URBAN HEALTH
Symposium | taking action for healthy cities in Bangladesh

22-23 November 2013   PKSF, Agargaon, Dhaka

Full Report

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Executive Summary

The challenges facing Bangladesh are well documented: climate change, widespread poverty, overpopulation, and egregious working conditions are but a few. As suggested by the 2013 Lancet country series on Bangladesh, the country's recent successes have worked to dispel its reputation as a "basket case". Examples of innovation, resilience and achievement vie against those of destitution and corruption. Both education and health indicators have risen steadily since independence, with several MDGs already achieved and a growing economy pushing Bangladesh into the ranks of middle-income countries.

Bangladesh's changing identity includes a shift from a country that was largely rural and agrarian to a country of city-dwellers. By mid-century, over 50% of the population will live in urban areas. This moment in time is critical, as Bangladesh sits on the cusp of this transformation from a rural majority to an urban majority. Bangladesh's many and growing cities can be epicentres for positive urban development. It is time to take stock of lessons from Bangladesh's largely rural successes, as well as global experiences in promoting healthy cities, and mobilize an agenda for healthy urbanization. Recognizing this moment, icddr,b, the Bangladesh Urban Health Network, BRAC Institute of Global Health and Eminence organized the Urban Health Symposium, with the generous support of GIZ and IDRC.

"Not doom and gloom, but boom and bloom"

Professor Kazi Ashraf (symposium speaker)

The Urban Health Symposium, which took place on the 22-23rd of November 2013 in Dhaka, provided a platform for international, national and regional policy makers, practitioners, engineers and academics to share their experiences, exchange ideas and explore avenues to improve the state of urban health in Bangladesh. The objectives of the symposium were:

1. to raise awareness about urban health and the health equity consequences of current policies and practices in different sectors;
2. to stimulate dialogue and problem-solving about how to move towards healthy public policy and practice; and
3. to initiate collective thinking about the post 2015 agenda and the promotion of healthy cities in Bangladesh.

The symposium programme featured keynote speakers, breakout sessions, video presentations, a poster competition and an interactive call-to-action finale. Over 75 national and international speakers and panel members, contributed to the programme. The diverse audience ranged from government officials, corporate representatives, NGO workers, donors, academics, students and interested individuals.

The consensus of the symposium is that healthy, inclusive cities in Bangladesh require multi-disciplinary action and committed collaboration. Lessons from other nations grappling with urbanization, as well as from Bangladesh, can illuminate the path forward. Bangladesh is well-placed to take a healthy cities agenda forward: there is now a positive policy environment with a return to relative political stability, innovations are already happening that can be harvested, and the negative implications of unplanned urbanization are being recognized nationally. There are also challenges. Priority actions require different levels of collaboration between vertical ministries for which institutional structures and mechanisms do not exist. Further, Bangladesh's health challenges include historically critical areas, such as infectious disease control and environmental health and nutrition, as well as "newer" problems, such as Non-Communicable Diseases (NCDs). The Symposium's 'call to action' builds on Bangladesh's advantages and begins to chip away at the challenges.

Photo: Thomas Kelly

Call to action

1. Enable community engagement

- Strengthen the voice of the urban poor in local and national governance to ensure attention to issues of tenure security, equity in access to basic services, and social protection.
- Redouble efforts of civil society in holding urban stakeholders accountable, and ensuring that the urban development agenda gives priority to the needs of the most disadvantaged, is environmentally sensitive and sustainable, and promotive of population health.

2. Expand health services offered

- 'Urban primary healthcare' must include services beyond Maternal Newborn and Child Health (MNCH) such as nutrition and NCDs .
- Health services should be offered in a coordinated manner to facilitate access through the use of shared information systems and development, and scale-up of health insurance mechanisms.
- Specific focus is needed on adolescents and the working poor (i.e. nutrition and affordable after hours services).

3. Harvest innovative approaches from the field

- Promote the use of the Health Equity and Assessment Response Tool (HEART) in urban areas to help identify evidence-based approaches to address health inequities.
- Adapt successful innovations from rural MNCH programmes for the urban setting.
- Learn from global evidence-based solutions in the areas of NCD prevention, traffic management and ecological urban development.

4. Sharpen focus beyond "health"

- Advocate for and support efforts around social protection and provision of health insurance, with attention to the disadvantaged urban populations.

- Give greater consideration to gender-based violence in policy and programme implementation.
- Invest in the development of sustainable water and sanitation solutions.

5. Think beyond Dhaka
- Invest in developing secondary cities (as decentralized economic centres).
- Improve health programming and living standards in other cities to improve quality of life, and reduce migration to Dhaka City.

6. Ensure collaborative efforts between urban stakeholders
- Create a coordinating body to promote collaboration between private, NGO, municipal and national sectors to address urban health and health-related needs.
- Involve multiple ministries in sustainable urban health planning, with strong coordination and leadership by the Ministry of Local Government Rural Development and Co-operatives (MLGRDC), and involvement of other stakeholders including civil society and the private sector.

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The Urban Health Symposium:

Taking action for healthy cities in Bangladesh

Background

The purpose of this report

This report documents the proceedings of the Urban Health Symposium which took place on the 22-23rd of November 2013 at PKSF, Agargaon in Dhaka. Distilling the wide-ranging discussions, debates and dreams shared in panels and specialized sessions over the two day event, it serves to inform an emerging agenda for action on how to tackle urban challenges at policy, programme, and community levels.

Supported by GIZ and IDRC, the event and the production of this report was a collaborative effort involving the Centre for Equity and Health Systems, icddr,b; James P. Grant School of Public Health, BRAC Institute of Global Health, BRAC University; Eminence Associates for Social Development; and the Bangladesh Urban Health Network.

Why an Urban Health Symposium?

Bangladesh is urbanizing rapidly. According to the most recent national census, 30% of the country's population of almost 150 million live in cities. By mid-century the urban population will swell to 50% of the national total due to natural increase, incorporation of surrounding rural areas, and rural-to-urban migration provoked by climate change, natural disaster, and economic pull factors. Most of this growth will concentrate in poor urban settlements that already comprise one third of the urban population. While cities and municipalities are increasing in size and number throughout the country, Dhaka's growth is perhaps the most alarming, rapidly overwhelming its capacity to regulate, plan or provide basic services. The benefits and efficiencies of concentrated urban living are often extolled, but are quickly eclipsed by gridlock traffic, crime and insecurity, dilapidated infrastructure and overextended services when unplanned growth occurs. An unhealthy city cannot be productive in the long run.

URBAN HEALTH Symposium

OBJECTIVES

1. To raise awareness about urban health and health inequity consequences of current policies and practices in different sectors in Bangladesh.

2. Stimulate dialogue and problem-solving about how to move towards healthy public policy and practice in Bangladesh.

3. Initiate collective thinking about the post 2015 agenda and the promotion of healthy cities in Bangladesh.

Despite the challenges posed by the fast pace of urbanization and related impacts on health and the environment, institutional structures have failed to adapt, and continue to reflect the country's rural and agricultural legacies. Widespread corruption and profiteering associated with unplanned urban development have discouraged attention to critical structural reforms. While inter-sectoral planning and coordination between government, NGOs and the private sector is critical to ensuring the provision of basic services and infrastructure essential to quality of life, there are no functional institutions that facilitate such collaboration. Poor urban dwellers are among those most affected by the lack of clarity on institutional responsibility for urban health and the provision of basic rights and services including water, health, education and housing. Inadequate regulatory mechanisms and gaps in public services have made space for the explosive growth of the formal and informal private sectors, and insufficient attention to issues of quality, equity or sustainability.

An unhealthy city cannot be productive in the long run.

Alayne M. Adams, icddr,b

The health risks of unsafe housing, air and water pollution, pedestrian road accidents and inadequate sanitation further undermine the well-being of city dwellers. These environmental health risks are particularly pertinent for residents of urban slums who constitute the backbone of the urban workforce, and whose lack of tenancy security often precludes investment in basic services like water and sanitation. Beyond the slum, the voracious appetite of developers goes unchecked, with little or no priority given to green space, or the development and upkeep of civic facilities that allow urban citizens quality of life.

An opportunity for collective problem-solving and action:
In response to these challenges, the Symposium focused on a the post (MDG) 2015 development agenda highlighting the imperative of inter-sectoral action around governance, universal health coverage, growth and employment, and water and environmental sustainability, all of which powerfully intersect in the urban space. By creating a common understanding of the health and health equity consequences of existing policy and practices, we aimed to stimulate dialogue and problem-solving amongst participants, and to contribute towards the formulation and implementation of policies and interventions that promote healthy cities in Bangladesh.

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Who attended the event?

The Symposium brought together a large and diverse audience (500 people on Day 1 and 300 on Day 2) including policy makers, government officials, corporate representatives, NGO workers, donor agencies, academics, students, and industry engineers, all committed to making Bangladesh's cities healthy and productive. Over 75 leaders in fields impacting urban health, such as health systems, migration, climate change, water and sanitation, housing and the environment, contributed to the programme. We heard from those working at the cutting edge of efforts to enhance healthy urban development in the South Asia region and globally, as well as innovators working on the front lines of Bangladeshi policy and practice.

Plenary Sessions

The first day of the symposium included two plenary sessions, each featuring a mixture of prominent local experts and international guests. Both plenary sessions were designed to reflect global to local perspectives, and to consider urban health and well-being in its broadest conception – not just as health care, but rather as the complex outcome of many factors ranging from the built environment, the safety of workers, the mobilized community, strong leadership and many others. The theme of sustainable and inter-dependent strategies, and the imperative of political will and civic commitment and energy to make these strategies happen echoed across presentations.

Plenary 1: Healthy Cities: What Does This Mean for Bangladesh?

Chair: Dr Ahmed Mushtaque Raza Chowdhury - *Vice Chair, BRAC*

Panellists:
Global perspectives on urbanization and healthy cities
Dr. Godelieve van Heteren - *Director, Rotterdam Global Health Initiative, Erasmus University*
Urbanization in Bangladesh: challenges and opportunities
Prof. Nazrul Islam - *Chairman, Centre for Urban Studies*
Visioning a healthy Dhaka
Prof. Kazi K. Ashraf - *School of Architecture, University of Hawaii*

Healthy Cities: What Does This Mean for Bangladesh?' featured three presentations. The panel was comprised of a former politician and now global health activist, Dr. Godelieve van Heteren, Bangladesh's urban sociologist Professor Nazrul Islam and architect and author of Designing Dhaka, Professor Kazi Ashraf.

Global perspectives on urbanization and healthy cities: Dr. van Heteren emphasized that in order for urban health to improve, we must have the "will to face, adapt to or change socio-economic and cultural realities in and around urban zones", while also considering the issues of equal access to services to promote equity. The presentation laid out lessons from urbanization in Europe.

- The relationship between the urban environment and health is well established (i.e. the sanitary movement in 19th Century Europe) as is the association between social and economic conditions, governance and individual health outcomes.
- Contemporary concerns about urbanization and health are far more complex due to the multitude of voices, interests and demands that must be heard and strategized.
- Interesting models to address urban health include The Healthy Cities Movement, a global approach that involves city or municipal government in health development.

- The WHO Kobe Centre, which plays a key role in monitoring and mapping urban health indicators, is promoting use of the Health Equity and Assessment Response Tool (HEART) in urban areas, a method for identifying evidence-based approaches to address urban health inequities.

Urbanization in Bangladesh: challenges and opportunities: Professor Islam outlined Bangladesh's history of urbanisation, and its consequences for health and well-being of urban population. These include:

- Challenges in providing adequate employment for arriving rural to urban migrants
- Poverty alleviation
- The provision of affordable housing
- Inadequate inter- and intra-city transportation
- Poorly managed and over-stretched basic services
- Environmental degradation
- Crime and political violence
- Inadequate capacity and resources within government.

He also noted opportunities associated with urbanization:

- Potential for substantial economic growth due to expansion of the garments and pharmaceutical industries and increasing demand from the rising middle class.
- Population density translates into per-capita savings for infrastructural development.
- A young, energetic and educated younger generation whose creativity and passion can be harnessed to improve the urban environment.

While it is important for us to engage in global discourse, and learn from lessons elsewhere, he emphasized the need for local solutions. Advocacy and implementation efforts need to come from within.

Visioning a healthy Dhaka: Author of Designing Dhaka: *a manifesto for a better city*, Professor Ashraf reminded us that the city is an ecological system, with a corresponding geological footprint and environmental effects. He emphasized the importance of imagination and new narratives in efforts to make our cities healthier. Conceptualizing Dhaka city as an island, urban planning must take into account the city's 'liquid landscape' in order to:

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- Promote healthy ecological development
- Improve access to clean water and good sanitation
- Ensure resilience against flooding and minimize the health impacts.

Plenary 2: Governance for Urban Health: Promising Ways Forward

Chair: Mr. DK Nath – *Consultant, Urban Health, Bangladesh Resident Mission, Asian Development Bank*
Co-chair: Zuena Aziz – *Additional Secretary, Ministry of LGRD & Cooperatives*

Panellists:
Global governance for urban health
Anthony Kolb – *Urban Health Advisor, USAID*
The political and policy context of urban health in Bangladesh
Dr. Hossain Zillur Rahman – *Former Advisor to the Caretaker Government – Economist & Sociologist*
Promoting community participation and linkages: improving urban health governance and reducing urban poverty
Kishore Kumar Singh – *International Poverty Reduction Specialist, UPPR*
Working for the health of the urban poor
Dr. Selina Hayat Ivy – *Mayor of Narayanganj (via video)*

Global governance for urban health:
Kolb reminded the audience that the discourse around urban health and poverty is not only about urban slums. Urban poverty is found beyond slums and thus efforts to impact urban health must consider different strategies for different vulnerable populations. He offered several suggestions for improved urban governance in health:

- Proactive leverage of the private sector
- Strengthen municipal and national leadership to bring health and other critical sectors together in ways that make cities healthier
- Map population and health differences in urban areas to ensure policy that recognizes variation across the urban poor
- Tailor interventions to meet the needs of communities

The political and policy context of urban health in Bangladesh:
Hossain Zillur Rahman, sociologist and economist, laid out characteristics of urban development that make it different from the rural experience, and noted the importance of:

- Strong advocacy for the health of the urban poor
- Consideration of work safety/labour regulations
- Population density management
- Strong collaboration across sectors to bring the policy issues to the forefront of discussions

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Given the lack of policy priority accorded to urban health, he suggested several entry points to get it on the policy agenda such as engaging municipal associations as advocates for change at central levels, or focusing on interventions with less obvious connections to urban health but with important larger impacts such as efforts to tackle health out-of-pocket expenditure or to increase age of marriage.

Promoting community participation and linkages:

Improving urban health governance and reducing urban poverty: Kishore Singh described the deplorable living conditions of urban poor in Bangladesh, citing that up to one third of Dhaka and Chittagong slum inhabitants are sick at any one time. He went on to describe the UPPR model of community-led poverty alleviation which aims to improve the livelihoods and living conditions of three million urban poor and extreme poor in poor urban settlements throughout the country. UPPR's approach focuses on:

- Strengthening community voice in local governance
- Improving community capacity to identify local problems and organize to address them
- Promoting partnership to enable community action and increase community access to resources

Working for the health of the urban poor:

Dr. Ivy, Mayor of Narayanganj, reflected on the city's recent transition from a rural district to a city. The presentation, delivered by video, focused on the challenges of urban health delivery from the perspective of governance. These challenges include:

- Ensuring communication between local and national government
- Monitoring quality, particularly in the large private sector
- Limited opportunity for cross-sectoral planning and collaboration in a vertical system

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Photograph: Thomas Kelly

Plenary 3: Innovations in Urban Settings: How Can We Improve Health Equity in Our Cities

Chair: Shahana Siddiqui - *Community Facilitation Coordinator, UNDP*

The video plenary showcased innovative work by individuals and organisations to improve the living environment, health and wellbeing of the urban poor in Bangladesh. The session featured seven videos and a presentation, which were sourced through submissions to the "Digital storytelling" stream of the symposium, as well as a targeted search. Shahana Siddiqui from UNDP facilitated the session.

JAAGO Foundation

A representative from the JAAGO Foundation explained how the organization is providing quality education for children from socially and economically disadvantaged backgrounds in the urban settings. Their achievements include free-of-cost schooling for underprivileged children, moving to International Standard Education (currently provided to 1400 children), and an online school, which provides real-time teaching between a city-based teacher and a class of students in a rural area.

Disgust box: a novel approach to changing behaviour around water purification

This brief film described how delivering culturally appropriate and acceptable messages promotes the use of local water treatment methods in the urban slums of Bangladesh. In this intervention, a demonstration of a 'disgust box' in communities was performed – showing how faeces enter

the water supply of communities through a series of visual and graphic steps. This demonstration showed communities how the appearance of water can be deceiving; even clean looking water can be contaminated with dirt, bacteria and faeces.

Zimba: an automated chlorine dispenser for treating unsafe water in urban slums
This video described a simple, automated method to treat household water in slum communities. Invented by Mr. Suprio Das, the ZIMBA system can chlorinate thousands of litres of water automatically at their share water point without the help of electricity, and with no moving parts that require repair or replacement. Minimal behaviour change is required from the community to treat water compared to methods that require households to add a new task when collecting water. Dr. Das and his team report that E. coli contamination in drinking water was successfully reduced by using ZIMBA.

Health Prior 21.com: an online health solution
This film presented the work of healthprior21.com, a health portal that provides online health services to the patients. The availability of online services addresses the health needs of people living in urban areas who are discouraged in seeking care due to lack of time, traffic congestion, inability to get a doctor's appointment, and shyness in sharing sexual and mental concerns during face to face doctors' consultations etc. Services provided by healthprior21.com include e-Doctor, e-Library, e-Prescription, e-Store, and a drug index.
For more information see: http://www.healthprior21.com/

The Urban Health Atlas: a tool for health service planning and referral
Data visualization is a powerful way to simplify complexity –where digital technologies are used to display data in a way that allows the human eye to identify patterns, trends or distributions. This video highlighted "The Urban Health Atlas", a data visualization tool developed by the Centre for Equity and Health Systems of icddr,b. This searchable map represents an innovative technology for health system planning and referral, showing the locations and detailed information about all formal and informal health facilities/providers on a city map.
The urban health atlas is accessible at: http://urbanhealthfacilities.icddrb.org/sylhet/

Safe Beginnings: BRAC's Manoshi Programme
This short film focused on Manoshi, BRAC's programme for improving pregnancy and delivery outcomes in Bangladesh's urban slums. It showed how the Manoshi programme, with the help of BRAC's community health workers, assists pregnant mothers in taking best possible care of themselves during pregnancy, provides facilities for a safe delivery, and gives support during breastfeeding. The programme has worked hard to build trust with the community, and has helped to reduce the maternal mortality in Bangladeshi slums by more than half in (135 per 100,000 births from 294 per 100,000 births) in 5 years. The film is found online: http://www.youtube.com/watch?v=EjuFJKYYj0o

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CRP's Emergency Bicycle Trailer

This video presented a newly developed stretcher trailer that attaches to a standard bicycle using a simple and secure bolt. The stretcher fits firmly on to the trailer and is cushioned either side for patient comfort, and helps transport patients who live in areas that are inaccessible using motorized vehicles, such as urban slums and rural locations lacking road networks. Further information is found on CRP's website: www.crp-bangladesh.org.

City of Dreams

This crowd-sourced video was prepared by Eminence using smart phones. It featured children from poor urban settings talking about their dreams of a better city for the future. Their dreams were to have clean roads to play in, safe food (free from formalin and chemicals), clean water, playgrounds, safe footpaths etc. The Bangladesh Urban Health Network believes these dreams can be transformed into reality by the work they are doing in the urban space and through advocacy to the respective authorities.

Breakout Sessions

Climate Change and Disaster

Chair
Dr. Peter Kim Streatfield – *Director, Centre for Population, Urbanization & Climate Change, icddr,b*

Panellists:
Mr.Nandan Mukherjee – *Programme Manager of Centre for Climate Change & Environmental Research, BRAC University*
Lusana Masrur – *Senior Sector Specialist, Disaster Environment & Climate Change, BRAC*
Dr. Aminul Islam – *Assistant Country Director, UNDP*

Format:
Brief presentation by the Chair, followed by a moderated Q&A session.

The session started with a presentation by chair-person Dr. Peter Kim Streatfield on climate change and disaster management as well as its impact nationally and globally. The overview included a history of climate change and disasters in Bangladesh and their impact on urban areas. Mr. Mukherjee spoke in greater detail on the effect of climate change on urban Bangladesh:

> *Urban areas in Bangladesh will confront more extended flooding.*
>
> IPCC (Intergovernmental Panel on Climate Change) 5th Assessment Report projects.

- Insufficient preparation for disasters such as flooding, earthquakes, and heat waves, puts large populations in urban areas at risk.
- There is a direct relationship between unplanned urbanization and the impact climate change may have. For example, with urban development, natural drainage systems are blocked, leading to water logging in the event of heavy rainfall.
- Increased temperatures threaten food safety, encouraging bacterial and fungal growth.
- High temperatures lead to increased temporal dimensions of vector borne diseases, especially dengue and malaria.

Lusana Masrur discussed approaches to prevent and reduce the impacts of climate change in the city:

- As sea levels rise and flooding increases in coastal areas, populations in cities are likely to increase.

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- Insufficient access to water, electricity and gas make urban populations vulnerable to the impact of further disaster-related shortages.

Dr. Aminul Islam from UNDP described the impact of increased salinity in fresh water in Bangladesh. Salinity in water is likely to increase as sea levels rise. Dr. Islam noted that increasing salinity is associated with human behaviour and climate change:

- Fresh water comes from upstream pushing the saline seawater back to the sea. If upstream water decreases due to man-made structures such as dams, it will lose the ability to push back the saline water.
- With rising sea levels due to climate change, there is a risk of direct inundation as well as increased salinity of the rivers, with consequences for crop growth, fisheries, and safe water supply.

Open discussion: Some other important key points and issues were discussed in the session:

- During catastrophes, basic support services may break down, resulting in increasing migration into cities.
- Migration will continue in Bangladesh, however, "forced" migration due to climate change cannot be seen as an adaptation technique.
- Slum populations represent one third of the urban population. However, this population lacks legal footing and therefore does not have access to all basic services. Access will be further compromised by natural disasters. Government may resist improving access to services and infrastructure for the urban poor, fearing that it would attract urban migration.

Priority actions for climate change and disasters

- Increase adaptation capacity of vulnerable populations in their localities.
- Integrate climate change and disaster risk reduction policies for the poor into the health system, and urban planning and management.
- Increase coordination between ministries during the disaster / post-disaster period.
- Undertake an Urban Planning Exercise to better prepare populations for disasters.
- Better enforcement of environmental protection regulations and building codes.
- Better national surveillance systems needed:
  - Climate change indicator data
  - Migration and climate refugees
  - Urban health surveillance, with particular attention on migrants

Photo: Thomas Kelly

Waste and Water Pollution

Chair:
Dr. Mihir Kanti Majumdar – *Dialogue Advisor, Ecosystems for Life, IUCN Bangladesh*

Panellists:
Dr.Khairul Islam – *Country Representative, Wateraid*
Mr. Andrew Jenkins – *Coordinator, Impact Assessment Unit, Research and Evaluation Division, BRAC*
Mr. K M Nurul Huda – *Managing Director, Bangladesh Municipal Development Fund*

Format:
Presentations with a Q&A session

Dr. Khairul Islam noted that the most important causes of pollution in the rivers surrounding Dhaka are industrial and domestic waste, although human waste is also known to be a major contributor.

Rather than turning water bodies into massive drains and sewage systems, Dr. Islam suggested that a better approach would be to recycle nutrient value available in faecal matter into nature in the form of fertilizer:

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- Bangladesh currently uses 3.5 million metric tons of fertilizer per year and receives a generous government subsidy of almost 18 BDT per kilo.
- Wateraid has calculated that if faecal matter was recycled, Bangladesh could produce almost 3 million metric ton of organic fertilizer per year and subsequently save up to 54 million BDT per year.

Drawing on the experience of NGOs in faecal sludge management, it is possible to successfully capture and utilize energy derived from faecal matter. Dr. Islam closed by emphasizing the importance of promoting urban policies and strategies to improve sanitation in urban Bangladesh. Mr. Jenkins' presentation also covered safe water.

Dhaka WASA is coping with ever-increasing demands for water in the capital. The essence of the water problem in Bangladesh lies in excessive reliance on groundwater to supply the increasing urban population. According to Mr. Jenkins, there is enough surface water in existing water systems to supply the country indefinitely; however this water is highly polluted.

Figure 1

QUICK SOLUTIONS

Implemented by WASA: by using non-functioning tube wells (because the water table has dropped too far); we can collect rainwater on roofs and use them to recharge the aquifer directly.

Schematic diagram of artificial recharge by rainwater from roof top
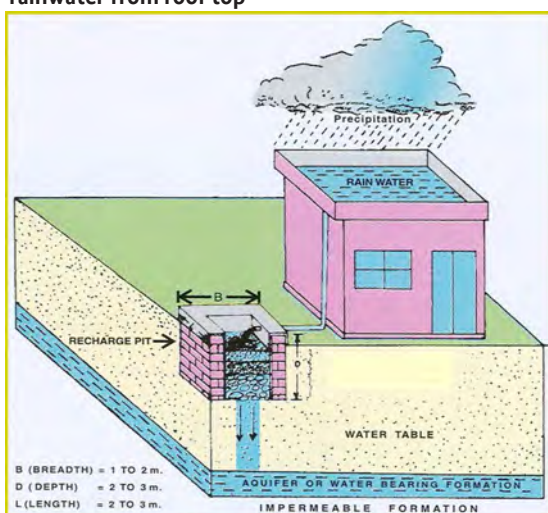
To replenish the groundwater depletion and to avoid hazardous consequence artificial recharge from rainwater is a good option

Hatirjheel: this solution, while far from perfect, is a big step forward for conserving water bodies, managing the system in a constructive way, preventing encroachment, improving groundwater recharge and reducing flooding.

This situation was illustrated with the use of a pie graph which showed that currently 87% of water used in Dhaka was from groundwater while only 13% was from surface water treated in water treatment plants in Chadnighat and Saidabad.

With rapid population growth, it will become increasingly difficult to meet the demand for water using tube wells. Many existing tube wells are becoming unusable due to lack of maintenance and a decreasing water table. Presently, extraction of water is greater than the groundwater recharge process, which is causing rapid reductions in the depth of the water table (2-3 meters per year). Additional challenges include a growing number of extractions each year, and the illegal filling of water bodies which prevents natural groundwater recharge. Industrial waste is also contributing to a decline in safe water supply. Many industrial units have invested in cheap water treatment plants to satisfy international buyers, however high running costs often result in their irregular use.

Mr. Jenkins concluded by suggesting several low cost options to increase the supply of safe water such as rainwater harvesting, construction of reservoirs and the regeneration of deep tube wells while promoting groundwater recharge.

Mr. Huda outlined approaches for waste management. He showed images of trash trucks, clogged canals, small children sorting through waste and unsanitary landfills, calling these *"obnoxious solutions"*. More principled actions were suggested:

- Many of the environmental and ecological problems caused by solid waste dumping could be solved if waste was separated at the source (in homes, shops, industries, hospitals, etc) and landfills were created and managed in a hygienic and appropriate manner.
- Citizens can contribute to the solution by cooking with Biogas and composting.
- Government or private sector can contribute through creation of sanitary landfills and waste collection systems.

Discussion:

- Given the many ministries involved in water and sanitation, processes should be streamlined and coordination improved.
- Advocacy is required to incite stronger political commitment to improving the water and sanitation situation in urban areas.
- Regulations should be better enforced; industrial lobbying is currently stronger than the voice of civil society.
- For the last three years, Wateraid has been collaborating with the Centre for Science and Environment (CSE) in India, to train over 200 architects, planners, and engineers, on sustainable and equitable development.
- Several Bangladesh universities are developing rainwater harvesting plans that will contribute

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to artificial groundwater recharge. The hope is that these plans will be implemented on buildings with a surface area over 2000 sq. ft.

- Universities are introducing simple technical know-how on waste water disposal into their curriculum.
- Several new buildings in Dhaka City are using green technology.

Priority actions for water and sanitation

- Illegal land filling must be stopped.
- Aquifers must be preserved.
- Prevent industrial water pollution of peripheral and large rivers.
- Rain water harvesting should be required in buildings over 2000 sq. ft.
- Segregation and dumping of waste in enclosed and walled landfills should be encouraged.
- Improve faecal sludge management.
- Recycle waste into biogas and organic waste.
- Promote waste and sanitation issues within the health sector.
- Given the strength of industrial lobbying, political commitment and raising civil society voice are essential.
- Involve multiple ministries around water and sanitation issues, with strong coordination.

Photo: Thomas Kelly

Built Environment: Transport and Housing

Chair:
Prof. Fuad H. Mallick – *Pro Vice Chancellor, Chairperson, Department of Architecture, BRAC University*

Panellists:
Dr.Zakiul Islam – *Associate Professor, Department of Architecture, BUET*
Dr. Mohammad Shakil Akhter – *Professor, Head, Dept. of Urban and Regional Planning,* BUE**T**
Professor Kazi K. Ashraf – *School of Architecture, University of Hawaii*

Format:
Presentations with a Q&A session

Dr. Islam connected children's health with the built environment in urban areas:

• The lack of children's outdoor activity and increasing numbers of overweight children are health issues requiring urgent attention. As suggested by the WHO guidelines, children over 5 should have more than 60 minutes of physical activity per day.
• A recent study of 100 children in Dhaka which explored the impact of city design on children's behaviour, found the following:
  • 33% of children in the study did not engage in outdoor activity.
  • In almost all cases, the end point of children's perceived independent mobility was a road with heavy traffic.
  • Regression analysis indicates that total building footprint (building density), open space

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adjacent to their residence, street type (e.g: dead end), gender and parent's perceptions of safety are strongly related to children's time outdoors.

Given the relationship between a neighbourhood's physical characteristics and children's physical activity, urban designers and planners have much to contribute to health improvement by altering outdoor environments.

Dr. Akhter's presentation focused on how the private sector can help create better living environments for low income groups, especially within slums. He provided several global examples:

- In the Philippines, government and donor agencies provide money to communities for slum improvement, and contract private developers to do the work.
- In Guatemala, commercial banks are providing microfinance loans to slum dwellers.
- In Mumbai, "transferable development rights" allow developers extra buildable floor space if they include replacement slum housing in their projects.

Although the Government of Bangladesh's Ministry of Housing and Public Works has made progress with the development of Detailed Area Plans (DAPs) for urban areas, implementation remains a challenge. Dr. Akhter concluded by stressing the need for collaborative efforts around urban planning and development inclusive of transport, industry and health sectors.

Prof. Ashraf introduced the notion of ecological architecture into the urban planning discourse. He noted that current approaches to architecture in Bangladesh's cities are detrimental to health. There is a crisis of imagination in architectural design and city planning.

Built Environment Issues

List of built environment issues for urban Bangladesh identified by speakers and audience during the Built Environment panel:

- Lack of children's playground in the housing planning
- Water clogging the road, especially in rainy season– bad drainage system
- Traffic congestion
- Environmental contamination
- Poor quality housing but relatively high rent
- Mental and physical disability
- Lack of recreational/cultural activity
- Lack of connectivity
- Rapid and uncontrollable slum growth

He noted in particular a failure to consider the unique deltaic conditions of Bangladesh, and the importance of centring planning around people and ecology. Sharing practical examples from China and other countries, he suggested the following actions for an ecological built environment in Dhaka:

- Both land and water need to be considered in city planning.
- Agricultural land, wet land, flood plain land can all be part of the city.
- Floods need not be pushed out but integrated in city planning.
- Architects should consider their environment and cultural practices.

Priority actions for the built environment

- Work with light, air, and water in urban architecture.
- Restore canal and water transportation, and avoid flyovers.
- Enable joint collaboration of inter-ministerial bodies along with other stakeholders for urban planning.

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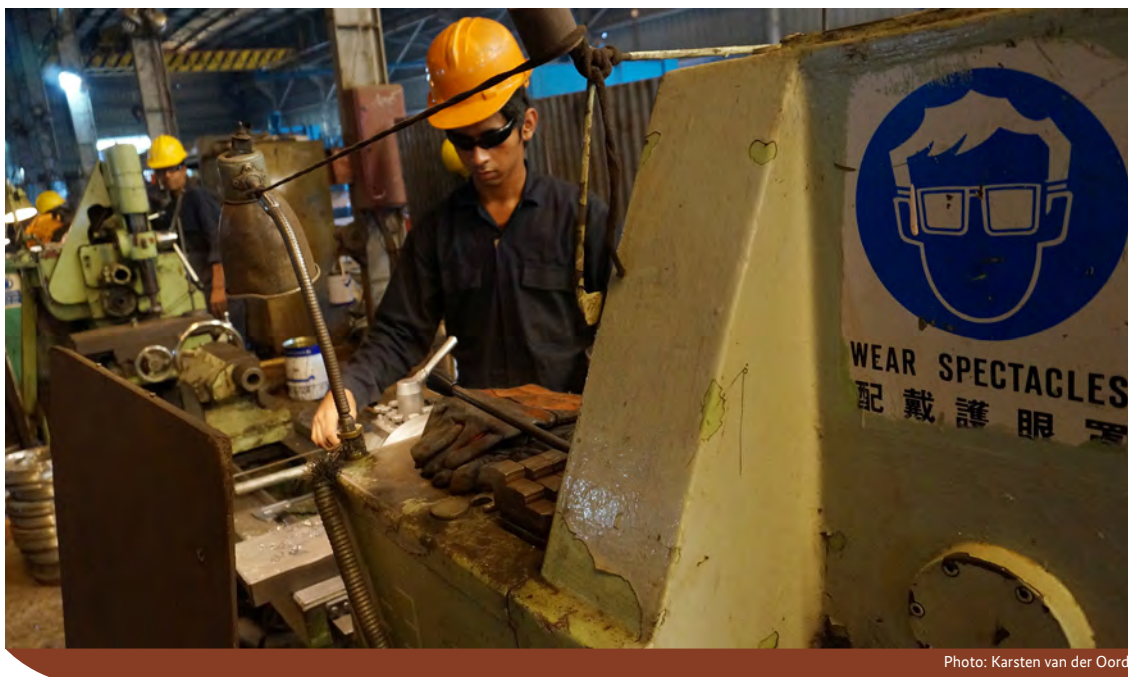
Photo: Karsten van der Oord

The Health and Safety of Workers

Chair:
David Bergman – *Former Head of Centre for Corporate Accountability*

Panel members:
Kristina Miller – *SHEQ Consultant, EOH Health, South Africa*
Syed Moazzem Hussain – *Advisor, Health, GIZ*

Format:
Presentations with Q&A session

Key Points and Issues:
A presentation by Kristina Miller focused on lessons learnt from the industrial sector in South Africa. Occupational Health and Safety (OHS) legislation became a cornerstone in the sector, leading to improved working standards and an increase in foreign investment. She emphasised that international specifications and frameworks (such as the OHSAS 18001) are useful guides, but proper implementation is critical if they are to make a difference.

Lessons from South Africa include:
*   The need for continuous training of governmental and regulatory inspectors and enforcers who are assessing compliance and enforcing legislation.
*   Developing realistic and appropriate repercussions for non-compliant individuals and organizations.

- Building partnerships with international development partners who have the expertise and resources to assist in the process.
- Platforms for shared learning and problem-solving across industries are helpful.

Syed Moazzem Hussain stressed that the health and safety of workers affects individuals and their families. He noted that workplace safety efforts in Bangladesh are reactive, not preventive in nature.

Implementing health and safety management may not result in obvious short-term benefits, thus jeopardizing compliance at both organizational and individual levels. However, long-term benefits are substantial including fewer injuries and fatalities, more efficient and effective working procedures, increased performance, and less negative publicity for the organization.

GIZ's efforts around OHS in the shipbuilding industry have focused on advocacy around the adoption of comprehensive OHS approaches, and the development of regulatory framework to guide implementation.

Discussion:

- In order to address health and safety issues, small and realistic targets should be initially set, which can then be scaled up.
- Basic rights, fair wages and social health protection should be incorporated into all organizations to ensure the wellbeing of workers.
- Implementing and maintaining OHS is a major investment for organizations. Advocacy messages need to discuss the benefits in putting these into place, as well as ensuring that regulatory bodies ensure that standards are upheld.

Priority actions for the health and safety of workers

- Basic rights, fair wages and social health protection should be incorporated into all organizations to ensure the wellbeing of workers.
- Realistic consequences should be set for non-compliance of organizations and individuals.
- Government and industry inspectors need continual training to enforce compliance with OHS regulations effectively.
- Small and realistic targets should be initially set, which can then be scaled up.
- Implementing and maintaining OHS is a major investment for organizations.

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Photo: Karsten van der Oord

Migration and Demographic Changes in Cities

Chair
Dr. Md. Bellal – *Associate Professor & Chairman, Department of Population Sciences, Chair of Department, Dhaka University.*

Panel Members
Dr. Peter Kim Streatfield – *Director, Centre for Population, Urbanization & Climate Change, icddr,b*
Dr. Binayak Sen – *Research Director, Bangladesh Institute of Development Studies (BIDS)*

Format:
Moderated Q & A session followed by questions and comments from the audience

Speaking to the impact of migration and demographic change in urban areas, panellists noted the following:

• Urbanization due to rural-urban migration plays a key role in national poverty reduction processes.
• Export/industrialization and remittances are particularly important drivers of economic growth in urban areas.
• Work opportunities in the garment and construction industries are powerful "pull factors" behind rural-urban migration.
• One recent study by Rachel Heath and Mushfiq Mobarak of Yale University shows that growth in the garment sector correlates with secondary school enrolment of girls, highlighting the significant role industrialization/urbanization play in overall social improvement in Bangladesh.

The lack of a pro-poor urban transport and rural-urban connectivity is contributing to a slowdown in poverty reduction and health improvement:

- The urban transport system is highly class based i.e., the poorest travel by bus or walking, the middle class by rickshaw, and the richest use private cars.
- There is no rapid mass transportation system in urban areas forcing workers to live in close proximity to their workplace where the rents are high, displacing investments in health, nutrition and educational improvement.

Good quality data on migration is scarce, and there is a lack of standard definitions. A mapping exercise based on key informant interviews in slums in 1996 and 2005 provides a good indication of the situation, but actual growth information cannot be determined.

- There are two peaks of rural to urban migration for men: the first is early to mid-twenties unmarried young men seeking work, and the second is married men who migrate with or without family.
- The same migration patterns exist for women also, with the younger cohort travelling at an earlier age (reflecting earlier marriage).
- Migration can be seasonal also – a farmer travels to urban areas to drive a rickshaw or to do manual labour for a two-month period while waiting for rice to grow.
- The HIES Survey Report 2011 found that nationwide, 1 in 8 married couples had the husband living somewhere else, and in almost half of the cases, the husband had not returned home within the last year. This may have implications for the health of families; i.e. research from Indonesia found a higher rate of child deaths in families where the father had migrated elsewhere. Furthermore, men migrating to cities looking for work may not generate enough savings to send back to their families as they often live hand-to-mouth.

The impact an individual's employment type (i.e. being self-employed or a waged employee) has on their health is unknown. This is particularly relevant given the rise of the informal sector.

There is some evidence that total fertility rate (TFR) reduction has been faster for waged employees compared to self-employed workers, however wage employment is a very broad category and includes casual and regular wages. Further research needs to be done investigating the characteristics of work and health outcomes.

Priority actions to address migration

- Develop and implement a pro-poor transportation policy and inclusive transport planning.
- Develop better rural-urban transportation networks.
- Better migration data needed.
- Invest in developing 3rd cities (such as Rajshahi and Khulna) as decentralised economic centres.
- Advocacy is needed and better regulation of standards is crucial.

Photo: Kristina Miller

Engaging the Private Sector

Chair:
Prof. Abdur Rahman – *Head of Public Health & Informatics Department, Jahangir Nagar University*

Panellists:
Dr. AZM Zahidur Rahman – *Head of Communications, SMC*
Dr. Iffath Sharif – *Senior Economist, Social Protection Sector, South Asia Human Development Unit, World Bank*
Ms. Lamiya Morshed – *Executive Director, Yunus Centre, Dhaka*
Dr. Sanjida Hasan – *Project Coordinator, Marketing Innovation for Health Project and Senior Clinical Advisor, EngenderHealth*

Format:
Presentations with Q&A session

In Bangladesh, the private sector includes NGOs and development organizations. Panellists discussed examples of 'successful' public/private partnerships in Bangladesh.

Dr. Rahman drew attention to inequities in urban health delivery systems in Bangladesh. The mode of service delivery varies in urban areas, char areas, hill tracts and rural areas. This is why public-private partnerships are very important. SMC (Social Marketing Company) is a family planning based organization that has been providing training and services through paramedics and medical assistants in urban and rural pharmacies.

Dr. Hasan noted the role of SMC in supplying long acting reversible contraceptives (LARC) and permanent methods, previously provided by the Bangladesh government.

SMC works directly with the Bangladesh government and promotes the national agenda for family planning promotion. Recently, EngenderHealth has been collaborating with SMC and USAID to build capacity for private sector providers, particularly doctors, through training and supply of contraceptives including IUD and implants.

Dr. Sharif, a World Bank poverty economist working with the public sector, noted the following:

• Figures from a recent World Bank poverty analysis show remarkable reductions in poverty, yet the continued poor state of social protection coverage.
• A large-scale pilot study on social protection models was conducted by World Bank in Narayanganj with the objective of understanding how to incentivize improvements in the social-economic conditions of slum dwellers.
• A cash card system has been developed whereby mothers can get money from the post office.
• World Bank studies suggest that tenure security is critical to greater social protection for slum dwellers.

Ms. Lamiya Morshed, executive director of the Yunus Centre, discussed two Grameen-government partnerships.

• The Grameen Health Programme has collaborated with Danone to produce a low-cost yogurt named 'Shakti Doi' to meet the micro nutritional needs of rural children. The price of this yogurt in the urban areas is higher in order to subsidize the rural yogurt cost. If a child takes 2-3 cups of yogurt a week, he will reduce any nutritional deficiency in his diet. A preliminary study by John Hopkins University's also attributes health impacts to consumption of Danone yogurt over a year long period. Running this venture as a business is important for scale and sustainability. This partnership enables Danone to bring in the business expertise while Grameen contributes their knowledge of the local population and their reach into rural areas.
• A partnership between Grameen and PSF has resulted in the local production and marketing of insecticide-treated mosquito nets throughout the country.

These collaborations show how partnering with private sector companies and sharing knowledge can be deployed to help solve social problems. Increasingly, the Yunus Centre is involving Bangladesh business. Every month, they hold a Social Business Design Lab where they bring entrepreneurs and businesses that are interested in social businesses and help companies find the right partners. Since 2013, there have been 9 design labs and 10 social businesses have been undertaken. One of them is Softies, a low-cost 'sanitary napkin' that is sold for BDT 3 to female garment workers.

Community Mobilization for Services and Rights

Chair:
Dr. Hamida Hossain – *Founder, Ain O Salish Kendra*

Panellists:
Salma Shafi – *Treasurer, Centre for Urban Studies – Architect & Urban Planner*
Dr. Nadira Sultana Kakoly – *Research Supervisor, JPG School of Public Health, BIGH, BRAC University*
Shoshannah Williams – *Urban Health Fellow, JPG School of Public Health, BIGH, BRAC University*
Shushmita Hossain Khan – *Senior Associate Coordinator, Eminence*

Format:
Presentations with Q&A session

Ms. Salma Shafi shared her experience of working on a community mobilization project with the urban poor undertaken by NDBUS (Nagar Daridra Basti Unnayan Songstha), This organization represents 1.5 million slum inhabitants through 400 wards and primary committees. Strategies include identifying office bearers who play an advocacy role in the community, involving slum leaders in efforts to ensure the rights of slum dwellers to tenure security and services, and collaborating with other organizations such as UPPR, DSK, WaterAid, and BLAST legal services.

The organization focuses on the following activities that help ensure better services for the urban poor:

• Building community resource centres (with UPPR)
• Skills training on income generating activities
• Undertaking community mapping
• Initiating housing projects though land projects
• Initiating capacity building training especially around advocacy
• Providing loan support and savings facilities

Achievements have included greater voice around anti-eviction and land tenure issues in slum areas, the establishment of a three tiered sustainable savings group model and improved health conditions in slum settlements.

Dr. Nadira Sultana Kakoly and Ms. Shoshannah Williams presented the results of a case study of UPPR's efforts around community mobilization for health in Barisal and Tongi. Some of the achievements and lessons were shared:

- Community women took ownership of activities, they experienced success through their collective efforts (such as building roads), and they felt empowered.
- In one of the project sites, activities continued even after project funds came to an end. Success appeared to be due to considerable community involvement in the project, linkage with stakeholders providing services, and commitments from local authorities to continue supporting MBBS doctors in satellite clinics.
- Communities appear to have low expectations of health systems – more needs to be done to understand the community's perception of health in order to design more effective and acceptable services.

Ms. Khan shared experiences from the implementation of a project involving digitization and the use of electronic media as a tool for community mobilization. Eminence conducted a pilot study involving Family Welfare Assistants (FWA) in Sylhet and Chittagong. They developed resources on family planning methods, provided training to FWAs in using netbooks and asked them to use the device during household visits. They found that the use of the netbooks increased attention and they observed a change in the intention of the service recipients to receive messages using the digital media. Several lessons were noted:

- Digital media communication can be a very useful tool for community mobilization and participation as well as behavioural changes.
- Age is not a barrier to effective use of communication tools.

Discussion:
Q&A largely focused on insecure tenure in urban slums. Participants discussed the potential effectiveness of community mobilisation efforts when slum dwellers had no tenure security, and therefore little incentive to invest in infrastructure to improve living conditions.

- To secure better living condition in slum areas, land ownership and land equity systems should be established. Some research findings indicate that slum dwellers are willing to invest more on housing if they get land ownership.
- Although the High Court has provided strong direction regarding slum eviction, major stakeholders continue to ignore these directives. To stop illegal eviction inter-ministerial advocacy might have a strong influence.
- Other participants mentioned the high incidence of skin and eye diseases that are prevalent in slum areas, and how health education might increase awareness to reduce these rates.
- The lack of services for mental illness, including basic counselling, was discussed, as well as NGO's role in rectifying this.

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Priority actions for community mobilisation

- Land ownership and land equity systems should be established, giving slum dwellers opportunities to invest in housing.
- Develop civil society to advocate for the rights of the urban poor and to support equitable urban development.
- Improve health literacy to increase awareness of preventable diseases such as skin and eye diseases in slum areas.
- Encourage ministries to work together in advocating against illegal slum evictions.
- Develop community groups among the urban poor to take action for their own future.

Mapping Cities for Planning and Referral

Chair:
Mr. Paul Rueckert – *Principal Advisor, Priority Area- Health, GIZ*

Panellists:
Dr. Sudhamay Majumdar – *Chief Health Officer, Sylhet City Corporation*
Mr. Ruman Zakaria– *Research Investigator, Centre for Equity and Health Systems, icddr,b*
Dr. Tanvir Ahmed– *Senior Research Investigator, Centre for Equity and Health Systems, icddr,b*
Mr. Nazrul Islam – *Urban Planning Expert, UPPR*
Mr. Altaf Uz Zaman – *Advocate/RER for Bangladesh, Google Map Maker*

Format:
Presentations with a Q&A session

The objective of this session was to explore current efforts around urban mapping in Bangladesh and how to maximize benefits for health planning and referral. Dr. Majumdar began by describing the urban health challenges in Sylhet City Corporation, highlighting gaps in the distribution and types of health facilities, available services, infrastructure, human resource capacities, and poor-friendly subsidies. He related Sylhet City's experience with GIZ and icddr,b's Urban Health Atlas effort, citing the following priority actions:

• Develop an electronic trade licensing system to maintain proper registration system for all health facilities.
• Address shortcomings in service availability including extended clinic hours, and efforts to target under-served geographical areas.
• Set up information booths to help urban citizens navigate available health services.

Dr. Ahmed (icddr,b) explained the development of the Urban Health Atlas for Sylhet City Corporation, which is currently being extended to Dhaka City Corporation (North and South), and other urban centres in Bangladesh. Data collection for the Atlas uses GPS enabled android tablets to minimize data distortion and errors in GIS readings. Survey data includes the facility name and address, services provided, service hours, costs and human resources.

Mr. Zakaria (icddr,b) demonstrated the Urban Health Facility Application (Figure 2), providing different examples on how this data visualization tool can be used to inform decision-making, such as identifying referral routes or service gaps in a particular geographic area. The application is entirely web-based and open sourced to permit free access. Mechanisms for regular information update and strategies to promote uptake and use of the application by stakeholders are current priorities for development and research.

Figure 2: The Urban Health Atlas
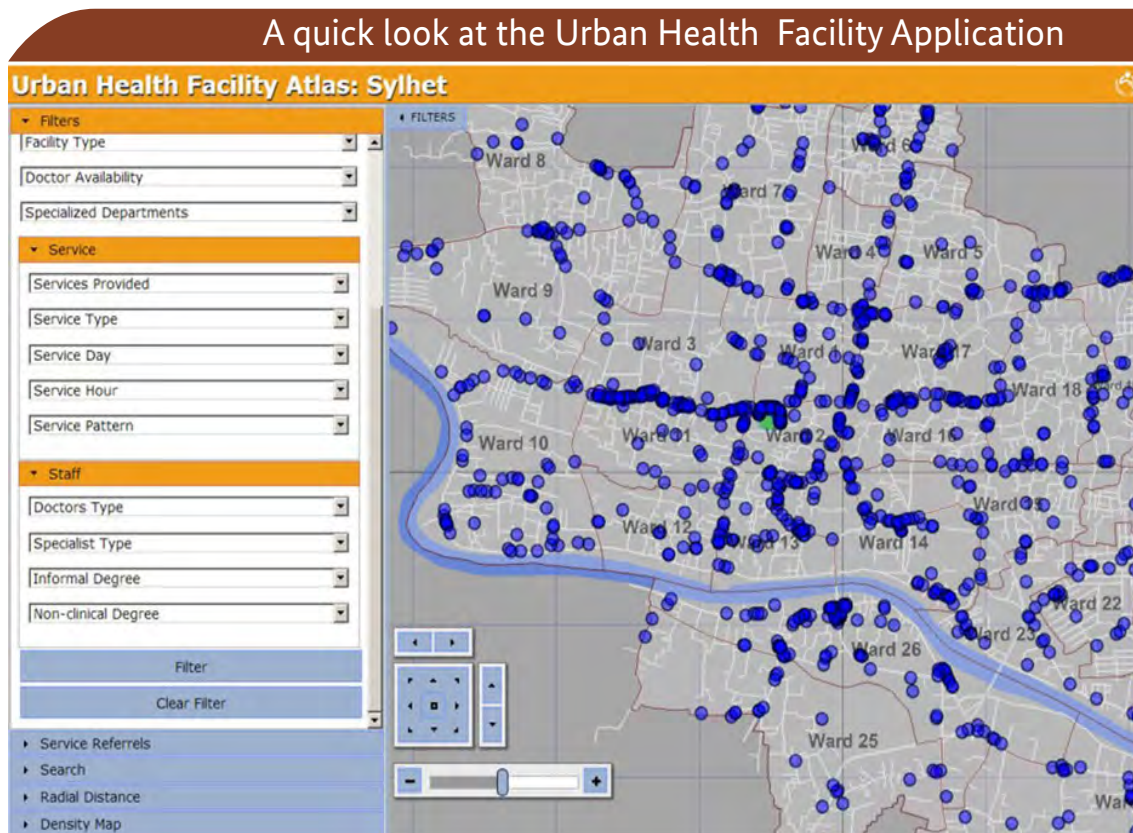
Mr. Islam presented the UPPR Settlement and Vacant Land Mapping (SLM) exercise which was undertaken in 29 towns of Bangladesh. The objective of this SLM exercise was to identify and characterize the living conditions of poor settlements to ensure evidence-based targeting of the most vulnerable settlements and households by Urban Partnerships for Poverty Reduction (UPPR) and others. This exercise included the Sylhet City Corporation and the Sylhet map was used as the base map for the SCC Urban Health Atlas.

Finally, Mr. Altaf Uz Zaman presented a Google application called the Google Map Maker. This application is used to gather mapping information on the areas for which there is no available mapping data through community efforts. Anyone who has a Google account can provide mapping information on an area, which is later verified by a Regional Expert Reviewers group. This application can be helpful for conducting health mapping on a large scale.

Based on the discussions and suggestions, some priority actions were identified to ensure effective mapping strategies to improve urban health status and equity.

Priority actions for urban mapping

- Explore opportunities to increase coordination around health mapping, potentially around a single platform, including the use of a standard methodology to minimize data variation.
- Create an offline version of the Health Atlas application.
- Share mapping exercises with Google map as a base platform, making health service data available in the largest open source network, and easily accessible for everyone.
- Encourage use of maps and data sources for decision making among policy makers, local government officials, donors, local NGOs and private sector. This data can contribute to planning and greater efficiency in resource allocation.
- Government should take initiative to ensure the regular update and sustainability of mapping efforts, which are mostly project-based.
- Expand urban mapping activities to other cities of the country.

Taking action for healthy cities in Bangladesh

Photo: Thomas Kelly

Reproductive Health

Chair:
Dr. Halida Hanum Akhter – *Country Representative, Pathfinder International, Bangladesh Country Office & COP NHSDP*

Panellists:
Dr. Kaosar Afsana – *Director of Health, Nutrition and Population Programme, BRAC*
Dr. Samina Chowdhury – *Programme Development Specialist, OPHNE, USAID*

Format:
Panel discussion with a Q&A session

The chair, Dr. Akhter set the background, discussing some of the issues faced by urban slum populations including high levels of migration, and multiple health risks and needs due to over-crowding, poor housing, inadequate hygiene and sanitation, poverty and insecurity.

Focusing on the issue of equity and reproductive health, Dr. Chowdhury emphasized the need to think about urban reproductive health service delivery differently:

- Reproductive health outcomes are a result of other systemic issues (including water and sanitation, workplace conditions etc.) and thus must be addressed at multiple levels in multiple sectors.
- Adolescent girls should be a priority, with a recent study indicating that over half of the respondents were malnourished.

She clarified the mandate of USAID- to complement the public health system and encourage local leadership and ownership, with a particular focus on reproductive health projects in urban areas.

Dr. Kaosar Afsana recognized the difficulties in conceptualizing a healthy city in the context of Bangladesh, and provided examples of how this can be achieved through coordinated efforts between local government and NGOs. Noting the recent initiation of Urban Primary Health Care Project (UPHCP) phase three activities, and its importance to addressing the health needs of the urban poor, she described how the BRAC Manoshi project can complement UPHCP service provision. Established in 2007, Manoshi runs delivery centres within the slums of nine city corporations (approx 6.6 million population), staffed by trained birth attendants who are assisted by BRAC trained midwives. In addition to ensuring safe delivery in urban slums, Manoshi strengthens the urban public system by:

- Registering pregnancies as soon as they occur, and ensuring that poor women living in slums receive home-based antenatal care through house to house visits by Community Health Workers.
- Strengthening referral systems through the deployment of Manoshi referral agents within public hospitals who assist poor women patients in receiving timely care and obtaining medicine.

A 20% shift from home to facility births has been documented over the course of the project, which has contributed to a reduction in maternal deaths, however, some challenges remain:

- More than one third (35%) of maternal deaths are due to non-obstetric causes or indirect causes which need to be addressed.
- An alarming increase in the rate of C-sections has occurred, even in slum areas, and which may not be medically necessary.

Discussion:
The discussion was broken into a formal Q&A process.

Question 1:
Who should take responsibility for increasing co-ordinated action around reproductive health services for disadvantaged urban populations?

- Dr. Chowdhury appealed to Urban Health Symposium participants to advocate for the reproductive health rights, and endeavour to work together to address some of these issues.
- Dr. Afsana identified tenancy security as a critical priority if services are to be effectively implemented in slum populations. There is a need for high level political commitment around tenure security and the provision of basic health-related services in slums. This requires dispelling preconceptions that slums are associated with criminal behaviour, and promoting a changed mindset that acknowledges the needs and rights of slum dwellers to adequate shelter, access to a safe water supply etc. Unless we challenge these ideas, change will never happen.
- Dr. Akhter identified two roles role civil society can play in improving the health of the urban poor: 1) providing services, and 2) advocating for and raising awareness of the needs of the urban poor at the policy level. This second area is where participants from the urban health symposium can jointly work.

Question 2:

How do you convince women that it is important to visit the birthing huts (vs. home delivery or outside)?

Dr. Kaosar Afsana replied:
- Delivery centres are located within the slum, which means they are close for women and easy to access.
- Trained Birth Attendants are critical to the process, as they visit women in their houses and motivate them to attend.
- Women who live in slums often have limited social networks, so BRAC provides these opportunities and recreate a 'family' during this time for women.
- Indigenous birthing practices are accommodated, such as providing beds on the floor and allowing women to take any position that is comfortable during delivery.
- An organized support system is in place to allow women to access a tertiary facility if required.

Question 3:

How can contraceptive use be improved in urban areas?

- The BRAC health programme is working towards partnership with government around improved family planning.

- Co-ordination is essential in the field of reproductive health, particularly between the health and family planning wings of the Ministry of Health.

Question 4:
Are current reproductive health services adolescent and youth friendly?

- An audience member, working at BRAC University Education Institute, discussed a recent programme where adolescents (both boys and girls) in schools are participating in a reproductive health awareness programme. She reflected that perhaps sexual rights and violence should also be a component of the programme.
- Dr. Akhter stressed the need to target the adolescent population, particularly around sexual violence and rights. She described a national mortality study, which found a significant proportion of suicides were amongst the adolescent population.
- Dr. Afsana also stressed the important issue of sexual violence in urban slums. There is a need to understand the complexity of the issue and ways in which it can be addressed.
- On the issue of early marriage, Dr. Chowdhury described a project that is working at the household level to advocate for the rights of adolescents, particularly around early marriage, and delayed first birth. A booklet 'Know yourself' has also been produced which promotes adolescent reproductive health.

Priority actions for reproductive health

- Mobilize civil society to advocate at the policy level to increase high level political commitment and coordination to provide urban reproductive health services.
- Focus attention of local and national governments on the reproductive health needs of poor and disadvantaged urban populations through research and advocacy.
- Contraceptive use to be more widely and effectively promoted as part of family planning.
- Greater consideration of the impact of gender based violence in reproductive health programmes.
- Target the adolescent population.

Photo: Screenshot www.maya.com.bd

IT Innovations for Urban Health

Chair:
KAM Morshed – *Assistant Country Director, Policy Support and Communications, UNDP Bangladesh*

Panellists:
Naomi Ferdous Mirza – *Medical Consultant, Maya.com*
Dr.Sudhamay Majumdar – *Chief Health Officer, Sylhet City Corporation*
Muhammad Abdul Hannan Khan – *Senior Technical Advisor, GIZ*
Farhana Afrose Rainy – *Associate Coordinator, Eminence*
Rubayat Khan – *Head of Research and Innovation, mPower Social Entreprises*
Prof. Malabika Sarker – *Professor & Director of Research, JPGSPH, BRAC Institute of Global Health, BRAC University*

Format:
Presentations followed by a Q&A session

The chair opened the session by explaining that all panellists will describe an IT innovation from their organisation, its importance to urban health, its impact, cost effectiveness, scalability and sustainability.

Dr. Sudhamay Majudar presented on the Health Management Information System (HMIS) that was used in Sylhet City Corporation (SCC) to inform its health planning and decision-making. SCC HMIS revised/reviewed the existing data system, then standardized it and incorporated IT for implementation. Information from the system will be utilized for:

- Health promotion
- Infectious disease prevention strategies
- Better coordination and communication between stakeholders
- Improved decision making, management and planning of health programmes

Muhammad Abdul Hannan Khan presented on the Urban HMIS package which features a software application named DHIS2 (District Health Information System 2), a highly flexible, open-source health management information system and data warehouse. The presenter shared data from Khulna City Corporation acquired using this package.

Vital registration systems are not very strong in Bangladesh: there's no systematic performance or recording of verbal autopsies (a technique of determining cause of death), nor are there strong referral systems between health services that allow data to be share. To fill this gap, Professor Malabika Sarkar described MOVE-IT Bangladesh, a project that focuses on maternal and child health, and will track each pregnancy, birth, death (plus cause of death) and other significant health events. The project aims to:

- Improve continuous care, allowing health indicators to be shared with various national registries, and improve tracking of outcomes.
- Use existing National IDs (given by the election commission) and birth registration numbers to generate a unique ID for each person in order to track interactions with health services.

In urban areas, MOVE IT will contribute to policy and practice by digitalizing of community based information systems, linking community based data to health facility data, helping improve continuum of care, and ensuing universal health coverage.

Rubayat Khan talked about two IT innovations that mPower has undertaken in urban spaces. The first project was collecting patient information on a micro level from BRAC's Manoshi programme to improve pregnancy surveillance and regulation, and the second was creating an automated schedule for the immunization of newborns that occurs during birth registration (in partnership with John's Hopkins School of Public Health, icddr,b, and MOVE-IT).

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Maya Apaki Bole was presented by Dr. Naomi Mirza. Data on women's health and wellbeing is not widely available in Bangladesh, with the exception of maternal. The website www.maya.com.bd has been developed as a resource for issues relating to women's health, to increase access to information.

Farhana Afrose Rainy presented on a project using information and communications technology (ICT) to improve adolescents' sexual and reproductive health. The website www.jantechai.com provides a safe place where adolescents can ask sensitive questions regarding relationships, STIs, reproductive health etc. The questions asked on the site feed into research being undertaken by icddr,b.

Discussion:
During the Q&A session, an audience member noted that although access to internet is difficult for many Bangladeshi women, male counterparts and children may be able to help bridge the gap. Successful campaign planning can help in this regard.

Averting "Urban" Epidemics: the challenge of NCDs

Chair:
Professor Shah Monir Hossain – *Senior National Advisor (Food and Safety), FAO*

Panellists:
Dr. Khurshid Talukder – *Senior Consultant, Paediatrician and Research Coordinator, Centre for Woman and Child Health*
Karar Zunaid – *Senior M&E Resident Advisor for Bangladesh, Carolina Population Centre/Measure Evaluation, University of North Carolina*
Dr. M. Mostafa Zaman – *National Professional Officer, NCD, WHO*
Mozammel Haq – *BD Cyclists*
Maruf Rahman – *National Advocacy Officer, Work for a Better Bangladesh Trust (WBB)*

Format:
Moderated Q & A session followed by questions/comments from audience

The session began with a discussion of the increasing burden of non-communicable diseases (NCDs) in Bangladesh including cardiovascular diseases, hypertension, diabetes, obesity and cancer. Risk factors for NCDs (physical inactivity, poor diet, stress, alcohol and tobacco use etc) were discussed. The incidence of risk factors for NCDs appear higher in urban areas; for example BDHS data shows urban women and men are between two and three times more likely to be overweight as their rural counterparts.

Some of the major challenges for NCD prevention in urban areas in Bangladesh include:

> *Did you know?*
> *Bangladesh's urban areas are not environments that encourage an active lifestyle. However, many people are taking their own initiative. One example is the BD Cyclist group, a network of cyclists who promote cycling for fun, exercise and transport, and organise group rides to increase safety and normalise the activity.*

- Opportunities for physical activity are limited by the lack of a mass transportation system, poorly constructed and overcrowded footpaths, and few public parks or playgrounds.
- Urban residents are exposed to high levels of noise pollution and vehicular exhaust, which can only be controlled by strong enforcement of the law.
- Cultural attitudes do not value physical activity– for example, many consider it beneath their status to walk for transport, carry their own groceries, walk up stairs etc.
- Unhealthy food culture is very common in urban areas. This includes food safety issues (unhealthy cooking oils like palm oil are being sold as soybean oil); questionable food fortification efforts i.e. Vitamin A fortification of cooking oil which is then sold at an exorbitant price; high salt consumption and seasonal variations in the availability of fruits and vegetables.

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- A lack of investment to support active transport options, such as cycling and pedestrian infrastructure. In Dhaka, 85% of those dying in road traffic accidents are pedestrians, yet not enough importance is given in policies to ensure their safe mobility.
- Evidence of developmental origins of health and disease (DOHAD) that early in life (in-utero as well as the first two years) can predict the likelihood of future chronic disease. This requires that maternal health during gestation (healthy diet, not smoking), and other protective factors, such as breastfeeding, should be emphasised.

A number of solutions were proposed:

- Learn from evidence-based solutions in other parts of the world such as Iran's Ishfahan Healthy Heart Programme, NCD efforts in Canada and Europe; health promotion efforts among urban school children in Finland and Chile. In Bogota, the "TransMilenio 2000" strategy has increased public transport options, and decreased use of private cars. The government has a critical role, especially the MoH, in taking the lead in replicating these programmes in the Bangladesh context.

- Review the way initiatives around health insurance are being conceived. Health insurance initiatives so far have primarily focused on MNCH even though this area may not be responsible for the catastrophic cost of illness. Stakeholders should also focus the health insurance system at the secondary and tertiary levels where NCDs are more likely to be managed.
- From a regulatory standpoint, redress lack of infrastructure for physical activity by requiring schools to offer playgrounds for students, ensuring adequate space allocation for open and green spaces in new developments.
- Policy solutions to poor diet could include more active regulation of food production, facilities to preserve fruits and vegetables when they are abundant, and imposing high VAT and tax on palm oil to discourage its consumption.
- Address the gap in information on NDCs, as most leading national surveys do not focus on risk behaviours. One possible solution is to institutionalise the WHO risk behaviour survey, which would provide more data on the prevalence and burden of risk factors and diseases.

Improved surveillance would support decisions around the scaling up of screening and prevention activities.

- The Government of Bangladesh has a critical role to play. Evaluation of the previous Health Nutrition and Population Sector Programme (HNPSP) noted that the NCD operational plans were inadequate in both leadership and programme implementation. Funding allocation also needs reviewing: a quick analysis of the financing pattern of the programme shows 85% of the total financing is devoted to MNCH services which constitutes only 30% of the total deaths in Bangladesh (while NCDs and hospital service management account for 70% of deaths).
- A systematic assessment of NCD activities by various stakeholders (NGO, private sector and government) is urgently needed.
- The MoH needs to take the lead in strategic planning and coordination of activities moving forward, in collaboration with urban development and other ministries. Additional resources and strong targets are needed.

Ms. Yasmin, Deputy Secretary, LGRD & Cooperatives, requested to donors and NGOs to work as a pressure group. She also suggested continuous advocacy for Government attention.

Dr. Monir concluded with the desire to have an inter-ministerial collaboration to establish national integration on healthy cities and healthy lifestyle strategies.

Priority actions for NCD prevention

Promote a healthy lifestyle
- Improve public transportation and develop pedestrian and cycling infrastructure
- Promote physical activity (especially in schools)
- Control traffic congestion
- Reduce sound pollution, a major contributor to hypertension and dizziness.

Raise awareness and action
- Increase the role of Government in stemming the urban epidemic of NCDs
- Request donor agencies and NGOs to work as a pressure groups
- Revise budget allocations to reflect the rising burden of NCDs
- Follow best-practice policy approaches that have been successfully implemented elsewhere

Photo: Thomas Kelly

Urban Primary Health Care Services

Chair:
Prof. Parveen Fatima – *Secretary General of OGSB*

Panellists:
Dr. Z.M. Babar – *Team Leader for HIV AIDS and STI Programme, CARE*
Dr. Setara Rahman – *Quality Assurance Specialist of Urban Primary Health Care Services Delivery Project (UPHCSDP)*
Dr. Reena Yasmin – *Senior Director, Marie Stopes*
Dr. Md. Akramul Islam – *Associate Director of Health, Nutrition & Population Programme, BRAC*

Format:
Presentations with a Q&A session

Professor Parveen Fatima began by giving an overview of the current context, describing how current estimates suggest that 40% of the urban poor in Bangladesh do not have access to health facilities. Quoting a recent Lancet article by Priya Shetty (2011), that projects Dhaka as the 5th largest city in the world by 2025, she noted that urban health care challenges will only grow over time. The difference between Primary Health Care (PHC) services in urban and rural areas

was discussed, as well as the different health needs of different population groups within urban settings. NGOs and the Government of Bangladesh are both working on this issue, but haven't obtained sufficient results. So what needs to change?

- Primary health packages typically include services to meet maternal and child health. Service provision packages should broaden in light of growing health concerns around nutrition and non-communicable disease.
- Accessibility to health care in urban areas must be improved, particularly for the urban poor. In addition to addressing financial barriers through health insurance and social protection, investments in health care infrastructure within slums will occur if tenure security concerns are alleviated.
- Physical and structural characteristics of urban settings such as traffic congestion, and its implications for emergent care, can also facilitate timely service provision.
- Extending service hours of primary health care services will better meet the health needs of the working poor.
- Standards guiding quality of care should be developed and applied to both public and private sectors.
- Structures and responsibilities for the governance of urban primary health care services need to be clarified. Who does what (Ministry of Local Government, Ministry of Health or City Corporation?) and how can coordination best be organized?
- What is the sustainability of the current NGO service provider model? How can duplication and gaps in the current service delivery model be addressed and referral between services be made more effective? Efforts to map the health facilities available in urban areas will help identify the areas with insufficient services.
- What sort of funding is required to deliver sustainable, quality urban primary health care services? How should this funding be managed to reduce wastage and misuse? Could some of the many urban private health care providers be encouraged to provide services to the urban poor as part of their corporate social responsibility (CSR) activities?

Priority actions for primary health care

- Expand services covered under the umbrella term "urban primary health care" to include a focus on nutrition and NCDs.
- Build the capacity of paramedics so they can help meet the gap in qualified service providers working in urban primary health care.
- Follow best-practice policy approaches that have been successfully implemented elsewhere (e.g. the National TB program).
- Develop standards to guide quality of care, and implement M&E systems to improve quality control.

What could have happened differently?
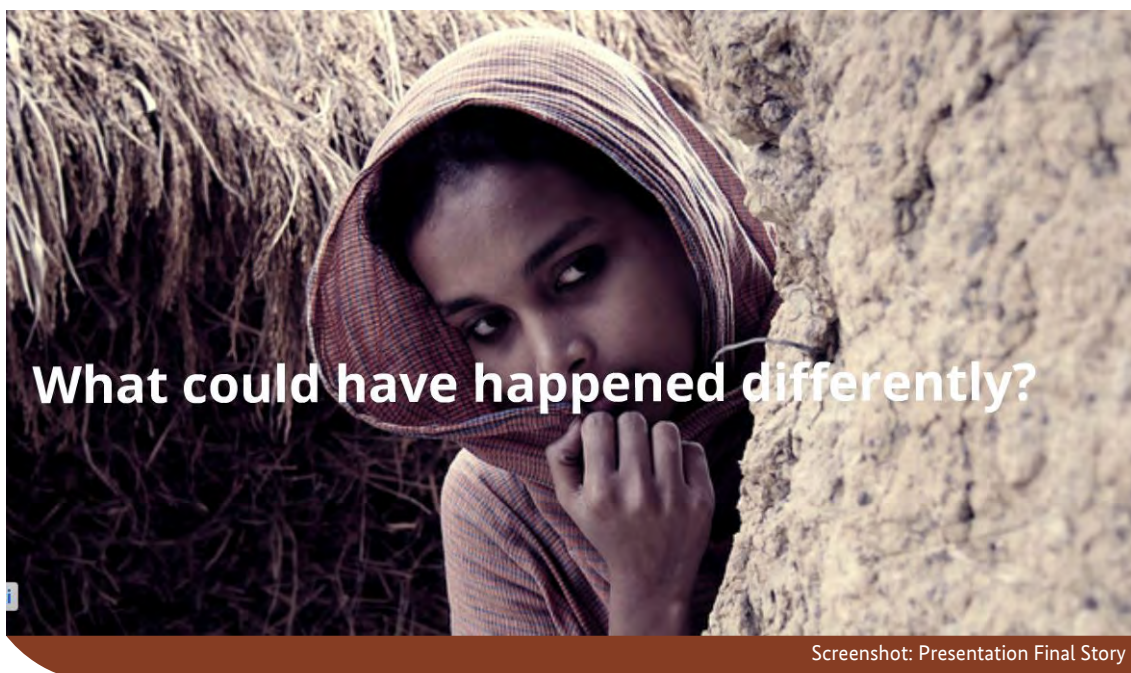
Screenshot: Presentation Final Story

Special Session:
What are we doing, and where are we going?
Opportunities for coordination and collaboration

Special guest:

Rehana Yasmin, Deputy Secretary – *MoLGRD & Co-ops*

Facilitators:

Dr.Sadia Chowdhury – *Executive Director, BRAC Institute of Global Health, BRAC University*
Dr. Alayne M. Adams – *Senior Social Scientist, CEHS, icddr,b and Professor, JPGSPH, BIGH, BRAC University*

Introduced by Dr.Chowdhury, this interactive session began with the case study of Nasima, a young pregnant women living in an urban slum in Dhaka. Presented by Dr. Adams, the case was designed to illustrate the myriad of factors that challenge the health of the urban poor, and the limited access to timely and affordable health care services (see Appendix A). Factors such as poverty, gender inequality, poor health literacy, insufficient labour rights, deficiencies of the built environment and transport systems, political instability and lack of proximate emergency care, are shown to intersect and result in a tragic and unnecessary maternal death.

Session participants broke into groups to discuss one of four dimensions of the story:

1. Structural factors
2. Service delivery bottlenecks
3. Heath-related hazards
4. Socio-cultural factors

Each group then discussed a series of questions related to their assigned theme:

1. What is being done to address these issues? Who is doing it?
2. What issues are not being addressed? Why not and what can we do?
3. Were there some positive dimensions to the story?
    •   What were they?
    •   How can they be strengthened?
4. What priority areas for advocacy and action that we can identify?

Groups reassembled to present their reflections to the larger symposium audience. A summary of the presentations is provided below.

Structural factors group

The fact that Nasima was forced to go to the city to provide financial security for her family, initiated subsequent hardships. Structural factors were identified that exacerbated these hardships:

 1. Livelihoods
•   The government has no interest in improving slums: they consider them illegal and temporary, and improvement might encourage more people in rural areas to migrate
•   Lack of financial means to cover the costs of iron-folic tablets, and delivery services.

2. Access to information
•   Lack of adequate information on many critical health issues such as family planning, antenatal care, how to recognize danger signs and act accordingly.

3. Access to family planning
•   No family planning health workers are available in urban areas.

4. No comprehensive health service delivery and no referral system in place
- No blood testing during ANC
- No blood bank or system for easily obtaining a donor for blood transfusion
- No efficient referral system from one health facility to another.

5. Work policy and work settings
- No information/service delivery regarding reproductive health (given that many factory workers are young women)
- Labour rights are violated and regulations are not enforced.

6. Other structural issues
- Poor transport/road infrastructure
- No social protection (in general and health), no registration of poor people entitling them for social benefits.

Several positive aspects of the case were noted including the presence of community health workers in the slum, and recognition of the ongoing efforts of NGOs to fill service gaps. Recommended solutions include the development and implementation of policies that address the issues listed above, and the continued role of NGOs in advocating for and supporting the rights and needs of the urban poor and disadvantaged.

Service delivery bottlenecks group

The second group explored bottlenecks in health service delivery, health promotion services (at home, school, and workplaces), community health services, ANC services (birth planning, nutrition, danger signs), EmOC services, and blood transfusion services.

The issues that were not being addressed include:

- Health promotion and adolescent health services, as well as health promotion and advocacy services on reproductive health for adolescents and pre-marriage couple counselling.
- Services were not available and/or being accessed in the slum community.
- Health promotion and protection services are not provided by the employer and/or other agencies.
- Registration as an eligible couple did not start access to reproductive services.
- At her workplace, she did not disclose her status but got dismissed when her pregnancy status was discovered.
- At the delivery facility she was not offered a blood transfusion.

Positive aspects to the story included the presence of CHWs in the community and Nasima's contact with them; her involvement in a community maternity group which provided support

and advice around her pregnancy; and the existence of a referral process for emergency care.

Possible solutions:

- Provide services to working women after working hours
- Strengthen training of community workers to deliver ANC services and recognize danger signs of bleeding for effective referral
- Overcome the lack of coordination/referral between community workers and obstetric services by developing a standard protocol for referral and providing information on how to access free services
- Expand registration processes to activate reproductive health surveillance as soon as a married couple register their relationship
- Implement an occupational health programme in workplaces

Health-related hazards group

The third group focused on health hazards, identifying poor housing, sanitation, drinking water, particulate matter, job insecurity and vehicle exhaust factors impacting on the health of the urban poor.

They noted that several groups were trying to improve the situation outlined in the case study, namely: WASA's efforts around the provision of safe drinking water in the slums; NGO health workers and service providers; factory owners offering free contraceptives to their workers; and the placement of medical officers in factories. However, a number of issues remain largely unaddressed, including housing and minimum standard living conditions, sanitation, and traffic congestion. These issues appear to be neglected due to a lack of political will, financial constraints and inadequate long-term planning.

Possible solutions include:

- Raising these issues in appropriate forums like inter-ministerial meetings.
- Synchronizing health awareness raising with workers' training.
- Advocating for action on health hazards through all media.

Socio-cultural factors group

This group considered various social-cultural dimensions of the story, many of which are not unique to the urban context, but exacerbated by it such as:

- Early marriage and the norm that women must marry and be provided for by their husbands
- Lack of safety and security for females

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- Lack of social networks amongst newly arrived migrant populations in urban slums
- Lack of male involvement in family planning and reproductive health
- Lack of empowerment: fear of asking for assistance in the workplace and the home

The group then presented what was being done to address these issues, many of which are deep-rooted in culture and gender relations, and difficult to impact. Community awareness raising, particularly around early marriage, and efforts around reproductive health and family planning in urban areas, tend to be small in scale, project based, and of low priority. Social protection schemes are in their infancy, but innovative strategies do exist. Promising alternative mechanisms for raising awareness include user forums and community management committees.

The group noted several positive aspects to the story. These include: the increasing mobility of women, making it possible for women to travel to cities, and to become part of the labour force; the presence of a community health worker, who was trusted by Nasima and assisted/supervised her access to care; the power of outreach work and technology in the context of urban slums; and finally, the physical density of slum areas facilitating outreach work and service delivery.

Finally, the group outlined priority areas for policy and action:

- Pay attention to smaller urban areas (not just Dhaka) in programming
- Innovate different approaches to meet the needs of culturally diverse urban populations
- Require the workplace to assume greater responsibility for workers health and rights
- Advocate for social protection and health insurance
- Adopt strategies to encourage females to complete secondary education – important for empowerment and ability to take action around health
- Utilize existing community groups (e.g. UPPR) to mobilize around some of these issues
- Get local leadership on board
- Promote male involvement in community mobilization and reproductive health (i.e. male reproductive health education in secondary schools)

Poster Competition

A call for posters on the theme of "Taking Action for Healthy Cities in Bangladesh" was issued to various public and private universities, student networks, and professional organizations. This was an excellent opportunity to present the work of undergraduate and postgraduate students, recent graduates and young professionals to a wide, interested and experienced audience.

Submissions were received from participants in the diverse areas such as urban planning, public health, architecture and design, engineering, environment, and water and sanitation.

Submissions were separated into two categories: students and young professionals. After reviewing all the submissions, a selection committee selected three posters from each category to come present their posters at the symposium. These posters were displayed throughout the duration of the symposium. A senior judging panel, Dr. Alayne Adams, Dr. Sabrina Rasheed, Dr.Shamim H. Talukder and Dr. Abu Jamil Faisel, then assessed the posters based on the strength of the research idea, its relevance to the theme, the content, its visual presentation and how they responded to questions asked. The winners received a certificate and prize money from Paul Ruckertz, Principal Advisor, GIZ, on the second and final day of the symposium.

The winners were…

Students: Fahrin Islam and Saffat Ara Sayeed.
Poster title: "Grey Water Recycling System for Cities in Bangladesh."

Young professional: Dr.Tanzir Ahmed Shuvo
Poster title: "HEALTH ON 2 WHEELS: A Perfect Solution for Urban Chaos in Dhaka."

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Appendices

Appendix A: A life too short
Appendix B: Organizing Committee

Appendix A: Nasima's story

A life too short

Nasima, age 17, prepares to leave her small village in the coastal areas of Bangladesh for Dhaka where she hopes to find work in a garment factory. She is nervous about the move, but her family needs money as the yields from her family's rice crop are getting smaller and smaller every year. With the help of a family friend in Dhaka, Nasima finds garment work and shares a room with other girls from the factory. Her family worries daily for her safety.

Several months later her mother tells her a marriage has been organized with a local family whose son is a market vendor in Dhaka. Nasima's parents are relieved that a husband from a good family can take care of her. Nasima moves into her husband's small room in an adjacent slum which they rent for 2500 tk per month including illegal water and electricity connection. The latrine and kitchen are shared between 12 other families. The slum is privately owned, with rumours circulating that one section will be demolished for development.

Nasima overhears women in the factory talking about the pill and injection. She doesn't know how they work or how to get them, and is afraid of being laughed at if she asks. One year into her marriage she becomes pregnant. Nasima tries to cover her growing belly with her orna while she works.

Nasima feels very alone. She doesn't understand what is happening to her body and worries about how she will deliver and care for her baby. She works long hours at the factory and is unable to receive the ANC services offered near her home. A medical officer is available at the factory but she is afraid she will be fired if management knows she is pregnant.

Five months into her pregnancy, Nasima's supervisor fires her. It is difficult to afford anything more than rice and dahl as her husband's daily income has decreased significantly due to the political violence that has reduced the supply of vegetables into the city, and the number of customers moving past his stand. She uses wood chips for fuel because it is cheaper than gas but the smoke burns her eyes and throat. Nasmina knows she should be eating well for the baby, but her husband brings almost nothing home.

Nasima finds herself alone most of the day. Fortunately a community health worker comes by one morning and asks about her pregnancy, and gives her advice about preparing for her baby. She is asked to join a maternity group, where she makes a few friends and is able to ask basic questions about her pregnancy. She is reminded to take iron and folic tablets which cost only a few taka each, however there just isn't any money to spare.

One evening Nasima notices she is bleeding. Terrified she borrows her husband's mobile phone

and talks to the Community Health Worker. She tells her to go to the health clinic nearby. Nasima doesn't go because she doesn't have any money to pay for the consultation, and eventually the bleeding stops. Two weeks later, Nasima goes into labour. She is bleeding heavily and is in a lot of pain. Her husband is at work leaving Nasima alone in her room and without a means of calling the Community Health Worker.

Finally someone hears Nasima's cries and finds the Community Health Worker who arrives immediately and realized that Nasima is showing signs of haemorrhage. The Community Health Worker fears for Nasima's life as there is major blood loss, and doubts whether there is enough time to reach the government hospital where services are free.

She calls her supervisor for advice and is told to go to a NGO clinic with emergency services that is closer to the slum. Nasima is reluctant as she can't reach her husband and knows they can't afford treatment. The Community Health Worker urges Nasima to go to the clinic and the two of them begin the slow trip through the maze of small paths towards the main road where they wave down a CNG.

It takes nearly one hour from slum to clinic. The traffic is exceptionally bad requiring the CNG driver to take back streets over bumpy unfinished roads causing Nasima to cry out in pain. Once at the clinic, nurses rush to prepare Nasima for an emergency C–section.

The Community Health Worker is told that she brought Nasima too late. The nurses are unable to stop the bleeding. Frantic phone calls are made for emergency blood supply for transfusion. Nasmina dies in the delivery room. Her husband receives the news and is overwhelmed with grief. He returns home with his infant daughter and a medical bill for BDT 9500.

Appendix B: Organizing Committee

The Organizing Committee for the event includes:

Chair:
Alayne M. Adams, *Senior Social Scientist, Centre for Equity and Health Systems, icddr,b and Director, Centre for Urban Equity and Health, BRAC Institute of Global Health, BRAC University*

Sabina Rashid, *Dean, James P. Grant School of Public Health, BRAC Institute of Global Health, BRAC University*

Shamim Hayder Talukder, *CEO, Eminence and Member Secretary, Bangladesh Urban Health Network.*

Abu Jamil Faisel, *CEO, EngenderHealth and Chair, Bangladesh Urban Health Network*

Selmin Jahan, *Senior Assistant Coordinator (Urban Development Unit and Communicable Diseases Unit), Eminence*

Paul Rueckert, *Principal Advisor, Priority Area Health, Deutsche Gesellschaft für InternationaleZusammenarbeit (GIZ)*

Kelvin Hui, Senior Advisor – *Priority Area Health, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)*

Jan Borg, *Health Specialist for South Asia, Department of Foreign Aid and Trade, Australia*

Shahana Siddiqui, *Community Facilitation Coordinator, UNDP Bangladesh*

Kazi Maruful Islam, *Associate Professor, Department of Development Studies, Dhaka University*

Gladys Leterme, *International Research Fellow, Centre for Equity and Health Systems, icddr,b*
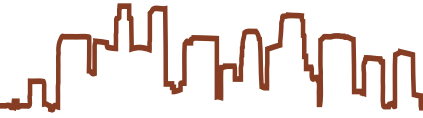
Tessa Hillgrove, *Urban Health Equity Fellow, Centre for Equity and Health Systems, icddr,b*

Rushdia Ahmed, *Research Fellow, Centre for Equity and Health Systems, icddr,b*

Tanzir Ahmed Shuvo, *Research Fellow, Centre for Equity and Health Systems, icddr,b*

Rubana Islam, *Research Investigator, Centre for Equity and Health Systems, icddr,b*

Shoshannah Williams, *Urban Health Fellow, Centre for Urban Equity and Health, BRAC Institute of Global Health, BRAC University*