2004 USAID Summer Seminar Series

August 24: Innovative Health Care Approaches
Organizer: Bryn Sakagawa, Global Health
Materials: Presentations (2) appended

Synopsis

As health systems in developing countries are challenged to finance growing demands for services, national governments and international donors are looking at innovative ways to protect targeted populations from the financial risks of illness. During this session, two innovative strategies of targeting and providing services will be discussed:

The first half of this seminar is titled, “Improving Health Care Systems Using Geographic Information Systems (GIS).” Mr. Mark Landry will describe how integration of health-related inputs into a GIS creates a powerful tool for improving efficiency and effectiveness of health care systems. Four state-of-the-art health GIS applications under development in Yemen will be described: 1) mapping health facilities and analyzing accessibility areas; 2) using GIS to target health care program interventions; 3) donor mapping; and 4) plotting the spatial pattern of the 2000 Rift Valley Fever outbreak. The seminar will address how health GIS applications provide evidence-based rationale for targeting health care system interventions.

The second half of this seminar is titled, “Community-Based Health Financing Schemes/Mutual Health Organizations (MHO) Grow Up.” Mr. Marty Makinen will discuss the transition of MHOs from local initiatives to national programs, and the role of the government and USAID technical assistance in facilitating the transition. Participants will be able to appreciate the complexity of 'scaling-up' community-based MHOs to national-level movements/programs. Can community-based initiatives scale up and keep their souls? The session will look at the different scaling-up experiences of MHOs in Senegal, Rwanda, and Ghana, and at clues for future development in Mali and Benin.

Notes

The ninth Seminar in a series of twelve, “Innovative Health Care Approaches” was organized by Bryn Sakagawa of the Global Health Bureau. All of the presenters came from the Partners for Health Reformplus (PHRplus) Project, a five-year, one hundred million dollar contract managed by Abt Associates, Inc and partners and that focuses on health reform in about 30 countries around the world.

The first speaker, Mark Landry, Geographic Information Systems (GIS) Specialist, discussed health GIS applications for improving efficiency and equity of health care interventions in developing countries. Sara Bennett, Manager of the Applied Research Program, and Pia Schneider, Health Economist, outlined the importance of, challenges to, and lessons learned from community-based health financing (CBHF) schemes. Bennett and Schneider discussed CBHF in Ghana, Rwanda, and the Philippines.

Geographic Information Systems (GIS)
Mark Landry defined Geographic Information Systems (GIS) as “a database with legs that allows a person to interlay and visualize information…and to analyze trends and relationships spatially.” The health database contains a broad range of health-related information, for example, health statistics, demographics, health care resources, and digital pictures and global positioning system (GPS) coordinates of health facilities. GIS permits the user to examine relationships among a wide variety of factors, including health data, population characteristics, environmental conditions, and more.

Landry specializes in GIS applications in the health sector and explained how ‘health GIS’ works. Health GIS is structured in layers—with a foundation of base map data layers (roads, elevation data, etc.) underneath mapped demographic data, and with the superior layer showing mapped health facilities, such as pharmacies and clinics.

Through its surveillance systems, surveys, and health information systems, GIS enables an expansive array of applications—such as aiding in the integration of health information systems (HIS), as well as determining the availability of and access to health care and equity and efficiency of health service delivery.

Landry gave a brief overview of ongoing health GIS efforts in Yemen, including continuous collection of health-related data, the development of customized health GIS analyses and the implementation of HIS in pilot health centers. He showed how GIS could map the distribution of governorate-specific projects by type and spatial patterns of outbreaks of Rift Valley Fever in 2000. Integrating HIS with GIS has improved data collection efficiency and provided a method of evaluation and monitoring for evidence-based health care pattern improvements.

Despite the many benefits of geographic information systems, there are some barriers to overcome. Relying on existing data sources can often be problematic as can collecting and integrating enormous amounts of data, sometimes from various sources. Health data cleaning and spatial rectification are important early steps to ensure appropriate use of the best available data sources. However, GIS brings some important implications for the health industry. It reveals new relationships and trends, illustrates evidence-based rationale, and allows for sophisticated and robust spatial analyses.

Scaling Up Community-Based Health Financing (CBHF)
The Partners for Health Reformplus (PHRplus) Project has provided mostly small-scale technical assistance in establishing and maintaining community-based health financing (CBHF) schemes. Though these small-scale programs have rapidly proliferated and flourished, the problem still remains of graduating to a more comprehensive, national-level health care system that would provide financial protection against health care cost for a broader community.

audience for the Health Care seminarThe importance of community-level insurance is evident in the relatively small numbers of the lower-income ill who consult a health care provider. As people in higher-income brackets have higher rates of seeking treatment when ill, Bennett and the team have deduced that user fees charged by health care providers are too high for lower-income groups and consequently restrict healthcare access.

CBHF schemes, driven by community members or health facilities, aim to improve financial access to health care. The project has determined that the following preconditions be present for the CBHF scheme to work: (1) willingness to pay for healthcare, (2) trust in the CBHF scheme, and (3) availability of providers that offer quality care. Assuming that these conditions are met, the population gains protection against the costs of illness. As a result, scheme members of a well-established CBHF scheme have a significantly larger probability of accessing healthcare than user-fee paying individuals.

The international community has found CBHF to be an appropriate mechanism to finance health services without causing too much pain for the population. (As an aside, Bennett remarked that there seemed to be a limited amount of data to support this claim.) Though the number of schemes has grown over the years, scheme membership is still very low—few low-income countries have more than one percent of their populations enrolled in schemes.

Bennett explained the process of scaling up by using an inverted triangle, the bottom of which represents low levels of institutionalization and a small government role characterized by a dominant out-of-pocket payment system, with the top representing high levels of institutionalization and a national policy framework typical of a universal insurance coverage system. The major challenges to scaling up include: ensuring equity among members through government adaptation of resources, preventing financial instability and implementing regulations to protect members from fraudulent schemes.

In August 2003, Ghana passed the National Health Insurance Act, which mandated that all districts establish CBHF schemes funded by sales tax, formal sector worker contributions, and voluntary payments by informal sector workers. The Ghanaians faced problems with client education and high (sometimes locally unachievable) standards of care. The major lessons learned from Ghana's trial with a national standard of CBHF were: ensuring that the necessary infrastructure exist prior to legislation (as many locals lacked capacity upon nation-wide rollout) and that the government's level of funding be sustainable.

Pia Schneider presented two dichotomous approaches of schemes in Rwanda and the Philippines. Rwanda has chosen atwo presenters, Bryn and Pia replication strategy whereby the government has replicated CBHF pilot schemes in other parts of the country. At the end of the PHR Project's first year (1999), the 54 pilot schemes had more than 88,000 members or roughly 10 percent of the population. These schemes were replicated in other districts.

Since 1999, CBHF schemes have grown from 54 to about 120. In the original three districts, more than 20 percent of the population is now enrolled in CBHF schemes. Some replication programs are funded by USAID, while others started up on by their own or are funded by other donors. Rwanda faces several challenges to CBHF scheme implementation, including lack of human and institutional capacity, premium levels in excess of what the poorest can afford, and low levels of quality care (which affect willingness to insure). The PHRplus Project found that CBHF replication requires a sound legal framework and a National Health Financing Strategy, subsidization of premiums for the poorest households, and monitoring and evaluation of the schemes' financial performance and providers' delivery of quality care.

The Philippines involved the integration of CBHF into national health insurance. In 2003, 40 million people or about 50 percent of the population were enrolled in a national health insurance plan PhilHealth. The Universal Coverage Law mandated compulsory insurance enrollment for both formal and informal sector workers (including independent workers) and for the poor with government subsidization.

Schneider pointed out some political interference that affected the scale-up of CBHF. First, while only 25 percent of the poor were enrolled pre-election, more than 100 percent were enrolled post-election. Second, she brought attention to the use of the mayor's picture on the back of the membership card, which confused the poor as to what the card was intended for. In addition, there is a general lack of solidarity among the populace, as the rich tend to opt-out of the universal care plan and enlist with private insurance companies.

Lessons learned from the Philippines were similar to the Rwanda pilot project. Countries should have a sound institutional framework, the organizational capacity to build a national health insurance system, financial sustainability and equity in financing, and be ready to provide for monitoring and evaluation of provider and insurance performance.

After considering the two approaches, Schneider concluded that there is no single way to achieve universal health coverage—the program must adapt to the socio-economic conditions of each country. In addition, the government must take ownership of the scaling-up process. Schneider emphasized the need for maintained client trust in the health system if scaling-up of insurance coverage is to be successful.

Schneider concluded her presentation with recommendations for technical assistance in the following areas: (1) individualSara and Joe Lieberson discuss innovative health care approaches schemes, (2) institutionalization of local technical assistance capacity, (3) development of a financing policy, (4) establishment of legal frameworks, and (5) measurement and evaluation and documentation.

Question and Answer Session

Have you done any excavation of using GIS in Iraq?
Landry: I don't think we've used GIS in Iraq to date and I don't know if we will.

Can you talk about the decision making that you've seen in Yemen based on GIS? Can you also discuss your efforts to build the capacity of local health people to use information gathered by GIS? Do you have any suggestions for the use of GIS (maybe through GPS noting) in regular monitoring and evaluation in health?
With respect to your first question, we have only been there for a year and we have the base of GIS ready to go and are currently working to build up specific health GIS applications. However, the Yemeni Ministry of Health are currently using donor mapping we provided to help them identify places where donor programs already exist and places that need donor support. In order to roll out health GIS applications, we are building out three types of GIS analytical tools: one for USAID, one for the national level—Ministry of Health, and another for the field (in terms of easy-to-use, standardized queries). In terms of using GPS, there are great opportunities for all types of surveillance and monitoring.

I see GIS as a wonderful tool for post-war developing nations and putting together a comprehensive program for long-term planning, not just for health care, but also for education or agriculture.
That is certainly on the table for next steps. USAID is very much interested in the base map data and potential cross-cutting uses. There are a lot of integrated analyses that can be done, especially with agriculture.

First, my experience trying to use these types of applications in data poor and spatially challenged countries, we must realize that when you have poor data, you can use them to identify where the gaps are, but you have to make sure that you do not disempower the local people. It is important to have local people provide input and validate the data. Second, with this technology you can show spatial and geographic inequalities. Also, we've tried to show some of the socio-economic inequalities three-dimensionally. Have you ever tried that?
In Yemen, we already have district level health facility maps in place. The local people are involved and they get excited about seeing the data that they have contributed. The only 3-D example of complex analyses that I can think of is choropleth mapping that includes sliding bars and multi-variable analyses. You can have 3-axises and provide map outputs showing that type of information. That is something that I've seen mostly in first-world countries because it requires more sophisticated data sets.

Looking on a long term horizon, what is it going to take to maintain the system? What are the relative costs of this versus another system? To what extent is the Ministry really committed to taking over this process and building ownership of the system?
In Yemen, the Ministry of Health is very much on board. Once you've paid the start up cost, you really just need to have the manpower and training to maintain it. I think the costs are very reasonable in comparison to maintenance other information systems.

Q & A - Scaling Up...

Do you limit coverage for certain things so the scheme doesn't go bust?
On the provider side, when coming up with a scheme you have to ask how much does it cost to cover the benefit package and based on that you can calculate your premiums. On the client side, we had meetings with the community representatives and asked them what they would like to have covered and how much they are willing to pay for premium. The benefit package was

then defined based on the costs of providers and the amount people were willing to pay for premium. In this way, the coverage can be specific to the local context.

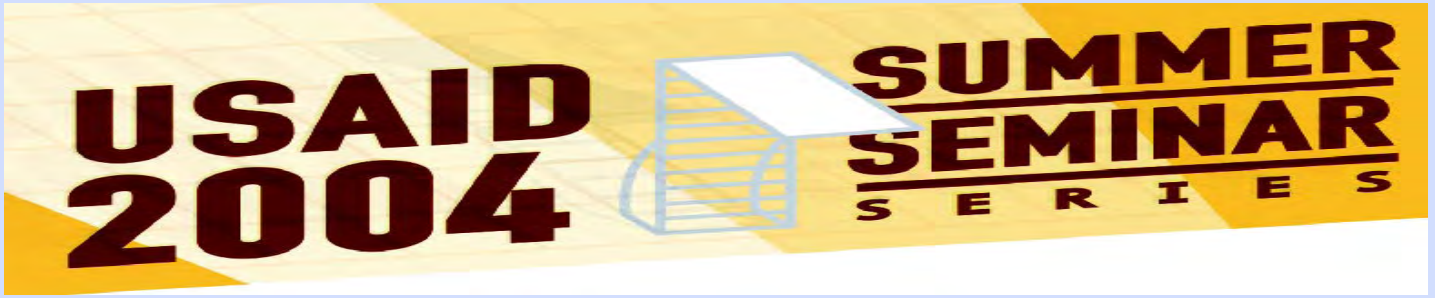
For sub-Saharan Africa schemes, to what extent is preventative health incorporated versus post-illness treatment.
The extent to which preventative health measures are incorporated depends upon what the individual community wants. For example, pre-natal care is often in included.

On either side of your inverted triangle, you have government and donor roles. What about the role of the community? I know that most communities already have their own welfare system when member of the community is sick. How can you use that to increase the coverage of the poor?
Many of the CBHF schemes have built upon traditional risk-pooling mechanisms, such as Tontines. The reason that the community is not more representative here is that we were thinking more about the scaling up issue, that is do you move from the small schemes to a nation-wide health safety net? Also, these traditional safety mechanisms are not really protecting the poor. Traditional methods are important systems to build upon and they help when it comes to teaching the locals about CBHF schemes. We've seen faster scheme growth in West Africa, which has these traditional mechanisms, than in East Africa, which lacks traditional safety nets.

Regarding monitoring and evaluation and learning doing—What have you learned about monitoring and evaluation and what recommendations do you have?
We've learned that it's difficult and that there are different clients for monitoring and evaluation. The burden of monitoring and evaluation typically falls upon the scheme managers and they have very different needs than those providing technical assistance might have. We've tried over the past 2 to 3 years to establish routine monitoring systems with the schemes. The hardest part of the issue is having different clients that have different informational needs.

People don't do monitoring and evaluation because they see the filling in of a data sheet as additional work. Once people see the benefits of monitoring and evaluation, they are more willing to do it.

Welcome to **Session 9**



Innovative Health Care Approaches

Organizer: Bryn Sakagawa

Panel: Mark Landry, Dr. Sara Bennett, and Dr. Pia Schneider

Tuesday, August 24, 2004

Agenda

- Introductions/Overview (USAID)
- Presentations
  - "Improving Health Care Systems Using Geographic Information Systems (GIS)" **Mark Landry,** Abt Associates
  - "Scaling Up Community-Based Health Financing" **Sara Bennett** and **Pia Schneider,** Abt Associates
- Closing Remarks
- Q&As (please hold your questions to the end!)

Scaling Up Community Based Health Financing

Sara Bennett PhD and Pia Schneider PhD,
Abt Associates

USAID

August 24, 2004

The PHR*plus* Project is funded by U.S. Agency for International Development and implemented by:

Abt Associates Inc. and partners, Development Associates, Inc.; Emory University Rollins School of Public Health; Philoxenia International Travel, Inc. Program for Appropriate Technology in Health; SAG Corp.; Social Sectors Development Strategies, Inc.; Training Resources Group; Tulane University School of Public Health and Tropical Medicine; University Research Co., LLC.

URL: http://www.phrplus.org

Outline of Presentation

- Why Scale up CBHF/MHO/mutuelles
- Approaches to Scaling up CBHF
- Country Experience
  - Ghana
  - Rwanda
  - Philippines
- Key Issues and Recommendations for Support

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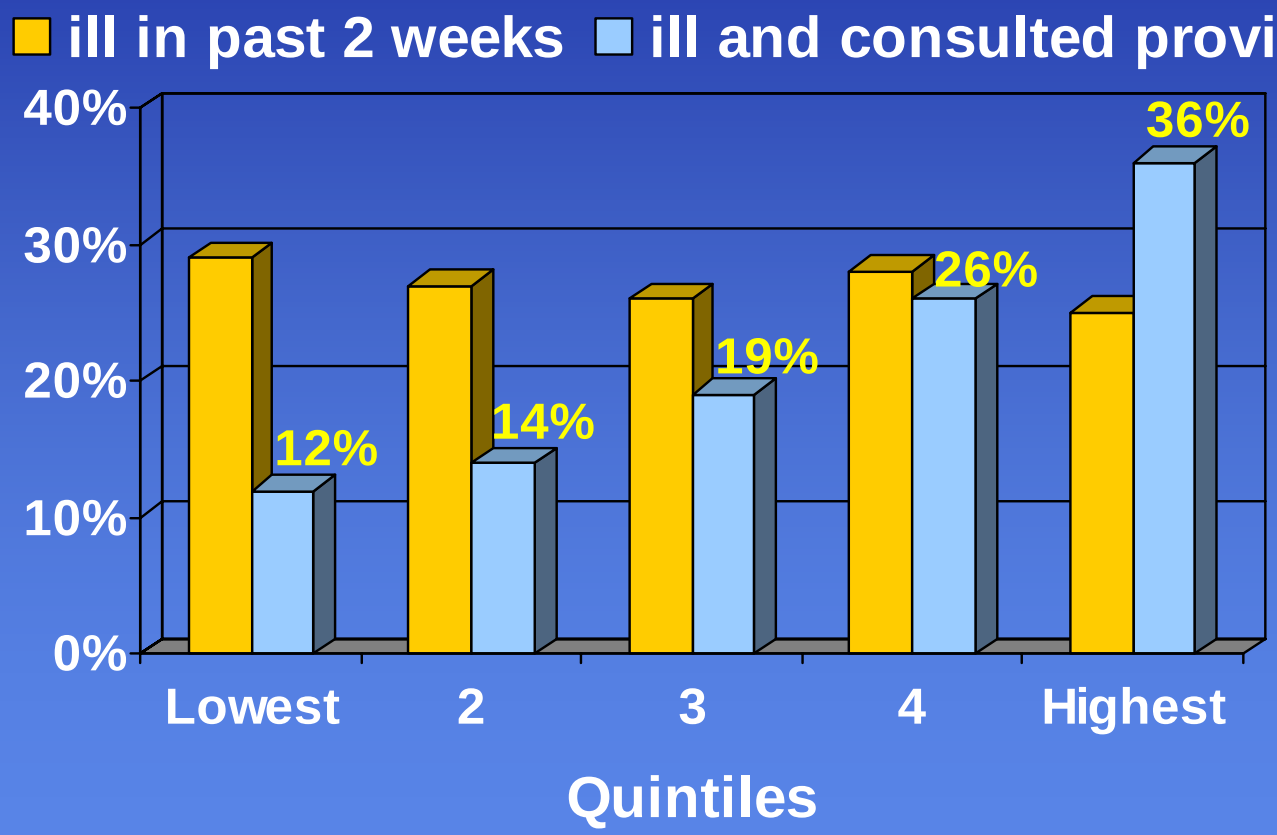
User fees restrict access to care for low-income groups: Rwanda



Source: Household and Living Condition Survey 1999/2001

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In response, people start CBHF schemes

Bottom-up approach:

- Driven by community or health facility
- Member governance
- Community participation in definition of benefit package and premium

Preconditions:

- Willingness to pay for health care
- Trust in CBHF scheme
- Providers offering quality care

Advantages to the population

- Improved financial access to care when sick
- Protection against the catastrophic costs of illness
- Improved ability to plan household expenditures

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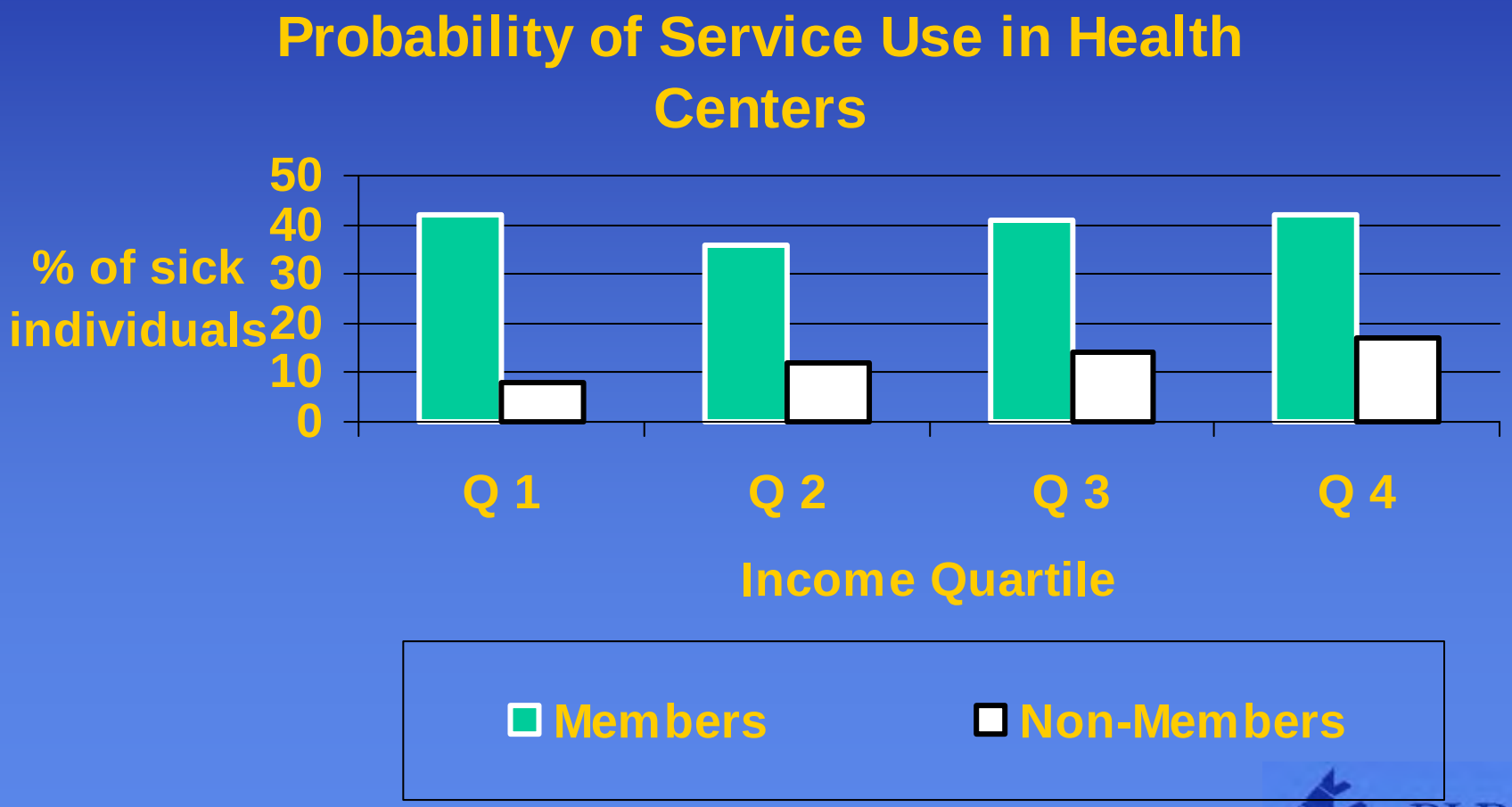
CBHF Improves Equity in Access to Care in Rwanda



Source: hh-survey

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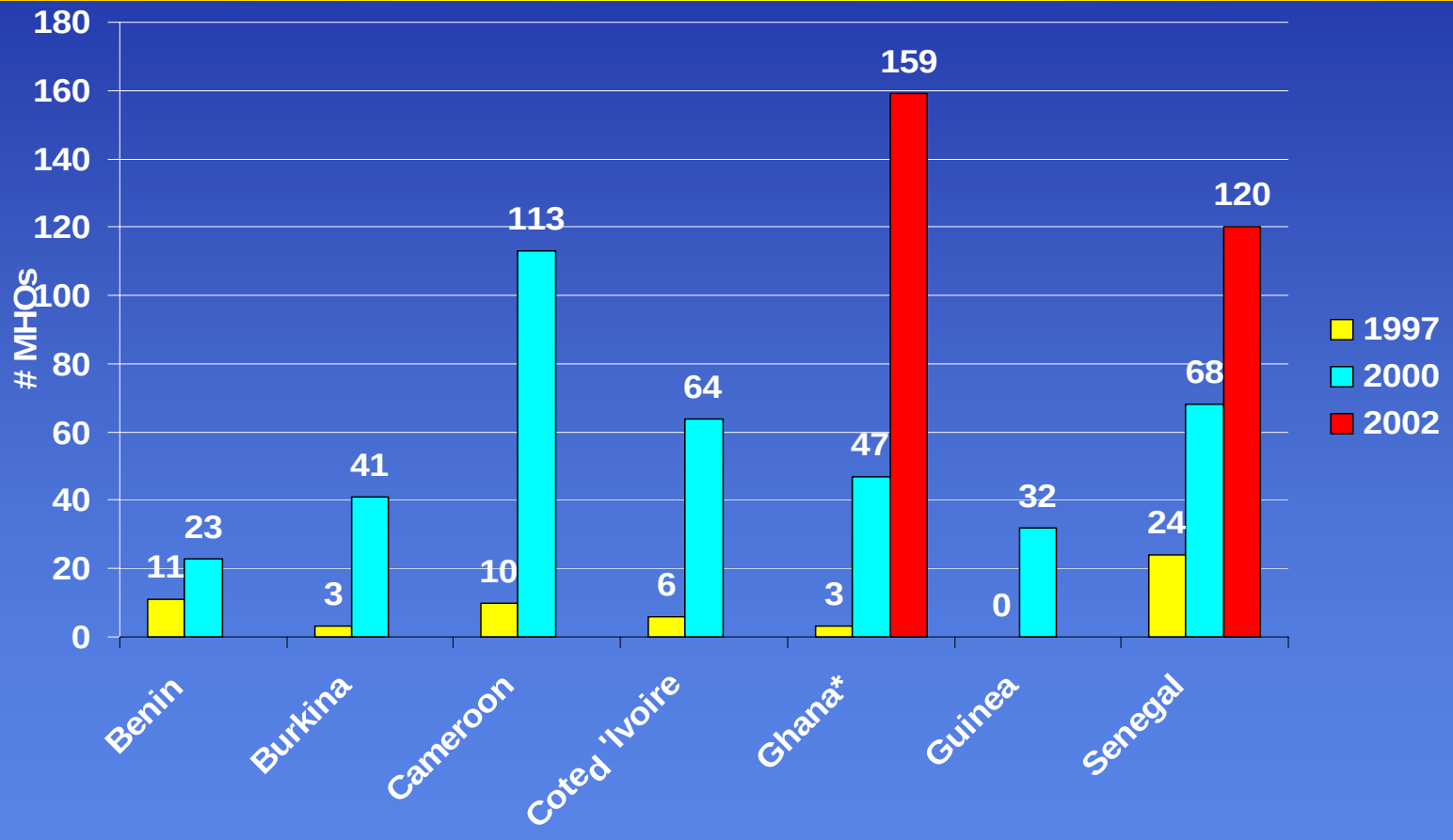
Also international support for CBHF schemes

"The Commission recommends that out-of-pocket expenditures in poor communities should increasingly be channeled into "community financing" schemes to help cover the costs of community-based health delivery."

Report of the Commission on Macroeconomics and Health, WHO, 2001.

Leading to a growing number of CBHF schemes



*Ghana data is from ' 99, ' 01, ' 02

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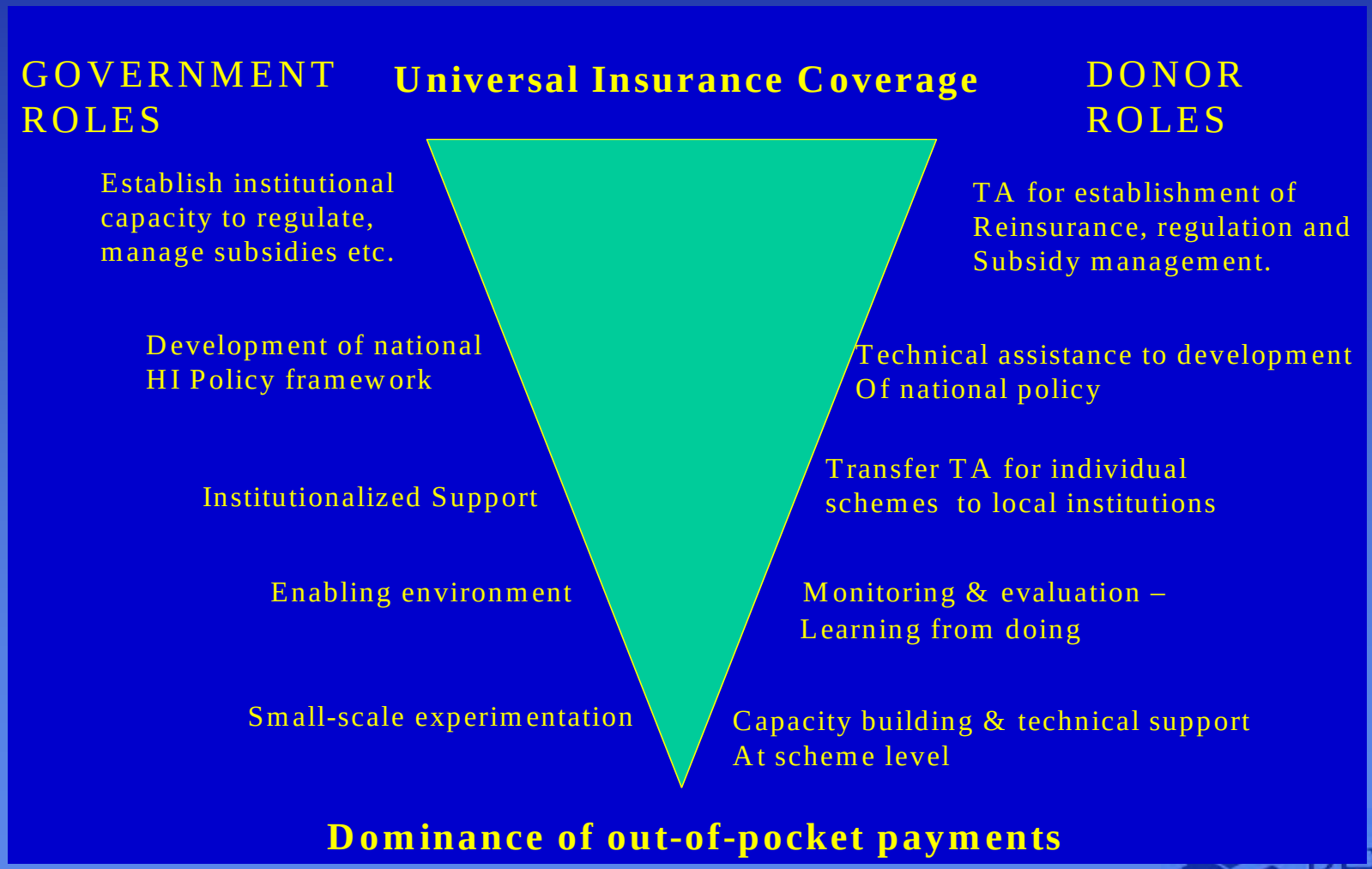
But still low membership….

- Few low income countries have greater than 1% of the population covered by CBHF schemes.

Key challenge – how to scale up such schemes

The process of scaling-up



Challenges in Scaling up

- To ensure equity between schemes, or regions or sub-groups of the population – need to adapt government subsidy patterns
- Preventing financial instability that may arise due to small scheme size and lack of reinsurance
- Ensuring that providers are equipped to work with schemes and can manage shifts in forms of payment
- Preventing the emergence of fraudulent schemes
- Maintaining the advantages of social solidarity within communities while going to scale

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Ghana

The growth of CBHF schemes in Ghana

- In 2002, 159 schemes, but many still nascent, only about 12 functional & providing benefits
- Political pressure to drop “cash and carry” led to the National Health Insurance Act, August 2003
- All districts mandated to establish CBHF schemes by September 2004, and everyone to join.
- Funded by (i) sales tax, (ii) formal sector worker contributions and (iii) voluntary payments by informal sector workers

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Challenges to Implementation

- Lack of prior local institutional capacity to support nationwide roll out – fraudulent consultants
- Break neck speed of implementation
- Lack of clarity about many aspects of implementation and communities concerned that "their" ownership of schemes will be taken away.
- Act requires accreditation of providers, establishment of reinsurance functions etc. that challenge local capacity
- Act mandates standardized national benefit package and premiums – that don't respond to differences between localities

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Lessons from Ghana

- Institutional Framework
  - Established via Act very early – prematurely?
- Organizational Sustainability
  - Scale up places heavy institutional burden –establish local institutional capacity prior to legislating.
  - Importance of ongoing M&E – will the government be sufficiently flexibility to alter course if need be?
- Financial Sustainability
  - Substantial government investment to launch schemes distorts incentives
  - Is this level of funding sustainable?
- Provider performance
  - Provider concern about prompt payment, and increased demand.

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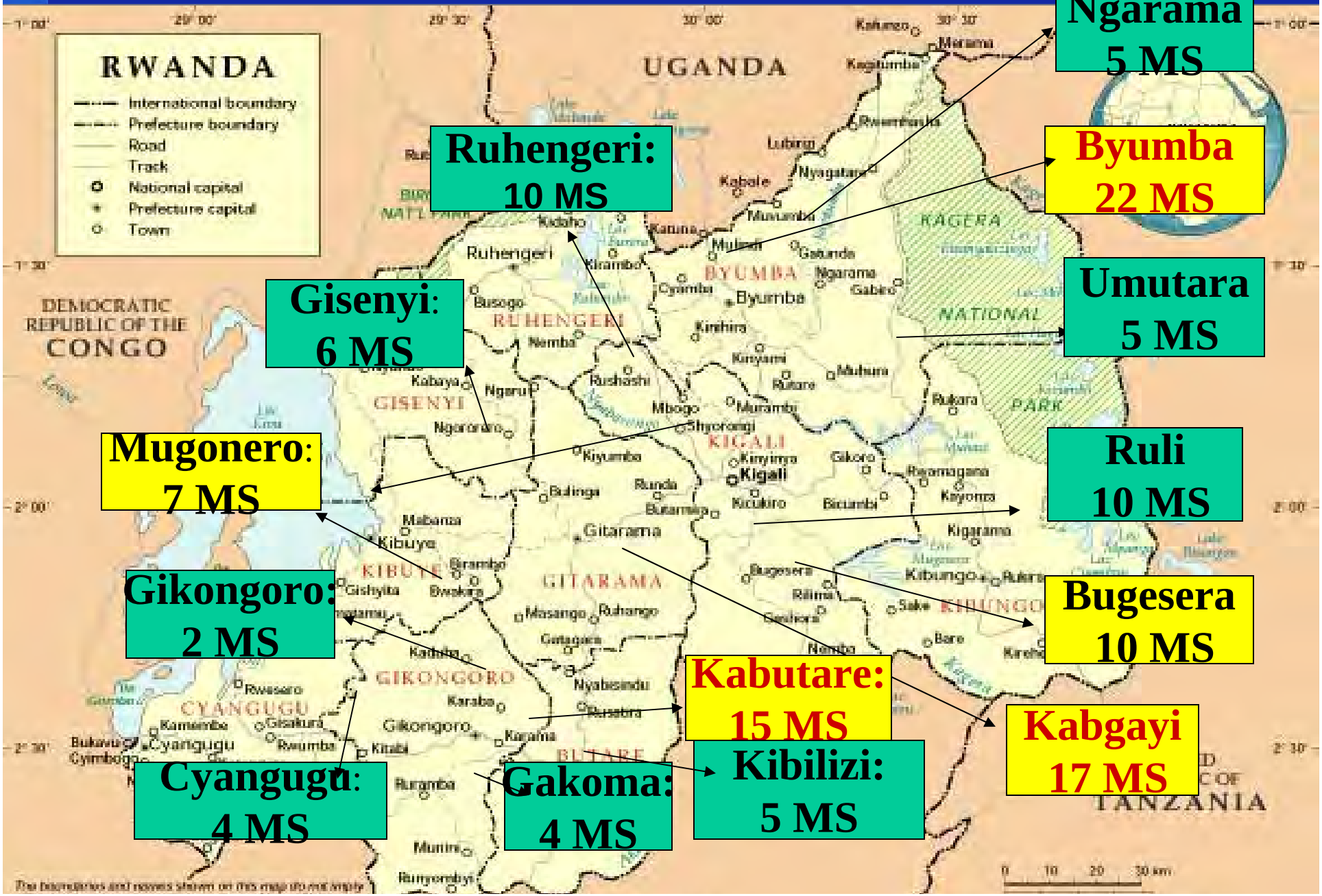
Rwanda

Replication Strategy in Rwanda:

Findings from CBHI pilot-test lead MOH to replicate CBHF in other areas

SITUATION AS OF MARCH 2004: 122 MHO



Ngarama 5 MS

Ruhengeri: 10 MS

Byumba 22 MS

Gisenyi: 6 MS

Umutara 5 MS

Mugonero: 7 MS

Ruli 10 MS

Gikongoro: 2 MS

Bugesera 10 MS

Kabutare: 15 MS

Kabgayi 17 MS

Kibilizi: 5 MS

Cyangugu: 4 MS

Gakoma: 4 MS

Challenges to Implementation

- Lack of institutional capacity (legal framework, national health strategy)
- Lack of human capacity among community members to manage CBHF
- Premium levels too high for poorest
- Low levels of quality of care affect willingness to insure

Lessons from Rwanda

Support needed when replicating CBHF

- Institutional Framework
  - Legal framework
  - National Health Financing Strategy
- Organizational Sustainability of CBHF
  - Continuous human capacity building
- Financial Sustainability of CBHF
  - Subsidize premium of poor households
- Provider Performance
  - M&E and improve quality of care

Philippines

PhilHealth Philippines

- *Universal Coverage Law*
- Formal sector workers
- Poor enroll in PhilHealth Indigent Plan (IP), subsidized by Government
- Independent workers (e.g. dentists, street vendors) pay same fixed premium per year, independent of income

Results from the Philippines

- Formal sector
  - 100% enrolled
- Poor households (subsidized)
  - > 100% enrolled following elections
  - Mayor's picture on back of PhilHealth membership card sends confusing message to members
- Independent workers
  - Low enrollment rates
  - Unaffordable premium for low-income groups
  - Rich insure in private insurance companies

Support needed when integrating CBHF into national insurance

- Institutional Framework
- Organizational Capacity Building of National Health Insurance
- Financial Sustainability and Equity in Financing
  - Income dependent premium levels for independent workers (includes dentists and street vendors)
  - Some solidarity enforcement between rich and poor
- Provider Performance
  - M&E and improve quality of care

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Conclusions and Remaining questions

- There is no defined path from individual CBHF schemes to universal coverage – processes are iterative and not always logical
- The role of government in developing a national health financing policy is critical in scale-up
- Distinction between replication and integrating into Social health insurance strategy
- In-country capacity to manage CBHF and scale up is major barrier
  - Lack of human, organizational, financial capacity
- What happens to trust in CBHF if scheme governance is moving up?

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Recommendations

- There are TA needs throughout the process of scale-up – these vary according to stage of scale up and local capacity but include:-
  - Assistance to individual schemes
  - Assistance with institutionalization of local TA capacity
  - Assistance with development of financing policy
  - Assistance with the establishment of legal frameworks, reinsurance functions, subsidy systems, billing systems etc.
  - M&E and documentation throughout

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Thank You …….. And more on: www.phrplus.org

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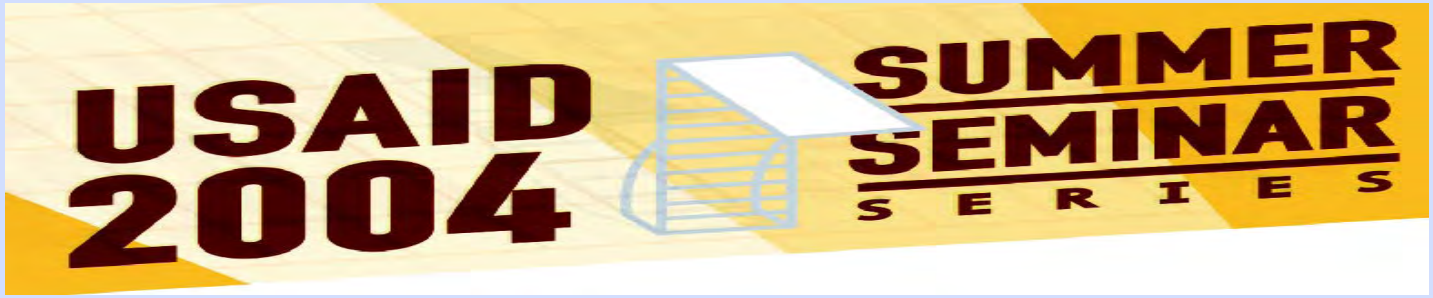
Come back next week for **Session 10**



Muslim World Outreach and Engaging Muslim Civil Society

Organizer: Ann Phillips

Panel: Krishna Kumar,

Tuesday, August 31, 2004

Improving Health Care Systems Using Geographic Information Systems (GIS)

Mark Landry

Abt Associates Inc.

USAID

August 24, 2004

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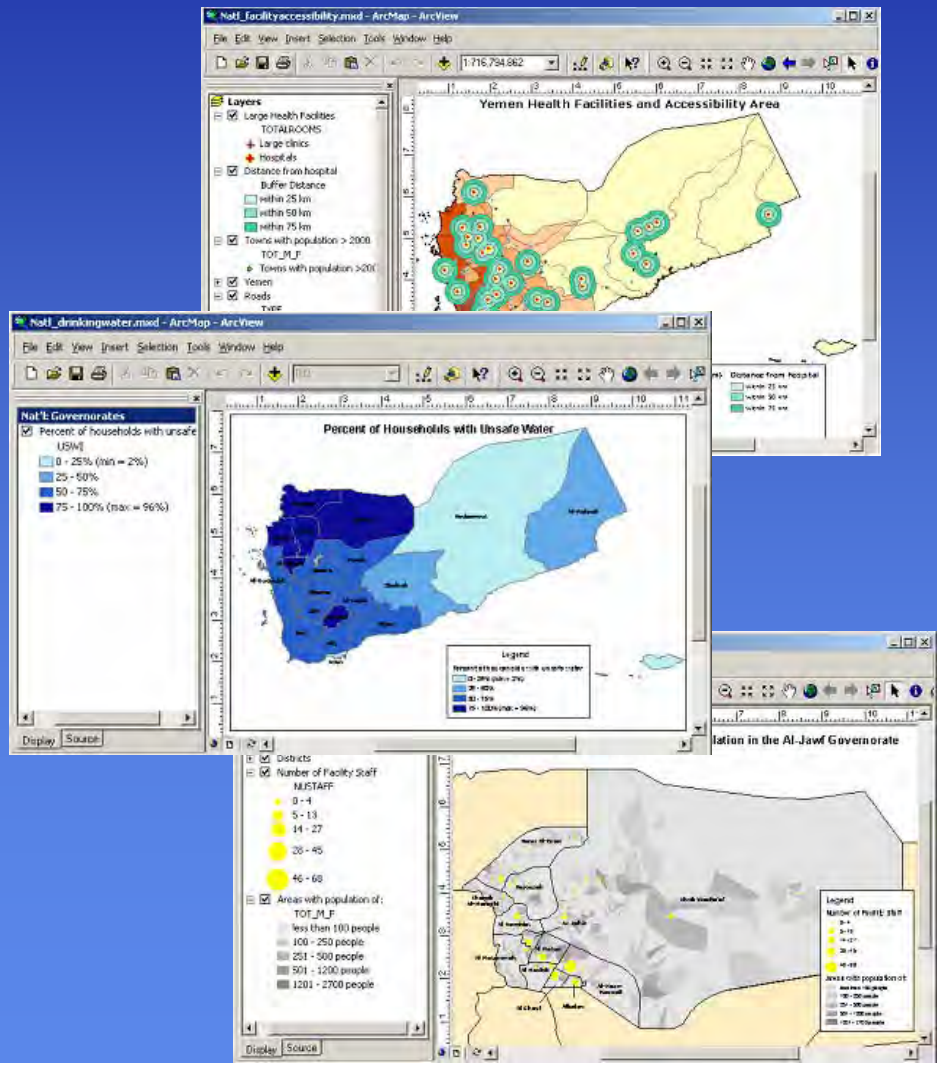
Overview

- Why use GIS? How it works?
- Data Requirements
- Example Health GIS Applications
- Analytical Considerations
- Potential Implications



Why Use GIS in Developing Countries?

- Important role in public health – strengthening health systems
- Variation in health care needs are influenced by a variety of factors
- Ability to analyze health data in a clear, convenient, and easy to comprehend form
- Ability to convey information visually
- Ability to geographically link health data with population characteristics, environmental conditions, and health care conditions

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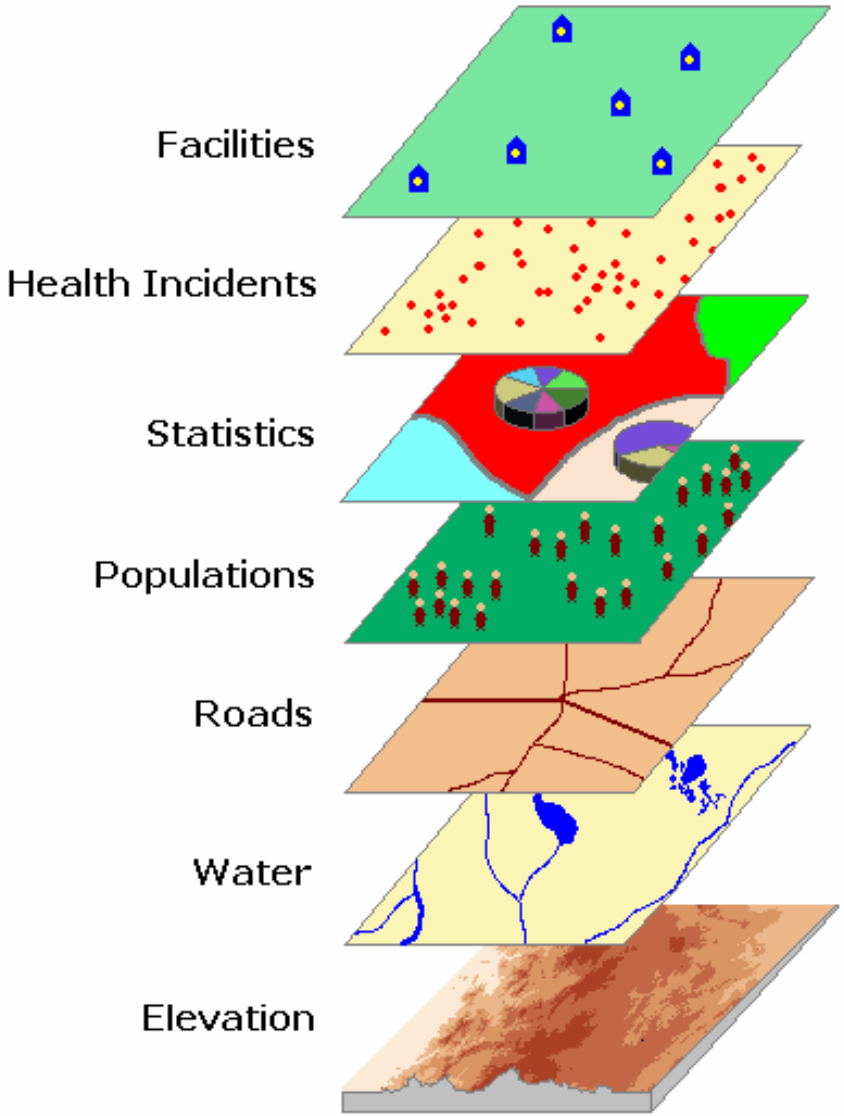
How Health GIS Works

- Includes surveillance systems, surveys, and health information systems
- Common reference points are geographic locations such as health facilities, settlements, districts, road networks, streams, and other spatial references.
- GIS tools enable public health professionals to overlay their health information on a map for visualization and analysis.

Integrating GIS Data



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Base Data Requirements

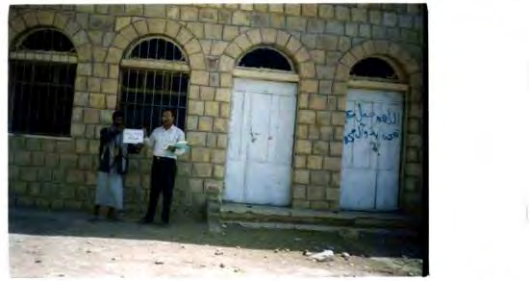
- Base Map Data Layers
  - Administrative boundaries
  - Road network
  - Elevation data
  - Hydrography
  - Land Use
- Population and Demographics
  - Critical information for developing health indicators and all types of analyses
  - 2005 Census

Base Data Requirements (continued)

- Health Facilities
  - Status and location of ALL health facilities is unknown
  - Implement 2004 Health Facility Survey
  - Supplement survey data with use of digital photographs & GPS coordinates
- Health Information Systems (HIS)
  - Consistency begins with developing data standards
  - Determination of essential elements or indicators

Al-Eagda Health Unit / Al – Zahir

وحدة العقدة / مديرية الزاهر



Al-Zahir Health Centre/ Al-Zahir

مركز الزاهر / مديرية الزاهر

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Sample Health GIS Applications

- Availability and access to health care
- Targeting resources
- Analyze program interventions
- Registry mapping
- Disease Surveillance
- Promote awareness
- Evaluate population groups at risk
- Assess equity and efficiency of health service delivery
- Integrate with Health Information Systems to support evidence-based decision making

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Health GIS Efforts in Yemen

- Held workshop in February 2004 to bring together the Yemeni GIS user community
- Ongoing collection of health-related data
- Built base Health GIS
- Providing support to the MOPHP with health sector donor mapping
- Developing customized health GIS analyses
- Assist the Ministry of Health with implementing the Health Facility Survey
- Deliver technical support to select Governorates
- Designing new Ministry of Health Website
- Implementing HIS in pilot health centers

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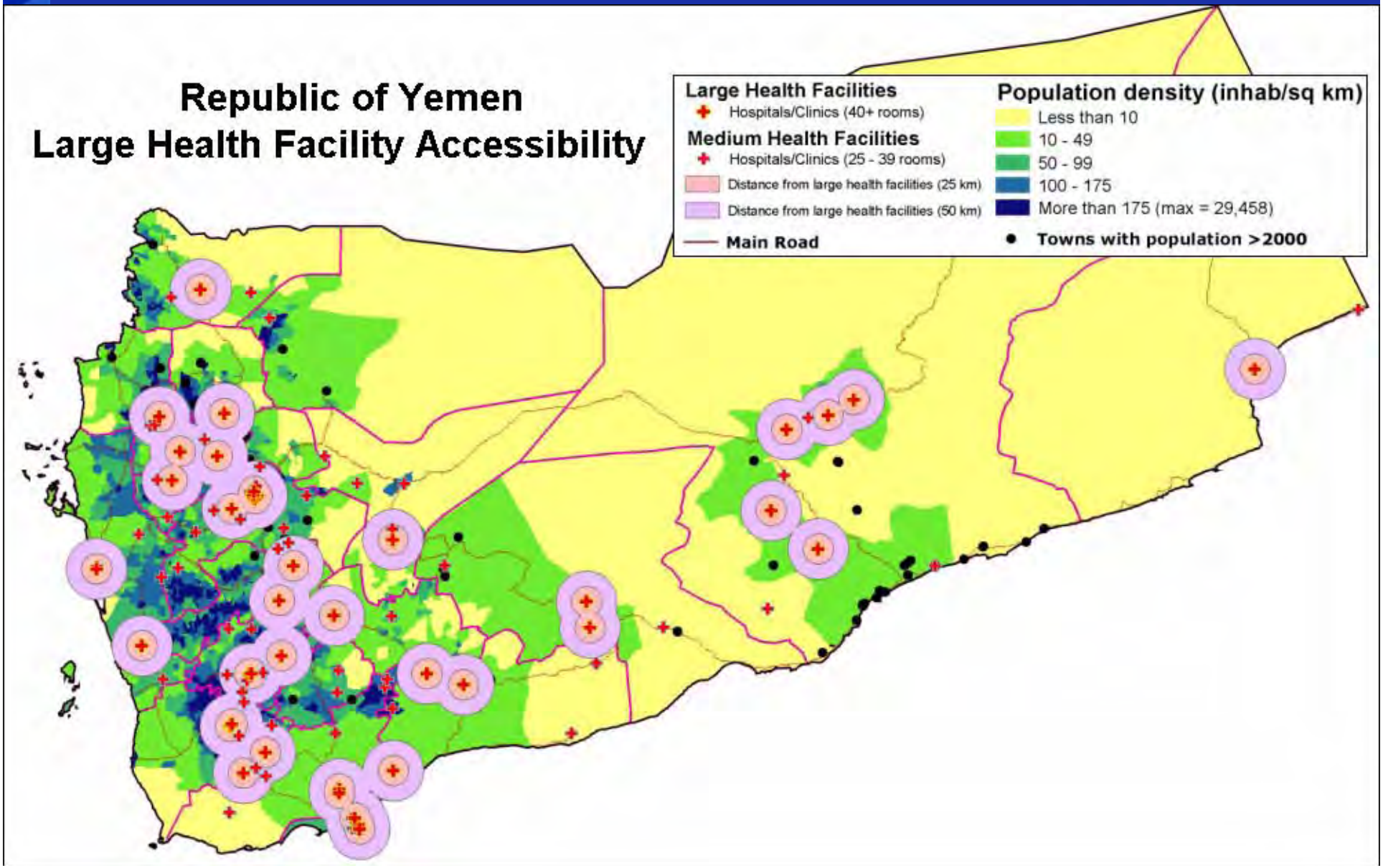
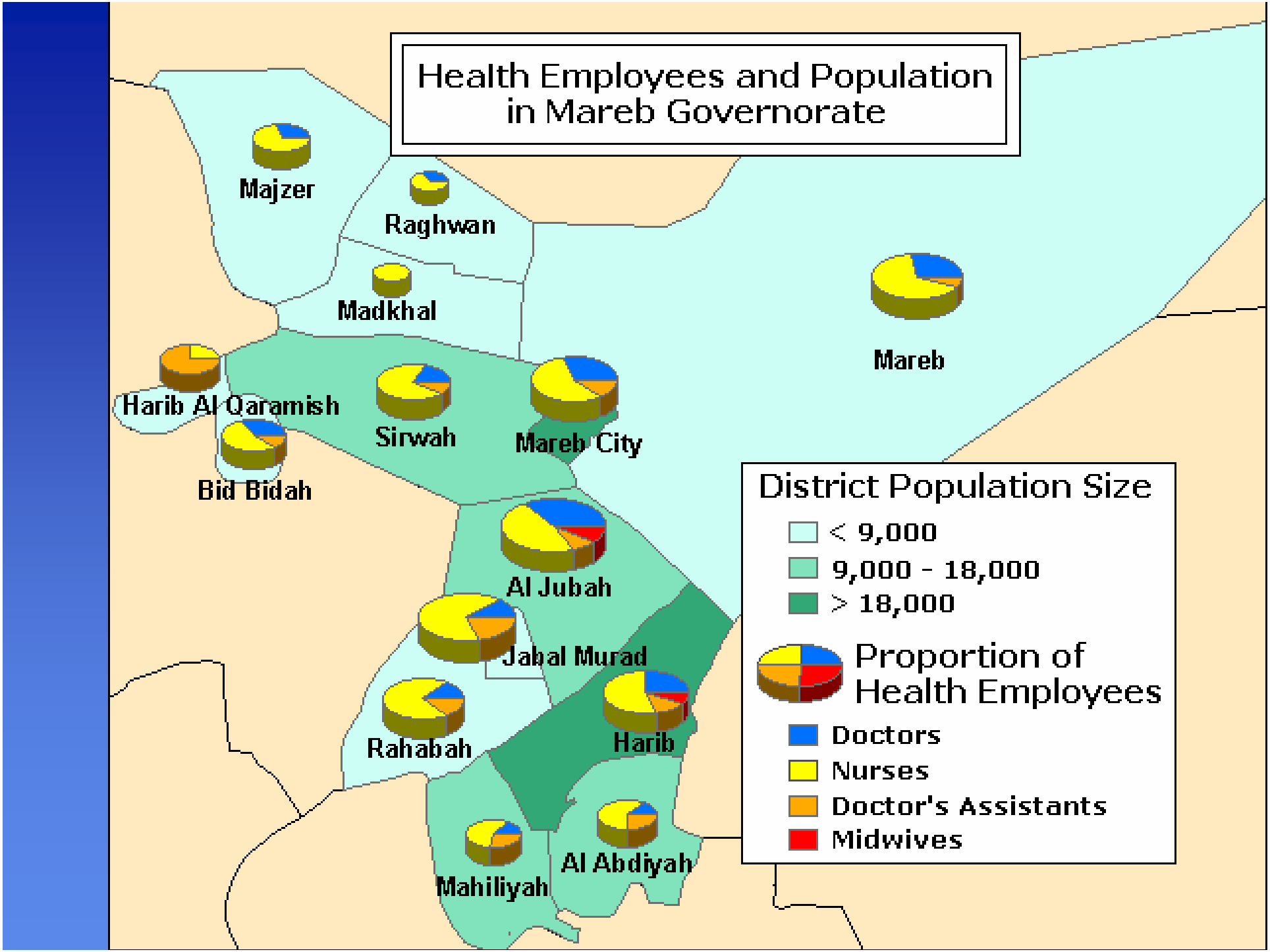
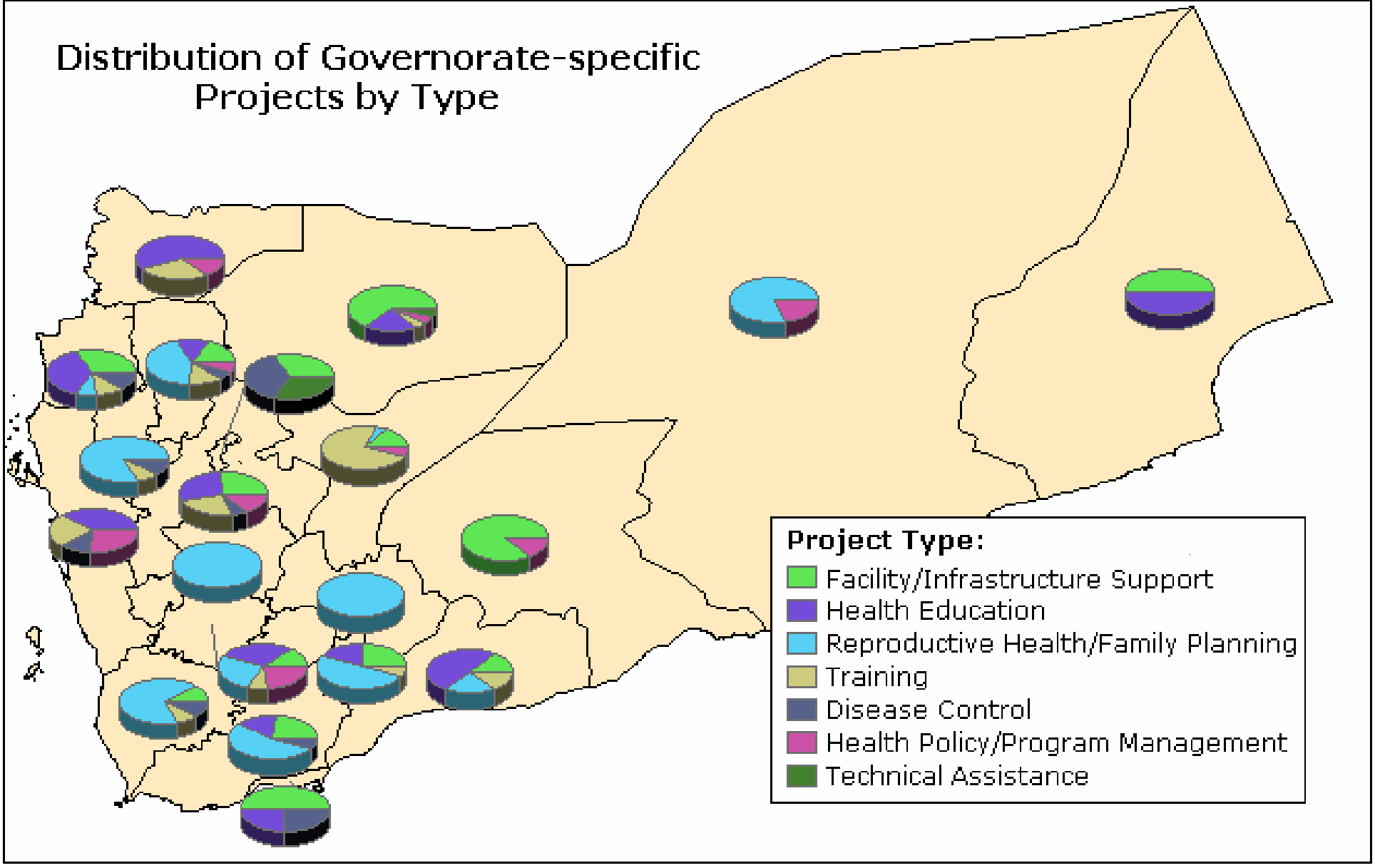
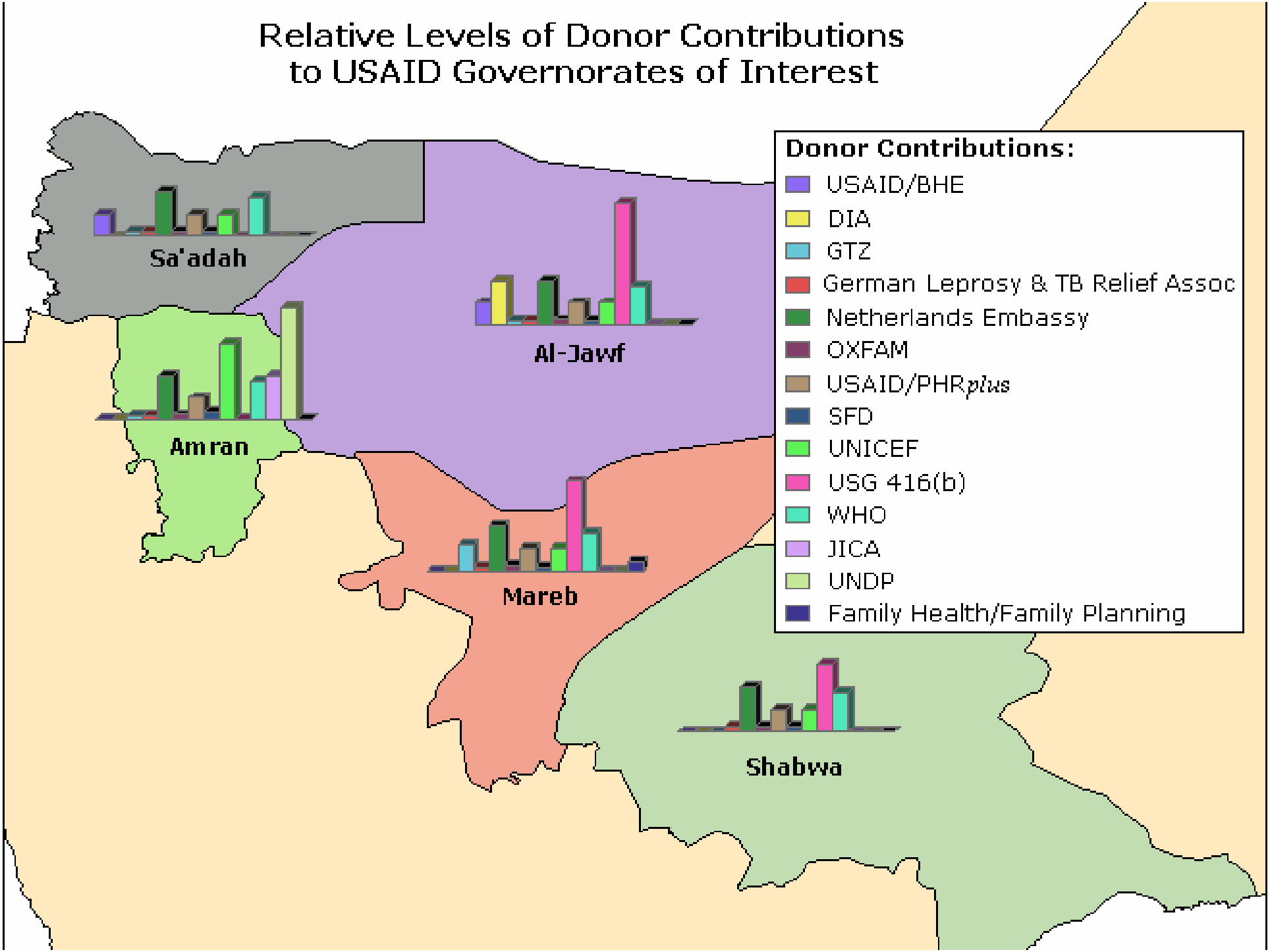
Health Care Accessibility Areas




Health Employees and Population in Mareb Governorate
Majzer
Raghwan
Madkhal
Mareb
Harib Al Qaramish
Sirwah
Mareb City
Bid Bidah
Al Jubah
Jabal Murad
Rahabah
Harib
Mahiliyah
Al Abdiyah
District Population Size
< 9,000
9,000 - 18,000
> 18,000
Proportion of Health Employees
Doctors
Nurses
Doctor's Assistants
Midwives

Donor Mapping




Relative Levels of Donor Contributions
to USAID Governorates of Interest
Donor Contributions:
USAID/BHE
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USAID/PHRplus
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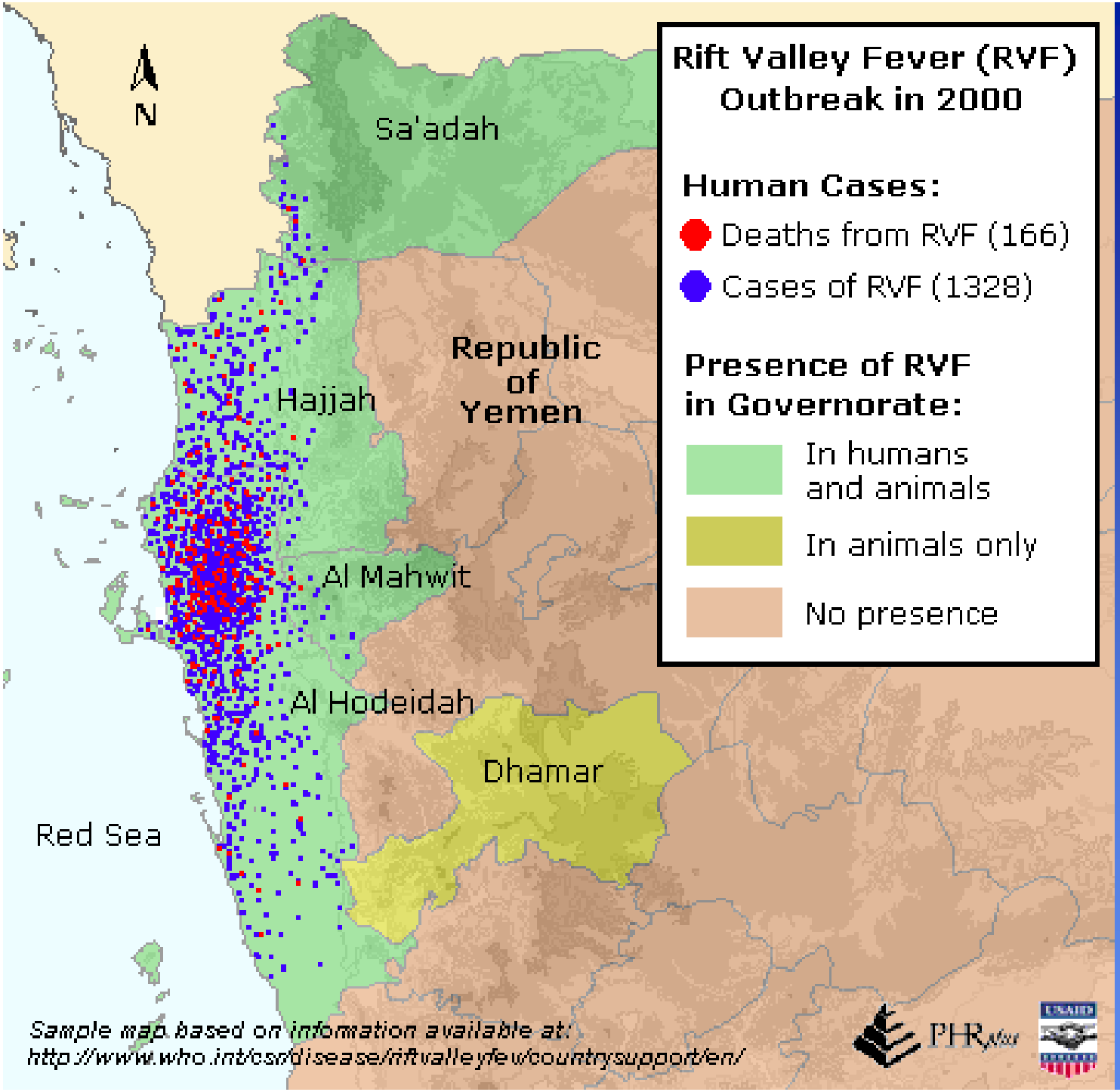
UNICEF
USG 416(b)
WHO
JICA
UNDP
Family Health/Family Planning
Sa'adah
Al-Jawf
Amran
Mareb
Shabwa



Spatial Patterns of Outbreaks

Integrating Health Information Systems (HIS) with GIS

- Standardization of facility-level health statistics data collection
- Simplify process and provide adequate training
- Improve data collection efficiency
- Provide a “feedback intervention” for creating continuous process of evidence-based health care pattern improvements

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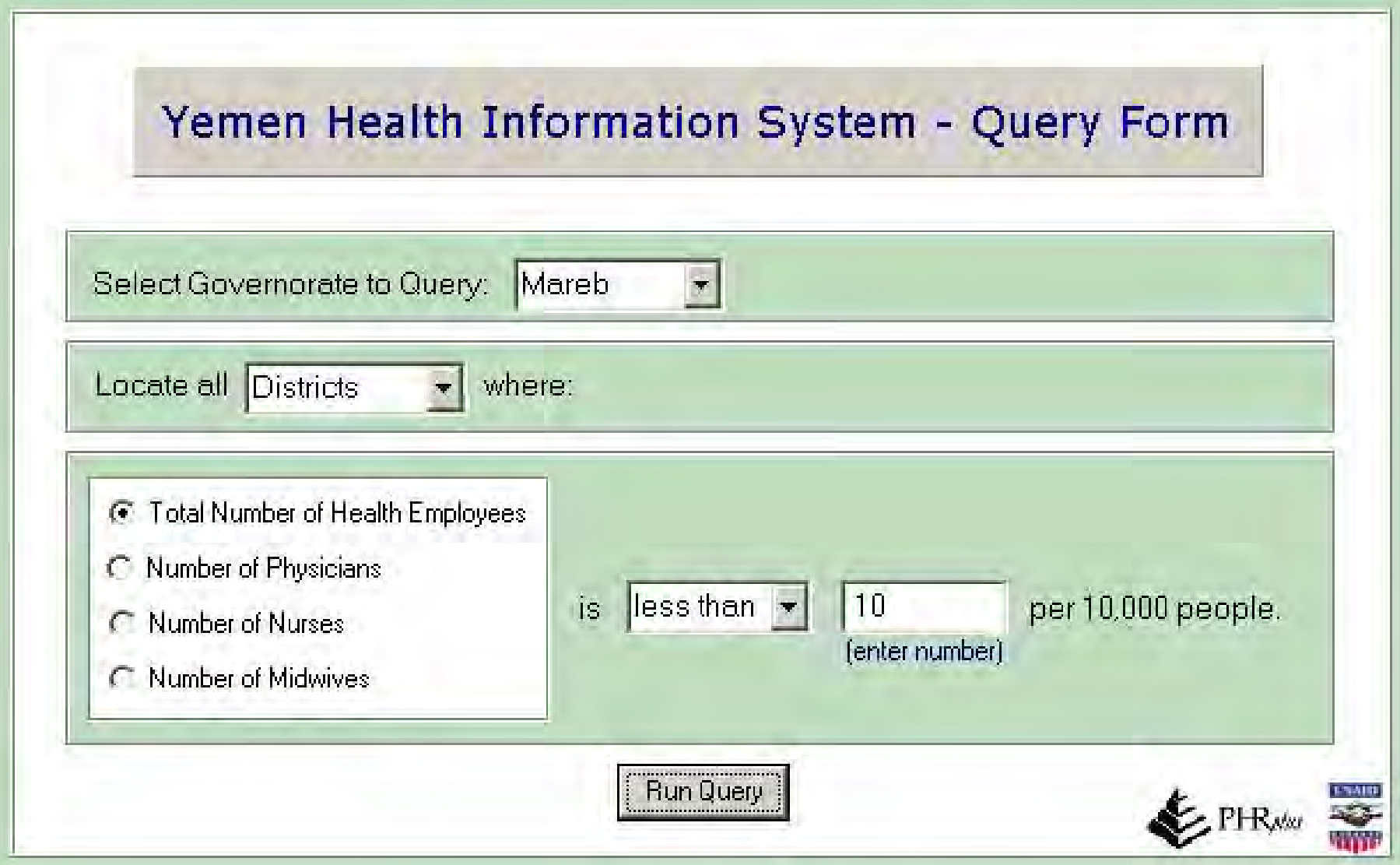
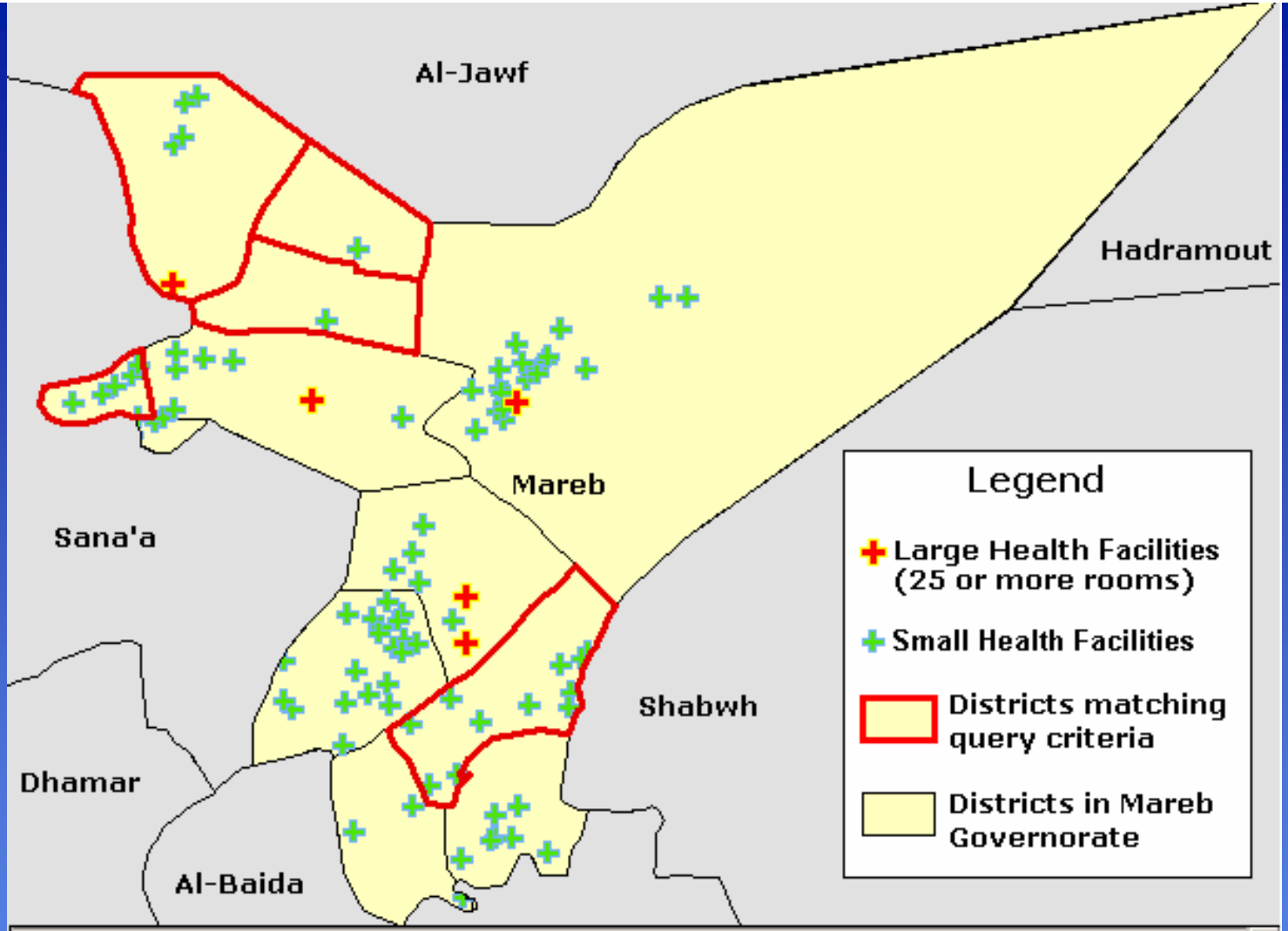
Targeting Program Interventions





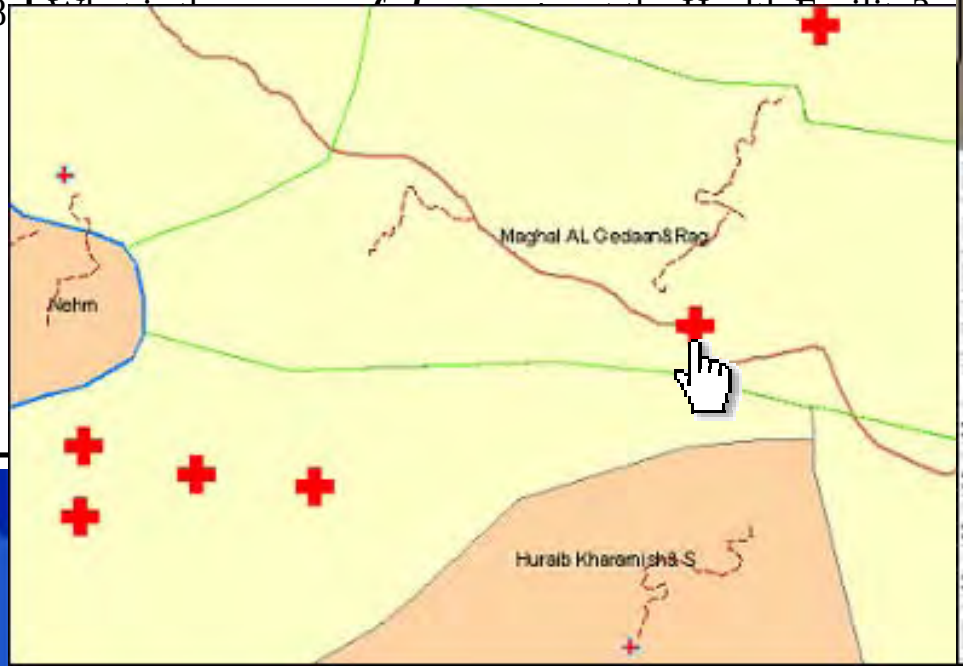
Selected?	Governorate	District	District ID	Population	Health Staff	Staff per 10,000
●	Mareb	Maghal Al Ge	1	9502	0	0.0
●	Mareb	Maghal Al Ge	2	7458	0	0.0
●	Mareb	Maghal Al Ge	3	8554	0	0.0
●	Mareb	Huraib Khara	4	13287	3	2.3
●	Mareb	Hareeb	10	21458	10	4.7
	Mareb	Huraib Khara	5	15846	16	10.1
	Mareb	Al Jubah&Rh	9	32440	33	10.2
	Mareb	Mareb	7	42357	49	11.6

Health Facility Inventory

27 What is the ***source of electricity*** at the Health Facility?
(*multiple answers permitted*)

	Source of electricity
1	Main network
2	Cooperative network
3	Private network
4	Generator
5	No electricity

28



Medghil Al-Jeda'an Health Center

Facility Name:	Medghil Al-Jeda'an
Governorate:	Mareb
Facility Type:	Health Center
Ownership:	Government
Year Opened:	1997
# of Staff:	8
# of Rooms:	11
# of Useable Toilets:	4
# of Telephone Lines:	1
Electricity Source:	Generator

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The Republic of Yemen

Ministry of Public Health & Population

Leading Yemen to Better Health, Safety and Well Being

التسوقـــع باللغـــة العربية

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Welcome

Our mission is to promote health and quality of life by preventing and controlling disease, injury, and disability.

Highlights

- MoPHP Announces **New Goals and Organizational Structure.** Learn more about the new health goals and integrated operations that will allow MoPHP to have a greater public health impact... more
- The **National Malaria Project** has reached out to thousands of children and prevented numerous malaria cases. Protect your child. Contact your local health clinic today... more
- **Childhood immunization rates** are steadily increasing with the implementation of the Extended Immunization Program. View the statistics by selected governorate... more

Minister of Health

Prof. Abdul-Nasser Ali Abdo Munaibari

Minister's Message

Internet

Overcoming Barriers

- Data collection can be an enormous undertaking
- Relying on existing data sources can be problematic

- Integrating data from a variety of sources often requires extensive efforts to clean and convert the data into a useable format.

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Potential Implications of Using Health GIS

- Reveals relationships and trends that might not be evident when the data is viewed in tabular format
- Innovative framework for accessing, integrating, visualizing and utilizing health data to inform decisions
- Illustrates evidence-based rationale
- Moves beyond basic mapping capabilities toward sophisticated, robust spatial analyses

PHRplus

Improving Health Care Systems Using Geographic Information Systems (GIS)

Mark Landry

Abt Associates Inc.

USAID

August 24, 2004

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