This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike License. Your use of this material constitutes acceptance of that license and the conditions of use of materials on this site.

Copyright 2009 The Johns Hopkins University and Abdullah Baqui. All rights reserved. Use of these materials permitted only in accordance with license rights granted. Materials provided “AS IS”; no representations or warranties provided. User assumes all responsibility for use, and all liability related thereto, and must independently review all materials for accuracy and efficacy. May contain materials owned by others. User is responsible for obtaining permissions for use from third parties as needed.
Selected Strategies to Improve Access to and Quality of Urban Primary Health Care

Abdullah Baqui, DrPH, MPH, MBBS
Johns Hopkins University
Section A

Lessons from the Application of Operations Research Methods to Improve the Delivery of Health Services in Dhaka, Bangladesh
What Is Operations Research?

- Systematic research to improve service delivery and influence related policies
- Operations research in health services identifies and solves programmatic problems
- Focuses on factors that are under the control of program managers
What Is Operations Research?

- Operations research is a continuous process with the following basic steps:
  - Problem identification and diagnosis
  - Strategy selection
  - Strategy experimentation and evaluation
  - Strategy adjustment
  - Re-evaluation
  - Information dissemination
  - Information utilization
Operation Research Flow Chart

- Problem identification
- Strategy selection
- Strategy evaluation
- Dissemination and utilization
- Dissemination and re-evaluation
- Dissemination and scaling-up
- Strategy adjustment
Case Study: OR Project in Dhaka

- A case study from an urban health and family planning OR project in Dhaka
Cities and towns in Bangladesh growing three times as fast as the country as a whole—at a rate of about 6 percent (vs. 2 percent)

In 2007, about 25 percent of the country's population lived in urban areas, compared to only 5 percent 30 years ago

During the same period, Dhaka's population increased from 0.5 million to more than 14 million

Currently, Dhaka is the eighth largest city in the world
Bangladesh—The Urban Challenge

- Dhaka is projected to become the second-largest city in the world by 2015, with an estimated population of about 20 million.

- A major consequence of this growth in Dhaka has been the rapid growth of slums and squatter settlements with poor health and living conditions.

- More than 30 percent of Dhaka's population live in slums, and about half of Dhaka’s population lives below the poverty line.
Bangladesh—Health Services in the Urban Setting

- Government of Bangladesh (GoB) has a comprehensive health infrastructure for the rural population.

- GoB's urban health services are limited to a few tertiary care hospitals, a number of dispensaries, EPI centers.

- NGOs and the private sector are the main health care providers in urban areas.

- The urban poor can’t afford good-quality private care.

- NGO services are selective and disjointed, creating gaps in coverage and quality.
The Urban Health Initiative

- A partnership among GoB, the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), and an NGO named Concerned Women for Family Planning (CWFP), funded by USAID

- Primary objective: develop a coordinated and cost-effective system for delivering maternal and child health and family planning (MCH-FP) services for the urban population, initially in Dhaka

- Methods
  - Needs assessments
  - Interventions and operations research
  - Population-based surveillance
  - Partnerships with NGOs and GoB
  - Initial experimentation in 1 out of 10 zones in Dhaka (Zone 3)
Needs Assessment—Objectives

- To identify community needs relating to MCH-FP services
- To identify areas requiring improvement
- To provide baseline information for the development and evaluation of interventions
Needs Assessment—Methods

- Population-based survey
- Assessment of MCH and FP service delivery points (clinics)
- Assessment of field workers’ performance
- Review of CWFP’s management information system
- Consultations with program managers and service providers
Needs Assessment—Selected Findings

- Zone 3 of Dhaka alone had ...
  - Thirty-six GoB and NGO facilities managed by two directorates of the ministry of health (MOH); Dhaka City Corporation (DCC) under another ministry
  - Three NGOs
  - More than 300 private practitioners
Needs Assessment—Selected Findings

- Coordination, communication, and referral among facilities are almost nonexistent

- Knowledge of service availability low
  - Twenty-five percent of non-FP clients knew FP was available
  - Twenty-five percent of non-EPI clients knew EPI was available

- Dhaka City Corporation should be coordinating and monitoring, but did not have the staff, skills, and resources
Needs Assessment—Selected Findings

- Most facilities in Zone 3 did not provide a package of essential services; only 1 out of 36 did

- Separate facilities for...
  - Family planning
  - Immunization
  - ANC, delivery care, PNC

- Overall greater emphasis on FP compared to MCH

- Quality of service not uniform
  - Standards/guidelines not followed
  - Client problems often not addressed
Needs Assessment—Source of Contraceptives

Data source:
Needs Assessment—Selected Findings

- Doorstep distribution of contraceptives in highly mobile urban areas was expensive and not very effective.

- Each field worker (FW) had to visit about 800 couples every two months; about 60 percent of these visits were for contraceptive re-supply only.

- Almost half of the pill and condom users obtained supplies from pharmacies, although FWs distribute these door to door free of charge.

- Injectable use in one slum area was substantially higher than in other areas, presumably due to well-located, fixed facilities.
## Needs Assessment—Field Worker Workload

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean number of eligible couples assigned</td>
<td>780</td>
</tr>
<tr>
<td>Mean number of planned visits in one day</td>
<td>25</td>
</tr>
<tr>
<td>Mean number of actual contacts in one day</td>
<td>15</td>
</tr>
<tr>
<td>Median duration of visit (minutes)</td>
<td>5</td>
</tr>
</tbody>
</table>
Needs Assessment—Quality of MCH-FP Services

- Quality of MCH-FP services provided in clinics
  - Contraception
    - None received standard screening
    - Side-effects explained to only about half the clients
  - Diarrhea management
    - None (children with diarrhea) examined for dehydration
    - Antibiotic prescribed even for non-bloody diarrhea
Needs Assessment—Quality of MCH-FP Services

- Quality of MCH-FP services provided
  - Acute respiratory infection (ARI) management
    - None examined according to guidelines
  - Antenatal care
    - Blood pressure measured: 8/20
    - Checked for edema: 4/20
    - Asked about vaginal bleeding: 0/20
    - Advice on nutrition given: 7/20
Interventions Design Workshop

- Two-day workshop of GoB, NGOs, and ICDDR,B
- Reviewed needs-assessment findings
- Eight interventions proposed and designed for testing
The Interventions—Preliminary List

- Planning and coordination of services
- Clinic information system
- Urban field-based information system
- Quality assurance for clinic services
- Quality assurance for community-based services
- Alternate service delivery strategies
- **Basic service package—clinic based**
- Basic service package—community based
Premise for a basic service package

- Fragmented, uneven services increase costs, create “missed opportunities”
- A public health service should provide a basic set of essential health services to address the most important health problems of the population
- The notion of “packaging” services relates to efficiency and cost of providing services, as well as client benefits
OR: Improving Service Mix and Quality

- Quality of basic health services
  - Quality of MCH-FP services from the urban facilities is inadequate and results in services of low effectiveness, which are also poorly utilized
  - Where national guidelines exist, these have not been adapted into service delivery protocols that are appropriate for the type of clinics and providers available at the urban primary care level
  - For some services, nationally recommended service delivery protocols are nonexistent, resulting in non-uniform standards of services
Objective of the intervention
- Expanding the range of services
- Adaptation and development of service delivery protocols
- Staff training
- Implementation and monitoring
OR: Improving Service Mix and Quality

- The design
  - Quasi-experimental
  - Intervention in three NGO and three GoB clinics
  - Two NGO and two GoB clinics served as comparison
  - Quantitative and qualitative methods used to collect data for evaluation
Research questions
- Did provider knowledge improve?
- Did provider practice improve?
- Extent of reduction of missed opportunities?
- Extent to which client expectations were met?
- What additional resources and support were required?
OR: Improving Service Mix and Quality

- Intervention inputs/components
  - Identification of components of service package
  - Adaptation/development of service delivery strategies
  - Staff training
  - Monitoring
Operations Research: Improving Provider Practices

- **Metronidazole for diarrhea**
  - Interv: 33%
  - Comp: 31%
- **Metronidazole for dysentery**
  - Interv: 83%
  - Comp: 84%
- **Cotrimoxazole for dysentery**
  - Interv: 68%
  - Comp: 11%
Key findings—provider perspectives

- Protocols were easy to follow, but ...
- Some doctors not fully convinced; e.g., preference for stethoscope rather than counting breaths
- More time was needed to follow the protocols
- Waiting time had increased
- Counseling perceived as time consuming and thus not always done
Key findings—packaging services

- Reduction in missed opportunities is an indicator that the “packaging” of services worked in ensuring that all clients coming to the clinics were screened and received all the services they needed, even if they came for a specific need.

- The evidence from the evaluation suggests that missed opportunities were only partially addressed—still occurred after intervention.
Operations Research: Lessons Learned

- Close coordination and partnership between program and research is critical, but requires effort and sensitivity

- Joint identification of research questions and design of interventions

- Researchers need to be acutely aware of and familiar with the environment, politics, and directions of the health sector
Design and execution requires care—quality of data has to be as good as that of clinical trials

Be ready for surprises—may not always achieve everything planned for
The operation research studies were small-scale, but provided programmatically important findings.

Over the last several years, the national public system (GoB and NGOs) has moved toward an essential service package and clinic-based services.

User fees are becoming increasingly common, USAID-supported NGO system now uses an adapted version of the client-based recordkeeping system.

OR can be a critical tool to improve access to essential health services by the urban poor.
Section B

Working with NGOs: Contracting Out Primary Health Care in Urban Areas
Challenges of Urban Primary Health Care (PHC)

- Difficult mix of rich, middle class, poor, and very poor
- Not all the poor live in “slums”
- Health service delivery in most urban areas is complex
  - Ministry of health
  - City governments/municipalities
  - NGOs
  - Large for-profit private sector—clinics and individual practitioners
- Often results in low coverage of PHC and poor health outcomes in the poorer areas, e.g., higher infant mortality rate (IMR) for the poor
How Should Health Services for the Poor Be Delivered?

- MOH-provided services: common in developing countries but actually fairly underdeveloped in urban areas

- NGO-driven services: NGOs/donors decide on area, services, and indicators for evaluation
  - Often seen in crisis
  - Often default mode for donors

- Private for-profit sector: often used even by the poor, questionable quality, often costly

- MOH-driven services: governments take on steward role in making services available, e.g., contracting with NGOs/private sector, but government decides on area, services, indicators
Risks/Benefits of MOH/Government Provision

- Large infrastructure already exists, although less in cities
- Has achieved reasonable results since the 1960s through expanded access
- Ensures continued public financing
- Poor track record in terms of effectiveness, equity, efficiency—especially since 1990
Risks/Benefits of NGO-Driven Approach

- Responds to community needs (NGO view)
- Familiar to donors
- Allows for innovation and advocacy
- Reduces direct service provision role of MOH
- Poor track record in improving services on a large scale (e.g., India)
- Financial sustainability?
- Hard to evaluate—limits accountability
- Inefficient use of resources continues
- Capacity of NGOs to expand unknown
Risks/Benefits of Private Provision

- Often providing 80 percent of out-patient care, even among the poor
- Treat people (customers) well
- Limited regulation
- Costly to the poor, although significant market segmentation
- Quality of care variable
Risks/Benefits of MOH-Driven Approach

- MOH maintains stewardship role
- Contracts services to NGO/private sector
- Likely to successfully and rapidly expand services based on previous experiences
- Rationalizes services
- Allows for innovation
- Capacity of NGOs sometimes questionable
- Capacity of MOH to implement contracts often weak
- Approach unfamiliar for MOH and NGOs
Methodology of Review

- Searched for examples of explicit contracts (not grants) with non-government entities (NGEs) to deliver non-hospital services, e.g., PHC and nutrition

- Used personal networks, prior reviews, computerized literature searches

- Included examples had to have some coherent form of evaluation, at least before and after

- Interviewed or sent questionnaires to people with personal knowledge of examples
Results of the Review

- Fifteen studies were found from a variety of countries and settings, all found positive results.

- The most rigorously evaluated cases tended to display the largest effects.

- In six studies where it was possible to compare, NGEs performed better than governments.

- In four studies with controlled, before and after design, the median difference between intervention and control areas ranged from 9 to 26 percentage points.
Thirty years of conflict left Cambodia with almost no health infrastructure—lacked both physical infrastructure and human resources.

- Morale among health staff was low (earned about $15 per month)
- Poor-quality district management
- Public annual expenditure was less than $2 per capita, but private expenditure was much higher
## Results of Two National Health Surveys

<table>
<thead>
<tr>
<th>Indicators</th>
<th>NHS—1998</th>
<th>CDHS—2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPI coverage, 12-23 months fully immunized</td>
<td>38%</td>
<td>39%</td>
</tr>
<tr>
<td>TT2+ coverage</td>
<td>19%</td>
<td>28%</td>
</tr>
<tr>
<td>Antenatal care, 2+ visits</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>CPR, modern methods</td>
<td>16%</td>
<td>19%</td>
</tr>
<tr>
<td>Delivery by skilled provider</td>
<td>31%</td>
<td>28%</td>
</tr>
<tr>
<td>Delivery at health facility</td>
<td>7%</td>
<td>6%</td>
</tr>
</tbody>
</table>
Response of the Government

- Devised a health coverage plan to increase physical infrastructure, HCs for each 10,000 population, strengthened district hospitals

- Developed a “minimum package of services” (MPA) that included preventive, promotive, and basic curative services

- Carried out an experiment of contracting with NGOs to manage district health services using funds from the Asian Development Bank (ADB)
Different Approaches to Contracting

- Contracting out (CO): NGO can hire and fire, transfer staff, set wages, procure drugs, etc., organize and staff facilities

- Contracting in (CI): NGO manages district within MOH, cannot hire and fire, can request transfer, obtain drugs from MOH, $0.25 per capita budget supplement

- Control/comparison (CC): services run by DHMT, $0.25 per capita budget supplement, technical assistance (TA) and training provided to the district health management team (DHMT)
Models for Contracting

MOH

Provider
NGO

MOH Personnel
NGO Managed

MOH Providers

Basic Services

Basic Services

Basic Services
Methodology Used to Evaluate Contracting with NGOs

- Twelve districts (100,000-180,000 population each) randomly assigned to contracting approach CO, CI, or CC

- Before and after household and health facility surveys carried out by third party

- Household survey (N = 450 households per district) divided into poor/non-poor based on housing characteristics
Use of Facilities by Poor People Sick in Last Month (%)
Change in Key Indicators

- Follow-up compared to baseline, percentage points

![Bar chart showing changes in key indicators with categories ANC, TT2+, HF del., Birth spacing, EPI, FIC, Vit. A, Utilization, and color-coded bars for Control, CI, and CO.]
Quality of Care Evaluations, Percent of Maximum Score

- Control
- CI
- CO

Health centers
Annual Per Capita Expenditures on Health Care ($)

![Bar Chart]

- **Control**: 24.99
- **CI**: 23.56
- **CO**: 18.17

Legend:
- Out-of-pocket
- Gov’t/donor/NGO

Total:
- **Control**: 26.85
- **CI**: 26.38
- **CO**: 22.62
Out-of-Pocket Health Expenditures among the Poor

- Percent change in out-of-pocket (OOP) health expenditures among the poor
Conclusions

- In a real world setting, CO did better than CI; but both were better than the control!
- CO was cost-effective and least costly to society as a whole
- Large improvements seen fairly quickly
- Possible to rigorously evaluate this kind of system intervention
As in most other large urban settings, health service delivery in Bangladesh is complex
- NGOs—patchwork of clinics and outreach
- Ministry of Health and Family Welfare (MOHFW) clinics—limited
- City corps.—limited number, little outreach
- For-profit private sector—clinics and individuals

Resulted in poor coverage of PHC, e.g., Expanded Programme on Immunization (EPI) and family planning (FP), particularly for the poor; higher IMR, under-five mortality rate, and lower CPR
Contract with NGOs to deliver PHC services to geographically defined areas

Parts of the four cities divided into PAAs

Five to seven health centers constructed per PAA

One very large PAA given to municipality to run itself (government-provision) with 21 centers

Baseline household and health facility surveys carried out

Ongoing facility survey conducted
Availability of Services

- Percent of outreach sites—baseline and mid-term

![Bar Chart]

- FP baseline: NGOs (n = 34), CCC (n = 521)
- FP mid-term: NGOs (n = 34), CCC (n = 521)
- Vit. A baseline: NGOs (n = 34), CCC (n = 521)
- Vit. A mid-term: NGOs (n = 34), CCC (n = 521)
- EPI baseline: NGOs (n = 34), CCC (n = 521)
- EPI mid-term: NGOs (n = 34), CCC (n = 521)
Quality of Care, Percent of Patients

- Assessment
- Prescription
- Waiting time ok
Conclusions about Contracting with NGOs

- Contracting with NGOs for PHC appears to be a successful way of improving access to service delivery.

- Little is known of the effect of contracting on other performance such as equity, quality, and efficiency.

- Results in different settings point in the same direction, although there remains some room for legitimate skepticism.
Take Home Messages

- It’s worth trying to contract! Not just a far-fetched idea. May make a real difference in achieving Millennium Development Goals (MDGs).

- Evaluate—debate on contracting should be decided by evidence, not eminence
  - Evidence is good, but not great—better than other interventions though

- Practical issues will determine success! Need to pay attention to contract design and management.
Challenges

- There’s much to learn about ...
  - Contract design and management
  - Approaches to bidding, setting prices
  - Ensuring increased equity

- Other challenges
  - Getting governments to try contracting
  - Overcoming vested interests and fear of innovation