Open Wide: An Examination of Issues in Global Oral Health

University of Colorado School of Medicine
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The Forsyth Institute, Boston, MA
Formerly Northern Rhodesia
Independence Oct 1964;
Republic with president
  (Michael Sata) & legislature;
Official language: English
72 languages (Bemba, Nanja,
  Tonga, Toka, Lozi, etc);
Industries: copper, other
  minerals, tobacco,
  cotton, gemstones
Population: 13 million
Poverty rate 86% (Avg. income
  $800/year)
Currency: ~5000 Kwacha / 1$
30 dentists
ZAMBIA

Average lifespan 43 years; infant mortality 9.8%

Endemic Diseases

Malaria
HIV
Schistosomiasis
Filariasis
Meningococcal meningitis
Polio
Rabies
Yellow fever
Typhoid
Other enteric infections (Shigellosis, Salmonellosis)
Sleeping sickness
FEVER, MALARIA
could mean seek early treatment
Zambia working towards a malaria free future
Did you have a cavity as a child?
Oral Diseases

- Dental Caries
- Periodontal Diseases
- Oral Cancer
- Oral Manifestations of HIV/AIDS
- Noma
- Orodental Trauma
- Malocclusions
Risk Profile for Oral Disease

- **Socioeconomic:** low-income, low educational status
- **Lifestyle:** poor diet, high dietary sugar intake, tobacco and alcohol use, poor oral hygiene
- **Environmental:** poor living conditions, inadequate sanitation, unsafe water supplies
- **Health Care Infrastructure:** inadequate development
Dental Caries in Adults

• Affects nearly 100% of adults in the majority of countries worldwide
• Over 40% of poor adults vs. 16% of non-poor adults have at least one untreated, decayed tooth
• Major cause of tooth loss, along with periodontal diseases
• 20% of U.S. adults over age 60 are missing all their natural teeth

Source: CDC Division of Oral Health
Dental Caries in Children

• Most common disease of childhood, 5 times more common than asthma
• Affects 60-90% of school-aged children in industrialized countries
• Higher DMFT (decayed, missing, filled teeth) in industrialized countries
• By age 17, 78% of U.S. teens have had a cavity, and 7% have lost a permanent tooth to decay

Sources: CDC Division of Oral Health, American Academy of Pediatric Dentistry
Did you have a cavity as a child?
Oral health is about more than good teeth; it is vital to general health.
# ORAL HEALTH SCREENING FORM
## Options for Children in Zambia

<table>
<thead>
<tr>
<th>Name</th>
<th>Screen Date (D/M/Y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOB or Age</td>
<td>Location</td>
</tr>
<tr>
<td>Gender</td>
<td>Screener</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oral Status Score</th>
<th>Pain</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated Caries Present</td>
<td>Past Caries Experience</td>
<td>Early Childhood Caries</td>
<td>Sealants Present</td>
</tr>
<tr>
<td>0 = No</td>
<td>1 = Yes</td>
<td>0 = No</td>
<td>1 = Yes</td>
</tr>
<tr>
<td>1 = Yes</td>
<td>1 = Yes</td>
<td>1 = Yes</td>
<td>1 = Yes</td>
</tr>
<tr>
<td>2 = Urgent care</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fluoride treatment: Yes ___________(date) No ________________(reason)

Sealants:
First molars: 3, 14, 19, 30 ___________(date) Second molars: 2, 15, 18, 31 ___________(date)

Other: ____________________________

Treatment recommendations

______________________________
______________________________
______________________________

Advanced Treatment
Medical history review

Treatment completed

______________________________
______________________________
______________________________

Signature of Provider Date
<table>
<thead>
<tr>
<th>Year</th>
<th>Status 0 (Year)</th>
<th>Status 1 (Year)</th>
<th>Status 2 (Year)</th>
<th>Total Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>39 (43%)</td>
<td>32 (35%)</td>
<td>19 (21%)</td>
<td>90</td>
</tr>
<tr>
<td>2005</td>
<td>68 (76%)</td>
<td>17 (19%)</td>
<td>4 (4%)</td>
<td>89</td>
</tr>
<tr>
<td>2007</td>
<td>77 (81%)</td>
<td>11 (11%)</td>
<td>6 (6%)</td>
<td>94</td>
</tr>
<tr>
<td>2008</td>
<td>76 (83%)</td>
<td>11 (12%)</td>
<td>4 (4%)</td>
<td>91</td>
</tr>
</tbody>
</table>
WHO Basic Package of Oral Care (BPOC)

• **OHE**: Oral Health Education
• **OUT**: Oral Urgent Treatment (emergency care)
• **AFT**: Affordable Fluoride Toothpaste (exposure to appropriate fluoride)
• **ART**: Atraumatic Restorative Treatment (appropriate treatment technology)
Building an Operatory
## Muchila Treatment Summary

<table>
<thead>
<tr>
<th>Year</th>
<th># Screened</th>
<th># Sugeries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>456</td>
<td>29</td>
</tr>
<tr>
<td>2009</td>
<td>377</td>
<td>121</td>
</tr>
<tr>
<td>2010</td>
<td>542</td>
<td>240</td>
</tr>
<tr>
<td>2011</td>
<td>453</td>
<td>75</td>
</tr>
</tbody>
</table>
## VOLUNTEER SCREENING RESULTS

“Silent Epidemic”

<table>
<thead>
<tr>
<th>Total Screened</th>
<th>% With Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Males</strong></td>
<td>5280</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td>6041</td>
</tr>
</tbody>
</table>
Options for Children in Zambia

Muchila Initiatives

• Dental Project: oral health education, prevention, urgent care, community oral health volunteer development
• Water Project: improved access to safe water (with Rotary International)
• Orphan/Farm Project: food, clothing, schooling, medical support via farm development
• Women’s Microfinance Project: beads and baskets with Penga Ujani
Galaba Farm
Orphans
Women’s group (Penga Ujane)
Women’s group (Penga Ujani) Beading Project
Regional Diplomacy, 2008: Julia Munachilau, Namwalla District Health Director
National Diplomacy, 2008: Gardner Syankatu, Deputy Director for Clinical Care and Diagnostic Services
Networking: 2008: Dental Therapy School, Lusaka
TOP-DOWN PLANNING VS. ADAPTATION TO LOCAL CIRCUMSTANCES

THE END OF POVERTY
ECONOMIC POSSIBILITIES FOR OUR TIME

JEFFREY D. SACHS
FOREWORD BY BONO

THE WHITE MAN'S BURDEN
Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good

WILLIAM EASTERLY
Take Away Points

• Most dental disease is preventable
• Dental decay is the most common cause of oral pain, tooth loss/compromise and treatment costs
• Rates of dental caries in developing nations can be expected to rise with increased access to dietary sugars and low fluoride exposure
Take Away Points

• Western models for dental care delivery are not feasible in most developing (or developed) countries
• Increasing populations and small oral health workforces require an emphasis on prevention
• The WHO Basic Package of Oral Care (BPOC) proposes an acceptable, affordable and sustainable format for oral health promotion and disease prevention
Take Away Points (personal edition)

• Slow down
• Work within the system
• Relish the experience
• Adapt to random events
• Don’t underestimate the magnetism of a dental component
Thank you Dentist.