Health Workers Retention: Spatial Analysis of Basic Services Using GIS

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Introduction

- Lack of basic services in some areas is one of the reasons for a health worker to migrate to areas with better services.
- Understanding the spatial distribution of basic services in a community is important.
- Data on the existence of basic services is not well known.
Water problem
Market
Health Facility buildings- Dispensary

Working Environment...... is it Good?

Can a MD work here?

Water problem at Health Facility
Infrastructure
Objective

Determine the availability of basic key services that are important for health workers

- Focus - how health Workers can access services in terms of travel distance using GIS techniques
Specifically

GIS was used to establish a network that will consider geographic position and existence of key services that could influence retention of health workers (e.g. bank, police post, markets, schools, post office, and water sources.)
Conceptual framework for the analysis of Health worker access to basic services

1. Health Worker
2. Services
3. Available
   - NO
   - YES
4. Analysis
5. GIS
6. Distance to access
7. RESULTS
Methods

- 16 districts were selected
  - Urban and Rural
- All health care facilities (Hospital, Health Centre and dispensary)
- Interview health workers
- GPS locations of basic services
  - Health Facilities, Health workers HH, Water sources, Banks, Post office, Police post, Referral hospital, Shops/markets, schools
- Buffer and Point distance analysis
Methods Cont...

Health Facility

Water source
Methodological Flow

Map
- District boundaries
- Ward Boundaries
- Roads
- Village
- Lake

Import Map
Layers to ArcGIS

GPS Data
- Health Facilities
- Health workers HH
- Water sources
- Banks
- Post office
- Police post
- Referral hospital
- Shops/markets

Convert to dBASE format
- dBASE Tables

Add dBASE tables to ArcGIS

Join data

Create point Map
Perform GIS Analysis

OUTPUT
Final Map
Results
Location of Services

- Analysis revealed areas that were significantly accessible and/or underserved
- Results from GIS point analysis show that HW might travel a distance up to 200km to seek for services (bank), with an estimated travel time of 4 to 6 hours or more
3km buffer from a road
Conclusion

- GIS - an approach to determine spatial distribution of existing basic services
- GIS - demonstrates how health worker can access services
  - Overlay different maps
    - More weight (i.e. planning) can be given into those areas which lack services