

GIS AND PRIMARY HEALTH CARE IN NIGERIA

By

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Presentation Outline

- Basic concept of GIS
- GIS and Primary Health Care
- On-going GIS efforts in Nigeria
- Progress made by NPHCDA in GIS Mapping
- Suggested 'Way-Forward'
- Conclusion

Basic Concept of GIS

- Geographic Information System (GIS) is a system of capturing, storing, checking, integrating, analyzing, updating and displaying data which are spatially referenced on a geo-spatial map.
- GIS uses the Global Positioning Systems (GPS) as an integral part of its operations.
- It is an innovative approach for information management & has great potential for significant impact on PHC service delivery.

GIS & Primary Health Care - 1;

- PHC Concept

- *Essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the **community** by means acceptable to them, through their full participation and at a cost that community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination.*

- Alma Ata

- It forms an integral part of both the country's health system, of which it is the central function and the main focus of the overall social and economic development of the community.

GIS and Primary Health Care - 2

- A large proportion of population reside in rural areas at considerable distances from basic health services.
- An indicator of health service performance is the population's proximity to PHC
 - Metric: proportion of population living within an hour of nearest service (or within 5km distance).
- GIS is helpful in Health planning, management and research in the following areas.
 - **Measuring access and coverage of health services**
 - Utilization patterns of health services
 - Rational Planning & design of health services.

GIS and Primary Health Care

- GPS technology can be used to record the locations of health facilities using coordinates and data downloaded for further processing using relevant databases and for use on maps.
- GIS is useful in the design, implementation and evaluation of health care programs.
 - Improved access to primary health care is required for the successful attainment of at least three of the UN MDGs (Reduce child mortality; Improve maternal health; and Combat HIV/AIDS, Malaria, TB & other diseases).

GIS and Primary Health Care/....2

GIS in health PHC management can be used to determine:

- Physical access to PHC facilities
- Human Resource capacity, needs & distribution
- Coverage of health programs
- Spatial utilization patterns
- Variation of service quality in urban, peri-urban & rural areas
- “Location-Allocation” (Strategic planning & resource allocation)
- Highlight Service areas for further research

GIS and Primary Health Care - 3

- Case of Rural South Africa

- In Hlabisa Sub-district of rural South Africa GIS used to;
 - Estimate travel times to health clinics
 - Understand PHC usage patterns
 - Measure disparities in access & usage of primary Health care by setting (rural, peri-urban & urban).
 - Evaluate clinic usage relative to expectation.
 - Optimally site a new health facility so as to achieve maximum population level increases in access.

On-going GIS efforts in Health; Nigeria

- WHO – 2006/7: SAM of selected 11 States
- MDG – Dec 2010: SAM + Human Resources of 3LGAs/State in 36 States + FCT
- FMOH/NASCAP – Jan 2011: HIV/AIDS SAM of 36 states & FCT
- NPHCDA Disease Control & Immunization Dept – Aug 2011: Micro-planning for SIA & RI focusing on delineation of boundaries in 4 States of NWZ
- Rivers State - 2011

On-going GIS efforts in Health/...2

- SAM consisted of general characteristics of facilities, types of equipment available, human resource, drugs & interventions available
- Some of the above mapping activities basically dwelt on specific interest areas for services such as immunization, HIV/AIDS etc, and did not provide a holistic picture

NPHCDA Generic GIS Mapping Initiative - 1

Agency has plan/limited budget for a Pilot GIS Mapping of Health Facilities.

Held bilateral meeting with NPopC to discuss the possibility of collaboration to achieve the following objectives:

- Geo-spatially map out the PHC facilities within the country to be able to locate on a map of Nigeria the different categories of PHC Centres
- Show the spatial distribution of the PHC Centres in relation to the population of their catchment communities, service availability and human resources.

NPHCDA Generic GIS Mapping Initiative - 2

- Link the service data generated at the PHC Centres with their mapping using the GIS software.
- Set up a National GIS lab in NPHCDA for easy national access to PHC-related data
- Many studies have shown that physical access to health care is the most important determinant of service utilization.

Suggested Way forward

- A coordinating mechanism needs to be agreed and developed.
- Need to establish Guidelines and Standards
- Stakeholder meeting for dissemination of various GIS initiatives.
- NPHCDA has strategic advantage for successful coordination of GIS health mapping.
- Forge strong partnerships to conduct a national GIS mapping in 36 States and FCT.
- Establish a National GIS lab.

Conclusion

- The application of GPS-dependent GIS is of crucial importance in the generating reliable geo-spatial data/information for policy, planning and decision-making for Primary Health Care as well as research.
- Used in a particular district in South Africa to address key PHC parameters for improving PHC.
- Kenyan authorities used GIS to define and implement equity approached in physical access to clinical services as part of planning & Monitoring of Malaria Programme.
- Nigeria needs GIS PHC much more. Harmonization coordination and scale-up of GIS in PHC will help accelerate our progress towards achievement of MDGs targets.

Thank you