity, witty initiatives/innovations, and results-driven work ethic, with great attention to high standards of statutory regulatory compliance. *To acknowledge and reward my resourcefulness, the hospital, UNTH, were I have worked in for the past 42+ years, honoured me last year, by naming our Mammography Suite, after me*: **Professor Ifeoma Okoye Mammoraphy Suite.**

I believe now is the time to harness the collective energy and commitment of LMICs, ALL HANDS-ON DECK, EACH ONE TOUCH ONE, to drive forward progress to, at least, achieve these TWO TARGETS, out of the nine visionary, 'World Cancer Declaration targets', as we March towards 2025.

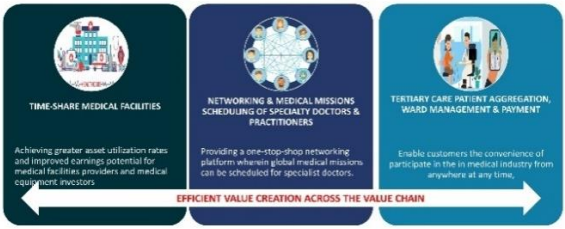
A Little Drop Goes a Long Way and can Save a Life! And Each Life Saved Makes a Difference.

HIGHLY CONFIDENTIAL

the Nigeria HEALTH CARE industry: challenges and impact

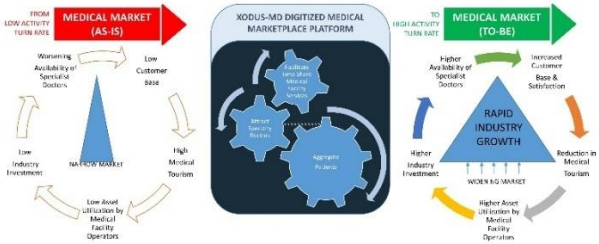


TIME-SHARE business model: Industry disruption to drive value creation



Market impact OF business model

THE DIGITIZED MARKET PLATFORM WILL POSITIVELY SHIFT THE LOCAL MEDICAL SECTORS OF NATIONS



PROFESSOR IFEOMA OKOYE MAMMOGRAPHY SUITE

One of the most challenging aspects of our work as cancer advocates is delivering difficult news to patients and their families. It is in this area that your compassion, empathy, and unwavering support have truly shone. Through workshops and role-playing exercises, we have strived to equip healthcare providers with the tools and skills needed to communicate with sensitivity, ensuring that patients receive the care and support they deserve during the most trying times of their lives.

Our collaborative work with the Union for International Cancer Control (UICC) has elevated our advocacy to a global scale, amplifying our voices and shedding light on the pressing issues faced by cancer patients in Nigeria.

Finally, perhaps our most ambitious endeavors have been the establishment of the Cancer Health Fund (CHF) and the National Institute for Cancer Research and Treatment (NICRAT). In the face of numerous obstacles, we have remained steadfast in our commitment to realising these vital institutions. It was and will always be a beautiful tag team. Together we plan, we plot, we beg, we work very hard to meet our objectives. I cherish our 6am banters and voice notes.

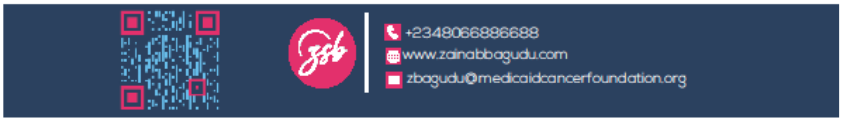
I am in awe of your resilience, your ability to overcome adversity, and your resolute belief in our organisations to transform cancer care, research, and education in Nigeria. Together, we are building a legacy that will provide hope, support, and life-changing opportunities to countless individuals affected by cancer.

As I reflect on our remarkable journey together, I am filled with an overwhelming sense of gratitude for your unwavering dedication and tireless advocacy. Congratulations, dear Prof. Ifeoma Okoye, our dear Pinky Prof on this momentous accomplishment. May your book reach a wide audience and ignite a spark of change that will ripple through communities, bringing about greater awareness, understanding, and support for those affected by cancer. Your work is a beacon of hope, and I will be with you for the rest of the journey.

It was the great Picasso who said, "Inspiration exists, you simply have to find it"
I found mine in my dear Pinky Prof!

With deepest respect and admiration,

H.E Dr. Zainab Shinkafi-Bagudu
CEO, Medicaid Cancer Foundation
Chairperson, First Ladies Against Cancer
Board Member, Union for International Cancer Control



I read in the prolific book aptly captioned," Living Life by Design", authored by Dr ChiefoEjiofobiri that an oak tree lives for over two centuries. It remains without fruit until its 50th anniversary. Then it produces its first acorn and thereafter, thousands of acorns. I see my life story in the oak tree. I sense my acorns are about to burst forth in their thousands. I see thousands upon thousands of doctors coming under the tutelage of the legacy I have built. I see thousands of libraries around the world invaded with journals and articles I've written. And like the scriptures say, "Eye has not seen, ear has not heard and

neither has it ever occurred to any man what God has kept in store and is about to unravel in my future simply because I love Him and focused on fulfilling His purpose for my life. Indeed, to Him alone be all the glory.

Acknowledgement

Ladies and gentlemen, esteemed guests, colleagues, friends, and family, today, I stand before you with a heart full of gratitude and humility, as I extend my heartfelt acknowledgments to the many individuals and organizations that have played a significant role in shaping my journey and supporting my endeavors. At the forefront of my gratitude, I express my deepest thanks to the Almighty Creator, who has guided and blessed me through every step of my life's path.

To my beloved immediate family, starting with my pillar of strength and loving husband, Engr Chris Okoye, **the "Wind Beneath My Wings**", Obu Nna Aku Eze. This aptly expresses **the relentless dynamic feelings I experienced in the 43 years of our journey as a couple, matching perfectly my 43 years as a Medical Practitioner**! His support for all I do has been both phenomenal and infinitesimal! He has provided in surplus quantity, not only, the very essential love, emotional and psychological support, but has buffered every other need I required to scale, and leapfrog, professionally, name it; from, providing mentorship, superior argument, enabling environment! Infrastructure/ logistics and bankrolling all my numerous clinical attachment programs (and each time, those internships fell in, that my children were with me on holidays, he put them in holiday camps abroad/ or sponsored an adequate Nanny to be with us]

Engr Sir Chris FNSE, FIMC, Chairman of Governing Council of Paul University, is very passionate about the well-being of his people and those around him. A graduate of both the

University of Wisconsin, Madison and the University of Houston, Texas where he also taught briefly. He is a Fellow of the Academy of Science, Fellow of the Nigerian Society of Engineers, Fellow of Nigerian Institute of Civil Engineers and Fellow of Nigerian Institute of Highway and Transportation Engineers. He is also a Fellow of the American Society of Civil Engineers, and Fellow of the Metallurgical Society of Nigeria.

1. Our cherished children, 4 of them born within 3 1/2yrs, after 6 years of infertility, have remained the gifts of God that they were ordained to be in Psalm 127 vs 3! Onyinye Adaobi Ebozue (nee Okoye) is an entrepreneur, Economist, and Financial consultant. She is married to Zoltan Ebozue, an Information Technologist. Both are blessed with a daughter, Dalya.
2. Chinny Krystle Ononuju-Mcernest (nee Okoye) is a Public Policy/Philosophy major and International Relations minor. She is the founder of the social enterprise, The Women International (an empowerment platform for women) and CEO of W Agency (a marketing and advertising firm) she is married to KemdyOnonuju-McErnest- a communication specialist; they are blessed with 2 sons, Chimzitaram JR and Bezaleel Adimchinobi.
3. Christopher Okechukwu, Okoye, an Electrical Engineer, currently in the Oil and Gas Industry as a Project Engineer with Seplat Energy.
4. Chudi Chukwudinma Okoye holds degrees in English and French literature, Law, and International Finance and Banking, and currently works as a Research and Editorial Manager for Oxford Business Group, an international business advisory firm.

You have all been a constant source of joy, love, and inspiration in my life, (adding no sorrow) and I am forever grateful for your unwavering support and understanding.

My gratitude extends to the esteemed members of the University community, whose guidance and mentorship have been instrumental in my growth and achievements. I am truly honored to express my appreciation to the Vice-Chancellor, Prof Charles Ìgwè, the Deputy Vice-Chancellor for Academics, Professor Johnson Urama, and the DVC Administration, Professor Patrick Okpoko. I would also like to acknowledge the invaluable contributions of Professor Daniel Nwachukwu, DVC Enugu Campus, the Bursar, Dr (Mrs) Ada Godwin Ozioma, and the Registrar, Dr (Mrs) C.N Nebedum. My heartfelt thanks go to Chairman of Senate Ceremonials, Professor Bennett Nwanguma, and Mrs. O. B. Saddiq, a member of the Senate Ceremonials at UNN. Also, former Vice-Chancellors, Professor Chuma Ozumba, Professor Bartho Okolo, and Professor Chinedu Nebo, and Former DVCs: Professor Edith Nwosu and Professor James Ogbonna.

I owe a debt of gratitude to the remarkable individuals at the College level, who have supported and inspired me. Provost Professor Hycinth Ezegwui, Deputy Provost, Professor Cajetan Onyedum, and former Provosts Professor Uchenna Nwagha, Professor Onwasigwe, your leadership has been exemplary. Special appreciation goes to Dean of Faculty of Medical Sciences, Prof Emmanuel Ejim, and Head of the Radiation Medicine Department Dr. Nneka Iloanusi for their dedication.

The University of Nigeria Teaching Hospital (UNTH) has been a significant part of my journey, and I express my heartfelt gratitude to the CMD of UNTH, Enugu - Professor Obinna Onodugo, the CMAC, Professor Valentine E. O. Ùgwù, and the able DCMACs Professor Tessy Nwagha, Drs Obinna Okwesili, and Brenda Nwatu. My thanks also extend to the PG unit head, Professor Cyril C. Dim, and other key management members of the hospital who have supported my work.

The Inaugural Planning Committee

Dr. Nneka Iloanusi [Chairperson, current HOD, and my beloved Rock of Gibraltar, Aaron), Dr. Amaka Nnamani (able treasurer, daughter and Protegee); *both of you have got my back for years… I am indebted.* Prof Ngozi Njeze [my super-gifted queen, I always valued your quiet counsel], Associate Professor (Dr) S.N. Ezeofor (dynamic is an understatement for the energy you brought to heading the Department. Thanks for the Mammography Suite, during your tenure), Dr. Ngozi Dim [Delectable Department's Scribe, predictably contributed to my script for this lecture, like a daughter], Dr. Ada Ilo (most fastidious resident, now consultant, Dr.Ifeoma Nevobasi (Sweetheart daughter, always available to give a hand), Drs. Emeka Mgbe and Rev Chuks Ajare, my beloved bishop], Professor P.C.N Okere and Dr. Obinna Modebe [My beloved Nuclear Medicine Sons, with both of you, I hand over 'To Dos' and I go to sound sleep), Dr. Uju Onyia (quiet and solid), and my dumplings: Drs Obasi Chikezie, Uloh Henrietta, Ugwuele, Ikenna Emedike, John Emenike and Kenneth Ibekwe and other members of the LOC. I owe you all, big time!

A heartfelt salute goes to the senior **consultants in my department**, Radiation Medicine. Prof K. K. Agwuna, Professor Ngozi Njeze, Professor Emma N Obikili (Anatomy), Dr Augustine Onu, Professor P. C. N. Okere, my co-authors and all my dedicated co-authors/researchers, colleagues have been instrumental in the growth and achievements of our department. I am also grateful to all the staff of Radiology, radiographers; darkroom technicians and administrative staff.

My appreciation further extends to friends, teachers, and colleagues who have left indelible marks on my journey. They include Professors Badsen Onwubere, Benjamin C. Ozumba, Ifeoma Ulasi, Ifeoma Emodi, Henrietta Okafor and Bond Anyaehie. Other are Emeritus Professor Nene Obianyo,

Professor A.U Mba, Professor Benedict Anisiuba, Dr Okafor, Professor Anthony Ikeme, Professor Onwasigwe, Professor Okey Mbonu, Professor Okoroma, Professor Esther Ofoegbu, Professor Chukwuedum Nwokolo, Professor Sam Ohaegbulam, Professor John Oli, Professor Vin Ikeh, Dr Austin Nwabueze, Professor Charles Attah, Professor Arthur Ikeme, late Dr Anidi, Prof Emeka Egwuatu, Late Professor Zuby Azubuike and Professor Mbonu. I appreciate your guidance and inspiration.

The consultants, residents, and support staff in the **Radiation Oncology Department**, especially the HoD, Dr Ken Nwankwo, Dr Amaka Lasebikan, Dr Vitalis Okwor, and Dr K. K. Sylvester, Professor Ezeome, Professor Ken Agu, have been the pillars of the department's success. I extend my heartfelt gratitude to retired nurse Mrs. Ukachi, the entire MDT team, and other dedicated staff members.

A special nod of appreciation goes to the Directorate of Clinical Trials at UNEC and all the esteemed professionals who work alongside me, Prof. Ifeoma Ulasi, Prof. Ngozi Onyemelukwe, Prof. Sam Ibeneme, Dr Ijeoma Ifeorah, Prof. Shu, Dr. Okey Nna, Pharm. Gbemimachor, Prof. Ocheni and Barrister Seun Adebiyi of Bone Marrow Registry in Nigeria (BMRN), your dedication to advancing medical research and improving clinical practices has been truly commendable.

Breast without Spots (BWS), my pet project, has been a labor of love. To the BWS Executives, Chief Osita Chidoka (Collaborator), The BWS Executives and Trustees, Dr Chinenye Okwuosa, Professor Okey Erondu, Dr Iloanusi, Professor Ajuluchuku, Dr. Ifeoma Obiora (nee Nwigwe), Dr. Ijeoma Ifeorah, Dr. Carina Achilefu, Pharm. Ada Obikili, Dr. Obinna Olejeme, Dr. Sola Olutayo, Mrs. Betty Elekwa,

Ambassador Sean Hoy and his beautiful wife, Patient Advocates: Dr Denise Ejoor, The Bring Back Beauty Project partner, Shalom Lloyd volunteers, and campaign partners, your tireless efforts in advocating for women's health are deeply appreciated.

A heartfelt thank you goes to my Executive Assistant, Tobenna Onyemeh, Chinelo Nkwonta, Uche Chyke-Ohuegbu, and other mentees like Dr Joel Aniegbe and Ebuka Nwafia, Chioma Okene and Nneoma Nwankwo, Chinemerem, who continue to impress me with their dedication and growth.

To the Association for Good Clinical Practice in Nigeria (AGCPN) and its esteemed faculty, Dr Anthony Ikeme, including Prof Iwu, Late Prof Dora Akunyili, Dr Paul Orhii, AGCPN Faculty/ Think Tank/ Partners Gbolahon Fatuga, Anthonia Orobor, Bukinola Teflosi, successfully launched a thriving CRO in country, Henrietta Ukwu, The Ashoka Team: Support for AGCPN / ACTC, Dr Echeazu Ogu, Dr Kelechi Lawrence, Dr Richard Somiari: first research work in Clinical Trials in Cancer,Emeritus Professor Reg Appleyard: AGCPN FACULTY/ PARTNER sponsored by the Office for Human Research Protections (OHRP), and many others, your support has been instrumental in advancing clinical research and practices in Nigeria.

My gratitude extends to **UNNCOMA**, 80 Class Medical School, F. G. C., KANO CLASSMATES, 72 Class of QSE, QSEOG, BVF SISTERS, LBD PARTNERS, and all those who have been part of my life's journey. You've brought immeasurable joy and support.
Special Spiritual Fathers, Dr Chiefo and Chinwe Chiefo [Map/Mappress] who have been pillars, enabling quantum leaps of not only spiritual growth but growth in my market

place, such that my current mien is a conviction, that; LIFE STARTS AT 70, and LIKE CALEB, I AM ASKING TO BE GIVEN MY MOUNTAINS TO CONQUER AND CONTINUE LAYING FOOTPRINTS ON THE SANDS OF TIME!

Colleagues in the cancer control space: Her Excellency, the Former First Lady of Kebbi State - Dr (Mrs) Zainab Bagudu, Founder - MEDICAID Cancer Foundation and MEDICAID Radio-Diagnostic Centre, Dr. Julie Torrode (Ph.D), The Union for International Cancer Control (UICC) President (2012-2014)- Professor Mary Gospodarowicz, for confidence in making me Observer to UICC BOARD, Prof Gerhard Fortwengel, Prof Effa Pierre, Prof Abubakar Bello - President of the African Organisation for Research and Training in Cancer (AORTIC).

NGO Partners: Cope With Cancer, Children Living With Cancer Foundation (CLWC), BRICON Foundation, The Prostate Cancer Transatlantic Consortium (CaPTC), Ego Bekee Cancer Foundation Abuja, Project Pink Blue, Partnership for Eradication of Cancer in Africa (PECA), MEDICAID Cancer Foundation.

Faithful and Supportive Colleagues: Profs, Bello, Saidu, Tabari, Arogundede, Awosanya, Obajimi, Akinola, Felix Uduma, Ugwumba, Rotimi, Iweala, Carpiten, Ezeome,
Drs. Umar, Olatunji, Carina, Jibrin, Audu, Ige, Bello, Anthonia Ikpeme, Mandi Ikpe, Chinekwu Nwosu, Mbadiwe , Farouk, Popoola, Anthonia Sowunmi, Dr Enemuo, Maduforo.
Nurses Ude, Elekwa, Obijiaku, Prof. Agnes Anarado, Lady Ube, Lady Ngozi Uzoagba

My Root and Support: I cannot forget my roots and support system, starting from my parents, in-laws, siblings, extended

family, family friends, and countless others who have been my pillars.

My Late Parents, Mr. and Mrs. Godwin Iloduba Nwokike**.** My Dear Father, **Mr. Godwin Iloduba Nwokike** was a foremost civil servant, and astute gentleman. He was the first indigenous Divisional Officer in charge of Enugu; Resident and Sole Local Authority in charge, Enugu Capital Territory of Enugu; Permanent Secretary (policy Division, Cabinet Office; Ministry of Establishment, Enugu). Statutorily, he was the no. 1 civil servant and no. 2 citizen of the state.At a very low point in my life, my father gifted me a very profound statement that reads thus: '**I want you to get to the height of your profession.**' And like a cup of spring water to a parched throat, these words gave me the tenacity my soul needed to forge ahead. Dear Dad, I hope you're looking down on your Ada with joy, and satisfaction.

My mother, **Mrs. Grace NwabuogoNwokike** (Nee Odumodu) aka *Igabella,* led a fulfilled life. She was a teacher at St. Andrews in Owo, Ondo State. Later, she became a trained secretary at the Oxford College of Arts and Technology. In that role, she progressed to become a Personal Assistant to the Secretary of the Eastern Nigeria Library Board. She chose to leave active service voluntarily to dedicate herself to her family, and I owe her my tenacious devotion to hard work, as she was a no-nonsense disciplinarian, with Zero-tolerance to not putting time to good use and I am fond of describing her impact in my life, as 'PANEL-BEATING ME INTO SHAPE'.

Due to her fastidious insistence on arming herself, with every knowledge about Diabetes, and applying herself diligently to 'Best Practice'as a patient, my mother played a significant role in co-authoring a book with me, titled "**Living a Healthy and Vibrant Life, Despite Diabetes.**" This book, (also co-authored

by MrsIfy Nebo, as another priceless example of PLWD) has provided valuable assistance and encouragement to diabetics across the country, particularly those who are newly diagnosed. Additionally, she willingly acted as a 'counselor' to numerous patients facing similar challenges, referred to her by her doctor, Professor John Oli.

She definitely, ingrained enduring life skills of diligence, hard work, and home-keeping, in me, notable of which is her belief, that **life is for living**, and when she found that I had swerved from being a student with barely tolerable school results, under her strict mentorship, to becoming a BOOK-WARM, she insisted on disrupting me from that Cacoonand literally dragged me into learning to be versatile with other life endeavours, apart from my studies… thus I was in the **legendary Queens school Choir, and in the Drama Group, both of which won State and National laurels**. I also started slating Drama Theater activities to raise funds for the voiceless and underserved, right from secondary school.

My appreciation also go to my Parents in law, the Late Sir and Lady FGN Okoye, who literally adopted me and mothered and fathered me similarly, like my parents did and polished me even more than when I stepped into the FGN Family.

I warmly thank my siblings, for buffering me at each stage of my life, my Brothers, Mr. Obinna Nwokike, Pastor Ikemefuna Nwokike, Deacon Chukwuma A. Kofi Nwokike, My Sisters; Rev. Mrs. Uzoamaka Uzoeghe, Evangelist Mrs. Chito Grace Mark, My Sisters in Law; Mrs. Ngozi Asiegbu, Justice Chinwe Iyizoba, Princess Uzoamaka Karenate-Egbuson, lady Mrs. Uche Obi, Barr. Joy Ebeledike, Mrs. Angela Nwokike, Engr. Barbara Nwokike, Pharm IfyNwokike, Mrs. Edith Nwokike,

My Brothers in law; Chief J.C Okoye, Rev. Emeka Uzoeghe, and Mr. Maxwell Mark, and Sons In Law: Zoltan Ikenna Ebozueand KemdyOnonuju-McErnest.

Family Friends: His Excellency (HE), Dr Peter Odiliand Hon Justice May Odili [Supreme Court Judge], Rev. Prof. Chinedu and Ify Nebo, Ernest and Ndali Ndukwe, Ernest and Lizzy Ebi, Nwabueze Nwokolo, Prof Darlene Bassey, Lady Uche Agbim, Olisa Onu and Lady Onuh, Obinna and BukyUnachukwu.

Other Invaluable People: Dr Samuel Otene, NMA, Dr Idris Omede, DG Nigerian Institute for Medical Research (NIMR) - Prof Babatunde Salako, DG National Institute for Pharmaceutical Research and Development (NIPRD)- Dr Obi Adigwe, Prof Gamaliel, and Dr Uford Inyang, DG Nigeria Natural Medicine Development Agency (NNMDA) - Prof. Martins Emeje, Former Minister for Science and Technology, Ogbonaya Onuh, The President, MWAN Enugu chapter - Dr Ijeoma Abana (*nee*Obianyo), Dr Beatrice Onyeador, Dr Ebele Chinwuba, Dr Uche Agunmadu, Chinelo Nkwonta: WAJR, helps with all my book reviews, secretarial work, Staff Assessments etc, Prof Felix Obioha: My **Aaron**, right hand man, ever ready to assist., Obj Chukwurah: for invaluable contributions towards conference support, Dr Chuka Ajene: New Partner for latter years Healthcare System Change interventions, Emeka Ibe, Dorothy Nwankwo: Invited me to the Association of Nigerian Physicians in the Americas (ANPA), in Newark to be Memorial Lecturer, Dr Nwogo Agbasi: Childhood friend, with me on all journeys, Dr Anele and Barrister Ebizie: Closest couple, always supportive, Uncle/ Aunty to children, Dr Leo Egbujiobi: AGCPN FACULTY/ PARTNER plus 100 IGBOES / ANPA/Family Friends, Patience Osinubi: National Cancer Control

Coordinator collaborated with me to implement ICW, till she became Director of Hospital Services and retired, Melody Lyn: Leveraged her being in-charge of Office for Human Research Protections, (OHRP), US Department of Health, to assist AGCPN with sourcing / funding Faculty plus introducing/recommending me to the **Collaborative Institutional Training Initiative** (**CITI** Program), Lady UlomaMbanaso, Aunty Kate: Beloved Housekeeper for years, made it possible to have seamless home base, Dr Idris Omede: NMA PRESIDENT, Dr Osy Ozoh: Radiologist that trained at same time with me and Co-authored Articles with me, Dr Onyia –Radiologist who enabled me start and finish my assignment to revive and institute legal status for Association of Radiologists In Nigeria (ARIN).

Profound thanks to my Prayer Partners; Pastor Tony Onyemaka, Pastor Vitalis Ndu, Rev Canon Osy Obi Okoye, Dr Stella Adibe, Ldr Arinze, My GAD 2 Mentees, Ldr Petra Buzor, Prof Chinedu Babalola, and all of Zion LBD.

Venerable Egemba, and the entire clergy and member of All Saints Church.

To each and every person mentioned here, and to those not explicitly named but who have touched my life, I express my deepest gratitude. Your contributions have been the driving force behind my accomplishments. May our journeys continue to be marked with success, growth, and unwavering support for one another.

Thank you.

INAUGURAL LECTURES

OF THE UNIVERSITY OF NIGERIA, NSUKKA

1. **Prof. Ikenna Nzimiro – 1976**
   Title: The Crisis in the Social Sciences: The Nigerian Situation.

2. **Prof. Chika Okonjo – 1976**
   Title: Economic Science, Imperialism and Nigerian Development.

3. **Prof. K. S. Hegde, Vet. Medicine – 1977**
   Title:

4. **Prof. D. I. Nwoga – 1977**
   Title: Visions Alternatives: Literary Studies in a Transitional Culture.

5. **Prof. J. A. Umeh – 1977**
   Title: Land Policies and Compulsory Acquisition of Private Land for Public Purposes in Nigeria.

6. **Prof. D. C. Nwafo - 1984**
   Title: The Surgeon as an Academic.

7. **Prof. G. E. K. Ofomata – February 22, 1985**
   Title: Soil Erosion in Nigeria: The view of a Geomorphologist.

8. **Prof. E. U. Odigboh - July 5, 1985**
   Title: Mechanization of Cassava Production and Processing: A Decade of Design and Development.

9. **Prof. R. O. Ohuche – 1986**
   Title: Discovering What Learners have attained in Mathematics.

10. **Prof. S. C. Ohaegbulam – August 1, 1986**
    Title: Brain Surgery, a Luxury in a Developing Country like Nigeria?

11. **Prof. Ikpendu Christopher Ononogbu - November 5, 1998**

Title: Lipids: Your Friend or Foe.

12. **Prof. V. F. Harbor-Peters – July 5, 2001**
    Title: Unmasking some Aversive Aspects of Schools Mathematics and Strategies for averting them.

13. **Prof. Peter OlisanwucheEsedebe –September 11, 2003**
    Title: Reflections on History, Nation-Building and the University of Nigeria.

14. **Prof. Emeka P. Nwabueze – June 30, 2005**
    Title: In the Spirit of Tespis: The Theatre Arts and National Integration.

15. **Prof. Ignatius U. Obi – July 25, 2006**
    Title: What have I done as an Agricultural Scientist? (Achievements, Problems and Solution Proposals).

16. **Prof. Philip A. Nwachukwu – Nov. 15, 2006**
    Title: A Journey through the Uncharted Terrain of Igbo Linguistics.

17. **Rev. Fr. Prof. Amechi Nicholas Akwanya – February 28, 2007**
    Title: English Language Learning in Nigeria: In Search of an Enabling Principle.

18. **Prof. T. Uzodinma Nwala –March 15, 2007**
    Title: The Otonti Nduka Mandate: From Tradition to Modernity.

19. **Prof. John AkolisaIbemesi – June 14, 2007**
    Title: From Studies in Polymers and Vegetable oils to Sanitization of the Academic System**.**

20. **Prof. Obioma Uzoma Njoku - June 26, 2007**
    Title: Lipid Biochemistry: Providing New Insights in our Environment**.**
21. **Prof. Humphrey Assisi Asobie – July 18, 2007**

Title: Re-inventing the Study of International Relations: From State and State Power to Man and Social Forces.

22. **Prof. Aloy Emeka Aghaji – July 26, 2007**
    Title: Prostate Cancer: Coping with the Monster in a Third World Setting.

23. **Prof. Eunice A. C. Okeke - August 9, 2007**
    Title: Making Science Education Accessible to All.

24. **Prof. Chibuike U. Uche – August 30, 2007**
    Title: The Future of the Past in Banking.

25. **Prof. Ossie O. Enekwe – September 5, 2007**
    Title: Beyond Entertainment: A Reflection on Drama and Theatre.

26. **Prof. OnyechiObidoa – September 12, 2007**
    Title: Life does not depend on the Liver: Some Retrospectives, Perspectives and Relevance in Xenobiosis, Chemoprevention and Capacity Building.

27. **Prof. Okechukwu Ibeanu – February 20, 2008**
    Title: Affluence and Affliction: The Niger Delta as a Critique of Political Science in Nigeria.

28. **Prof. Damian UgwuntikiriOpata – March 27, 2008**
    Title: Delay and Justice in the Lore and Literature of Igbo Extraction.

29. **Rev. Fr. Prof. Elobuike Malachy Nwabuisi – April 15, 2008**
    Title: Education for What?

30. **Prof. Michael C. Madukwe – April 29, 2008**
    Title: Practice without Policy: The Nigerian Agricultural Extension Service.

31. **Prof. Anthony N. Eke – May 14, 2008**

Title: Delay and Control in Differential Equations: Apogee of Development.

32. **Prof. Joe Sonne Chinyere Mbagwu – May 29, 2008**
Title: From Paradox to Reality: Unfolding the Discipline of Soil Physics in Soil Science.

33. **Prof. Inno Uzoma Nwadike – June 12, 2008**
Title: Igbo Studies: From the Plantations of West Indies to the Forest Lands of West Africa, 1766 – 2008.

34. **Prof. Benjamin Chukwuma Ozumba – July 16, 2008**
Title: Improving Maternal Health in Developing Countries: The Nigerian Experience.

35. **Prof. Henrietta Nkechi Ene-Obong – July 29, 2008**
Title: Nutrition Science and Practice: Emerging Issues and Problems in Food Consumption, Diet Quality and Health.

36. **Prof. Amarauche Chukwu – August 12, 2008**
Title: Using Neglected Local Raw Materials in Developing High Level International Health Manpower.

37. **Prof. Samuel Ogbonna Enibe – August 26, 2008**
Title: Engineering Systems Analysis and Optimization.

38. **Prof. Michael Ifeanyi Uguru – September 23, 2008**
Title: Crop Genetics and Food Security.

39. **Prof. Alex Ikechukwu Ikeme (KSM)– October 15, 2008**
Title: Poly-Functional Egg: How can it be Replaced?

40. **Prof. Chukwuma C. Soludo – October 30, 2008**
Title: Financial Globalization and Domestic Monetary Policy: Wither the Economics for the 21st Century.

41. **Prof. Josephine Ifeyinwa Okafor (Mrs) – November 6, 2008**
Title: Fungal Diseases: A Serious Threat to Human Existence in Recent Times.

42. **Prof. Cletus C. Agu – December 4, 2008**

Title: Understanding the ABC of the Financial System.

43. **Prof. Polycarp Emeka Chigbu – January 26, 2009**
Title: Semi-Latin Squares and Related "Objects": Statistics and Combinatorics Aspects.

44. **Prof. Reuben U. Okafor – April 17, 2009**
Title: 4-Circle Base Triangular Model in Ageing and Death Education.

45. **Prof. Francisca Nneka Okeke – April 22, 2009**
Title: Geomagnetic Research in Physics: The Journey So Far.

46. **Prof. Clara Ikekeonwu – May 7, 2009**
Title: Language and Gender in Nigeria: Perception, Patterns and Prospects.

47. **Prof. Fabian C. Okafor – May 28, 2009**
Title: The Varied Roles of Snails (Gastropod Molluscs) in the Dynamics of Human Existence.

48. **Prof. DenchrisNnabuike Onah – June 4, 2009**
Title: The Elegance and Success of Trypanosomes as Parasites: Immunological Perspective.

49. **Prof. Grace ChibikoOfforma – June 5, 2009**
Title: Curriculum across Languages.

50. **Prof. Doris UkanwamakaEgonu – February 25, 2010**
Title: Illiteracy in a Century-Old Education System: The Challenge of Adult Education in Nigeria.

51. **Prof. Uchenna MariestellaNzewi – March 25, 2010**
Title: It's all in the Brain: Of Gender and Achievement in Science and Technology Education.

52. **Prof. Beatrice A. Okeke-Oti – April 29, 2010**

Title: They have Dignity and Worth and Therefore Need Restoration.

53. **Prof. Ernest N. Onwasigwe – June 29, 2010**
Title: Pediatric Ophthalmology: Past, Present and Future.

54. **Prof. Chika N. Onwasigwe – July 22, 2010**
Title: Disease Transition in Sub-Saharan Africa: The Case of Non-Communicable Diseases in Nigeria.

55. **Prof. Rich Enujioke Umeh – December 15, 2010**
Title: River Blindness: An Insight into Community Directed Management of Endemic Diseases.

56. **Prof. Eric C. Eboh – January 27, 2011**
Title: Agricultural Economy of Nigeria: Paradoxes and Crossroads of Multimodal Nature.

57. **Prof. George O. S. Amadi – March 31, 2011**
Title: Political Jaywalking and Legal Jiggery-Pokery in the Governance of Nigeria: Wherein Lies the Rule of Law?

58. **Prof. Ola Oloidi – April 28, 2011**
Title: The Rejected Stone: Visual Arts in an Artistically Uninformed Nigerian Society.

59. **Prof. Felicia N. Monye (Mrs.) – May 26, 2011**
Title: The Consumer and Consumer Protection in Nigeria: Struggles, Burdens and Hopes.

60. **Prof. Goddy Chuba Okoye – June 30, 2011**
Title: Enhancing Healthy Human Life through Bioengineering and Rehabilitation Medicine.

61. **Prof. James C. Ogbonna – July 28, 2011**
Title: Biotechnology and the Future of Human Existence.

62. **Prof. Ngozi M. Nnam – August 25, 2011**
Title: Adequate Nutrition for Good Heath: Is our Environment Nutrition Friendly?

63. **Prof. Joseph C. Okeibunor – September 29, 2011**
Title: Health Services for the Poor by the Poor: Lessons for Addressing the Diverse Social Problems in Nigeria.

64. **Prof. Okwesili Fred Chiletugo Nwodo – February 23, 2012**
Title: From Water Beyond Wine to Longevity.

65. **Prof. Fab Obeta Onah – March 29, 2012**
Title: Engaging the Challenges of Human Resource Management in Public Organizations in Nigeria.

66. **Prof. Emmanuel Onyebuchi Ezeani – April 26, 2012**
Title: Delivering the Goods: Repositioning Local Governments in Nigeria to Achieve the Millennium Development Goals (MDGs).

67. **Prof. Malachy Ikechukwu Okwueze – May 31, 2012**
Title: Religion Indeed the "Opium" of Life.

68. **Prof. Emmanuel Chinedum Ibezim – July 26, 2012**
Title: Exploring the Exciting World of the Wonder Agents Called Drugs.

69. **Prof. Patience OgoamakaOsadebe – August 30, 2012**
Title: From the Laboratory Bench through the Gardens to the Apothecary: Journey So Far.

70. **Prof. Ifeoma Maureen Ezeonu – October 22, 2012**
Title: People vs. Bacteria: Bacteria Innocent until Proven Guilty.

71. **Prof. Chika Njideka Oguonu – November 29, 2012**
Title: Fiscal Management and Grassroots Development: Issues and Concerns in the Nigerian Context.

72. **Prof. Gabriella IhuarugoNwaozuzu – February 28, 2013**
Title: The Babelist Theory of Meaning.

73. **Prof. Basden Jones C. Onwubere – March 26, 2013**
Title: High Blood Pressure – The Silent Killer on the Prowl: Combating the Albatross.

74. **Prof. Obinna Onwujekwe – April 25, 2013**
Title: Moving Nigeria from Low Coverage to Universal Health Coverage: Health System Challenges, Equity and the Evidence.

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Title: Science Without Women: A Paradox.

76. **Prof. Elizabeth UgonwaAnyakoha – June 27, 2013**
Title: Advancing a Framework for Showcasing Family Concerns: Challenging the Challenges.

77. **Prof. Micah OkwuchukwuOsilike – July 25, 2013**
Title: Fixed Point Theory and Applications: Contributions from Behind Closed Doors.

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Title: Physics in Life and the End of All Things.

79. **Engr. Prof. Daniel Oraeguna Nnamdi Obikwelu – June 19, 2014**
Title: Metallic Materials: Challenges in the 21st Century Nigeria and Didactic Lessons from the 18th Century Industrial Revolution.

80. **Prof. (Mrs.) Catherine IkodiyaOreh – June 26, 2014**
Title: Igbo Cultural Widowhood Practices: Reflections on Inadvertent Weapons of Retrogression in Community Development.

81. **Prof. Charles Livinus Anija Asadu – July 10, 2014**
Title: The Soil We Do Not Know.

82. **Prof. Basil Chukwuemeka Ezeanolue – July 17, 2014**
Title: Hear the Voice.

83. **Prof. Ifeoma Pamela Enemo – July 31, 2014**
Title: Dangerous Families in Nigerian Law: A National Albatross?

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Title: The Demise of the African God/s: Fallacy or Reality.

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Title: Clariid Catfish Aquaculture: A Panacea for Quality Animal Protein Security.

86. **Prof. Benjamin Sunday Chudi Uzochukwu – September 25, 2014**
Title: Accelerating the Achievements of Health related Millennium Development Goals: Social Determinants of Health Approach and Mainstream Health in All Policies.

87. **Venerable Prof. Samuel Obiajulu Ike – October 30, 2014**
Title: The Matter of the Heart.

88. **Prof. Chimdi Memnofu Chuka-Okosa – November 13, 2014**
Title: Beyond Vision.

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Title: The Control of Impurities in the Quality Control of Pharmaceutical Dosage Forms.

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Title: Cancer in Nigeria: Surviving the Emerging Epidemic.

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Title: The Road to Nanomedicines.

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Title: Global Political Economy and Development of Underdevelopment: Different People, Same Market and Glorification of Poverty.

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Title: Formulating Medicines Round the Globe: Lessons for the Growth of the Pharmaceutical Industry in Nigeria.

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Title: Poor Government Budget Implementation in Nigeria: Who is to Blame?

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Title: Kidney Solution: Nature or Nurture.

96. **Prof. Henry Amechi Onwubiko – July 9, 2015**
Title: Ultrasensitive Detection of Corrupt Prions and Diagnosis of their Neurodegenerative Infectious Diseases: Mad Cow Disease in Cattle, Scrapie in Sheep and CJD in Humans.

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Title: Transportation Development in Nigeria: The Journey So Far and The Way Forward.

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Title: Clinical Pharmacy in Nigeria: The Issues, Challenges and Way Forward.

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Title: Science Education for Life in a Dynamic World.

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Title: Composing Art Music Based on African indigenous Musical Paradigms.

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Title: Averting Pedagogical Failure in Science: Insights from Educational Measurement and Evaluation.

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Title: Marketing in Nigeria at Crossroads: Going Forward.

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Title: Non formal Education and the Promise of Development.

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Title: Microbial Technology and Food Security: Micro Organisms Put Safe Food on Our Tables.

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Title: Lovely Surprises Come in Small Packages: Thin Film Photovoltaics.

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Title: Humanising Environmental Impact Assessment Practice in Nigeria: A Cultural Anthropological Excursion.

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Title: Stress-Illness Connection: Critical Factors Moderating the Link.

110. Prof. Ignatius Ani Madu – June 16, 2016
Title: Geographic Perspective: The Missing Link In Nigeria's Quest for Rural Development.

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Title: Motherhood: A Natural but Perilous and Adventurous Expedition (From Conception to Reproductive Annihilation).

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Title: Public Policy for Public Interest and National Development in Nigeria: Whose Policy, Whose Interest and Whose Development?

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Title: Cyberspace Revolution: Issues, Implications and Imperatives.

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Title: Higher Distance Education Programmes in Nigeria: From Quantity to Quality.

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Title: Financing Nigeria for Economic Development: Cornucopia/ Pandorax Box?

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Title: Bifurcation, Damage, and Stability: From Structure to Human.

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Title: The Novelist as a Psychoanalyst: The Untold Story of Tragic 'Heroes' in Chinua Achebe's *Things Fall Apart* and *Arrow of God.*

118. Prof. Uche N. U. Agwagah - May 25, 2017
Title: It's all about figuring it out: Agenda for Change in Mathematics Education.

119. Prof. Nnanyelugo Okoro - June 15, 2017
Title: Positioning Nigeria as a Brand for Global Competitiveness in the 21st Century: Roadmap to Best Practice.

120. Prof. Sebastian OkwuchukwuEkenze - June 29, 2017
Title: Newborn Surgery in a Developing World: Dissecting the Gains, Challenges and Advances.

121. Prof. Philip Ogbonnia, Phil-Eze- July 27, 2017

Title: "Biogeography – The Master Voice of the Environment".

122. Prof. Iheanyi Okpala- August 24, 2017
Title: Molecular Medicine and Haematology for Healthy Blood.

123. Prof. Geraldine EgonduUgwuonah- September 7, 2017
Title: Market-Led Approach to Agricultural Value Chain Development: Issues in Investment and Wealth Creation.

124. Prof. Hyginus UzochukwuEzegwui- September 28, 2017
Title: The Human Drama of Contraception- Adolescence to Andropause/Menopause: The Evidence

125. Rev. Canon Prof. Ikem Chris Okoye - October 12, 2017
Title: Man Versus Parasites: Perpetual Imbroglio

126. Prof. Christian Ndubisi Madu - October 26, 2017
Title: The Journey Continues ….

127. Prof. ChukwunọnsoOkafọ- November 9, 2017
Title: Beyond the Rule of Law: Grounded Law and Personal Responsibility as the Catalysts for Effective and Efficient Crime Control in Nigeria.

128. Rev. Fr. Prof. Hilary C. Achunike - December 7, 2017
Title: Pentecostal Enterprise in Nigeria and its Future Outlook

129. Prof. B. M. Onyemaechi, Mbah – January 25, 2018
Title: Nsara Uche, Nzubere Ọnọdụ naakara aka (mental spaces, domain construction and thelimitation of possibility)

130. Prof. Smart N. Uchegbu – February 15, 2018
Title: My Environment, Your Environment: That We May Live Healthy

131. Rev. Prof. Emmanuel NlenanyaChinwokwu– March 15, 2018

Title: Hope and Responsibility in Divine Economy

132. Prof. Fidelis EbelechukwuEjezie – March 29, 2018

Title: "Nature's Tiny Superheroes"

133. Prof. Osita Ogbu– April 26, 2018

Title: Why Are They So Poor?

134. Prof. Samuel Nnamdi Obi– May 10, 2018

Title: "Be Fruitful and Multiply" The Turbulent Journey of Uncertainty by Infertile Couples

135. Prof. Charles Arizechukwu Igwe– May 24, 2018

Title: Unfolding Soil Erosion in Southeastern Nigeria: from Models to Aggregation and Colloidal Materials.

136. Prof. Ibemesi, F.N– June 14, 2018

Title: das interesse an dem Eigenen und am FremdenalsHermeneutischen Abenteuer Versatility in Foreign Language Scholarship

137. Prof. Ifeoma Regina Ezegwui– June 28, 2018

Title: I Can't See Mummy

138. Prof. Emmanuel Nwabueze Aguwa– July 12, 2018

Title: Occupational Hazards and Linkages to increased Mortality and Morbidity: The Southeast Nigerian Perspective

139. Prof. Chukwuemeka Basil Chukwuali – July 26, 2018

Title: Establishing today as the tomorrow we designed for yesterday: The dilectics of tradition and modernity in contemporary architecture in Nigeria

140. Prof. Kenneth Chibuzor Ofokansi – August 16, 2018
Title: Breaking the Barriers to Effective Peroral Drug Delivery.

141. Prof. Ugochukwu Bond Anyaehie – August 30, 2018
Title: Surrogate Father: Prospects in a Constrained Scientific Environment.

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Title: Un-Marketed Output of the Household Economy: A Missing Link in the Nigerian System of National Accounts

143. Prof. Okpan Kalu Oyeoku – September 27, 2018
Title: Growing the Ceramics Industry in Nigeria

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Title: Are we Free and Equal? Law, Justice and Human Rights in Nigeria

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Title: Agrochemicals and Pharmaceuticals on Aquatic Life – Danger Ahead

146. Prof. Ozioma ChinonyelumOnuzulike– November 15, 2018
Title: Beyond Pots and Plates: Ceramic Arts as Social Critique

147. Rev. Fr. Prof. Francis O. C. Njoku– December 6, 2018
Title: The Philosophical Grid of Igbo Socio-Political Ontology: *Iɛ̃βυ ανψιꓱ δαɛ̃νδα#*

148. Professor Chuku Umezurike - April 4, 2019

Title: Neoliberalism in Nigeria: A Paradox of Statism and Democratic Deficit

149. **Professor Anthony Nnaemeka Ikefuna - April 25, 2019**
Title: Childhood TumoursIn Nigeria: Gazing Into The Future With Hope

150. **Professor Uchenna Agatha Onyechi - May 9, 2019**
Title: Indigenous Nigeria Foods: The Best Alternative

151. **Professor Ijeoma Onyekachi Ehiemere - May 16, 2019**
Title: Nursing: Caring from Dawn of Life to Dusk, then Departure Lounge and the End?

152. **Professor Cyril Chukwudi Dim - June 20, 2019**
Title: "Not My Portion" Syndrome: The Bane of Cervical Cancer Prevention and Women's Health Promotion in Nigeria.

153. **Professor Emmanuel NebeuwaObikili- July 11, 2019**
Title: Anatomy of the Head and the Heart of the family

154. **Professor Sam Onuigbo – July 25, 2019**
Title: Language and Power in Our Common Humanity

155. **Professor (Sir) Oyiogu Francis NnatcheyOzoemena – August 8, 2019**
Title: "Myths, Fallacies and Verities of Male Infertility: The Untold Story of the Developing World"

156. **Professor Boniface Ikenna Eze – August 22, 2019**
Title: Back-of-the Eye Diseases: Voices from the Interface between Stakeholders in Eye Care

157. **Professor Onyemaechi Valentine Ekechukwu– August 12, 2019**
Title: Cheap, Clean and in Harmony with Nature: Renewable Energies

158. **Professor (Mrs.) Chinwe N. Ezeani– September 26, 2019**

Title: Rejigging Nigerian Academic Libraries for Increased Visibility, Greater Impact, and Enhanced Service Delivery: How Can We Connect the Dots?

159. **Professor Godwin Christopher Ezike Mbah - October 24, 2019**
Title: Mathematical Modeling and the Revealing of Order in Nature

160. **Professor Elsie ChizuaUmeano - November 21, 2019**
Title: Communication: In the classroom and beyond.

161. **Professor Gladys Angela OgonniaOzoh**
Title: Community Dermatology Practice in Africa: Benefits and Challenges

162. **Professor Anthonia Ogo Uzoegbunam – March 12, 2020**
Title: Voiceless, Yet Capable Human Resource: Women in Economic and Rural Development in Nigeria.

163. **Professor Henrietta Uchenna Okafor – April 22, 2021**
Title: Sustaining Healthy Kidneys from Nascence: "The Role of Watchmen"

164. **Professor Gregory Ejikeme Odo – April 29, 2021**
Title: Limnological Frontiers and Ichthyofaunal Forecast of Doom

165. **Professor Esther Ngozi Oluikpe - May 27, 2021**
Title: Nigerian Colonial Mentality in the Use and Teaching of English in a Globalized World: Time for Paradigm Shift.

166. **Professor Ogbonnaya Igwe – June 24, 2021**
Title: Earth's Geospheric Domain: The Tectonic Shift from Balm to Humanity's Bane.

167. **Professor Nkechi G. Onyeneho – June 24, 2021**

Title: Exploratory to Synthetic Cohort Analysis of Anaemia in Pregnancy *Navigating the Lifetime Risks of Motherhood in Nigeria*

168. Professor Peter-Jazzy Ezeh – July 29, 2021
Title: Which Tribe? Facts and Fallacies Concerning Anthropology

169. Professor Rose Nduka NwanyoluaruObiezue – August 12, 2021
Title: Paragonimiasis: Tussis or Tuberculosis?

170. Professor John Chukwuemeka Eze – August 26, 2021
Title: Sustenance of Cardiothoracic Surgery Practice at the UNTH with Open Heart Surgery as Flagship Programme.

171. Professor Sylvester Chuks Nwokediuko – September 23, 2021
Title: The Human Stomach: Structurally Fortified, Functionally Versatile and Highly Resilient in Disease.

172. Professor Edith Ogonnaya Nwosu – November 11, 2021
Title: Gridlock and Goodluck in Quasi-Corporate Marriages in Nigeria.

173. Professor Victoria Onu – November 25, 2021
Title: Infusing Critical and Creative Thinking Skills into Nigerian Educational System: Implications for Raising a Re-Engineered Generation in a Competitive World

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177. Professor Jonathan Joachim Jones Ndubuisi Nwosu – March 30, 2023

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182. Professor Zephrinus Chidubem NJOKU – June 22, 2023

Title: Abstractions and Misconceptions: Pedagogical Approaches towards Reducing Students' Learning Difficulties in School Chemistry

183. Professor Onyenekenwa Cyprian Eneh – July 13, 2023

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Title: The Pace, Pangs and Perils of A Child With Heart Maladies: A Conondrum Wrapped in an Enigma; The Dawn of A New Day.

185. **Professor Emmanuel Onyebuchi Valentine Ugwu– August 10, 2023**

Title: The Obstetrician and the Female Pelvic Floor: Protecting The 'Floor' and Improving Childbirth Experience.

186. **Professor Felix Nzube Chukwuneke– August 24, 2023**

Title: Oral and Maxillofacial Surgical Practice in a Developing Economy: The Making of a Surgeon.

NOTE
