Visualization and Data Analysis: Healthcare Needs of Rural Clinics in Malawi

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Can technology enable CHWs to fight the disease epidemics and human resource crisis?
Right now someone is using a mobile phone to report a new tuberculosis case...
These little actions are changing outcomes almost all over the world.
Challenges to Health in Malawi

• Worst Health Indicators
  – Life expectancy: 44 years (2007)
  – 1 / 124 births = Maternal mortality
  – 1 / 15 births = Infant mortality
Challenges to Health in Malawi

• Prevalent diseases
  – HIV AIDS: 12% (900,000)
  – Malaria: 40% of hospital deaths
  – Disease outbreak: Cholera, Plague
Challenges to Health in Malawi

• Human Resource Crisis
  – 257 doctors, 14 million people
  – High attrition, low training and recruitment

• Shortage of medications
E-health initiative in Malawi

- Outpatient clinic at a district hospital

- 3 years of point-of-care data
  (Feb 2008 – Mar 2011)
Goals

• What can we learn from Malawi?
  – Understand E-health initiative
  – Identify positives / negatives

• Recognize planning and operational gaps
  – Evaluate database
  – Improve ongoing data collection

• Surveillance and Projections
  – Create better situational awareness through real-time visualizations
Desired skills / interests

• Management / Operations
• Computational:
  Database (MySQL), Data analytics
• Design, Information Visualization, Graphics
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