Re-Mapping Africa in GIS Conference

Using Geographic Information Systems to Support HIV Care in Rwanda

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Introduction

• Good health is a cornerstone of development (Organization for Economic Co-operation and Development 2003)

• Geographic Information System (GIS) is a useful tool for improving quality of care for HIV, and improving program monitoring and evaluation.

• Partners in Health (PIH) supports the Rwanda MoH (Ministry of health) in providing comprehensive patients care in three districts (Kayonza, Kirehe and Burera),

• PIH has introduced GIS technology to map service delivery in the supported catchments area.
• Rwanda is one of East African countries
• Located between RDC, Uganda, Tanzania and Burundi,
• Surface 26 336 km², and population around 10 million
• Rwanda is composed of 4 provinces and one city, 30 districts, 416 sectors, 2148 cells and 14842 villages

• PIH support three districts, Kayonza, Kirehe and Burera.
• This analysis was completed in Southern Kayonza and Kirehe district.
## Health system in Rwanda

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<tr>
<th>Levels of Partnership</th>
<th>Administration</th>
<th>Health</th>
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<td>Community</td>
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<td>Community health workers (CHWs), accompagnateurs</td>
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<td>Sector</td>
<td>Executive secretaries</td>
<td>Health center (HC) titulaires, Community Health nurses</td>
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<td>District</td>
<td>Mayor, Vice Mayor of Social Affairs, Statistician</td>
<td>District Health Officer, District Hospital (DH) Medical Director</td>
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<td>Province</td>
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<td>Country</td>
<td>President</td>
<td>Ministry of Health Referral Hospital</td>
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Methodology

- Villages and health facilities WP collection using GPS, in collaboration with CHW.

- HIV patients vital data were obtained from OpenMRS Electronic Medical Record (EMR) system, and were used to calculate BMI.

- Arc GIS 10 were used to visualize the proportion of villages within five kilometers (Euclidean Distance) to the nearest health facility.

- The proportion of active patients whose BMIs are less than 18.5 (considered underweight) were mapped at the sector level.
- Villages are indicated by blue circles and are sized proportionally to population size.

- The particular interest was to visualize the proportion of villages within five kilometers (Euclidean Distance) to the nearest health facility.

- Some villages are located very far from health facilities, so new health facilities are needed to improve spatial access to health care.

- Maps were produced and feedback meetings were held with stakeholders.
In May 2011, there were 6,064 active patients (over aged 15 years) in Southern Kayonza and Kirehe districts.

For 4,881 of those patients (80.5%), addresses had been confirmed at the sector level and a weight and height recorded.

The mapping shows variation in proportion of underweight patients by sector, with highest rates in Ruramira and Ndego sectors in Southern Kayonza and Mushikiri sector in Kirehe.

Providing feedback of this information assists programs in making decisions regarding CHWs outreach and targeting nutritional and agricultural programs.
Conclusion

• Health maps can effectively be shared with clinical, administrative and community-based partners for decision-making

• Maps provided are useful in supporting programs in planning and M&E

• Map analysis support to address gaps and to ensure equitable geographic access to care.
Thanks