Diabetes kills: 1 person every 8 seconds, 4 million people a year

Diabetes does not discriminate: all ages, rich and poor, all countries

ACT NOW
BIGPIC – Addressing the Unique Barriers to Care in Rural Kenya
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Assistant Professor
Purdue University College of Pharmacy
Co-Chair
AMPATH Chronic Disease Management Program
Easterly Paradox

• On July 16, 2005 nine million copies of Harry Potter were distributed in a single day

• Coca-cola has found a way to distribute their product to almost every corner of the world

• $2.6 trillion of foreign aid have been spent in the past 5 decades, BUT
  ➢ $4 bednets and 12 cent antimalarials have not reached the millions who die from malaria each year
  ➢ ~1 billion adults still remain illiterate
  ➢ Stockouts are the norm in most public healthcare facilities
Implementation Bottleneck

MMR - 590 per 100,000
MMR - 8 per 100,000
<table>
<thead>
<tr>
<th>Population in Millions</th>
<th>Annual Per Capita Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-100</td>
<td>$&gt;20,000</td>
</tr>
<tr>
<td>1500-1750</td>
<td>$&gt;1,500 and $&lt;20,000</td>
</tr>
<tr>
<td>4000</td>
<td>$&lt;1500</td>
</tr>
</tbody>
</table>
HIV CARE INFRASTRUCTURE
Development of the Program

Academic Model for Prevention and Treatment of HIV/AIDS

Academic Model Providing Access To Healthcare
Initiated in November 2001
65 care sites in western Kenya
- Catchment population ~ 2.9 million
- HIV prevalence 2 – 30%
- >150,000 ever enrolled patients with 58,000 on antiretroviral therapy
AMPATH Comprehensive Care

Chronic Disease Management
- HIV
- Oncology
- Mental Health
- Hypertension
- Diabetes
- Cardiology
- Pulmonology

Maternal and Child Health

Lead With Care

Tiered Care
- Protocolized Care
- Research
- Monitoring and Evaluation
- Laboratory
- Pharmacy
- Nutrition Support
- Specialty Referrals
- Information Technology
- Income Generation/Social Work
- Screening/Prevention
- Training
Evolution of Diabetes in Rural Settings
In Sub Saharan Africa

Year 1
Diagnosis

Year 2
Symptoms

Year 3

Year 4

Year 5 and beyond

www.hartsdalevet.com
www.dongo.org
www.bloodpressurereading.net
FLTR

- Find
- Link
- Treat
- Retain
Electronic Medical Record Based On Handheld Android Phones

A. Community health workers (CHWs) make home visits or client visits local dispensary

B. CHW Scans Patients Medical ID card

C. CHW performs basic assessment based on decision support in the phone based EMR

D. Data entered directly into the phone

E. Data from previous visits available for decision support

Web-based Network Server
- Eventually connectivity to all areas within our catchment area
FINDINGS FROM AMPATH’S EXPERIENCE
## Demographic Data (N=1348)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Average or Frequency</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>52</td>
<td>1-92</td>
</tr>
<tr>
<td>% With Outpatient Health Insurance</td>
<td>&lt;1%</td>
<td></td>
</tr>
<tr>
<td>% With History of Smoking</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>% With a History of Alcohol Use</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>% With Caretaker Assistance</td>
<td>68%</td>
<td></td>
</tr>
</tbody>
</table>
Voluntary enrollment of patients into BIGPIC (N~126)

Identification and enrollment of rural patients with diabetes

Provision of standard care strategies

Attainment of group or individual goals enables access to income generating programs and incentives

Turbo Clinic

Webuye Clinic

Provision of peer and self-management training

Peer groups

Individual Level Care Goals

Peer Group Care Goals

Direct Employment
  - Provision of Low Interest Loans-GISE
  - Horticultural Training/Support
  - Business Skills Training

Income Generation Opportunities
What is a GISE?

- GISE groups are accumulative savings and credit associations (ASCAs) that mobilise and manage their own savings, providing interest-bearing loans to members and offering a limited form of financial insurance.
- A GISE group is self-managed and independent.
- Members save in variable amounts and borrow, when needed, for varying periods of time.
- GISE groups are usually time-bound – they share out member equity at least once a year in proportion to savings.
AMPATH Approach to Screening

**Community Screening**

Village based screening at innovation sites

**Home Based Screening**

Perpetual door to door screening for chronic diseases

**Targeted Diagnostic Testing**

- Referral to clinic for enhanced care
- Linked to care by community worker
# BIGPIC Phase 1 - Home Based Screening

Data from Webuye vs Community Based

<table>
<thead>
<tr>
<th>Parameter</th>
<th>HCT Result</th>
<th>Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Screened</td>
<td>350</td>
<td>346</td>
</tr>
<tr>
<td>Number with random blood sugar &gt; 7.0 mmol/L (128 mg/dL)</td>
<td>47 (13%)</td>
<td>27 (7.8%)</td>
</tr>
<tr>
<td>Total number returning for a confirmatory testing/diagnosis at the health center</td>
<td>19 (40%)</td>
<td>10 (37%)</td>
</tr>
<tr>
<td>Total number confirmed with diabetes</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Estimated prevalence of diabetes</td>
<td>1.1%*</td>
<td>1.7%**</td>
</tr>
</tbody>
</table>
Next Steps

• Continue community based screening
• Begin training for patients
• Obtain baseline HbA1c’s from participating patients
• Transition management of this project to Webuye District Hospital Staff
Questions?

spastaki@gmail.com