UNIVERSITY OF ILORIN

THE TWO HUNDRED AND TWELVETH (212TH)
INAUGURAL LECTURE

CANCER! THE SLEDGE HAMMER OF DEATH? NO! NOT A DEATH SENTENCE, IF…

BY

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The Vice Chancellor

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Heads of Other Departments,
Members of University of Ilorin Community(Academic and Non-Academic),
My Lords, Spiritual and Temporal,
The Royal Fathers, Onipe of Ipee and other Royal Fathers present,
Members of my Nuclear and Extended Family including my in-laws
Members of First Baptist, (Ipee) and Emmanuel Baptist Churches, Sabo Oke Ilorin
Students of the Faculty of Basic Clinical Sciences,
Great Students of the University of Ilorin (Greatest Unilorites)
Gentlemen of the Print and Electronic Media
Distinguished invited Ladies and Gentlemen.

Preamble

I give honour, glory and adoration unto Almighty God because today has been crowned by Him and it is not only marvelous in our eyes but also divine. The Vice Chancellor Sir,

this statement is not because I only want to foremost reference God but because it has never been in my dream to become a Professor in my life talk of giving an inaugural lecture but rather to become a politician in order to follow the footsteps of my late uncle, However, man proposes but God disposes the whole scenario of becoming a pathologist and subsequently a Professor of Pathology of University of Ilorin is divine. It goes thus. One day after the Lecture in systemic Pathology, delivered by late Prof. G. M. Edington, renowned Pathologist during our part III MB; BS program in 1977, I took a cursory look at the composition of the entire Academic Staff at Ahmadu Bello University, Zaria in the four Laboratory Medicine Departments, (viz Chemical Pathology & Immunology, Haematology & Blood Transfusion, Medical Microbiology and Parasitology and Morbid Anatomy and Histopathology) and to my surprise they were all expatriates from Britain, India, Poland etc. During the time, Nigerian Economy was robust and the country could afford their remittances to their various home countries. Then the question, like a silent message, came to my mind, that what would become of the Pathology posting of MBBS Program of medical students and the qualities of various Laboratory services being rendered to the Physicians and patients, if one day the economy of the country turned around negatively, of course, all the expatriates would return back to their various countries or other greener pastures. There will be a serious challenge, during the course of the monologue, I said to myself, God forbid, I must be patriotic enough to join like minds to forestall such a situation. That day I took a decision to specialize in Pathology not minding the lucrative and other watering mouth specialties then like Surgery, and Obstetrics & Gynaecology (O & G) at that time. Four (4) years later, after the mandatory National Youth Service Corps (NYSC), I joined the services of Kwara State Government as a Medical Officer II and I was posted to General Hospital Ilorin. As soon as I settled down I called on my Late Uncle, Hon. (Chief) E. O. Afolayan (who had been a member of the defunct Parliament of Northern region in the First Republic,

to intimate him about my interest in full time politics, in order to take after him. He was excited about it. He counseled that we should begin to hatch a plan with a gestational period of 4-5 years. That on my part, I will use the period (4-5 years) to sell myself by working as a Medical Offer at the virtually all the General Hospitals in my Kwara South Senatorial District (now comprising of Oyun, Offa, Irepodun, Ekiti, Isin and Ifelodun Local Governments) and fraternize with the Royal Fathers, Politicians and the creams of the society in our various communities. Thereafter I would pull out to contest an election as a Politician. I have forgotten completely about the decision I took way back at Medical School in 1977 to specialize in Pathology, not knowing that it was a divine one! Then the thought about the Civilian Government's stability came to my mind. That, what would happen to me, even if I won the election and later the Military Junta over threw the Civilian Government and all Politicians were sacked with immediate effect. I would have to fall back on my first degree, MBBS Certificate, for private practice in order to survive? I aborted the idea and instead took a decision to go for post graduate Fellowship in Pathology. That upon completion, I will join the University as a Lecturer I and the moment I attain the status of a Senior Lecturer, I will resign my appointment and pursue my political career in full. Man proposes, that with Fellowship degree in politics if and whenever the Military strikes again and all politicians are sacked with immediate effect, I will just dust off my P.G. Certificate and take up Lecturer job in any University that runs MBBS program (that will surely need my services both clinically and academically) and I will just continue to fire the shots from the Ivory Tower awaiting another chance the Military will return power to the Civilians again. In October 1982, I joined the services of Ahmed Bello University Teaching Hospital (A.B.UTH), Department of Pathology, Zaria with Prof. Ed. B. Attah (as HOD) and four Indian Lecturers for residency program. Ladies and Gentlemen by 1986, 9 years after, my prediction came to pass. I was the only Resident (Nigerian)

Doctor in all the four departments of Laboratory Medicine with no single expatriate, except one Late Prof. Egler (a Polish) in Medical Microbiology & Parasitology Department. Professor Ed. B. Attah also left for Calabar. I had to be shuttling between, UCH, Ibadan and ABUTH, Zaria for the completion of my residency training in 1987. As soon as I passed the part II Fellowship Examination, I became Lecturer I/Consultant and Coordinating three Departments: Pathology, Heamatology and Chemical Pathology. With my presence in the Laboratory as the only Nigerian, Consultant Pathologist, there was influx of Doctors coming in for residency training in all the four departments and within a couple of years all the four disciplines of Laboratory Medicine were being run by Pathologists who were Nigerians and MB;BS Pathology posting program was never interrupted for lack of Academic Staff. Mission accomplished; Glory be to God. As God would have it, I became a Senior Lecturer in 1991. Three years later, 1994, through the grace of God and intervention of my big brother, Brigd. Gen S. T. Bello (RTD) I became the Chairman of Oyun Local Government, Ilemona. I took it as an opportunity to launch my Political career. Man proposes. However an incidence occurred, a circumstance beyond my control, forced me to return back to ABU, Zaria as Senior Lecturer in 1996 after my tenure as Local Government Chairman instead of resigning my appointment and pursue my political agenda on non party basis. Not giving up my plan, I transferred my Services from ABU, Zaria to University of Ilorin in 1997 with the primary intention to re-strategize for my political adventures being closer home. While the maneuvering was going on, (God disposes), unexpectedly in the first quarter of 2001, I was again thrown off balance. My plan was again truncated by ASUU 49 Tsunami/storm. For good nines (9) years and some months I went into academic exile(from UNILORIN) building and stabilizing Pathology Department in other Universities via temporary appointment to survive as if there was a Military Coup and all politicians were sacked.

By His mercy and grace of God the One who knows the heart of men, He only can grant our supplications and indeed, He answered our prayers, Alas!, miraculously, we, **ASUU 49** were reinstated back into our various academic positions (me as a Senior Lecturer) at Unilorin, Ilorin in October 2010, courtesy of unchallengeable Supreme Court verdict. I am grateful to God because I survived the hardship and the psychological imbalance as I nearly lost my life twice, few of us died during the crisis (related or not? May their souls continue to rest in perfect peace). The Vice Chancellor Sir, at this point, I was at a cross road, to resign my appointment as Senior Lecturer after over twenty years in the University Services with the title Doctor, the same prefix title I earned in 1979 as a medical Doctor. That will be a disservice to me. I therefore decided to do the needful, 'publish or perish', in order to earn the title, Professor before I quit.

Thank God, two years after returning from the academic exile, precisely October 2012, I was elevated to the position of a Professor of Pathology in the University of Ilorin, Ilorin during the tenure of Prof Isaaq Oloyede to whom I am indebted with gratitude. That night when the announcement was made, my wife congratulated me profusely and said "You are been delayed not to be delayed". I have not been able to decode that statement till today.

Today, the Vice-Chancellor Sir, at this moment, I stand before these distinguish Scholars, Academicians and colourful audience in our cool auditorium, through your kind approval which I cherish so much, to deliver the 212th inaugural Lecture of the University of Ilorin, the 40th in the College of Health Sciences, the first in the newly created Faculty of Basic Clinical Sciences and by His special grace the First of its kind or maiden one in the Department of Pathology (the jinx is broken) since its inception in 1980

The Vice Chancellor Sir and the distinguished audience, the title of my inaugural Lecture is **Cancer! The Sledge Hammer of Death? No! Not a Death sentence if ..**

Cancer at its initiation and earliest stage appears non harmful, painless, asymptomatic, as a tolerable parasite like 'afomo tree', and treatable but once left undetected early, untreated and become symptomatic and metastasize, it becomes harmful, dreadful, uncurable and invariable result to premature death.

Vice Chancellor Sir, I selected this topic, not only because, cancer epidemiology has been my research focus, but also, anticipating that this inaugural lecture will draw a large audience, hence an opportunity to further promote and enhance public awareness on cancer, bring cancer awareness to our door steps and fore knowledge and sensitize all, for cancer is real. The presentation is also aimed to realign the erroneous common perception that cancer is always a killer or fatal disease.

Cancer has become a global health challenge, therefore all tiers of governments, private sectors, agencies, philanthropists and individuals should coordinate and focus on scaling up activities, on prevention, early detention, diagnosis, prompt adequate treatment, palliative measures and other secondary cares in other to combat the cold epidemic of cancer for its incidence and mortality continue to increase on annual basis.

Common Terms and Symbols For Cancer (malignant tumour/neoplasm)

The word, **tumour** simply means an abnormal painless mass of tissue (lump) which is pathologically divided into either benign or malignant (cancer) tumour. A benign tumour is localized, grows slowly and neither re occurs nor progresses once removed surgically and does not usually result into death. Whereas cancer develops more rapidly, not localized, metastasizes to distant sites, destroying vital organs of the body and invariable causing death or becomes fatal.

Cancer: This is the common term for all malignant tumour arising from the tissues or organs of the body such as Blood (**Leukaemia)**, Breast (**Breast Cancer)**, Liver **(Hepatocellular Carcinoma/Primary liver cell carcinoma, PLCC),** Prostate **(Prostatic Cancer)** Cervix **(Cervical Carcinoma)**, Bone

(Osteosarcoma), even the skin (Melanoma) (**Afolayan, 2008)** etc. Again by An eminent British Oncologist defined Neoplasm as an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of the normal tissues and persists in the same excessive manner (autonomous) even after cessation of the stimuli which caused the change. Cancer cells prey on the host because the neoplastic cells compete with normal host cells and tissues for energy supplies and nutrition substrate. Cancer growth is autonomous because while the patient (its victim) is wasting away and becomes cachetic the cancer cells continue to flourish rapidly.

Population-Based Cancer Registry: Is the systematically collection of information on all cancers occurring in a geographically defined population from multiple sources; compares and interprets population based cancer incidence data and supports population based actions aimed at reducing the cancer burden in the community. Other types of CR are:

i) **Hospital-Based Cancer Registry (HBCR)**:- Records all cases of cancer treated in a given Hospital, HBCR has its values as an alternative to PBCR in low income countries.**(Jedy-Agba, Afolayan et al)**.
ii) **Pathology-Based**
iii) **Departmental-Based CR**

Cancer Cure: Curing cancer would mean completely eradicating cancer without it coming back. Although this can happen for some people, there is currently no specific cure for cancer but with early diagnosis and treatment the patient can experience many years of remission to an extent that the cause of death in such a patient will be something else but not cancer. Therefore by cure it means that the patient remains free of the disease and he or she enjoys the normal or same life expectancy as a person who never had cancer.

Screening: Screening aims to identify individuals with features suggestive of a specific cancer or pre-cancer who have not

developed any symptoms and offers the opportunity to refer them promptly for diagnosis and treatment.

Symbols for Cancer

The earliest and commonest symbol for cancer is the crab (fig 1) because the cancer cells spread or infiltrate the surrounding tissues or structures in a way that tumour looks like a crab. This is the reason why during surgery, wide excision beyond the body of the tumor is being carried out in order to avoid leaving residual tumour cells behind. Hence mastectomy in breast cancer.

Fig. I Crab as a symbol for cancer

Similarly, use of ribbons is another form of creating cancer awareness.

Fig 2 Symbol for cancer awareness

General Overview Of Cancer

Cancer incidence and mortality are rapidly increasing globally with the current estimated 19.3 million new cancer cases and 9.9 million cancer deaths in 2020,(**Sung, 2020**). These alarming figures on cancer incidence and mortality worldwide covered only 36 different cancers in 185 countries of the world with a population of 7.8billion people. To corroborate the above statement, the global burden of cancer in 2000 was estimated at 10.2 million cancer cases (**Parkin, 2000),** while in 2008 cancer incidence rose to 12.7 million (**Ferlay, 2008)** and in 2012, again cancer cases went up to 14.1m (**Ferlay, 2012)** The increasing trends are attributed to aging and rapid growth of the population worldwide, industrialization with consequent increased population being exposed to causative risk factors Further disturbing still is the fact that more than 60% of the world's total cancer cases occur in Africa, Asia, Central America etc, while greater than 70% of the world's cancer deaths come from these same regions and worse still, survival rates are meager in the low and middle income countries. (**Moten, 2014),** Fig 3

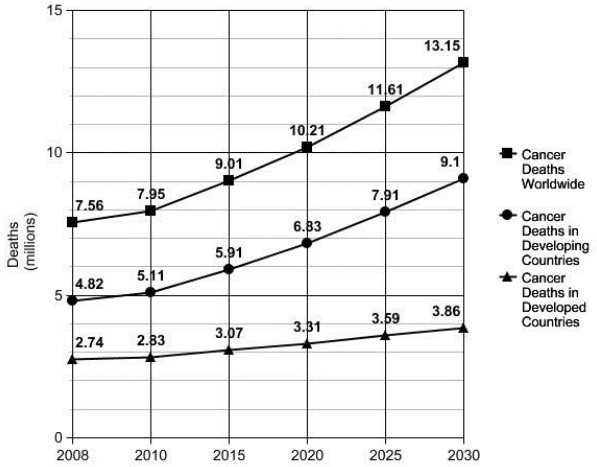


Fig 3 Countries in the developing world bear the greatest burden of new cancer cases as well as deaths.

Despite this increasing burden and the attendant premature deaths, cancer continues to receive a relatively low Public Health priority and being under–emphasized especially in Africa, largely because of limited resources and other pressing public health problems which include, communicable diseases such as Acquired Immunodeficiency Syndromes (AIDs/HIV infection), Malaria, Tuberculosis (**Parkin, 2012)** and of recently Lassa Fever and the ravaging COVID 19, of pandemic proportion, whereas currently, cancer kills more people worldwide than Tuberculosis, AIDS/HIV and Malaria combined- **(Moten, 2012).**

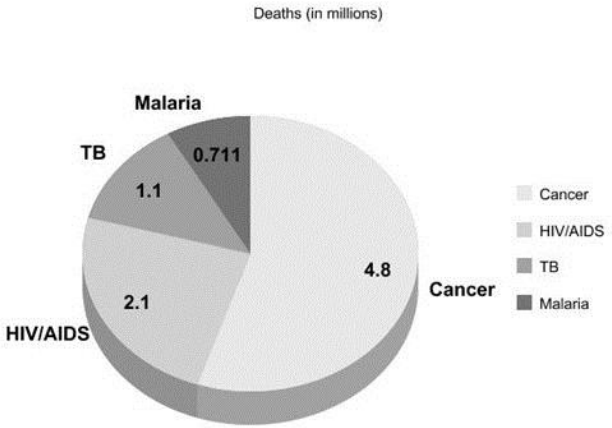


Fig 4: Deaths due to Cancer, HIV/AIDS, tuberculosis (TB), and malaria in the developing world. Source: American cancer society.

Causes/Aetiology of Cancer

The aetiology of cancer is largely unknown and its understanding to layman is quite complex but cancer is mostly associated with combined effect of genetic (hereditary) and exposure to environmental and lifestyles factors (i.e. risk factors).

The body is endowed with four regulatory genes which are; the growth promoting Proto-Oncogenes that control cell growth and division, the growth inhibiting cancer suppressor genes (anti Oncogenes), the genes that regulate programmed cell death 'apoptosis' and the fourth category of genes are those that regulate repair of damaged DNA. Essentially damage to the genes (mostly due to risk factors) called MUTATION throws a wrench into the orderly system that guide the life of the cells. Mutations change the cells instructions causing the cells to behave in dangerous and potentially harmful ways. Cancer is one of the outcomes of this changed behaviour.

Risk Factors for Cancer

What is a risk factor?. Epidemiologically, risk factor is a **variable** associated with an increased risk of developing a disease and in this instance cancer. These variables include: age, genetic make-up (family history), environmental (including trauma, **Adesiyun and Afolayan, 2015)** and lifestyles that can increase the likelihood of developing cancer (**Danaei, 2005)**. These risk factors for cancer include:

- Cigarette Smoking
- Second hand Smoke
- Excess Body fat
- Drinking Alcohol
- Eating Red and Processed Meat
- Diet low in fruits and dietary fibers and calcium
- Physical inactivity
- Ultra Violet (UV) Radiations
- Cancer associated infections viz: HBV, HPV, etc

Through epidemiological studies and from study models in vivo and vitro, the International Association of Research on Cancer (IARC) classified risk factors into four groups according to the evidence for their carcinogenicity namely: Carcinogenic to humans (group I), probably carcinogenic to human (group 2A), possibly carcinogenic to human (group 2B), not classifiable as

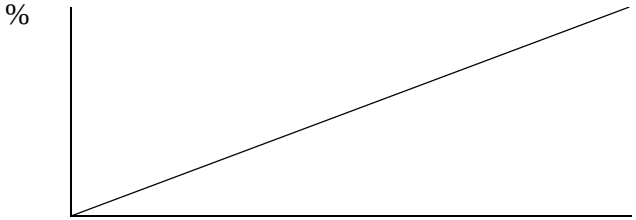
being carcinogenic to human (group 3) or probably not carcinogenic to humans(group 4), **(Toporcov, 2018)** Table 1 shows some examples of risk factors currently classified as groups human carcinogen by IARC as well as primary prevention targets to reduce cancer occurrence.

Table 1: *Risk Factors and site affected Toporcov et. Al*

Risk factor	**Sites affected**
Lifestyle factors	
Absence of excess body fat	Thyroid, gastric cardia, liver (hepatocellular carcinoma), esophagus, gall bladder, colon and rectum, pancreas, corpus uteri (endometrium), ovary, brain and central nervous system, kidney, multiple myeloma
Aflatoxins	Liver (hepatocellular carcinoma)
Alcoholic beverages	Oral cavity, pharynx, upper aerodigestive tract (acetaldehyde), liver (hepatocellular carcinoma), esophagus, colon and rectum, larynx
Processed meat	Colon and rectum
Regular physical activity	Colon and rectum
Smokeless tobacco	Oral cavity, esophagus, pancreas
Tobacco smoke, secondhand	Lung
Tobacco smoking	Oral cavity, pharynx, stomach, liver (hepatocellular carcinoma), esophagus, colon and rectum, pancreas, uterine cervix, ovary, nasal cavity and paranasal sinus, larynx, lung, kidney, renal pelvis and ureter, urinary bladder, leukemia/lymphoma
Infectious agent	
Epstein-Barr virus	Nasopharynx
Hepatitis B virus	Liver (hepatocellular carcinoma)
Hepatitis C virus	Liver (hepatocellular carcinoma), leukemia/lymphoma
Human immunodeficiency virus type 1	Anus, uterine cervix, eye, leukemia/lymphoma, endothelium
Human papillomavirus type 16	Oral cavity, tonsils, pharynx, anus, uterine cervix (HPV types 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59), vagina, vulva, penis
Human T cell lymphotropic virus type 1	Leukemia/lymphoma
Kaposi sarcoma herpes virus	Leukemia/lymphoma, endothelium
Schistosoma haematobium	Urinary bladder
Medicines	
Busulfan	Leukemia/lymphoma
Cyclophosphamide	Urinary bladder, leukemia/lymphoma
Cyclosporine	Leukemia/lymphoma, skin (nonmelanoma), multiple sites (unspecified)
Estrogen/Estrogen progesterone menopausal therapy	Corpus uteri (endometrium), ovary
Estrogen-progestogen contraceptives	Liver (hepatocellular carcinoma)
Etoposide with cisplatin and bleomycin	Leukemia/lymphoma
Tamoxifen	Corpus uteri (endometrium)
Treosulfan	Leukemia/lymphoma

In all these age of the individuals is an harbinger for cancer development as demonstrated in various studies; in Canada, Smith et al 2019, in Victoria (Australia), Thurfield, et al 2016,) in Africa, Parkin et al 2012 at ABUTH, Zaria, **Afolayan et al, 2008,** and at UITH, Ilorin **Afolayan et al 2012.** Fig. 5 shows the relationship between age and cancer incidence.

Fig 5: Graph showing the incidence of cancer against age group in Africa Source: Parkin et al 2012



In all, according to the study conducted by America Cancer Society researcher in 2014, it was found that, 42% of cancer cases were linked to modified risk factors, which could be prevented (Islami 2017) and the work further analyzed each risk factor's contribution to the overall cancer cases and deaths. Cigarette smoking topped the list.

1. **Cigarette smoking** accounted for 19% of all cancer cases and 29% of cancer deaths
2. **Excess body weight** was responsible for 7.8% of cancer cases and 6.5% of deaths
3. **Drinking alcohol** was linked to 5.6% of cancer cases and 4% of deaths
4. **UV radiation** was attributable to almost 5% of cases, but a lower 1.5% of deaths
5 **Physical inactivity** played into 2.9% of cases and 2.2% of deaths, (Islami, 2017).

The 10 commandments of cancer prevention

Vice Chancellor Sir, bearing in mind that risk factors played a significant role in the causation of cancer and since prevention and early detection is the key to tackling or controlling cancer (Schneidman, 2020). I wish to bring to our knowledge the following ten commandments to prevent cancer as developed by Scientists at the Harvard School of Public Health, which reported that up to 75% of cancer deaths can be prevented hence the birth of 10 commandments of cancer prevention **(Harvard Med. School).**

1. Avoid tobacco in all its forms, including exposure to second hand smoke.

2. Eat properly Reduce consumption of saturated fat and red meat, which may increase the risk of colon cancer and a more aggressive form of prostate cancer. Increase your consumption of fruits, vegetables, and whole grains.

3. Exercise regularly. Physical activity has been linked to a reduced risk of colon cancer. Exercise also appears to reduce a woman's risk of breast and possibly reproductive cancers. Exercise is for protection even if weight is not lost.

4. Stay lean. Obesity increases the risk of many forms of cancer. Calories count; To slim down, take in fewer calories and burn more with exercise.

5. if you choose to drink, limit yourself to an average of one drink a day. Excess alcohol increases the risk of cancers of the mouth, larynx, oesophagus, liver, and colon; it also increases a woman's risk of breast cancer. Smoking further increases the risk of many alcohol-induced malignancies.

6. Avoid unnecessary exposure to radiation(UV radiation). Get medical imaging tests only when needed.

7. Avoid exposure to industrial and environmental toxins such as asbestos fibers, benzene, aromatic amines, and polychlorinated biphenyls (PCBs).

8. Avoid cancer related infections, including hepatitis viruses, HIV, and the HPV. Many are transmitted sexually or through contaminated needles.

9. Make quality sleep a priority. Admittedly, the evidence linking sleep to cancer is not all that strong.

10. Get enough vitamin D. Although protection is far from proven, evidence suggests that vitamin D may help reduce the risk of prostate cancer, colon cancer, and other malignancies.

Clinical Manifestations of Cancer (Signs and Symptoms)

Generally, most of cancer cases in the early phase are asymptomatic (no signs and symptoms that are pathognomonic for the disease), do not draw any serious attention for a long time, as it takes several years before it becomes manifested clinically through generalized symptoms that can be easily explained away for another disease. These generalized symptoms include but by no means exhaustive: inexplicable weight loss (Cachexia), Anaemia, (shortage of blood), fatigue and tiredness/body weakness, insomnia, poor appetite etc. However, common to all is that cancer signs and symptoms usually worsen as time goes by, which often explains the poor prognosis characterizing late presentation of cancer cases (Anyanwu 2000). Often benign tumour mimics malignancy clinically posing a diagnostic and management dilemma **(Olaoye & Afolayan, 2018)**.

The Vice Chancellor Sir, in view of the above let me highlight signs and symptoms of two or more common cancers in our community.

Breast Cancer: Breast Cancer, the commonest cancer in our community and among women, is ab initio characterized by a small **PAINLESS** breast lump (mass) which is often disregarded, not receiving attention because it is not painful and often mistaken for a simple boil. Others symptoms include nipple bloody discharge, peau d'Orange, ***Fig.6A,*** and later a palpable lump in the axillary region (evidence of metastasis) and mass that is initially mobile but becomes fixed later. During its

terminal phase, breast cancer becomes ulcerated, (non-healing breast skin ulcer) fungating and foul smelling ***Fig.6B.*** At this point let me clearly state that most breast lumps among under 25years old girls, are non cancerous tumour as it is most often benign, (fibro-adenoma), but breast lump generally in both males and females especially those aged 30 years and above should be regarded as cancer until it is thoroughly investigated and diagnosed otherwise. This is because in some studies and at our centre UITH, Ilorin cancer of the breast had been diagnosed among young girl even among children (0-14 years) **(Afolayan, 2012)** and **(Adeniji, 2015)**. Therefore it is advisable for women to personally conduct monthly breast self-examination for early detection of breast lump.

Fig. 6A Breast cancer showing *Peau' d'Orange* *Source:* Healthline 2019

Fig. 6B Young girl with ulcerated breast cancer Source: ***Chrlotte et al 2012***

Steps for Brest Self-Examination and Pictures

Breast Self-Examination (Fig 7)

1. Lie on your back and put one arm behind your head. With your three middle fingers placed flat on your breast, move your hand gently in circular motions checking for lumps or thickening. Do this over the entire breast area including the area from your collarbone right down to the ribs below your breast. Apply pressure moderately as your fingers move. Put the other hand behind your head and do same for the other breast.
2. Stand in front of a mirror with your hands on your waist and observe your breast. Look out for any changes in size, shape, any swelling or dimpling of the skin.
3. Stand upright, raise your left arm and use the right hand to check your arm for lumps.
4. Squeeze your nipple between your thumb and index fingers and look out for any fluid or discharge. Do same for the other breast.

Prostate Cancer (PC):

Prostate cancer is the second commonest cancer in Nigeria and ditto in our community. It is characterized with non specific symptoms in the early stage of the disease as there is free flow of urine, until it is at advanced stage when it manifests with generalized symptoms such as loss of weight (cachexia), anaemia, fatigability etc. The incidence of PC increases with age from 40 years, Therefore in the absence of specific symptoms for PC in its early phase it advisable for men aged 40 years and above to undergo routine Prostatic Specific Antigen (PSA) test on yearly basis. Other methods for early detection of PC are skillful rectal examination and trans-rectal ultrasonography.

Cervical Cancer

Cervical cancer is the second commonest cancer among women**.** Unlike the breast, uterine Cervix is a concealed anatomical structure and its tumour (cancer) often has gone beyond stage 1 or 2 before it begins to manifest clinically. This why PAP smears screening is advocated for women (above 30 years of age) regularly in other to detect the cancer either at its precancerous or early stage when the possibility of escaping its sledge hammer of death is visible. Cervical cancer presents with the following signs and symptoms: Foul smelling vaginal discharge, bleeding per vagina, post coital or post menopausal bleeding in addition to general symptom of cancer.

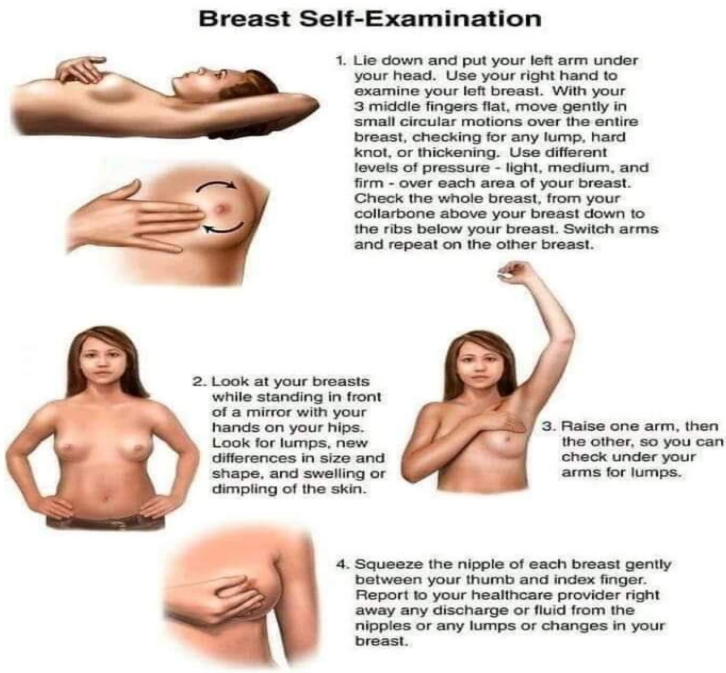


Fig. 7 Breast Self-Examination

Cancer Diagnosis

Diagnosis of cancer is a multi-stage process and the final diagnosis though based on pathologist's opinion but it includes the following.

i) Clinical Examination

ii) Imaging/Radiology Tests

- Ultrasound examination
- X-ray
- Mammography
- Endoscope
- Computed Tomography (CT)
- MRI
- Position Emission Tomography (PET) etc

Laboratory Tests

- **Biopsy**: Histopathological diagnosis of tissue or surgical samples
- Fine needle aspiration Biopsy (FNAB) The procedure is simple, cost effective and quick **(Bhusnurmath and Afolayan, 1986)**
- **Cytology**
  PAP smear **(Afolayan)**
  Urine
  Sputum
  Gastric washing
  Ascitic
  Pleura fluid etc
- **Blood Tests**
  Complete/Full blood count
  Serum (Blood) protein
  Tumour marker tests etc
- **Autopsy**

Geographical Variation Of Cancer

Worldwide cancer is characterized by geographical variations in terms of its magnitude and cancer types, presumably due to different exposures to risk factors and susceptibility of the populations. In Norway (Europe), with a population of 5,353,365, a total of 34,299 cancer cases comprising of 18,712 males and 15,587 females were registered in 2018, showing male predominance with prostate, colorectal and breast cancers as the commonest cancer in that order of magnitude.(Bray, 2018) Cancer of the prostate was the commonest among males

Whereas **In India** with a population of 1,354,051,855, had estimated 1,157,294 cancer cases in 2018 comprising of 570,045 males and 587,249 females, showing female predominance with cancer of the breast (162,468, 14%), lip and oral cavity (119, 992, 10,4%) and cervix (96,922, 8.4%) as the

commonest cancers. Cancer of the lip and oral cavity is the commonest cancer in the male gender. (Bray 2018).

In Canada, like most other countries globally, cancer is the leading cause of death with an estimated 220, 400 new cancer cases in 1919. Cancers of the lung, breast, colorectal and prostate were the most commonly diagnosed cancers, accounting for 48% of all Cancers cases. Cancer of the lung was the second commonest cancer in both males and females in Canada. (Smith, 2019).

Also**, i**n the United State of America with a population of 326,766,750, total of 2,129,118 cancer cases were registered for both sexes in 2018 with breast cancer(234,087, 11%) as the commonest followed by lung (227,356, 10%) and prostate (212,783, 10%) cancers.**(Bray, 2018).**

Cancer In Africa

Cancer has become an increasing health issue in African Continent (due to its annual increasing trends, unlike in the past, in the early 50_s when infectious, parasitic and nutritional diseases constituted major health challenges, disability and a barrier to life expectancy and high infant mortality rate), and its increasing incidence has been attributed to many factors including **aging, growth of the population and increased prevalence of risk factors associated with economic transitions such as smoking, obesity, physical inactivity and reproductive behaviour with certain infectious agents of importance in cancer aetiology.** In Africa with a population of 1,340,598,088 in 2020, the estimated total number of new cancer cases was 1,109,209 comprising of Breast, 186,598(!6.8%), Cervix, 117,316(10.6%), Prostate, 93,173(8.4%), Liver,70,542(8,4%), Colorectal,66,188(6.4%). (Parkin, 2012). Fig. 8 shows the five common cancers in Africa-

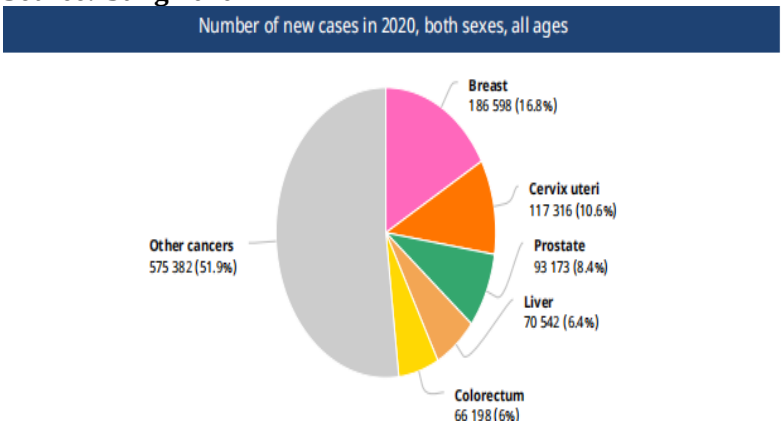
Breast, cervical, prostate, liver and colorectal cancers.

Geographical variation of cancer in Africa was remarkable as in South Africa, the commonest cancer was cancer of the oesophagus, in Gambia, it was liver cancer, Kaposi sarcoma in

the Uganda while in Ghana, breast cancer similar to that of Nigeria. .

Fig 8: Pie Chart of Five common cancers and others in both sexes in Africa 2020

Source: **Sung 2020**



Cancer In Nigeria

Cancer has become a growing global epidemic with a disproportional share of its deaths in low- and middle-income countries including Nigeria, unfortunately our country is least prepared to deal with the rising numbers. (Sylla 2012) Severe dearth of Population-Based Cancer Registry (PBCR) in the country is a serious challenge to availability of accurate and reliable data on cancer in Nigeria. In 1992, when the National Headquarters of Cancer Registries in Nigeria (NHCRN) was first established and headed by Late Professor Emeritus Toriola Feisetan Solanke, the estimated cancer cases in Nigeria when the population stood at 100m, was 100,000 cancer cases per annum, (Solanke, 1992). However, over the past years through the efforts of Nigeria National System of Cancer Registries (NSCR) since 2009, the number of Population-Based Cancer Registry (PBCR) in Nigeria rose from one (Ibadan PBCR established in 1960) to 10 PBCRs covering only 5.2% (10.5m) of the population (200 m) of Nigeria (Adebamowo, 2020). In the recent

publication of Cancer in Nigeria, two PBCRs (Abuja and Benin) covering a population of 2,648 239, registered a total of 7,972 new cancer cases for a period of eight (8) years, 2009-2016 with 4,918 (61.7%) females and 3,054 (38.3%) males giving a male to female ratio of 1:1.6. (Adebamowo, 2020). The female preponderance was largely due to high incidence of Breast and Cervical cancers. The five(5)most common cancers in both genders in the country using the data from these two PBCRs as window or mirror image to Nigeria were Breast, 2,143 (26.9%) followed by prostrate, 990 (12.4%), cervical, 937 (11.8%), Liver, 427 (5.4%) and colorectal, 361 (4.5%) cancers. The leading sites among men, were Prostate, 990 (32.1%) accounting for about one-third of all the cancer cases in men, others were Liver, 321 (10.6%), colorectal, 146 (4.8%), Bone marrow/Blood (Leukemia), (77 (2.5%) cases, while in women, breast cancer with 2,095 (42.6%), accounting for almost 50% of the total cases of cancer in women. Others in order of magnitude were cervix, 937 (19.1%), ovary, 199 (4.1%), colorectal, 118 (2.4%) and Liver, 106 (2.2%) cancers.

At Ibadan Cancer Registry (IBCR), in the South-Western geopolitical zone of Nigeria covering a population of 3,148 376 people, a total of 4,799 new cancer cases (1,861, 38.8% males and 2,838, 61.2% females) were registered over a period of 5 years (2013-12017) (Ogunbiyi, 2017) while at Zaria, in the North-Western geopolitical zone of Nigeria, a total of 1,887 cancer cases were registered in five years (1992–1996) at the Zaria Hospital-Based Cancer Registry (ZCR) **(Afolayan, 2008)**. There were 887 (46.6%) males and 1,008 (53.4%) females. The five commonest cancers in both sexes were Lymphoma, 275 (14.6%), cervical, 256 (13.6%), breast, 226 (12.0%), colorectal, 112 (5.9%) and urinary bladder, 111 (5.9%) cancers. However, the recently published data on cancer (Samaila, 2015) from the same center (ZCR) showed a changing pattern of cancer occurrence with 2,536 cancer cases registered from (2009 -2013). The commonest cancer cases currently in both genders were breast, 517 (20.4%), cervix, 426 (18.9%),

prostate, 210 (8.3%), skin cancer and lymphoma had 181 (7.1%) and 112 (4.4%) cases respectively. In Sokoto, a city in the North-Western geopolitical zone, the UDUTH, PBCR registered a total of 332 cancer cases within 2 years, 2014-2015 with the following 5 commonest cancers in the center, Breast, 42 (12,7%), cervix, 36 (10.6%), Urinary bladder, 30(9.0%), prostate, 15,(4.5%) and ovary,13 (3.9%). Cancer of the **Urinary bladder** was the commonest cancer in males, (Iseh, 2020). Whereas at Calabar in Cross-River State, the PBCR covering a population of 375,196, from 2009-2013, registered a total of 719 cancer cases comprising of 320 males and 399 females (M:F; 1:1.2) with the following 5 commonest cancers, breast, 164(22.8%), prostate,150(20.9%), cervix, 77(10.7%). lymphoma, 52(7.2%) and colorectal,34,(4.7%) (Ekanem, 2015).

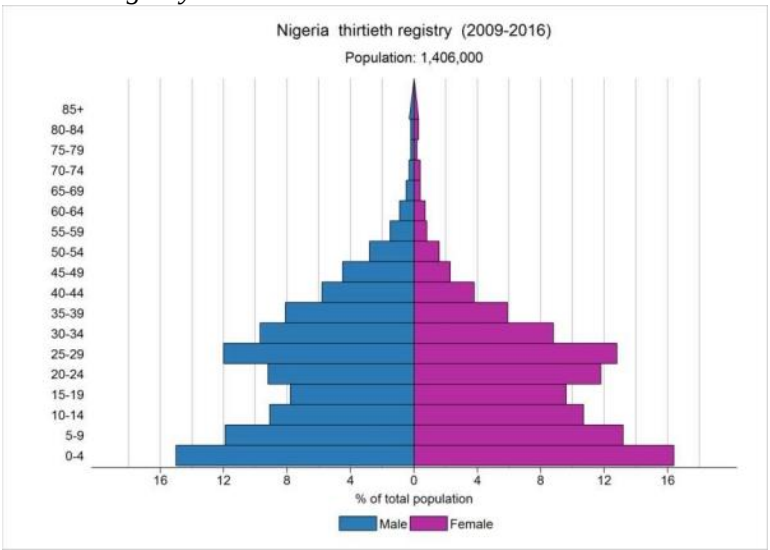
Cancer in Children

The Vice Chancellor Sir, cancer also occurs in children below the age of 15 years and like in the adult, it is characterized by geographical variations, however the types of cancer during childhood are different from those seen in later years (adulthood) and also that cancer incidence was relatively lower in children compared with that of adult considering the incidence of cancer vis-a-vis their populations as reflected in various studies, **Ibrahim and Afolayan, 1989, Afolayan, 2008, Afolayan 2012, Obaseki, 2020 etc.** At Abuja, children, 0-14 years accounted for about 40% (542,4195) of the Federal Capital Territory (FCT) population of 1.4m (NPC 2006) **(fig 9.)** yet, the number of cancer cases registered at Abuja from 2009–2016 among children was 203 (3.3%) out of the 6128 cancer cases registered during same period. **Igbinoba, 2020.**

At Ilorin, childhood tumors accounted for 163 (8.6%) cases out of the total number of 2,442 cancer cases registered over a period of ten years, 1998–2007 **(Afolayan, 2012).** The commonest cancers among the children in Ilorin during that period were lymphoma (mostly Burkitt), 87 (45.1%), Leukaemia (Blood), 30 (15.5%), Retinoblastoma (Eye), 19 (9.8%), and

nephroblastoma (kidney), 15 (7.8%). Retinoblastoma was the commonest eye ball tumour in children (**Owoeye and Afolayan, 2005)**. No single case of brain tumor was registered during the period. The recent data from ILCR, 2011-2020, children accounted 160 (5.2%) cases out of the total number of 3,104 cancer cases registered with changing pattern compared with the previous publication as there were 3 cases of brain tumour among children, and the top three cancers among children were Retinoblastoma, Lymphoma and Leukaemia. **Afolayan 2021 Unpublished**

Figure 9. shows the population pyramid covered by the Abuja Cancer Registry.



Cancer In Ilorin

Cancer registration via HBCR began in the last quarter of 1997 at UITH, Ilorin and within a period of 5 years (1999–2003) of data collection on cancer, 1,187 cancer cases were registered, comprising of 456 (38.4%) males and 731 (61.6%) females giving a male to female ration of 1:1:6. The top 5

cancers sites at Ilorin in both sexes were breast, 266 (13.1%) cervical, 512 (12.8%), liver, 152 (12.8%), lymph node (Lymphoma), 56 (4.7%) and prostate, 51 (4.3%). The five commonest cancers among men were liver, 97 (21.2%), prostate, 51 (15.9%), colorectal, 26 (9.2%) while kidney, lymphoma and leukemia had 22 (4.8%) cases each. In women, the leading malignancies were breast, 262 (35.8%), cervical, 156 (21.3%), liver (HCC), 55 (18.4%), lymphoma, 34 (7.0%) or Leukemia 22 (4.8%). Lung and brain cancers were rare with only 7 (0.63%) and 1 (0.08%) case respectively **(Afolayan, 2012).** In another study, 1998-2007 the data collected corroborated the statement that cancer will continue to increase in the near future as earlier stated if campaign against cancer is treated with gloved hands as a total of 2242 cancer cases were registered without a change in the cancer pattern. **(Afolayan, 2012).** The ILCR was revisited to update the cancer data for the purpose of this inaugural lecture. From 2011-2020, the number of cancer cases rose to 3,104, with women accounting for 1,859 **(59.9%)** cases, while men had, 1,245 **(40.1%)** cancer cases giving a M: F 1:1.5. The cancer pattern has begun to change and assume that of the national pattern Table 2. The current data showed an up surge in the occurrence of prostate cancer in men from 51 in, 1999-2003, period to 397 cases of prostate cancer in, 2011-2020, period **(Afolayan, 2021 Unpublished)**. This had been attributed to the effect of prostate cancer screening drive, public awareness, availability of man power and diagnostic facilities. The 5 top cancers in the current cancer data were breast cancer, 853 (27.5%), comprising of 850 females and 3 males. Others were, prostate 397 (12.8%), cervical, 185 (6.0%), colorectal, 176 (5.7%), and Liver, 151(4.9%) cancer cases. Among male gender prostate cancer with 397 (31.9%) cases ranked first, followed by colorectal, 62 (5%), liver, 102 (8.2%), lymphoma, 60 (4.8%) and leukemia 38 (3.1%). In women as usual, breast cancer with 853 (45.8%) topped the list**) accounting for almost half of the total number of cancer cases in women)**, followed by cervical, 185 (21.7%), colorectal, 114 (13.4%), leukemia, 46(5.4%) and

lymphoma, 30 (3.5%). Colorectal cancer is also a significant cancer at our center as reported by **(Ibrahim and Afolayan, 2011)**. During the same period there were 69 (2.2%) cases of lung cancer while 21 (0.9%) cases of Brain cancer were registered unlike in 1998-2007 data which reflected 15 and 3 cases for Lung and Brain cancer respectively **(Afolayan, 2021)**.

Vice Chancellor, Sir, I wish to submit that cancer incidence is not only increasing but also new ones hitherto rare are now emerging due to improved diagnostic facilities and availability of relevant specialists for detection and accurate diagnosis.

Table 2: Showing ten top and other cancer cases in University of Ilorin Teaching Hospital, 2011-2020

S/N	CASES	2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		Total
	Gender	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
1	Breast	-	110	1	82	-	83	-	67	-	90	-	77	-	92	-	103	2	105	-	41	887
2	Prostate	37	-	27	-	38	-	33	-	53	-	29	-	57	-	36	-	59	-	28	-	415
3	Cervical	-	25	-	25	-	25	-	20	-	14	-	8	-	16	-	10	8	17	-	17	185
4	Colorectal	8	-	22	9	2	5	2	11	9	9	5	8	10	7	1	50	-	10	3	5	176
5	Liver	12	5	13	5	18	5	18	14	9	6	16	4	9	7	3	2	1	-	3	1	151
6	Lymphoma	9	-	19	7	6	5	1	2	7	1	1	2	4	3	9	-	6	10	-	-	92
7	Gastric	1	-	6	6	11	7	3	5	6	3	7	4	7	2	5	4	3	7	3	2	92
8	Leukemia	-	-	1	1	13	3	-	8	6	9	4	11	3	8	4	-	3	3	4	3	84
9	Lungs	-	10	8	9	1	1	3	3	2	2	1	2	2	4	2	4	3	9	1	2	69
10	Eye	3	2	2	7	1	6	4	1	4	1	1	3	7	4	3	1	4	6	-	-	60
	Others	30	34	89	70	46	47	52	56	33	33	27	29	54	63	34	46	34	49	70	59	955
	Total	100	186	188	221	136	177	116	187	129	168	91	148	153	206	97	220	123	216	112	130	3104
	Grand Total	286		409		313		303		297		239		359		317		339		242		3104

Cancer Trends Pattern

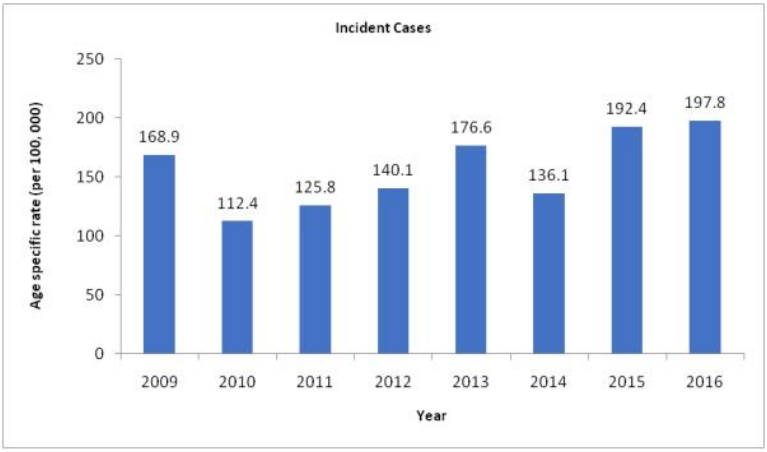
Globally, the incidence of cancer is increasing on annual basis with about 60% of the total number of new cancer cases

occurring in the low and middle income nations (Parkin, 2014). GLOBOCAN cancer statistics (going by the estimates of the worldwide incidence, mortality and prevalence of 26 cancers), showed that the world cancer burden rose from 10.2m in 2000 (Parkin, 2001) to 19.3 m new cancer cases for the year 2020 Sung et al (2020). Reports further showed that 19.3m cancer cases (for the year 2020) would rise to 22m worldwide by 2030 with more than half of all the new cancer cases and two-third of cancer deaths occurring in low and middle–income countries (Nigeria inclusive) which are least prepared to deal with the rising trends (Moten, 2014 and Torre, 2012).

In Africa, the story is not different for cancer incidence keeps on increasing on annual basis (because of aging and population growth as well as increased prevalence of risk factors associated with economic transition such as alcohol, smoking, physical inactivity Obesity and reproductive behaviour coupled with certain cancer associated infectious agents (Pisani, 1997, De Martel, 2012) as cancer incidence for Africa rose from 847,000 in 2012 (Parkin, 2014), to 1,055,172 cases in 2018 (with cancer of the breast, Cervix and prostate, liver and colorectal as the five commonest cancers in the continent) and further gone up to 1,109,209 cases in 2020 with the breast cancer as the commonest cancer in Africa like the rest of the world, (Sung, 2021).

As for our Country, Nigeria, data on cancer statistics available showed that cancer incidence is also increasing in Nigeria due to the already stated reasons. Bray at al in cancer statistics, GLOBOCAN 2018 showed that Nigeria with a population of 195,875,239 (Census 2018.) had an estimated total number of 115,950 cancer cases in 2018 for both sexes and all ages, while in 2020 cancer incidence in Nigeria with a population of 206m (Census, 2020) rose to 124,815 (51,398 males and 73,417 females) At Abuja, Fig 10 showed the trend of cancer during the period 2009-2016 of cancer registration.. At the registry, 112.4 per 100,000 cases of cancer were registered in 2010 which rose to 192.8/100,000 cases in

2016 (Igbinoba, 2020). Report from other parts of the country (Zaria, Lagos, Ibadan, etc.) also supported the increasing trend of cancer. Samaila, 2015, Sowumi, 2018, Ogunbiyi, 2019. The report from IBCR which covered the period 2013 – 2017 revealed similar increasing trend in the center (Ogunbiyi, 2019) Sowumi, at al on trend of cancer incidence in an oncology center in Nigeria which was one of the functional Radiotherapy centers in Nigeria,(where patients in the southern part and part of the middle belt of the country do attend for radiotherapy treatment,) corroborated the report that cancer incidence is increasing in Nigeria (Sowumi, 2018).



The Ilorin CR cancer statistics for the periods 1998-2007 and 2011-2020 also supported the gradual increasing cancer trends at our center as there were 2,242 cancer cases registered in 1998-2007 **(Afolayan, 2012)** which rose to 3,104 cases in 2010-2019 (**Afolayan, 2021 Unpublished).** Fig 11**.**

Therefore V. C. Sir, again, I submit that cancer trend pattern at Ilorin is not in any way different from the rest of the world as the trend is increasing. I also did studies on the trend of specific cancers (Breast and Liver) at our center. Breast cancer is now the commonest cancer in the whole world, instead of its

initial 2nd position to cancer of the lung but its mortality rate has dropped drastically as in 2020 GLOBOCAN data. The increasing trend of breast cancer was observed mostly in the low and medium – income countries. Figure 12: showed the gradual increase in the trend of breast cancer at UITH Ilorin, from 1999–2008 during which a total of 528 cases of breast cancer were registered **(Afolayan, 2012).**

This finding was corroborated by Adeniji et al in their publication on rising pattern of breast cancer in young women; a worrisome trend (Adeniji 2015). Another study was carried out on the trend of liver cancer, which demonstrated the value of vaccination against cancer related infectious agents such as Hepatitis B virus as there was a decline in the occurrence of liver cancer at our center **(Afolayan, 2009). Fig. 13** Similar plot study on vaccination against HBV and HCV at the Gambia showed similar decline in the incidence of liver cancer in that Country (De Martel, 2012 and Chang, 2016).

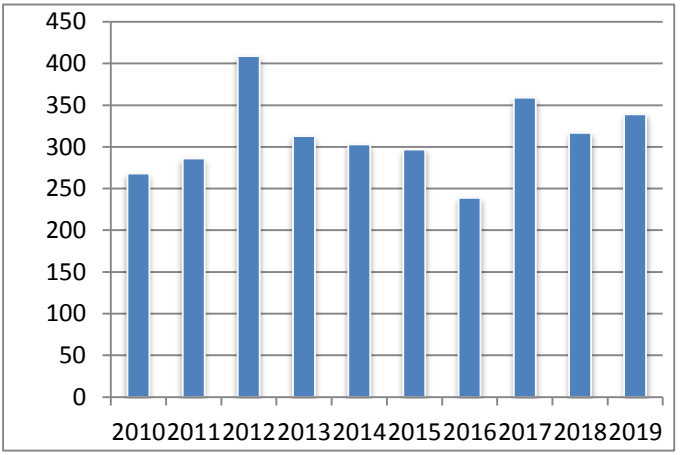
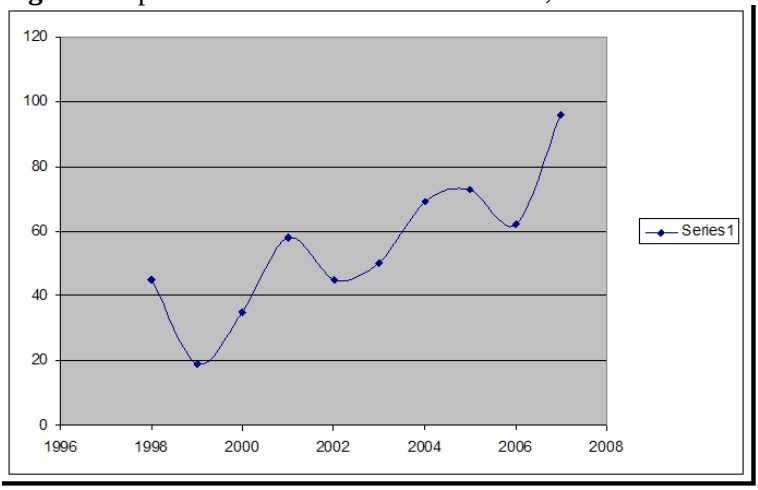


Fig 11: Bar chart showing the cancer trends for the period 2010-2019 at UITH, Ilorin.

Fig. 12 Graph of breast cancer trends at UITH, Ilorin 1999-2008



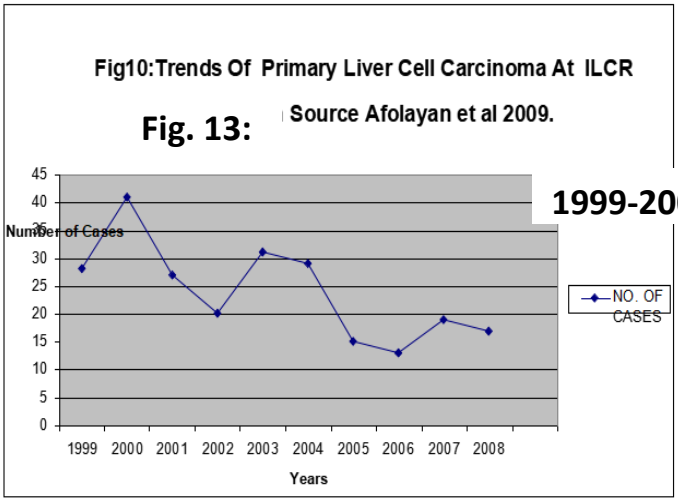


Fig. 13:

As stated earlier, one of the keys to tackling cancer is by its prevention. Liver cancer, which is preventable belonged to the group of one-third of cancer cases that are incurable, yet it ranked 3rd after breast and cervical cancer at our center, UITH

(**Afolayan, 2012**) and occupied 5th position in our country (**Adebamowo, 2020).**

Is Cancer A Sledge Hammer Of Death?

Does diagnosis of cancer confer death sentence on the patient, as the moment it is pronounced; fear, disbelief, emptiness and all sorts of psychological challenges envelope the life of the patient and his or her friends and relatives alike. Cancer has come to stay and until such a time in the near future when it will be conquered like small pox through research and technological advancement and produce vaccine against each cancer like infectious diseases such as T. B. and even COVID-19 which are being tamed because scientists were able to develop vaccines against them and disrupt or terminates their spread and fatal destruction. Therefore for everyone who beats cancer there is someone who loses the battle to cancer hence global variations in cancer survival appeared very wide among nations. For instance five years survival for breast, and prostate cancers was higher in North America, Japan, Australia Western and Southern Europe but lower in Brazil and Eastern Europe. Five years relative survival in women diagnosed with breast cancer was 72% in Europe and Brazil, 58.4% Canada 82.5%, New York (US) 89 – 90%: Coleman, 2014 Survival had been more than 5 years in some individuals whose cases were diagnosed early and treated promptly. Unfortunately cancer survival statistics in our country, is a big challenge as reliable National data on cancer survival statistics for Nigerians with cancer are lacking or near total absence because there is hardly any coordinated functional cancer follow up units with the few PBCRs available in the country. Therefore information on cancer survival was only available through the research works of physicians or pathologists during their routine practices. (**Afolayan, 2012**) The question again sir! Is cancer a sledge hammer of death? Vice Chancellor Sir, the attentive audience before you await an answer from me, to be either, Yes or No. The answer is obvious to many relatives, friends and even parents that have lost their

loved ones or children to cancer. Let me begin to address the question with an illustration, even though cancer is an outright killer disease and the second commonest cause of deaths worldwide. Personally, I have also lost a young brother (KS), a cousin (J.K), a brother-in-law (K.A), my senior at Offa Grammar School (TF), a hard working and promising colleague(P.S) and many more to cancer, all within few months of diagnosis because of late presentation or diagnosis at the terminal stage of the disease (when it was too late to save the situation) as all of them experienced non-specific signs and symptoms which underscores the essence of regular or periodic screening tests. By the way of emphasis prevention, early detection (through screening), early diagnosis and treatment are the keys of tackling cancer to avoid its (cancer) sledge hammer of death.
Another illustration of several decades. Fig 14

Figure 14 Late Shirley Temple Black at the Hospital bed for mastectomy in 1972 https://www.shirleytemple.com

This is Late Shirley Temple Black, an American celebrity, born in 1928, who after being diagnosed with breast cancer at the age of 44 in 1972 and undergone mastectomy in 1972, held a news conference from her hospital room to raise

awareness and encourage women not to sit at home and be afraid after discovering a breast lump. At that time, 1972 mastectomies were secret operations and Temple helped to bring breast cancer awareness to the forefront of the nation's priorities in public health discussion. Shirley became the first celebrity to publicize a personal case of breast cancer. The tumour was removed with performance of a modified radical mastectomy. Also cancer was typically discussed in hushed whispers and Shirley Temple disclosure was a significant milestone in improving breast cancer awareness and reducing stigma around the disease. She went further to announce the result of the operation on radio and television. The good news and lesson! Shirley Temple died at the age of 85 years. She lived 41 years after the diagnosis and treatment of her breast cancer. The cause of death according to her death certificate was chronic obstructive pulmonary (lung) disease (COPD) and NOT due to breast cancer. Her case again underscores the values of early detection, diagnosis and treatment without delay. Also from Ghana, was another woman by name, Twena Harvey-Ewusi, who won battle against breast cancer. She said "cancer took so much away from me and but in return, I have a better perspective of life, what matters and who counts. I live my life like golden. I don't take anything for granted". Cancer is not a death sentence: You don't have to die. Get screened.

The Vice Chancellor sir, today in this auditorium, I am glad to announce that, we have specially invited guests, patients who have been living with various types of cancer – thyroid, breast, colorectal etc. ranging from 3-21 years after their cancer diagnosis and treatment. I thank them all for honoring my invitation. However by special request, we have the near version of Shirley Temple Black, in our midst. A Nigerian, this woman was diagnosed as having breast cancer from a small palpable lump in 2000 at the age of 50 years, via fine needle aspiration biopsy at our pathology department, UITH, Ilorin. Because she was a close family friend, I looked straight into her eyes with empathy and said "Madam, this is cancer, you have to undergo

mastectomy within the next one week. However if you refuse the operation, I will not want to see you again and I will be waiting for your obituary in a couple of months or years. She looked at me and as usual smiled. She replied, Doctor since you have said so, I am prepared to do whatever you asked me to do. I will go and tell my husband and children. She agreed. She consented to the mastectomy and the histology report confirmed cancer of the breast.

V. C. Sir, today the woman is alive and she is in our midst. She has agreed not only to be present physically but also show herself up as a lesson for others that with early diagnosis (stage 1) and prompt treatment, like Shirley Temple, our Nigerian (African) women could leave beyond 5 years after mastectomy. She had mastectomy 21 years ago at the age of 50 years and by the special grace of God she is above 70 years now. I wish to humbly request Mrs. A to please rise. I thank you for this honour and rare service to your fellow women folks. **She is a living witness to the statement that cancer is not a sledge hammer of death, if diagnosed early and treated without delay. Go for regular screening.**

Further Still in their publication titled, survivorship patterns of histopathological variants and molecular subtypes of breast cancer in a teaching hospital in Nigeria, Adeniji, et al 2016, showed that recurrence free survival was best for stage 1 and worst for stage 4 tumors, strengthening the values of early presentation of malignant tumour for treatment intervention. Their prospective study involved 203 patients with breast cancer from 2003–2007. While many of their patients lost the battle to cancer within few months or years of diagnosis, three (3) patients were followed up for 10-12 years after their diagnosis of breast cancer. This study within our immediate environment lends weight to this 212th inaugural lecture that cancer is not a sledge hammer of death if allowed to be diagnosed and treated early.

Vice Chancellor Sir, I therefore submit to the audience before you that: **Cancer! The sledge hammer of death? No not**

a sledge hammer of death if, and the if is: Patients or victims of cancer should seek medical attention (go for screening) for early diagnosis and treatment intervention which include surgery (where indicated), Chemotherapy and Radiotherapy:

An Appeal

I want to appeal to the, the rich men and women in our community to launch foundation or NGO that is not another profit making outfit, (as I wish to recognize the efforts of LEAH and Ayoka Foundations towards such direction) but solely for supporting cancer control activities, such as:

i) Procurement of million doses of vaccines against Hepatitis viruses (associated with cancer of the livers), HPV (associated with cervical and nasophageal cancers), for the general public.

ii) Cancer screening programs – procurement of mammography machine for early detection of breast cancer, (the commonest cancer in Nigeria today, let us show love to our mothers who are the main victims of this scourge), Also sponsorship for free PAP smears screening centers for early detection of cervical cancer, Occult blood in stool and Sigmoidoscopy for colorectal cancer etc

Iii). Subsidizing cancer treatment by way of supporting cancer patients in area of surgery, Chemotherapy (drugs) and Radiotherapy and making palliative cares (for terminal patients) accessible available and affordable by supporting and establishing hospices, as terminal phase of cancer is very painful and deeply agonizing, not only for the patients but also their relatives who look after them.

Now that cancer is no longer a death sentence we must do more to help survivors live comfortably to overcome various challenges and denials associated with its stigma.

Contributions

- Over the years the Vice Chancellor Sir, I have contributed my quota to the body of knowledge through publications in both Local, National and International peer review journals. Some of my works have been cited and still been quoted.
- My joy, which I am still savoring and that I will continue to enjoy for many years to come, is the privilege I have also been Teacher of Teachers, as many of my students at both undergraduate and post graduate levels (Resident Doctors) have become Professors and by diversification captains of industries, Glory be to God.
- **Invention of Wooden Histology Slides and Tissue Cassette Paraffin Wax Blocks Filling Cabinets.** In the 80's and early 90's imported metal filling cabinets were being used for filling the histology slides and tissue cassette paraffin wax blocks. However by the turn of events in late 90's it became very expensive that the department or UITH management could not afford the cost price and importation became impossible and as a result tissue blocks were kept in polythene begs while, histology slides were being piled up in boxes and not being filed, which disrupted our retrieval system. I thought of the alternative and solution to the challenge. After several months of reflections, I came up with the idea of wooden filling cabinets as an alternative as the metal works Engineers or Welders in the town did not possess the equipment and the metal material was not even available to construct the imported prototype. The next challenge was the carpenters that could produce the sketched sample. This took me to Ibadan as I could not get a carpenter that could do the work at Ilorin. At last through the encouragement and support of Pastor A. Aliyu, Mr. Ezekiel Osunwuyi, Late Mrs. Wumi Omole and Mr. Kunle Fowotade, the wooden filling cabinets for both histology slides and tissue blocks were produced Fig. 15. Many sister institutions – UCH Ibadan, UniOsun Teaching Hospital

Osogbo, Igbenidion University etc. were beneficiaries of this invention or Innovation.

Fig 15 Proto type of Wooden Filing Cabinet improvised/invented by me

- **Stabilization of Pathology Academic Programs and Clinical (histopathology) services.** At a period when the expatriate in pathology returned back to their various Countries (India, US, Europe, Poland e.t.c) I was the lone hand Coordinating Academic Programs in Pathology and histopathology Services, accreditation exercise, and human capital development in various Universities: ABU AND ABUTH, Zaria, LAUTECH Ogbomoso and LTH, Osogbo and Igbenidion University before more hands came on board in the second hall $1990_{s..}$
- **Physiotherapy and Medical Laboratory Sciences Programs at Unilorin, Ilorin.** Though very challenging, however through the strong support and commitment of the Vice Chancellor, Prof. Age

Abdulkareem, the Bursar, Mr. Sonde, the Provost, Prof. Adedoyin, Dr. Oluseye (Physiotherapy), Dr. Adumo (Medical Laboratory Sciences) and others, two additional programs; Bachelor of Physiotherapy (B. PT.) and B. Sc. in Medical Laboratory Sciences were added to the Academic Programs of University of Ilorin during my tenure, as Dean of Faculty of Basic Medical Sciences.

- **Introduction of Fine Needle Aspiration Biopsy (FNAB) Diagnostic Procedure: I**n 1997, when I joined the services of University of Ilorin Teaching Hospital, I formally introduced FNAB procedure into the diagnostic armament of the pathology Department, UITH, Ilorin. Through a workshop jointly organized by Dr. Adeniji and myself, the procedure was accepted by our fellow colleagues (Physicians and Surgeons) in the hospital.
- **Establishment of Hospital-Based Cancer Registry (HBCR)**. In the last quarter of 1997, under the headship of Prof Albert Anjorin, I initiated the establishment of a functional HBCR at UITH, Ilorin. With the full support of the then CMD, Prof. Olurotimi Fakeye an in-house workshop was jointly organized by Dr. Adeniji and myself for its awareness, acceptability and commencement. Till today Ilorin Cancer Registry (ILCR) is among the league of HBCRs in the Country.
- **Establishment of Immunohistochemistry (IHC) Diagnostic Procedure at UITH, Ilorin.** Immunohistochemistry is a special staining technique which is of value at resolving some diagnostic challenges often encountered using routine Haematoxylin and Eosin staining technique. I laid the egg when I became the Head of Department while the current DVC (RTI), Prof. M. Buhari hatched the egg when he took over Though an expensive procedure it is still one of the powerful diagnostic tools in the department of Pathology of UITH, Ilorin

Recommendations

The Vice-Chancellor sir, for the past forty minutes, in this auditorium, I have attempted to promote the awareness on cancer, tried to explain why cancer should no longer be a death sentence and highlighted its aetiology and risk factors, preventive measures and the importance of early diagnosis and efficacious treatment in order to avoid its sledge hammer of death. Therefore to stem the trend and prevent its pandemic, all hands must be on deck to aid its prevention, public awareness, early diagnosis, treatment and palliative care.

Vice-Chancellor sir, while I do not want to sound as an alarmist, however if cancer is left uncontrolled as we are not doing enough yet, the burden in a country like ours (transitioning) will increase in no distant future, to an epidemic proportion, for obvious reasons already enumerated. It is in the light of the above that I wish to make the following recommendations and if appropriately considered positively will definitely go a long way to promote cancer control and slow down its increasing trend: The government especially the political leaders need to be aware of the current and impending situation about trends of cancer and take the essential actions in cancer control which include development of cost-effective and affordable approaches to prevention, early detection, diagnosis and treatment of the commonest cancers (**Breast, Prostrate, Cervix, Colorectal and lymphoma)** which constitute the bulk (57.56) of the cancer burden in the mist of us.

1) **Cancer Treatment Subsidy and its Inclusion in the National Health Insurance Scheme**

Cancer treatment is very expensive and poses a serious challenge financially to the majority of the patients and their relatives. The treatment includes surgery, chemotherapy, radiotherapy and palliative care for terminal cases. The NHIS edict should therefore be reviewed to accommodate cancer treatment and grant at least 50% waiver for the management of cancer in orders to safe more lives unless we have voluntarily allowed cancer to

be a check on our population explosion. It is too late and not even necessary to immortalize the name of a person who died of cancer when he or she was alone to seek treatment while alive.

2) Cancer Treatment Centers

Bearing in mind the inadequacy of cancer treatment centers (CTC) in Nigeria, it is therefore being recommended that the number of CTC be increased and at best the existing ones (10) be re-organized and well funded to meet the international standard in terms of well equipped facilities with trained staff to provide effective treatment plan and quality patients care.

3) Radiotherapy Facilities:

Presently there are only 3 functional radiotherapy machines (located at Abuja, Enugu and Lagos) for thousands of cancer patients. This is damning and the low provision for Radiotherapy treatment (RT) is a washed, as more than 70% of patients, with cancer will require RT. As recommended by International Atomic Energy Management Agency (IAEMA), any community with 250,000 people (in transitioned countries) is supposed to have one RM. How many RM do we have in Kwara State with over 2.3m population (2006 Census)? None. Therefore for Nigerians diagnosed with cancer to escape the sledge hammer of death of this dreadful disease, the Federal and State governments in partnership with private and international agencies should make provisions for more functional RT facilities in every state. This will go a long way to minimize the agonies and undue stresses and delay cancer patients do experience in those crowded cancer treatment centers with unlimited waiting time.

4) Training and Retraining of Manpower for the Management of Cancer Patients

The gap between the demand and supply for the manpower in the management of cancer patients presently is wide. These personnels include: Medical Physicists, Oncology Surgeons, Oncology Nurses, Radiation Oncologists, Therapy

Radiographers, Engineers etc which are all in short supply throughout the Federation considering the gradual increasing burden of cancer. The government agencies involved in manpower planning and development should begin to review and address the challenge and facilitate the training of more personnel and other health professionals in order to cope with the increasing trends of cancer in the country.

5) Palliative Care

There is lack of health care professional skilled in palliative care to provide comfort care in pain relief for cancer patients as part of end-of-life care. Therefore I am pleading and humbly requesting the management of University of Ilorin, Ilorin to revisit the proposal submitted for Diploma/Degree program in Palliative care (already presented at the Senate floor by Dr. Kolawole of Anaesthesia Department) which have been submitted some years back, so that University of Ilorin will not only take the lead in the training of the manpower but also begin to filling the manpower gap in this area. There is also the need for the government to promote the palliative care facilities in the country.

6) Establishment of more Population-Based Cancer Registries for more population coverage.

In our country, there are only 10 PBCRs covering 9.3m (4.7%) out of the over 200m Nigerians. This is grossly in adequate. Anti-cancer campaign established all over the world is directed toward prevention, early detection, diagnosis, treatment and rehabilitation. Cancer registries assume an integral part in any national program of cancer control.

For effective policies on prevention, early diagnosis and treatment for cancer control to be developed and integrated require a reliable and high quality data on the burden (magnitude) of cancer in the community for planning future needs of cancer services; assessment, difference in cancer incidence and mortality in that region, monitoring the effect of

primary preventive campaign, assessing the effectiveness of cancer treatment and survivor-ship.

In times of limited economic resources, investing in collection of basic cancer information should not be considered as a luxury for population but cost-effective investment that will allow determining where the real needs are and spending the money where it matters to most people. Without accurate data any strategy is based on a poor foundation and investment in intervention may well be ineffective. Therefore there is the need to expand the coverage of PBCRs in order to obtain more complete and reliable data to guide cancer intervention. It is on this fact that I wish to recommend functional and appropriate funded PBCRs be established in every state of the federation either at or both the University Teaching Hospital, Federal Medical Centers and State Specialist hospitals and that all the existing Hospital-Based cancer registries be upgraded to PBCR for high percentage coverage of the population which will make our data acceptable in the edition of Cancer incidence in five continents (C15).

7) Enhancing Preventive Measures

Cancer prevention is of primary importance as it is undoubtedly more logical and cost-effective to prevent disease than to deal with it once it has occurred.

It has been estimated that at least 32.7% of cancer in Sub-Saharan Africa were caused by infections agents (Liver cancer (HBV), cervical cancer (HPV), Urinary bladder (Schistosomiasis) etc. A substantial proportion of these cancers are potentially preventable by vaccination and improved hygiene and sanitation.

It is hereby recommended that National Primary Health Care Development Agency (NPHCDA) should endeavour to attain 100% coverage of vaccination against HBV which has been part of the routine national infant immunization program and the inclusion of HPV vaccination for girls at the age round 11-13 years into the program combined with well organized

national program for screening in order to reduce the burden of these preventable cancers.

8) Fight against Tobacco Smoking

Tobacco smoking alone is responsible for 30% of cancers worldwide. Therefore all the 3-tier of governments should step up efforts and sustained the activities in the fight against tobacco. This requires a strong political will and strong commitment on the part of our political leaders.

9) **Accessing Chemotherapy Drugs**

The importance of chemotherapy in the treatment of many forms of cancers is undisputed. Unfortunately these cytotoxic drugs committed to the treatment of cancer are only not affordable because of the cost, very expensive (running to hundreds of thousand naira), but also not accessible because of its inadequacy or lack of it's availability. A department or unit, commissioned to procurement of cytotoxic drugs, should be established in the Federal Ministry of Health or any of the relevant agencies or parastatals for onward distribution to the various outlets such as cancer treatment centre, health facilities and other tertiary health institutions involved in the treatment of cancers.

10) Investment on Epidemiological Studies on Cancer

The relevant arms of governments, agencies and tertiary institutions especially Universities should focus or invest into more epidemiological studies on cancer in order to understand the trend of cancer and more important to discover cancer risk factors akin to our social orders and cultural practices, as well as evaluating the effectiveness of cancer preventive measures and efficacy of treatment. Also through this type of research the barriers to cancer screening and appropriate recommendation could be highlighted for early diagnosis program.

11) Cancer Survival: Many cancers that were once considered death sentence can now be cured and for many more peoples,

their cancer can be treated effectively as advances in understanding risk and prevention, early detection and treatment have revolutionized the management of cancer leading to improved outcome for patients. Early stage cancers are less lethal and more treatable than late stage cancers.

Efforts should therefore be geared upwards making multidisciplinary cancer services for cancer treatment such as drugs (chemotherapy), surgery and radiotherapy, accessible and affordable to patients as these services are only available in wealthy countries and few individuals in our country.

To Individuals

It is said in Africa that "If someone is washing your back, you should wash your front". There are so many things the government cannot do for us, therefore individually we must play our part in the fight against cancer and its control in order to avoid its sledge hammer of death prematurely. Go for screening

Women:

Cancer of the breast and cervix alone accounted for 39.3% (881 out of 2242) out of the total number of cancer cases registered from {1998-2007) but of recent increased to 57.3% of the total of cancer cases in women . These are tumours that can be detected early or prevented in order to reduce their burden: Mothers/ladies, we love you, we do not want you to die a premature death due to these two cancers. So please do care to do the following:

Periodically

- **Breast Self Examination**: Learn how to carry out breast self examination on your own to feel for and detect a very small painless lump in the breast. Go to the hospital or meet your physician (Surgeon) to teach you how to carry it out. See a doctor without delay once a lump is palpated.
- **Mammography**: The sole goal is for early detention of cancer. It is being recommended that women aged 40 years

should do mammography every year while women 55 and above should do the test every 2 years. Its values outweigh the cost.

- **PAP Smears:** This is a screening procedure for cervical cancer. PAP test is for detection of presence of pre cancerous or cancerous cells in the cervix. Ladies between 21-29 years should go for smear every 3years, while women of 30 years and above should also undergo the test for HPV test.
- **Men: Prostrate–specific antigen (PSA) test**. This is for prostate cancer. It is recommended that if the PSA level is between 1 and 3 bg/ml that test should be carried out every 2-4 years but if greater than 3 then the test should be carried out every year. The test should commence from 40/45 years of age.

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Conclusion

Cancer is as of now, *aisan ti ko gba ogun, ki Olorun ma je kari* (cancer is a disease that defiles treatment, may God protect us). Its prevention is better than its cure, therefore, get vaccinated, go for screening, shun all life styles and other risk factors associated with cancer

The V. C Sir, in conclusion, I wish to submit that cancer is not a death sentence if only we all can endeavour to prevent it, through avoiding its risk factors and allow its early detection, by undergoing for periodic cancer screening tests, as most common cancers are treatable or potentially curable, provided it is diagnosed early and promptly and effectively treated.

I appreciate you all once again for coming and for your rapt attention. Good evening and God bless

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