Radiotherapy The Entry Point of Cancer Control in Zambia

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Zambia

- Member State of IAEA: 1969
- Population: 18.4 million
- Below 24 years: 66%
- Median Age: 17.6 years
- Growth Rate: 2.94%
- Urban population: 45.3% of the (8,336,381 people in 2020)
- Rural Population: 54.7%
- Life Expectancy: 64.7yrs
- Literacy: 63.4%
- Overall Cancer Mortality: 71% of new cases
- NCCSP: 2016
- MoH HQ established the Oncology (Cancer Control) Services Unit
Cancer Burden Top 3 Cancers Male vs Female

<table>
<thead>
<tr>
<th>Cancer Incidence</th>
<th>Total % of incidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer site</td>
<td>Males</td>
</tr>
<tr>
<td>Prostate</td>
<td>1230</td>
</tr>
<tr>
<td>Kaposis Sarcoma</td>
<td>1036</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>NHL</td>
<td>359</td>
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<tr>
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New patients coverage: **25%**  
(2018 data: CDH Cases / ZNCR)

Active Policy Documents

- National Cancer Control Strategic Plan 2016 - 2021
- ZNCR Report, August 2018
- Globocan/WHO 2018 Factsheet Zambia
- CDH Annual Report Data 2017
What are the building blocks of Zambia’s cancer control programme and is there any one specific factor that can be identified as the key ingredient to Zambia’s success?
1. Political will – Gives Freedom to Technocrats – Bankable Documents
Late President LP Mwanawasa Opens CDH
19 July 2007  - "the culmination of a vision."

Directed that all Zambians access treatment for free and Government will Provide the cost of the service
Expansion Programmes as Part of Cancer Control

September 14, 2010

2013
Expansion Programme
June 2016 The President Dr Edgar C Lungu Announces the Completion of CDH Phase II
2. Funding – 2% of MoH budget
Allocated to Cancer Care Services

<table>
<thead>
<tr>
<th>YEAR</th>
<th>APPROVED NATIONAL BUDGET</th>
<th>APPROVED MOH BUDGET</th>
<th>PERCENTAGE OF NATIONAL BUDGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>20,537,358,046</td>
<td>1,758,592,077</td>
<td>8.6</td>
</tr>
<tr>
<td>2012</td>
<td>27,698,281,929</td>
<td>2,566,933,794</td>
<td>9.3</td>
</tr>
<tr>
<td>2013</td>
<td>32,212,160,265</td>
<td>3,637,244,219</td>
<td>11.3</td>
</tr>
<tr>
<td>2014</td>
<td>42,682,034,134</td>
<td>4,228,351,379</td>
<td>9.9</td>
</tr>
<tr>
<td>2015</td>
<td>46,666,560,736</td>
<td>4,444,124,368</td>
<td>9.5 (GDP 21 243m)</td>
</tr>
<tr>
<td>2016</td>
<td>53,135,825,364</td>
<td>4,436,592,856</td>
<td>8.3 (GDP 20 941m)</td>
</tr>
<tr>
<td>2017</td>
<td>64,500,000,000</td>
<td>5,732,842,152</td>
<td>9.1 (GDP 25 868m)</td>
</tr>
<tr>
<td>2018</td>
<td>64,093,722,128</td>
<td>6,024,809,880</td>
<td>9.9 (GDP 26 760)</td>
</tr>
<tr>
<td>2019</td>
<td>67,682,596,426</td>
<td>6,362,164,064</td>
<td>9.4%</td>
</tr>
<tr>
<td>2020</td>
<td>106,007,612,236</td>
<td>9,366,691,684</td>
<td>8.8%</td>
</tr>
</tbody>
</table>
3. Well Costed The Cancer Control Plan

- **2007** Gov allocate budgets to cover treatment and Salaries, RDC,
- **2008** Cost of Treating one patient at CDH nearly USD 3000.00
- **2009** Cancer medicines and supplies allocated: increased from 400,000USD to now 3M USD
- **2009** 1ST QUATRO MISSION (IAEA)
- **2010** IMPACT MISSION (IAEA/WHO/PACT)
- **2013** Revised Cancer medicines part of NEML for MoH
- **2015** IAEA Calculator to cost cancer treatment
- **2016** Costed National Cancer Control Strategy 2017 – 2021 signed
National Cancer Control Strategic Plan 2016 - 2021

- Developed, signed by Minister of Health August 2016 and launched February 4th 2017
- Director Cancer Control Unit Appointed with the Coordination Unit
- Cost plan for five years
4. Strong Partnerships and TA based on a Solid Plan (Country Policy & Direction)

- **ZAM 6010** – Establishing the First RT Centre in Zambia – 2001 basic RT/CT OPD services and recommended create CDH as a separate entity and Training
- **ZAM 6012** – Improving the Quality of Cancer Treatment – 2007 Protocol development improved care to 3D Training
- **ZAM 6016** – Strengthening the Delivery of Radiotherapy Services – 2009 – Train more medical physicists
- **1ST QUATRO MISSION 2009**
- **IMPACT MISSION 2010**
- **ZAM 6019** – Expanding the Capacity for Radiation Oncology through Sustainable Local Human Resource Development to Benefit National Cancer Control – 2012 – Established RTT TEVETA accredited Diploma Training at CDH & 2016 RO training, Curriculum MPs & ON training
- **ZAM 6020** – Consolidating the Delivery of Cancer Treatment Services – Transition from 2D to 3D BT and EBRT
- **ZAM 6022** - Supporting the Expansion of the Delivery of Radiotherapy – 2017 – supporting the training programmes and expansion programme
- NCI, Universities and others
True Partnerships
5. Human Resource Development Through Local Training
Key Ingredients in Building Cancer Control Programme

• Existence of HCW Trained in Cancer Management
• Political Will & Government Support
• Use of a
  – Primary Health Care Approach
  – Universal Health Coverage Agenda
  – Partnerships with IAEA/WHO/NCI/NGOs
  – Education – Universities/Colleges/Professional Training Bodies
From The Technology Side

• What are the benefits of using both Cobalt-60 and Linacs for cancer diagnosis and care in Zambia?

• What are the challenges and benefits related to both these technologies? (e.g. security, safety, maintenance, training)
# Cobalt 60 Teletherapy Machine in Zambia

## Advantages
- Cheaper to procure
- Cheaper to maintain
- Less Down time
- Can treat superficial and deep seated lesions
- Consumes less electricity
- Easy QA/QC procedures

## Disadvantages
- Increased side effects of radiotherapy
- Security Issues
- Need for complex treatments make it an apparent disadvantage
- Decaying source
## Linear Accelerator Teletherapy Machine in Zambia

### Advantages
- Can treat superficial and deep seated lesions
- Easy QA/QC procedures
- Decreased side effects of radiotherapy
- No radioactive source
- Can do complex treatments
- Deliver IMRT/Arc therapy & SBRT

### Disadvantages
- Expensive to procure
- High maintenance costs
- Spare parts are not easily available in-country
- Dependant on electricity
- Needs certain operating temperatures
- High replacement costs
- Complex QA/QC procedures
Republic of Zambia

Steps Taken to Improve Access to Cancer Care Services in Zambia
Challenges of Accessing Quality Radiotherapy Care in Zambia

- Inadequate primary and secondary prevention national programmes (Late Presentations)
- Limited resources to finance cancer care activities (from Community to TC)
- Inadequate trained Human Resource
- No or Poor or Inadequate Infrastructure
- Lack of appropriate equipment and its maintenance
## Steps Taken To Improve Access to Cancer Care in Zambia

<table>
<thead>
<tr>
<th>Service Type</th>
<th>2006 Baseline</th>
<th>Current Situation</th>
<th>Desired Service Level</th>
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<tbody>
<tr>
<td>Health Promotion and Primary Prevention</td>
<td>Advocacy, IEC, only HBV vaccine only</td>
<td>Full Programme, Guidelines &amp; IECs HBV &amp; HPV vaccine Programmes</td>
<td>All Community and Health post HCW equipped to promote good health for communities</td>
</tr>
<tr>
<td>Secondary Prevention</td>
<td>One Clinic in UTH</td>
<td>95% of Zambia’s district have cancer screening</td>
<td>All health centers to be able to do cancer screening in Zambia</td>
</tr>
<tr>
<td>Early Diagnosis</td>
<td>No services available</td>
<td>EBCD Guidelines done, 5 Clinics set up 4/118 districts</td>
<td>All districts should have capability for early diagnosis</td>
</tr>
<tr>
<td>Treatment &amp; Palliative Care</td>
<td>One CRT Center No other Oncological services</td>
<td>3 centers will operate, with RO, Surg &amp; Gynae Onc, Paeds Onc, Haeme Onc</td>
<td>All Provinces must have one comprehensive cancer treatment center</td>
</tr>
</tbody>
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Thank You