GENERAL SURGERY IN RWANDA

Department of Surgery
Grand Rounds
5-16-2011
James Cromie
Land of 1,000 Hills

Size of Maryland
Population: 11.1 million
Kigali – 1 million
- Hutu and Tutsi division – from same ancestry
  - Tutsi – historically governing class, cattle owners
  - Hutu - farming class
- Colonized by Belgium until 1962
  - Hutu revolt in 1962, establishing power
    - Massive exodus of Tutsis to bordering countries
    - Ongoing anti-Tutsi violence
  - Tutsi (Rwandan Patriotic Front) launched civil war 1990
    - Army of refugees
    - Led by Paul Kagame in exile in Uganda
1994 Genocide – April 6, 1994
- 1,074,017 Tutsi and moderate Hutus killed in 90 days
  - 10,000 murdered each day
- Likely more than 2 million involved in killings
Recovery from Genocide

- 1995:
  - 80% of population was female
  - Majority of work force were dead or had fled

- Gacaca
  - "Justice on the grass"
  - Traditional community justice system
  - Used to try the 120,000 alleged genocidaires
Health Care Resources

- 44 Government-funded hospitals
- Teaching Hospitals:
  - Centre Hospitalier de la Universitare de Kigali (CHUK)
  - King Faisal Hospital (Kigali)
  - Centre Hospitalier de la Universitaire de Butare (CHUB)
- Graduate training programs:
  - Internal Medicine
  - Pediatrics
  - OB-Gyn
  - General Surgery
  - Family Medicine
    - headed by Dr. Cal Wilson from UC-Denver
1.2 operating Rooms per 100,000
  - International average: 6/100,000
0.15 general surgeons per 100,000
0.09 orthopedic surgeons per 100,000
80% surgical procedures take place at district hospitals
## Human Resources

<table>
<thead>
<tr>
<th>Surgical and Surgically-related Care Providers, November 2010</th>
<th>Kigali City</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time surgeons</td>
<td>37</td>
<td>45</td>
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<tr>
<td>Postgraduates in Surgery</td>
<td>15</td>
<td>20</td>
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<tr>
<td>Full-time OB/Gyn</td>
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<td>20</td>
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<tr>
<td>Part-time OB/Gyn</td>
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<tr>
<td>Postgraduates in OB/Gyn</td>
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<td>19</td>
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<tr>
<td>Full-time Anesthesiologist</td>
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<tr>
<td>Part-time Anesthesiologist</td>
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<td>1</td>
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<tr>
<td>General Doctors doing surgery</td>
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<td>231</td>
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<tr>
<td>General Doctors providing anesthesia</td>
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<td>4</td>
</tr>
</tbody>
</table>

Petroze. Surgical Capacity in Rwanda: Results of a Nationwide Survey. Presentation at Lemigo Hotel. Kigali, Rwanda. 18 March 2011
CHUK, Kigali

- 429 Beds
- 6 operating theaters
- 8 ICU beds.
- 7,682 operations per year
Resources

- Laboratory
- Radiology
  - Fluoroscopy
  - U/S
  - Xray. (No CT or MRI)
- Pathology. Avg. 4 week turn-around for results.
  - 2 pathologists within Kigali
- Prosthetics lab
- Ambulance Service
- 97 MD’s
  - 3 General Surgeons
  - 3 Orthopedic surgeons
  - 1 Neurosurgeon
  - Surgical Residents:
    - 3 Junior, 3 senior
Weekly Schedule

- Scheduled Operative cases 3x/week
- Clinic 2x/week
- Chief resident responsibilities
  - Morning report
  - Ward rounds
  - Weekly teaching for medical students and residents
- Daily call for Emergencies
- 5 weeks at CHUK
Trauma

- Majority of emergency admissions
  - Traffic accidents: 2% of annual deaths
  - Machete injuries, blast injuries, burns, agricultural accidents.
    - (impalement with bull’s horn)
- Trauma presents hours to days afterwards, not minutes.
Delay in management

- Mistrust in allopathic medicine
- Common use of traditional medicine
- Advanced stage pathology
Pediatric Surgery

- Intussusception
- Pyloric Stenosis
- Nephroblastoma
- Teratoma
Operative Case Log

- Head/Neck: 1
- Thoracic: 1
- Stomach: 6
- Small Bowel: 6  Total: 58
- Colo-rectal: 10
- Hepato-biliary: 7
- Hernia: 7
- Soft Tissue: 6
- Ortho: 2
- Op. Trauma: 5
- Amputations: 3
- Pediatric: 4
• 1 week at Ruhengeri District Hospital
• 450 beds
• Four G.P.’s who operate
• No surgeons
Complications
Take Home Lessons

- You can accomplish a great deal **without** a CT scanner or other technologies we routinely rely upon.
- 90% of what we throw out can be re-used
- IV bags make good ostomy appliances
- There was a time when we did everything without surgical staplers or mesh
  - Knowledge of alternative or traditional surgical techniques is crucial
- Surgical disease is a tremendous burden on global economy
  - 15% of total disability adjusted life years lost worldwide
- Surgery is the “neglected stepchild of global health” - Paul Farmer
  - Why?
    - Significant infrastructure required - not just a vaccination or a bug net
    - Historical attention to communicable diseases: HIV/AIDS, Malaria, TB
      - Public health problem = public funding
    - Historical inattention from surgeons on the surgical burden in the developing world

What Others Are Doing:

- **Harvard:**
  - Paul Farmer Global Surgery Fellowship, Partners in Health
    - [http://www.childrenshospital.org/clinicalservices/Site1935/mainpageS1935P76sublevel70.html](http://www.childrenshospital.org/clinicalservices/Site1935/mainpageS1935P76sublevel70.html)
    - Includes MPH
  - Clinical fellowship; 2 years after 5 years residency
  - Research Fellowship: 2 years, during residency

- **UW**
  - 2 year fellowship. MPH, 1 year international research

- **OHSU**
  - Rural Surgery Track
  - International Surgery Research Fellowship, India
References