Building impactful collaborations in Global Oncology: Examples from Rwanda and Botswana

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Rwanda: Butaro Cancer Center of Excellence
## Rwanda Context

### Health indicators (WHO)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population (2015)</td>
<td>11,918,000</td>
</tr>
<tr>
<td>GNI pc (PPP Intl$ 2013)</td>
<td>1,430</td>
</tr>
<tr>
<td>Life expectancy at birth m/f (years, 2015)</td>
<td>66/70</td>
</tr>
<tr>
<td>Total health expenditure pc (Intl$ 2014)</td>
<td>125 (7.5% GDP)</td>
</tr>
<tr>
<td>Doctors per 100k pop</td>
<td>6</td>
</tr>
<tr>
<td>Nurses per 100k pop</td>
<td>83</td>
</tr>
</tbody>
</table>

### Development indicators (UNDP)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural residence (2016)</td>
<td>82%</td>
</tr>
<tr>
<td>Adult literacy rate (2015)</td>
<td>71.2%</td>
</tr>
</tbody>
</table>
Partners In Health in Rwanda

Rwinkwavu Hospital entrance, 2005

Rwinkwavu hospital

Butaro Hospital, 2011

Kirehe Hospital

Photos: PIH
**Health Workforce**

- **Task shifting**, with training and strong decision support
- **Training** for generalists
- Adapted standardized **protocols**
- Rotating specialists and fellows
- Telepathology

**Information**

- Open source **EMR**, suitable for low-resource setting (e.g., offline functionality)
- **Multipurpose**: clinical care and safety, utilization data, drug forecasting, clinical outcomes, program reports

**Medical and Social services**

- Standard formulary medications and consumables (WHO, off-patent, PPE)
- **Socioeconomic supports** (transport, food, CHW)
- **Shared investment** by PIH-MOH
Results: Patients treated

Top 5 cancers treated

- Breast (~20%)
- Cervical (~20%)
- Head and Neck (~5%)
- ALL (~4%)
- Stomach (~4%)

Oncology patient enrollment and referral type, 2012-2017

Butaro Outpatient Infusion Center, 2014
Broader Impact

• >30 published manuscripts
• Contribution to infrastructure and human capacity

Fidel Rubagumya
Joel Mubiligi
Cyrprien Shyirambe

Hon. Dr Tharcisse Mpunga, State Minister of Health

PIH global nurse leaders graduate
UGHE campus, 2019
UGHE graduates, 2019
Botswana: Botswana Harvard Partnership Oncology
## Botswana Context

### Health indicators (WHO)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population (2015)</td>
<td>2,262,000</td>
</tr>
<tr>
<td>GNI pc (PPP Intl$ 2013)</td>
<td>15,500</td>
</tr>
<tr>
<td>Life expectancy at birth m/f (years, 2015)</td>
<td>63/68</td>
</tr>
<tr>
<td>Total health expenditure pc (Intl$ 2014)</td>
<td>871 (5.4% GDP)</td>
</tr>
<tr>
<td>Doctors per 100k pop</td>
<td>40</td>
</tr>
<tr>
<td>Nurses per 100k pop</td>
<td>272</td>
</tr>
</tbody>
</table>

### Development indicators (UNDP)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural residents (2016)</td>
<td>39%</td>
</tr>
<tr>
<td>Adult literacy rate (2016)</td>
<td>88.5%</td>
</tr>
</tbody>
</table>

### Global prevalence of HIV, 2016 UNAIDS

![Global prevalence of HIV, 2016 UNAIDS](image)
Approach

• Thabatse cohort (2010, Scott Dryden-Peterson)
• Tumor board (2011)
• Short courses for local nurses and doctors
• Rotating fellows, students
• Country-based oncologists
• Potlako early diagnosis (2016)
• Peo NCDs research planning project (2017)
• Expansion of funded research, including cervical cancer early detection, other NCDs
Potlako “Hurry up” Intervention

- Standardized algorithm
- Training and coaching
- Results f/u
- Appointment booking
- Phone-based navigation
- Defaulter tracing
- Transport support

Potlako

Potlako is a program aimed at improving cancer detection in Botswana. It uses a standardized algorithm to help in early detection and includes transport support, defaulter tracing, and phone-based navigation. The program also offers training and coaching to ensure medical professionals are well-equipped to handle cases effectively.
Results

• >3000 patients enrolled in cancer cohort
• >80 tumor boards held
• >40 published manuscripts
• Expansion of funded research
Enablers & Challenges

• **Local leadership** and strong partnership with MOH
• Research, while **strengthening health systems** (responsiveness to local need, care, building local capacity, supporting broader national efforts)
• **Innovation**
• Addressing social barriers
• **Brick and mortar**
• Personal relationships

• Building a **successful career** (both for local and foreign clinicians/scientists)
• More **female leaders**
• **Burn out**, turn over, raising families in rural settings
• **Institutional rivalries**
• Individuals who lack **humility**

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Summary

• Two different settings and programs that are contributing to global oncology

• Key enablers and ongoing challenges relevant to global oncology program development
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