THE CURRENT STATUS OF CANCER CARE IN NIGERIA

“STOP BREAST CANCER FROM TAKING HER LIFE”

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CONTENT

• FACILITIES
  – DIAGNOSTIC RADIOLOGY, NUCLEAR MEDICINE, RADIOTHERAPY, THEATRES, LABORATORIES

• MANPOWER
  – SURGEONS, RADIATION ONCOLOGISTS, MEDICAL ONCOLOGISTS, PATHOLOGISTS, PSYCHOLOGISTS, PSYCHIATRISTS, ONCOLOGY PHARMACISTS, ONCOLOGY NURSES, MEDICAL PHYSICISTS, RADIOGRAPHERS, PALLIATIVE CARE SPECIALISTS, EQUIPMENT ENGINEERS, ETC

• DRUGS
  – NARCOTICS / CHEMOTHERAPY / TARGETED THERAPY / BISPHOSPHONATES / BIOLOGICAL AGENTS ETC
    • AVAILABILITY
    • AFFORDABILITY
    • ACCESSIBILITY

• FUNDING
  – OUT OF POCKET
  – NHIS
  – OTHERS

• LEGISLATURE
  – NATIONAL HEALTH ACT

• OTHERS
  – NATIONAL CANCER REGISTRY
  – CANCER TREATMENT PROTOCOLS & CANCER RESEARCH
  – CANCER AWARENESS PROGRAMS
  – CANCER SCREENING (BREAST, CERVIX, PROSTATE, COLORECTAL, ETC)
  – NEED FOR CANCER EDUCATION AND CANCER SURVIVORSHIP PLATFORM
  – MULTIDISCIPLINARY TEAM FOR CANCER MANAGEMENT
  – INCESSANT INDUSTRIAL STRIKES & CORRUPTION IN THE HEALTH SECTOR

• RECOMMENDATIONS / WAY OUT

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INTRODUCTION

• Cancer is real! No community spared!
• Cancer is a common cause of death among non-communicable diseases.
• It occurs irrespective of age, sex, colour, financial status, political party, religion, etc.
• Pattern of cancer is influenced by both genetics and environmental factors.
• Types of cancers seen varies from region to region within the country and also globally.
• Outcome of treatment also varies from region to region, influenced by
  – Available resources, stage at presentation, extent of uptake of screening programs, extent of poverty and awareness in the populace, beliefs & culture, insurance policy, etc.
BACKGROUND

• Nigeria is the most populated African country with a population of about 210 million people based on 2006 population census and average annual growth rate of 3.1%.

• It is also one of the least developed countries as regards oncology services and resources with inadequate radiation therapy facilities.

• Many of the patients have little or no access to safe and modern radiation therapy.

• There is need to obtain a better understanding of the status of radiation oncological practices in Nigeria and to help sensitize the Nigerian government and its developmental partners on the way forward.
A nation health care delivery system has significant inputs from:
- The patients
- Health Care Professionals
- Infrastructures
- Financers (Government) and other partners

A good synergy of all these stakeholders is required to achieve optimal care and the desired results.

Traditional / herbal medicine enjoys wide acceptance in Nigeria mainly due to the fact that it blends readily into the socio-cultural life of the people in whose culture it is deeply rooted.
HISTORY OF HEALTH IN NIGERIA

• 1880 – The first Health care facility (Dispensary) in Nigeria by Church Missionary Society (CMS) in Obosi.
• 1885 – The first hospital established in Nigeria (Sacred Heart Hospital, Abeokuta) by the Catholic Church.
• 1889 – Establishment of First Government Hospital, St. Margaret Hospital, Calabar.
• 1939 – Establishment of the first Medical school in Nigeria, the Yaba Medical College, Lagos. This was to produce the necessary medical personnel for health care delivery.
• 1948 – Establishment of the UCH, Ibadan.
• 1960’s – Establishment of cancer Department in LUTH.
PROBLEMS

• High disease burden
• Low awareness amongst populace
• Deficient diagnostic and therapeutic facilities
• Deficient manpower (surgeons, oncologists, pathologists, etc)
• Deficient National cancer registry
• Prevailing poverty and high cost of health care
• Wrong concept of health in the population
• Apathy / Low acceptance of orthodox Medicine, bias towards traditional, herbal and religious institutions
• Health is not number 1 priority issue for the Federal government, etc
PROBLEMS Cont.....

• Incessant breakdown of equipments without backup.
• Procurement of equipment without input by end-users.
• Unstable electricity, dependence on alternative power source and exorbitant cost of running equipments on diesel.
• Bureaucracy / bottle necks for procurement of spare parts for equipments.
• Absence of maintenance contract with supplier and
• Lack of prompt response by foreign engineers when equipment is faulty.
PROBLEMS Cont......

• Presently, provision of capital intensive medical equipment is an unaffordable luxury in the developing countries due to wrong priorities.

• The national health insurance scheme is yet to enroll cancer patients and expensive diagnostic tests on its list of care.

• Medical tourism to India, Egypt, United Kingdom, USA and South Africa to cater for relatives having cancer sometimes using national funds at the expense of developing the health centers in the country.

• Being diagnosed of cancer in Nigeria is like a death sentence due to costs of drugs, surgeries and investigations; deficient facilities for radiotherapy and specialized care; and inadequate manpower in every aspect of oncologic therapies.
ONCOLOGICAL FACILITIES

• The situation is similar in Sub-Saharan Africa countries, but better in South and North African countries.

• There is concerted political will, government commitment and non-governmental organizations’ involvement in funding cancer care in North and South African countries.

• There is significant contribution from the private sector to development of radiation therapy facilities in South Africa, Egypt and other developed countries. This is absent in Nigeria.

• It is pertinent to recognize the role of radiation therapy in cancer management both for curative and palliative intent, and the need to immediately address the paucity of manpower, equipment and faulty geographical distribution.
Radiotherapy is an essential part of treatment of cancer. In high-income countries, 50-60% of new cases of cancer would receive radiotherapy at least once and up to 25% might receive a second course.

Because of advanced stage at presentation in the developing countries, patients with cancer in low-income and middle-income regions, Nigeria inclusive, could have greater need of radiotherapy than those in high-income countries.

More than 50% of the cases of cancer in the world arise among people in the low-income and middle-income countries. This proportion is expected to rise to 70% by 2020.

Despite evidence that radiotherapy for cure or palliation is cost-effective, cancer patients in Nigeria have no or limited access to radiotherapy.
• Strategies for developing radiation oncological services need planning at the national level, and substantial investments for staff training and equipments.
• In this country, no priority is given to cancer care services by healthcare planners at all levels.
• Similarly, the rural population in the country lacks a sense of cancer awareness or recognition that treatment is available.
• Where there is knowledge of treatment, the long distance from such centers and poverty become major obstacles.
• Travel expenses, accommodation and other factors prevent or delay many of those who are aware of their diseases from seeking medical attention.
• This contributes to relatively advanced stages at presentation with attendant morbidity and mortality.
• Adequate access to radiation therapy is a crucial component of modern multidisciplinary cancer care.
• Provision of safe and effective radiation oncology services is complex.
• In order to make a proper plan to meet this increase and the challenges, it is desirable to know the present status of radiation therapy resources in Nigeria as a baseline for future references.
• The provision of megavoltage equipment has been used as a yardstick for cancer services worldwide.
• The validity of this approach lies in the fact that to run such a unit requires governmental commitment in the form of substantial buildings & equipments, staffing and maintenance.
• The conventional megavoltage equipment for external beam radiotherapy is either a linear accelerator, which generates X-rays and electrons, or Cobalt-60, which in the course of radioactivity emits gamma-rays with an average energy of 1.25 MV.

• This equipment though expensive still requires other sophisticated equipment for radiation safety and optimal patient care.

• These include a conventional simulator, a CT simulator, a three-dimensional computerized treatment planning system, a well-equipped mould room, immobilization devices, a C-arm X-ray machine and necessary relevant quality assurance physics equipment for dosimetry.
Table showing equipment distribution in functioning radiotherapy centers in Nigeria.

<table>
<thead>
<tr>
<th>Center</th>
<th>Linear Accelerator</th>
<th>Cobalt 60</th>
<th>Superficial x-rays</th>
<th>Conventional simulator</th>
<th>CT Simulator</th>
<th>3D TPS</th>
<th>Brachytherapy</th>
<th>Mould room</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABUTH</td>
<td>-</td>
<td>1</td>
<td>1 (non-functioning)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>LDR = 1</td>
<td>Yes</td>
</tr>
<tr>
<td>UCH</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1 (non-functioning)</td>
<td>-</td>
<td>-</td>
<td>HDR = 1</td>
<td>-</td>
</tr>
<tr>
<td>LUTH</td>
<td>1 (Faulty)</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>NHA</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>LDR = 1</td>
<td>Yes</td>
</tr>
<tr>
<td>UDUTH</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>UNTTH</td>
<td>1 (Faulty)</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>UBTH</td>
<td>1 (Faulty)</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>FTH Gombe</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>HDR = 1</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>EKO Hospital</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>LDR = 2</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>LDR = 2, HDR = 2</td>
<td>7</td>
</tr>
</tbody>
</table>
Table showing the number of megavoltage machines and population per megavoltage in selected countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Department</th>
<th>Cobalt -60</th>
<th>Linear Accelerator</th>
<th>Total Megavoltage machine</th>
<th>Megavoltage per million</th>
<th>Megavoltage per department</th>
<th>Population million per megavoltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>42</td>
<td>4</td>
<td>86</td>
<td>90</td>
<td>4.80</td>
<td>2.14</td>
<td>0.21</td>
</tr>
<tr>
<td>China</td>
<td>453</td>
<td>381</td>
<td>286</td>
<td>667</td>
<td>0.53</td>
<td>1.47</td>
<td>1.89</td>
</tr>
<tr>
<td>India</td>
<td>188</td>
<td>256</td>
<td>35</td>
<td>291</td>
<td>0.30</td>
<td>1.55</td>
<td>3.33</td>
</tr>
<tr>
<td>Japan</td>
<td>611</td>
<td>213</td>
<td>603</td>
<td>816</td>
<td>6.46</td>
<td>1.34</td>
<td>0.15</td>
</tr>
<tr>
<td>Pakistan</td>
<td>19</td>
<td>21</td>
<td>13</td>
<td>34</td>
<td>0.26</td>
<td>1.79</td>
<td>3.85</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>4</td>
<td>7</td>
<td>0</td>
<td>7</td>
<td>0.37</td>
<td>1.75</td>
<td>2.70</td>
</tr>
<tr>
<td>Indonesia</td>
<td>16</td>
<td>15</td>
<td>9</td>
<td>24</td>
<td>0.12</td>
<td>1.50</td>
<td>8.33</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>11</td>
<td>10</td>
<td>1</td>
<td>11</td>
<td>0.09</td>
<td>1.0</td>
<td>11.1</td>
</tr>
<tr>
<td><strong>Nigeria</strong></td>
<td><strong>9</strong></td>
<td><strong>2</strong></td>
<td><strong>5</strong></td>
<td><strong>7</strong></td>
<td><strong>0.033</strong></td>
<td><strong>0.8</strong></td>
<td><strong>30</strong></td>
</tr>
<tr>
<td>Egypt</td>
<td>35</td>
<td>25</td>
<td>28</td>
<td>53</td>
<td>0.80</td>
<td>1.51</td>
<td>1.26</td>
</tr>
<tr>
<td>South Africa</td>
<td>18</td>
<td>16</td>
<td>24</td>
<td>40</td>
<td>0.78</td>
<td>2.22</td>
<td>1.13</td>
</tr>
</tbody>
</table>
The International Atomic Energy Agency (IAEA) recommendation is that there should be one megavoltage equipment per **250,000 population** or if there is excellent cancer registry, one megavoltage equipment per **350-400 new cancer patients**.

Considering Nigeria with a population of 210 million people, the expected number of megavoltage equipment is **840 units**.

Nigeria has only seven megavoltage equipments, which is less than 1% of the requirement.

While these figures may be contested according to the concept of “service” and “standard of care”, it is indisputable that one machine for 30 or more million population in Nigeria is grossly inadequate.
Similarly, where there is an excellent cancer registry, the IAEA advisory group in 1993 suggested that the typical incidence of new cancer patients is 75-150 per 100,000 population.

This implies, using an average of 100 new cancer patients per 100,000 populations, that Nigeria is expected to have an average cancer incidence of **210,000 patients per annum**.

Assuming, with reference to the literature, that 50% of these patients will require radiation therapy at one time or the other, **about 105,000 cancer patients will require radiation therapy per annum**.

Using the IAEA recommendation of one megavoltage equipment for 400 cancer patients, Nigeria requires **260 megavoltage units**.

Whichever recommendation used, there is gross shortage of megavoltage equipment in Nigeria.
• The absence of a superficial X-ray machine in some centers makes some cancers to be managed suboptimally.

• Similarly, absence of a conventional simulator results in high chances of recurrences, suboptimal care and possible complications.

• Absence of high-dose rate brachytherapy in most centers especially in the north minimizes the number of cervical uteri cancers being treated in these centers.

• Although developing countries represent about 85% of the world population, the industrialized countries (Western Europe, Japan and North America) have 60% of the world’s radiotherapy facilities: about 80% of all linear accelerators and 25% of all Cobalt-60 units.
• Cancer treatment is a multidisciplinary effort even while using radiation therapy alone.
• This multidisciplinary team involves radiation oncologists, medical physicists, oncology nurses, radiation therapy technologists (therapy radiographer), maintenance engineers, mould room technicians, dosimetrists, dieticians, physiotherapist and social workers.
• Deficiencies in any of the core units of the multidisciplinary can stop treatment, render equipment underutilized or cause suboptimal care of patients.
MANPOWER

- Inadequate manpower
- Since inception in 1979, NPGMC has produced less than 6,000 consultants / specialists in various fields of Medicine.
- Subspecialty especially in oncology is worst hit.
- No representation of this specialty in most hospitals under the States (State General Hospitals and Specialist Hospitals)
- Choice of specialization influenced to some extent by monetary income and chances of private practice.
- No obvious incentives for specialists in this field of oncology despite attendant hazards.
Table showing manpower distribution in functioning radiotherapy centers in Nigeria.

<table>
<thead>
<tr>
<th>Centers</th>
<th>Radiation Oncologist</th>
<th>Medical Physicists</th>
<th>Therapy Radiographer</th>
<th>Oncology Nurses</th>
<th>Mould Room Technician</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABUTH</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>UCH</td>
<td>8</td>
<td>4</td>
<td>6</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>LUTH</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>NHA</td>
<td>6</td>
<td>4</td>
<td>7</td>
<td>15</td>
<td>-</td>
</tr>
<tr>
<td>UDUTH</td>
<td>3</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>UNTH</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>UBTH</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>FTH Gombe</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>EKO Hospital</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>31</td>
<td>35</td>
<td>36</td>
<td>6</td>
</tr>
</tbody>
</table>
• The recommendation by the IAEA is that there is a need of a minimum of two radiation oncologists per center and an additional radiation oncologist for each 200-250 new cancer patients treated annually.

• Similarly, no more than 25-30 patients should be under a single radiation oncologist at any one time.

• This recommendation is to minimize radiation accidents and for optimal cancer treatment.

• For expected 105,000 new cancer patients per annum, Nigeria needs 420 radiation oncologists. Presently, there are only **51 Radiation Oncologists**.

• Similarly, there will be need of more radiation oncologists for brachytherapy and three-dimensional computerized treatment planning.

• Gross shortage of radiation oncologists in Nigeria.
• Similarly, the country needs 260 Medical Physicists but only 31 are available. (1 Medical Physicist per 400 new cancer patients).

• To treat average of 75 cancer patients per megavoltage, the center needs 6 therapy radiographers, with additional radiographers for simulation, brachytherapy, treatment planning and a supervisor. That implies at least 10 therapy radiographers per center with only 1 megavoltage.

• Of note is the gross shortage of maintenance engineers and mould room technicians coupled with inadequate experience with megavoltage equipments and absence of relevant tools.

• This makes the turnaround time for repairs very long, at times months of waiting for an engineer from the manufacturer to come and rectify simple repairs.
Comparison of expected and observed
RESULTANT EFFECT OF MANPOWER SHORTAGE

• The scarcity of trained staff can
  – Restrict the number of patients who can be treated
  – Under-utilization of equipment and also cause
  – Suboptimal treatment,
  – Prolonged waiting time,
  – Disease progression,
  – Medical tourism
  – Apathy for orthodox treatment
  – Dissatisfaction amongst Medical Personnel
  – Poor quality of life
  – Ultimately increase in morbidity and mortality.
DRUGS

• Non availability of up-to-date National Drug Formulary
• Out of stock syndrome in hospital pharmacy
• Issues of affordability, exorbitant costs of drugs
• Accessibility and Availability
• Parallel importation of drugs without knowledge of source and efficacy
• Scarcity of narcotics, and associated bureaucracy.
• Deficient storage facility for some oncology drugs especially the targeted therapy drugs that needs temperature control.
FUNDING OF CANCER TREATMENT

• Presently, most cancer patients treatments is out of pocket.
• Need for alternative funding for cancer patients
• Health Insurance scheme for non Civil Servants.
• NHIS to take cancer patients, from diagnosis to complete treatment.
• Social responsibility for the very rich in the community and multinational companies
  – MTN, GLO, DANGOTES, OTEDOLAS, OIL FIRMS,
• Formation of Cancer consortium

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LEGISLATURE ON CANCER CARE

- Implementation of the National Health Act.
- Strengthening of the healthcare services at the State and Local government levels.
- Infrastructural development of hospitals at all level of government.
- Stoppage of Medical tourism especially involving the political class and government officials.
- Special fund to develop the health care system in the country.
- Budgetary allocation of at least 15% to the Health sector as recommended by WHO.
OTHERS

• Director of Hospital Services, Dr. Patience Osinubi (17/9/2015)
  – “if doctors are not on strike, nurses are. When nurses and doctors are at work, other health workers down tools. Unfortunately, it is the people who bear the brunt.”

• Stoppage of industrial strikes in the Health sector

• Strengthening of the concept of SERVICOM and Anticorruption in the Health parastatals

• Strengthening of Rewards and Punishment in MDAs

• Partnership with established cancer centers in developed countries.
OTHERS

• There is absence or inadequate CANCER REGISTRY in all tertiary health institutions and absence of regional centers for collation of data on Cancer.

• In most institutions, there is no established CANCER TREATMENT PROTOCOLS.

• No evidence of collaboration amongst Specialists involved in cancer care

• CANCER AWARENESS PROGRAMS & CANCER SCREENING (Breast, Cervix, Prostate, Colorectal, Etc)

• NEED FOR CANCER EDUCATION AND CANCER SURVIVORSHIP PLATFORM

• MULTIDISCIPLINARY TEAM FOR CANCER MANAGEMENT
CONCLUSION

• A large and significant deficiencies exists in the availability of all components of cancer therapy in the country (infrastructure and manpower).
  – Nigeria faces gross shortage of radiation oncologists, highly specialized surgeons and other personnel, with under supply of megavoltage machines

• Cognizance should be taken of the specific short falls to ensure that there is expansion of existing centers and creation of new centers especially in every geopolitical zone and major teaching hospitals in the country.
RECOMMENDATIONS

• Need to expand existing centers and create new ones in every geopolitical zone and major teaching hospitals.

• The FMoH should partner with major pharmaceutical companies in the country with aim of getting genuine drugs at affordable prices.

• Training / retraining of all cadre of staff involved in cancer care and collaboration with established centers in developed countries.

• NHIS should begin to accept all cancer patients.

• Functional Cancer Registry should be established in all states for proper statistics.

• A plan to fund cancer treatment like that done for HIV / AIDS.

• Government to vote dedicated funds for cancer centers so as to give optimal care to all cancer patients.
THANK YOU FOR LISTENING