Population-based Cancer Registries in Kenya: What do the data tell us?

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Cancer registries in Kenya

- **Three Population-based cancer registries (PBCR):**
  - Nairobi Registry at KEMRI &
  - Eldoret cancer registry at Moi Teaching and Referral Hospital (MTRH)
  - Kisumu Cancer registry at CGHR covering Kisumu county

- **Hospital-based registries** exist in:
  - Eldoret registry at MTRH
  - Kenyatta National Hospital
  - Agakhan University hospital
  - Tenwek Mission hospital
  - MP-Shah hospital
  - Cancer Care Kenya
  - Nairobi hospital
Kenya Cancer Research and Control National Stakeholders meeting, Naivasha, Kenya (2014)

- A forum organized by MOH and US NCI, Centre for Global Health in 2014
- Cancer Registry Technical Working Group. The TWG had membership from Kenya (KEMRI, MoH, UoN, KNH) and internationally (Dr. Sandy Dawsey, Pr. Rosemary Rochford)
- The cancer registry track resolved to:
  - Strengthen existing population-based cancer registries (Nairobi, Eldoret, Kisumu) to attain high quality data (support by NCI, USA)
  - Expand population-based registries (additional regions)
  - Link the registries at KEMRI to have a centralized population-based cancer registry programme
- A proposal was developed and approved by scientific and Ethics committee
- Funding received from US NCI (2 years) and GOK (National Treasury)
- MoUs were signed with selected counties
- Trainings of registrars and installation of databases commenced
- Data collection and analysis ongoing
Existing CR
(Nairobi, Eldoret, Kisumu)

Initial stage of development
(Embu, Nakuru)

Targeted (Meru, Mombasa, Nyeri, Kiambu, Bomet, Garissa, Machakos, Marsabit, Kakamenga, Kisii)
Trainings and installation of databases in Meru and Bomet counties
Nairobi County (2009-2013)

Top 10 cancers (Male), Nairobi

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>824</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>335</td>
</tr>
<tr>
<td>Non-Hodgkins...</td>
<td>253</td>
</tr>
<tr>
<td>Stomach</td>
<td>242</td>
</tr>
<tr>
<td>Colon</td>
<td>221</td>
</tr>
<tr>
<td>Nasopharynx</td>
<td>203</td>
</tr>
<tr>
<td>Liver</td>
<td>177</td>
</tr>
<tr>
<td>Kaposi Sarcoma</td>
<td>147</td>
</tr>
<tr>
<td>Rectum</td>
<td>129</td>
</tr>
<tr>
<td>Bone</td>
<td>114</td>
</tr>
</tbody>
</table>

Top 10 Cancers (Female), Nairobi

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>1634</td>
</tr>
<tr>
<td>Cervix Uteri</td>
<td>1095</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>272</td>
</tr>
<tr>
<td>Ovary</td>
<td>233</td>
</tr>
<tr>
<td>Stomach</td>
<td>202</td>
</tr>
<tr>
<td>Colon</td>
<td>188</td>
</tr>
<tr>
<td>Non-Hodgkin Lymphoma</td>
<td>180</td>
</tr>
<tr>
<td>Rectum</td>
<td>122</td>
</tr>
<tr>
<td>Corpus Uteri</td>
<td>117</td>
</tr>
<tr>
<td>Liver</td>
<td>104</td>
</tr>
</tbody>
</table>
Age Profile of Cancer Cases, Nairobi county

Nairobi Cancer Registry (Nairobi County 2009-2013)

All cancers

Male
- 50-69 (40.2%)
- 30-49 (22.0%)
- 0-14 (23.3%)
- 15-29 (6.0%)

Female
- 50-69 (39.6%)
- 30-49 (13.0%)
- 0-14 (6.9%)
- 15-29 (3.5%)

Age Group: 0-14, 15-29, 30-49, 50-69, 70+
Incidence Rates Per 100,000 Nairobi (2009-2013)

Male
Nairobi Cancer Registry (Nairobi County 2009–2013)
Age Specific Rates (Top Cancer Sites) (Males)

Female
Nairobi Cancer Registry (Nairobi County 2009–2013)
Age Specific Rates (Top Cancer Sites) (Females)
## Concurrent illness (HIV status) Nairobi registry

<table>
<thead>
<tr>
<th>Cancer Site</th>
<th>Unk.</th>
<th>HIV -ve</th>
<th>HIV +ve</th>
<th>All Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>5373</td>
<td>303</td>
<td>86</td>
<td>5762</td>
</tr>
<tr>
<td>Cervix</td>
<td>4033</td>
<td>200</td>
<td>202</td>
<td>4435</td>
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<tr>
<td>Oesophagus</td>
<td>2626</td>
<td>89</td>
<td>24</td>
<td>2739</td>
</tr>
<tr>
<td>Prostate</td>
<td>2532</td>
<td>86</td>
<td>18</td>
<td>2636</td>
</tr>
<tr>
<td>Stomach</td>
<td>1754</td>
<td>65</td>
<td>20</td>
<td>1839</td>
</tr>
<tr>
<td>Blood/Bone Marrow</td>
<td>1653</td>
<td>117</td>
<td>26</td>
<td>1796</td>
</tr>
<tr>
<td>Skin</td>
<td>1476</td>
<td>55</td>
<td>153</td>
<td>1684</td>
</tr>
<tr>
<td>Lymph Nodes</td>
<td>1190</td>
<td>95</td>
<td>110</td>
<td>1395</td>
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<tr>
<td>Colon</td>
<td>1281</td>
<td>72</td>
<td>17</td>
<td>1370</td>
</tr>
<tr>
<td>Liver</td>
<td>1135</td>
<td>54</td>
<td>13</td>
<td>1202</td>
</tr>
<tr>
<td>Eye</td>
<td>1004</td>
<td>14</td>
<td>32</td>
<td>1050</td>
</tr>
<tr>
<td>Nasopharynx</td>
<td>935</td>
<td>44</td>
<td>16</td>
<td>995</td>
</tr>
<tr>
<td>Ovary</td>
<td>823</td>
<td>40</td>
<td>9</td>
<td>872</td>
</tr>
<tr>
<td>Others</td>
<td>10893</td>
<td>438</td>
<td>159</td>
<td>11491</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>36708</td>
<td>1672</td>
<td>885</td>
<td>39266</td>
</tr>
</tbody>
</table>
Meru County
Top 10 Male Cancers in Meru County (2015-2016)

Male

- Prostate: 208
- Oesophagus: 159
- Stomach: 110
- Mouth & pharynx: 69
- Liver: 41
- Lymphoma: 41
- Colon, rectum, anus: 35
- Pancreas: 21
- Larynx: 14
- Leukaemia: 12
- Lung, trachea, bronchus: 12

Number of cases, 0-75+ years

Female

- Breast: 184
- Cervix: 151
- Stomach: 79
- Oesophagus: 77
- Colon, rectum, anus: 37
- Mouth & pharynx: 26
- Leukaemia: 23
- Corpus & Uterus NOS: 19
- Lymphoma: 19
- Pancreas: 16

Number of cases, 0-75+ years
Bomet County
Leading cancers, Bomet County (2015-2016)

Top 10 Male Cancers (Bomet County 2015-2016)

- Oesophagus: 121 cases
- Prostate: 64 cases
- Stomach: 43 cases
- Mouth & pharynx: 19 cases
- Colon, rectum, anus: 18 cases
- Liver: 16 cases
- Pancreas: 9 cases
- Lymphoma: 8 cases
- Leukemia: 7 cases
- Brain & nervous system: 5 cases

Top 10 Female Cancers (Bomet County 2015-2016)

- Oesophagus: 91 cases
- Cervix: 30 cases
- Breast: 24 cases
- Colon, rectum, anus: 18 cases
- Stomach: 16 cases
- Pancreas: 13 cases
- Ovary & adnexa: 7 cases
- Liver Thyroid: 6 cases
- Kidney & urinary NOS: 6 cases
- Brain & nervous system: 6 cases
Mombasa County
Cancer in Mombasa County

Top 10 cancer sites:
- Breast: 36.2
- Cervix: 29.8
- Prostate: 15.9
- Oesophagus
- Mouth & pharynx
- Lymphoma
- Colon, rectum, anus
- Lung, trachea, bronchus
- Liver
- Ovary & adnexa

Age-standardized incidence rate per 100,000, 0-75+ years
- Male
- Female
Age profile of cancer cases in Mombasa county

All cancers but C44

Male
- 0-14: 43.6%
- 15-29: 18.2%
- 30-49: 6.6%
- 50-69: 22.9%
- 70+: 8.8%

Female
- 0-14: 38.9%
- 15-29: 11.1%
- 30-49: 2.3%
- 50-69: 41.4%
- 70+: 6.3%

Age Group: 0-14, 15-29, 30-49, 50-69, 70+
Conclusion

- Breast and cervical cancer are the most common malignancies among women. They make up over 40% of women cancers
- Prostate cancer is leading malignancy among men
- Esophageal cancer is common in both men and women but more predominant among men
- Increase in ovarian cancer noted
- Declining rates of KS both in Nairobi and Kisumu registries
- Need to invest in population-based registries that cover a representative population of the country
- Need for intervention programmes to address the high burden of disease in communities
- Access to care (UHC)
Acknowledgement

• All reporting facilities and registries
• US NCI, Centre for Global Health (Two-year award to support cancer registries in Kenya)
• GOK (National Treasury) –KEMRI Internal Grants

• Thank you all for your attention

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