BRAC SCHOOL OF PUBLIC HEALTH
JAMES P GRANT

BRAC UNIVERSITY
Inspiring Excellence

PATHWAYS TO EQUITABLE HEALTHY CITIES

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Pathways to equitable healthy cities is a global partnership that aims to improve population health, enhance health equity and ensure environmental sustainability in cities worldwide through the co-production of rigorous evidence with policy and civil society partners in the towns in five countries.

HEALTH CHALLENGES OF CITY DWELLERS

- Unplanned housing, toxic substances in the air and water, and lack of sanitation and safe roads expose the population of Dhaka city to health threats such as water-borne diseases, respiratory difficulties, road fatalities and non-communicable diseases.
- To reduce the inequalities and realize Sustainable Development Goals by 2030, policy movements are needed to minimize these urban health threats. Due to a lack of evidence, influencing policymakers remains a challenge.
- The information available in population census and other large-scale surveys is insufficient to modify policies. To address this matter, BRAC James P Grant School of Public Health (JPGSPH), BRAC University partnered with the Wellcome Trust through the Imperial College London, envisioning a healthy Dhaka city for all, regardless of one's socioeconomic status.

The Wellcome Trust funds our research through the Our Planet, Our Health scheme.

VISION

The vision is to provide timely, rigorous scientific evidence on how urban change and development can be directed and managed to positively impact the health of people, communities, and the planet and enhance health equity.

RESEARCH AREAS

We use diverse data sources, especially emerging open and big data, and novel methods for data integration and visualization to characterize cities' dynamic social, physical and natural environments, people's experiences of these environments, and their health. We also use interdisciplinary methods from social sciences, engineering, environmental science and epidemiology to evaluate how urban policies and programmes will impact the urban environment and population health through a lens of health equity.
The Pathways Project focuses on the following areas:

- Big Data
- **Knowledge Co-Production**
- Health Outcomes
- **Housing and Neighborhood**
- Measurement and Monitoring
- **Poverty and Inequality**
- **Transport and Mobility**
- **Water, Sanitation and Waste Management**

TOWARDS A HEALTHY DHAKA CITY FOR ALL

- Involve all stakeholders in developing a set of actionable policies across urban sectors
- Analyze the policy scenarios with context to population health and inequalities and create models to visualize impacts
- Training for leaders to take the advocacy movement forward

OUR ACTIVITIES

Knowledge co-production

- We engaged with policy and civil society partners on strategic waste management and waterlogging interventions via a virtual workshop in March 2021.
- We are now engaging with policy and civil society partners on Ambient Lighting, Air and Noise Pollution and Gendered Accessibility and Transport in Dhaka.
- In addition, in May, we received the grant relating to waste-induced waterlogging for Public Engagement Enrichment Funding for the main grant, Our Planet, Our Health: Pathways to Equitable Healthy Cities.

Housing and neighbourhood study

- We explored the primary solid waste management practices (collection, segregation and disposal) to understand the waste management practices of Secondary Transfer Stations (STSs) among the city dwellers and the surrounding Secondary Transfer Stations (STSs) in Dhaka North, Dhaka South, and the slums of Dhaka city.
- We also explored the knowledge about solid waste management and the health impacts of improper solid waste disposal in households near Secondary Transfer Stations (STSs), waste collectors and waste recyclers.
- We have identified the spatial location of the secondary transfer stations (STS) within the DNCC and DSCC and collected data on the volume of waste generation with respect to the total population. We also assessed the proximity of the STS location from the hospitals, educational institutions and greenspace.
- Focusing on urban space, we looked at the availability of greenspace and changes over 30 years, an assessment based on spatial analysis to identify the impact on urban health
- In close collaboration with the Harvard T.H. Chan School of Public Health, we have also developed a study plan to investigate the effects of poor ambient lighting and its health impacts in Dhaka through KIIs and FGDs.
- We have conducted a study on factors influencing the multi-temporal variability of air quality in Dhaka, and neighbouring cities, and its human health implications
- We are developing the Dhaka air and noise monitoring plan in close collaboration with the Government of Bangladesh and with technical guidance from Imperial College London. The fixed and rotating sites for obtaining primary data have been selected using multiple spatial data sources. We also analyzed the historical secondary data on air quality in Dhaka and adjacent areas.

Waterlogging Study

- We have mapped the risk of waterlogging using high-resolution satellite images.
- With such data, a more accurate scenario of waterlogging in Dhaka under various rainfall conditions is possible.
- We determined the degree of vulnerability in different areas by combining population data and land use with waterlogging zones.

Social inequalities

- We have mapped poverty in small areas of Dhaka City to reveal patterns of poverty and economic inequalities.
- Poverty was measured using the small area estimation method with Household Income and Expenditure Survey (HIES) and Census data to identify the extremely poor and poor people.
- It then transmuted the results into a spatial analysis to provide a more precise visualization of the current situation, and it correlated poverty with other population aspects (i.e., population density, slum households, greenspace, housing conditions)

Transport and Mobility:

- We are currently researching to support large-scale investments in bicycling in the cities [Delhi (India), Dhaka (Bangladesh), and Accra (Ghana)] of low-and middle-income countries.

STAKEHOLDERS' PARTICIPATION: CO-PRODUCTION AND CO-CREATION OF KNOWLEDGE

- Researchers, academicians, government officials, non-government organizations, health care providers as well as private sector officials; all stakeholders will play a significant role in shaping the project
- Views of each stakeholder based on practical experience of working in each of the sectors will be taken into account for policy scenario development
- Through BRAC JPGSPH's data bank and future projections, stakeholders will gain access to information on the impacts that policy changes will have on the health scenario of Dhaka in the future
- The co-production of policies will help stakeholders uptake actions to bring positive changes in their respective sectors
- Synergistic advocacy among stakeholders will inflict policy changes for a healthier Dhaka city that is livable for all

PUBLICATIONS

1. An overview of progress towards implementation of Solid Waste Management policies in Dhaka, Bangladesh
   Author: Delufa Tuz Jerin, Hasna Hena Sara, Marzuka Ahmad Radia, Prianka Sultana Hema, Shahriar Hasan, Salma Akter Urme, Camilla Audia, Md Tanvir Hasan, Zahidul Quayyum
   Journal: Heliyon
   Date of Publication: Feb 22, 2022

2. Synthesizing the links between secure housing tenure and health for more equitable cities
   Author: Jill Baumgartner, Judith Rodriguez, Frans Berkhout, Yvonne Doyle, Majid Ezzati, George Owuso, Zahidul Quayyum, Bethlehem Solomon, Meghan Winters, Gary Adamkiewicz, Brian E. Robinson
   Journal: Wellcome Open Research 2022
   Date of Publication: Jan 2022

3. Dhaka landfill waste practices: addressing urban pollution and health hazards.
   Author: Urme SA, Radia MA, Alam R, Chowdhury MU, Hasan S, Ahmed S, Sara HH, Islam MS, Jerin DT, Hema PS, Rahman M.
   Journal: Buildings & cities
   Date of Publication: July 2021

4. Effective solid waste management can alleviate the severity of the waterlogging situation in Dhaka (Blog)
   Author: Rafiul Alam and Hasna Hena Sara
   Newspaper: Dhaka Tribune
   Date of Publication: October 2021

5. Why cities need to preserve green space: A case study of Dhaka city (Blog)
   Author: Khadiza Tul Kobra Nahin, Hasna Hena Sara, Dr Zahidul Quayyum
   Website for Blogs: Pathways to Equitable Healthy Cities BLOG.
   Date of Publication: Jan 2022

6. Taking the bus as a girl in Dhaka: A view of Dhaka city's broken commuting system (Blog)
   Author: Sabrina Mustabin Jaigirdar, Zahidul Quayyum
   Newspaper: Dhaka Tribune
   Date of Publication: June 7, 2022

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