

Health and Nutrition in Urban Bangladesh *Social Determinants and Governance*¹

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¹ The findings, interpretations, opinions, and conclusions expressed in this paper are entirely those of the authors, and do not necessarily represent the views of the World Bank, its Executive Directors, or the countries they represent.

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Preface

Bangladesh has made remarkable progress on the health and nutrition related Millennium Development Goals (MDGs), with major achievements in increasing immunization rates and reducing the rates of malnutrition, infant and under-five mortality, maternal mortality and communicable diseases. Building on these successes, Bangladesh has now committed itself to achieving universal health coverage by 2032. Realizing this ambitious goal will require Bangladesh to intensify its efforts to address the unfinished agenda of communicable diseases and maternal and child health issues, while at the same time tackling newer health challenges, such as noncommunicable diseases, climate change, and urbanization.

Urbanization is occurring at a rapid pace in Bangladesh, accompanied by the proliferation of slum settlements, whose residents have special health-related needs given the adverse social, economic, and public environmental conditions they face. Health and nutrition policies and programs over the last 45 years have focused largely on the provision of rural health services. Consequently, equitable access of urban populations - and the urban poor, in particular - to quality health and nutrition services has emerged as a major development issue. The knowledge base on urban health and nutrition in Bangladesh is also weak.

With the objective of addressing the knowledge gap, this report examines the health and nutrition challenges in urban Bangladesh—looking at socioeconomic determinants in general and health-sector governance in particular. Based on a mixed methods approach, the study identifies critical areas such as financing, regulation, service delivery and public environmental health, among others that require policy attention. The report also proposes specific actions within and outside the health sector to address the issues, providing guidance on their sequencing and specific responsibilities of government agencies and other actors.

In sum, many of the substantial health-sector gains made by Bangladesh may well be compromised if urban health and nutrition challenges are not tackled. The same commitment that the country showed in realizing the MDGs is now needed to address the health and nutrition needs of urban populations. We hope that this report is valuable to policymakers and practitioners working on urban health and nutrition issues in Bangladesh, the South Asia region and elsewhere, and can help inform the design and implementation of sound health policies and programs by our clients.

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The 2006 and 2013 Bangladesh Urban Health Surveys were the data sources for the report's quantitative research. These surveys were administered by the National Institute of Population Research and Training, Measure Evaluation, University of North Carolina at Chapel Hill, United States, and ICDDR,B, with survey fieldwork conducted by Associates for Community and Population, Bangladesh, and funded by USAID and DFID. The report's qualitative research benefited from background studies prepared by Sabina Najma on regulations and by the team at Data International led by Dr. Najmul Hossain on community participation and accountability. The team is grateful to all the individuals who participated in personal interviews and focus group discussions.

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Executive Summary

1. Bangladesh has made remarkable progress on the United Nations Millennium Development Goals related to health and nutrition, increasing child immunization rates while reducing the incidence of malnutrition and communicable diseases, as well as infant and maternal mortality rates. Building on this success, Bangladesh is seeking to achieve universal health coverage by 2032. Realizing this ambitious goal won't be easy, however. To do so, the country must radically intensify ongoing efforts to tackle communicable diseases and maternal and child health issues. At the same time, Bangladesh must address fresh health challenges arising from an increase in noncommunicable diseases, and from climate change and urbanization.

2. Urbanization is occurring at a rapid pace in Bangladesh. While most of the population remains rural, 23 percent of people now live in urban areas. From 2001 to 2011, the country's urban population expanded by 35 percent, at an annualized growth rate of three percent. By 2050, the urban population is projected to account for more than half of Bangladesh's total population. Slum settlements have proliferated as part of this trend, with a recent census counting approximately 14,000 slum settlements across the country. Although these settlements differ in size, they share some characteristics, including high population densities, a large share of migrants from rural areas, inferior public water and sanitation services, and poor-quality housing. These conditions have contributed to health challenges for slum residents.

3. Despite increasing urbanization, health and nutrition policies in Bangladesh have continued to focus on the delivery of health services and improving health and nutrition outcomes in rural areas. The unique urban health governance structure in Bangladesh, with a division of roles and responsibilities between the Ministry of Local Government, Rural Development and Cooperatives (MOLGRD&C), the Ministry of Health and Family Welfare (MOHFW) and urban governments has further constrained the effective delivery of urban health services. Much thus remains to be accomplished in ensuring access to quality health services in urban areas, particularly for the poor. There are also significant knowledge gaps on the financing, delivery, and regulation of urban health services. Even less well understood are the nonhealth sector related issues associated with urbanization that have an important bearing on health and nutrition outcomes in urban areas.

4. The study uses a mixed methods approach to investigate the determinants of health outcomes in urban Bangladesh. The study is underpinned by the Commission on Social Determinants of Health (CSDH) framework. The use of the CSDH framework enables a systematic exploration of the social determinants of health inequalities ("structural" determinants) and the social determinants of health ("intermediary" determinants), of which the health system is but one. Within the CSDH framework, governance is an element of specific focus, since the distribution of roles and responsibilities, and the relationships between urban health actors, have been identified as important in explaining health inequalities. Accordingly, a quantitative analysis was conducted using relatively unique community and household sample survey data from 2006 and 2013 to understand the extent and nature of variation in health and nutrition outcomes within and across city corporations (the largest cities) in Bangladesh, and which, how, and how much specific factors within and outside the health sector influence the variation in outcomes. The quantitative analysis seeks particularly to understand the variation in outcomes between slum and nonslum areas in city corporations. A qualitative analysis was also conducted to understand the structure of institutional arrangements for urban health governance in Bangladesh; and *de jure* and *de facto* roles and responsibilities of, and relationships between, three key groups of actors – the government, service providers, and citizens - and consequences for access, quality and equity in health service delivery.

5. **Findings.** The key findings of the study are:

- *Health outcomes and determinants.* Most average health and nutrition outcomes are poorer for slum than non-slum residents. Exceptions are overweight, diabetes, and hypertension for adults—averages for these outcomes are poorer for non-slum residents. Average socioeconomic characteristics are generally poorer for slum than non-slum residents. Factors such as age, high levels of education attainment, and household economic status are quite consistently associated with nutrition and health outcomes. Factors such as neighborhood environmental quality and health service availability by different provider types are much less consistently associated with nutrition and health outcomes.
- *Governance.* Two important challenges pertaining to stewardship and planning are a lack of meaningful coordination between MOHFW and MOLGRD&C on the provision of urban health services, and the inability of the urban health system—particularly at the primary health service level—to keep pace with the rapid urbanization. These factors contribute to the inadequate numbers and poor quality of public health facilities, which along with the high cost of private health facilities, frequently result in the denial of basic health services to the urban poor and delays in seeking care by these groups.
- *Financing.* Urban governments do not have a separate budget allocation for health services or public health initiatives, and have limited capacity to mobilize their own funds. Each urban local body may employ a small number of health staff, paying their salaries from its budget, and through donor-funded projects. This is in line with the country's overall administrative structure, which is not fiscally decentralized, and does not allow local participation in funding decisions. Urban governments do not have updated, standardized systems to determine who qualifies as poor and who should qualify for exemptions from user fees. Fees are not standardized across providers; nor are measures in place to ensure provider compliance.
- *Regulation.* Many regulations are weak and outdated, especially those related to government responsibilities and urban health service providers. For example, the law requires every health facility to obtain an operation license from regulators, to register with the urban government, and to renew its registration annually. However, regulators approach this process as a purely administrative exercise, with no quality controls in place. Monitoring and evaluation of facilities remains fragmented. While the national Health Management Information System (HMIS), under the Ministry of Health and Family Welfare, maintains data on ministry-run facilities, it does not do so for other public health facilities, or for NGO or private health providers. This makes it difficult to measure the performance of the entire urban health system.
- *Service delivery.* Bangladesh's health service system consists of different legal entities, with limited horizontal and vertical integration, and no mechanism in place to facilitate patient referrals. The health system puts inadequate emphasis on aspects such as equitable access to quality care, continuity of care, patient-centeredness, and patient rights; and the sector lacks a culture of accountability. Due to the strong focus on maternal and child health, services are not widely available for treating certain conditions, such as noncommunicable diseases, or patient groups, such as men, particularly among public and NGO providers. Patients cannot easily access credible, relevant information on provider performance.
- *Overarching policy framework.* The urban health landscape is evolving in Bangladesh, without a concurrent vision emerging of how the health system should work in city corporations and municipalities. As such, there is a pressing need for policymakers to develop a comprehensive, urban health policy in consultation with relevant stakeholders. The policy needs to better reflect changes in the operating environment, including increased rural-urban migration and shifts in the epidemiological and demographic profiles of urban areas. It should also consider the potential for multisectoral action to influence health and nutrition outcomes, the country's unique urban governance structures, and the needs of a working population. Any urban health policy should also recognize the proliferation of urban slum settlements and the special needs of their residents.

6. **Recommendations.** Based on the findings, the study makes several strategic recommendations to address the issues identified, strengthen urban health services, and help Bangladesh move towards its universal health coverage aspirations, including:

- *Governance.* Establishing an effective governance framework for the urban health sector will require a multipronged strategy. This includes: (i) strengthening involvement at the local level, to allow mayors to take ownership of urban health services with financial and other support from the central government; (ii) ensuring a cohesive partnership among the Ministry of Health and Family Welfare, the Ministry of Local Government, Rural Development and Cooperatives, and other relevant ministries, and the NGO and private sectors, by agreeing on a clear division of responsibility, coordinating financial resources and accountability, and developing capacity; and (iii) aligning donor support for urban health with the central government's urban health strategy.
- *Regulation.* Boosting regulation of, and enforcement capacity for, urban health service delivery, including revising regulations on licensing and registration, and ensuring rigorous quality control of public, NGO, and private health services. Professional associations can play a bigger role by promoting collaboration and fostering a stronger patient-centered focus among providers. And the government should develop a comprehensive monitoring and evaluation system covering public, NGO, and private urban health service providers in all urban areas, and promote evidence-based decision-making.
- *Financing.* Ensuring sufficient, sustainable financing for urban governments to provide health services. Potential options to achieve this include: (i) aligning financing with responsibilities for urban health by ensuring that the relevant central Ministries allocate adequate funds to city corporations and municipalities to provide health services, and exploring ways to complement central government transfers with revenues collected at the local level; (ii) updating and standardizing user fees for essential services and the most common procedures; (iii) standardizing methods to identify the poor and levels of exemption from user fees, and ensuring full compliance among providers to honor such exemptions; and (iv) exploring the use of cash transfers, with or without conditions related to health service use, to households.
- *Service delivery.* Restructuring its urban health system so that it doesn't just target specific diseases or population groups, but addresses the needs of the entire population and fosters a patient-centered approach. This will require urban health providers to move beyond maternal and child health services to also tackle noncommunicable diseases, reach underserved groups, and make services more accessible to the working population by expanding operating hours. The government should expedite its plans for establishing a functioning referral system by ensuring that patients are properly assigned to specific providers. Promoting accountability and strengthening public trust in the system will require efforts targeting both supply and demand aspects. Partnerships with the private sector have the potential to considerably expand the reach of urban health services. Pharmacies are ubiquitous, while private clinics operate as the main provider of health services in urban areas, including to the poor. Partnerships with such entities could include experimentation with preventive and promotive health services, and with the provision of a minimum level of quality care that is affordable to the poor.
- *Urban health policy.* Developing an urban health policy, within the broader context of urbanization and urban policy, with a strong focus on the needs of slum residents. In the urban health policy, it is important to recognize that nonhealth determinants of health and nutrition outcomes are at least as important to improving health as interventions in the health sector. Thus, the policy should cover the roles and responsibilities of other health-sensitive ministries.

Introduction

1. Bangladesh has made remarkable progress on the United Nations Millennium Development Goals related to health and nutrition, increasing child immunization rates while reducing the incidence of malnutrition and communicable diseases, as well as infant and maternal mortality rates. Building on this success, Bangladesh is seeking to achieve universal health coverage by 2032. Realizing this ambitious goal won't be easy, however. To do so, the country must radically intensify ongoing efforts to tackle communicable diseases and maternal and child health issues. At the same time, Bangladesh must address fresh health challenges arising from an increase in noncommunicable diseases, and from climate change and urbanization.

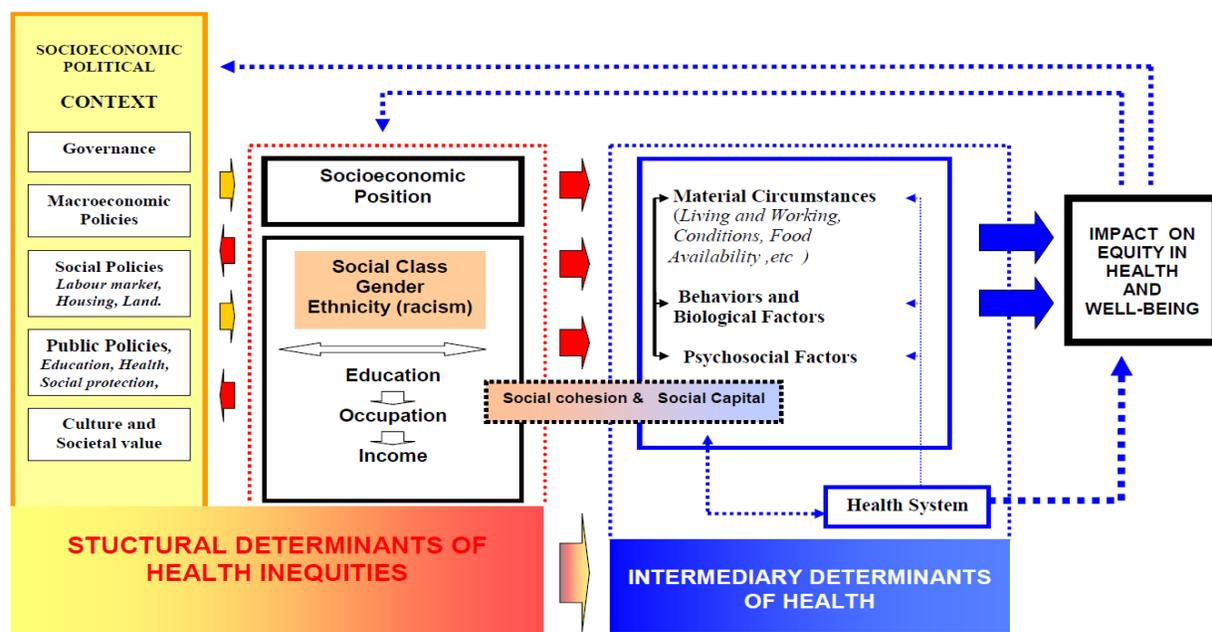
2. Urbanization is occurring at a rapid pace in Bangladesh. While most of the population remains rural, 23 percent of people now live in urban areas. From 2001 to 2011, the country's urban population expanded by 35 percent, at an annualized growth rate of three percent. By 2050, the urban population is projected to account for more than half of Bangladesh's total population. Slum settlements have proliferated as part of this trend, with a recent census counting approximately 14,000 distinct slum settlements across the country. Although these settlements differ in size, they share some characteristics, including high population densities, a large share of migrants from rural areas, inferior public water and sanitation services, and poor-quality housing. These conditions have contributed to a raft of health challenges for slum residents.

3. Health and nutrition policies and programs in Bangladesh have up to now focused largely on the provision of health services to rural areas. Consequently, urban populations, and especially the urban poor, have not enjoyed sufficient access to quality health and nutrition services. Knowledge about urban health and nutrition in Bangladesh also remains sparse. Addressing this critical knowledge gap, and the imbalance in policy and program focus, will be a priority for Bangladesh if it is to successfully address the health needs of the urban poor and improve overall health and nutrition outcomes in urban areas.

4. Furthermore, urban health governance in Bangladesh is relatively unique. Urban governments are responsible for the delivery of public health services and preventive and curative care through public hospitals, clinics, and dispensaries, as well as for licensing private health providers. MOLGRD&C, through LGD, provides financial and human resources to support urban governments perform these tasks. The Ministry of Health and Family Welfare (MOHFW) is responsible for national health and family planning standards, strategy and policy development, and regulation, as well as secondary and tertiary care through its own public hospitals in urban areas (ICDDR, 2015; Adams et al., 2015). This fragmented governance arrangement appears to be an important constraint in efforts to improve health outcomes in urban areas.

5. The study used a mixed methods approach to investigate the determinants of health and nutrition outcomes in urban Bangladesh. The study is based on WHO's Commission on Social Determinants of Health (CSDH) framework (figure 1). The use of the CSDH framework enables a systematic exploration of both the social determinants of health inequalities ("structural" determinants), as well as the social determinants of health ("intermediary" determinants), of which the health system is but one. Furthermore, within the CSDH framework, governance is presented as an element of specific focus, since the distribution of roles and responsibilities, and the *de jure* and *de facto* relationships between actors relevant to urban health—which reflect broader sociocultural norms and values embedded in social policies as well as in social relationships—have been identified as important in explaining health inequalities.

Figure 1. Conceptual Framework of Health Determinants



Source: Adapted from the *Final Report of the Commission on Social Determinants of Health* (2008).

6. Accordingly, a quantitative analysis was conducted using relatively unique community and household sample survey data to understand the extent and nature of variation in health and nutrition outcomes within and across city corporations (the largest cities) in Bangladesh, and which, how, and how much specific determinants within and outside the health sector influence the variation in outcomes. Of particular interest, the quantitative analysis seeks to understand the variation in outcomes between slum and non-slum areas in city corporations.

7. Governance is viewed as a critical dimension for understanding the urban health service performance in Bangladesh. To explore this, a qualitative analysis was performed to understand how urban health sector governance in Bangladesh is structured, and how this affects access, quality, and equity in health service delivery. The use of mixed methods was necessitated by the fact that few rigorous and widely-accepted quantitative measures of governance exist (Kaufmann, Kray, and Mastruzzi, 2007), and relevant, reliable data for Bangladesh are unavailable for such measures. A qualitative analysis also allows for a richer examination of urban health sector governance issues.

Background

8. To set the backdrop for the study, this section discusses three aspects. First, the section discusses urbanization; the types of urban centers; basic dimensions and characteristics of slum settlements; and the levels of urban poverty and inequality in Bangladesh. Second, the section compares health and nutrition outcomes in urban Bangladesh to (1) urban areas of developing countries and (2) rural Bangladesh. Third, the section discusses the organization of urban health services, and available evidence on the quality of urban health services in Bangladesh.

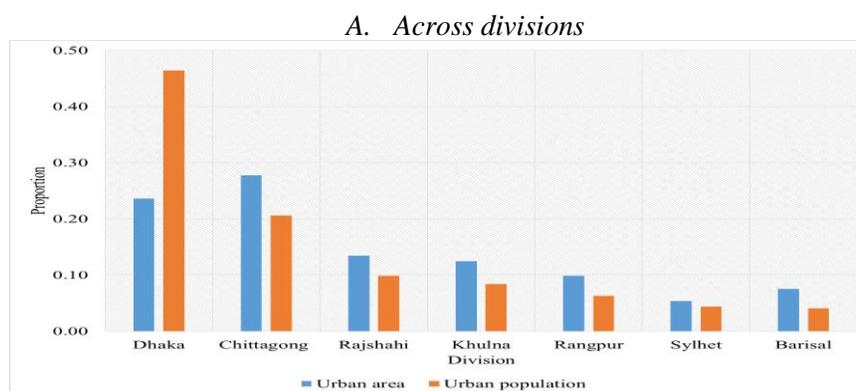
Urbanization

9. Classified as a lower middle-income country, Bangladesh is the eighth most populous country in the world, with an estimated population of 159 million in 2014 (World Bank, 2016). According to the 2011 Bangladesh population and housing census, 23 percent of the country's population is urban (Government of Bangladesh, 2014). Based on official measures, Bangladesh's urban population share ranks it in the middle among South Asian countries. In turn, South Asia, with an urban population share of 28 percent, ranks lowest among all regions in the world (Ellis and Roberts, 2016).

10. In South Asian countries, including Bangladesh, official definitions of urban tend to be related to administrative boundaries. Built-up extents are frequently found to correspond poorly with administrative boundaries of urban areas in the region. An alternative measure, which is arguably comparable across countries and does not rely on administrative boundaries, is the agglomeration index. Using this index, Bangladesh's urban population share rises to 46 percent, while the corresponding share for South Asia rises to 52 percent, ranking the region higher than East Asia and Pacific and Sub-Saharan Africa. Bangladesh's index-based share continues to rank the country in the middle among South Asian countries (Ellis and Roberts, 2016).

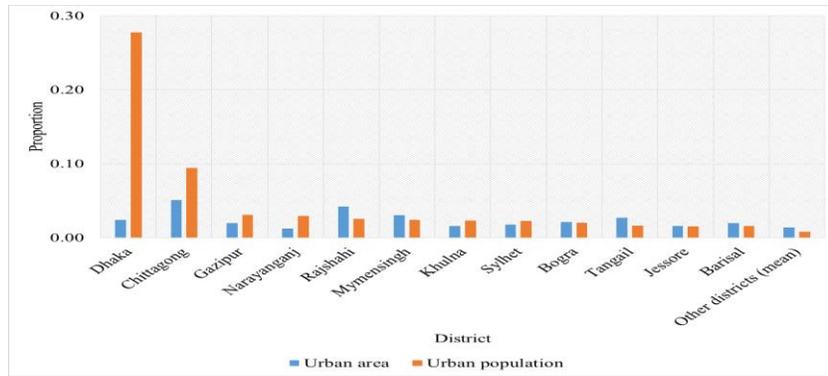
11. Bangladesh's urban population is spatially concentrated. The country is organized into eight administrative divisions and, under them, 64 administrative districts.² Per the 2011 census (Government of Bangladesh, 2014), at the division level (in 2011, there were seven divisions), Dhaka division had an urban population of 16 million (accounting for 46 percent of the country's urban population), Chittagong division had 7 million people (21 percent), while the remaining divisions each had between 1 to 3 million people (figure 2, panel A). At the district level, Dhaka district had an urban population of 9.3 million people (28 percent of the country's urban population), Chittagong district had 3.2 million people (9 percent), and each of the other districts had between 100,000 to 1 million people (figure 2, panel B).

Figure 2. Distribution of urban population and area, by administrative division and district, 2011



B. Across districts

² Mymensingh division was formed in 2015, divided from Dhaka division; Rangpur division was formed in 2010, divided from Rajshahi division.



Note: Statistics obtained from the Population and Housing Census 2011: National Report Volume 3: Urban Area Report.

12. Establishing the rate at which Bangladesh is urbanizing is complicated by a recent adjustment in the definition of an urban area. The 2011 population census introduced a stricter administrative-based definition of an urban area compared to preceding censuses (Government of Bangladesh, 2014).³ If the older census definition of an urban area was retained, the country's urban population would have increased from 13.5 million (15.5 percent of the total population) in 1981 to 42 million (28 percent of the total population) in 2011, an annualized urban population growth rate of 3.8 percent.⁴ Over the 2001–11 period, the annualized urban population growth rate was lower, at 3 percent. These urbanization rates are roughly in line with the overall rate for least-developed countries over the last 40 years (UN, 2015a).

13. Urban centers in Bangladesh are essentially organized into three levels: city corporations, municipal cities and towns (*paurashavas*), and *upazilla* headquarters. Per the 2011 census (Government of Bangladesh 2014), Bangladesh had 506 urban centers: six city corporations (Barisal, Chittagong, Dhaka, Khulna, Rajshahi, and Sylhet), 311 municipal cities and towns, and 189 upazilla headquarters. The six city corporations accounted for 34 percent of the country's total urban population in 2011.

14. Since 2011, the number of urban centers has grown, and some urban centers have moved up in level. The number of city corporations has grown from six to 11, with four newly incorporated city corporations: Comila (in 2011), Gazipur (in 2013), Narayanganj (in 2011), and Rangpur (in 2012). Dhaka city corporation was bifurcated into Dhaka North and Dhaka South city corporations in 2011. Based on published census statistics (Government of Bangladesh 2014), the study estimates that these 11 city corporations that exist today accounted for 41 percent of the country's total urban population in 2011.

15. **Urban poverty and inequality:** It is well-recognized that the distribution of economic welfare, measured by household consumption-based poverty and inequality, is associated with the distribution of individual health outcomes. Poverty and inequality statistics for Bangladesh are available at the national and division levels and within divisions, by SMAs, municipal cities and towns, and rural areas. The

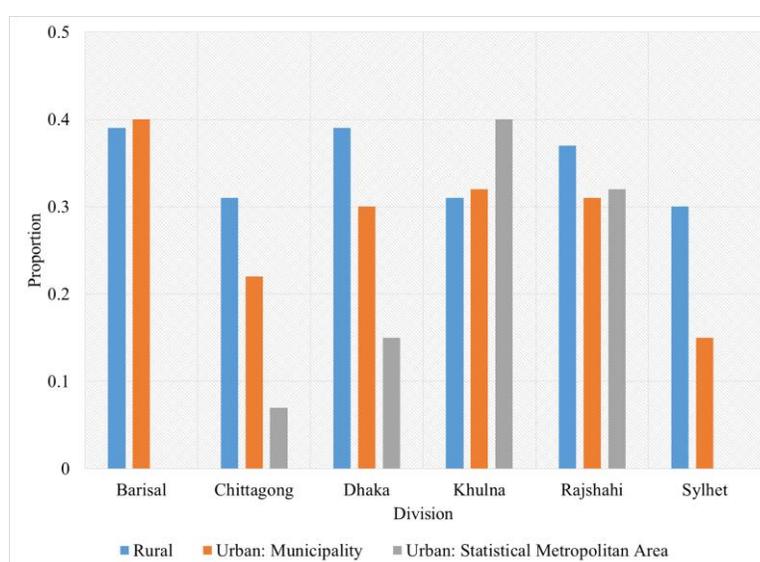
³ In the 1981, 1991, and 2001 censuses, the definition of an urban area included urban developments next to large cities. The 2011 redefinition reduced the total area classified as urban from 10,711 square kilometers in 2001 to 8,867 square kilometers in 2011 (a 17 percent reduction). The reductions affected some districts more than others. In particular, Dhaka, Chittagong, Gazipur, and Khulna districts experienced reductions in their urban areas of more than 50 percent. With the adjustment in urban areas, Bangladesh's urban population in 2011 totaled 35.1 million, or 23.4 percent of the total population.

⁴ The 2010–11 Bangladesh Household Income and Expenditure Survey (HIES) data was drawn using the 2001 census as the sampling frame, and used the pre-2011 definition of an urban area. An estimated 27 percent of the country's population was urban based on these data.

estimated consumption-based poverty rate in urban Bangladesh was 21 percent in 2010. Except for Afghanistan, the country’s urban poverty rate is higher than for other South Asian countries (Ellis and Roberts, 2016). The estimated poverty rate is lower in urban than rural areas (21 percent versus 35 percent), as are the estimated depth and severity of poverty (World Bank, 2013).

16. The urban poverty rate differs across divisions, both in absolute terms and relative to the rural poverty rate (figure 3). Poverty rates in SMAs and municipal cities and towns are either similar or higher than rural poverty rates for Barisal, Khulna, and Rajshahi divisions, whereas the reverse holds for Chittagong, Dhaka, and Sylhet divisions. Poverty rates in SMAs and municipal cities and towns for Chittagong, Dhaka, and Sylhet divisions tend to be lower than in corresponding areas for other divisions (World Bank, 2013).

Figure 3. Consumption poverty rates, by administrative division and urban versus rural areas, 2010



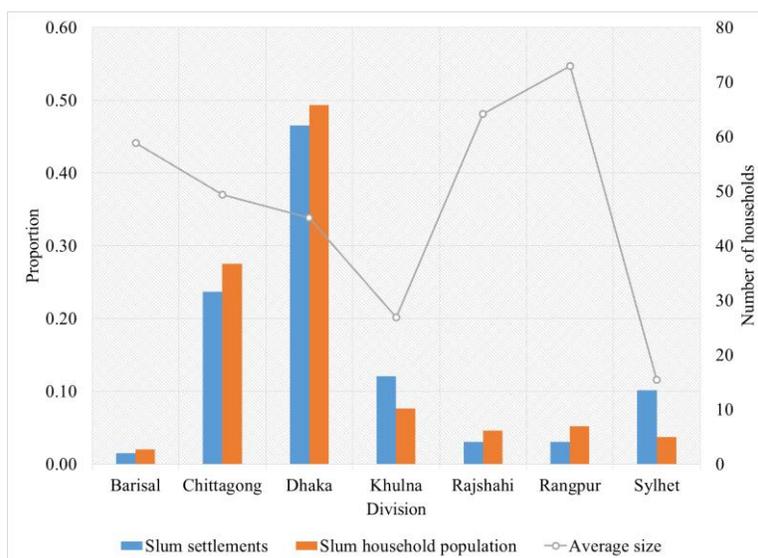
Note: Statistics obtained from the Bangladesh Poverty Assessment: Assessing a Decade of Progress in Reducing Poverty 2000-2010.

17. Over the period 2000–10, the country’s urban poverty rate fell from 35 percent to 21 percent. The rate of decline was comparable between urban and rural areas. Estimated consumption-based inequality in 2010, measured by the Gini coefficient, was higher in urban than rural areas in 2010 (0.33 versus 0.27). Inequality appears to have declined over time in urban areas (from 0.37 in 2000 to 0.33 in 2010), while it appears to have remained unchanged in rural areas (World Bank, 2013).

18. **Slum settlements:** A 2014 census of slum settlements enumerated approximately 14,000 distinct slum settlements across the city corporations, municipal cities and towns, and upazilla headquarters and other urban areas (Government of Bangladesh, 2015). City corporations accounted for 65 percent of slum settlements, municipal cities and towns for 24 percent, and upazilla headquarters and other urban areas for 11 percent. Chittagong and Dhaka divisions accounted for 75 percent of slum settlements and slum households (see figure 4). Within these divisions, Chittagong, Dhaka North, Dhaka South, and Gazipur city corporations accounted for the majority of slum settlements and households. The average size of slum

settlements ranged from 15 households in Sylhet division to 73 households in Rangpur division, and was 49 in Dhaka division and 45 in Chittagong division. An independent census and mapping of slum settlements conducted in 2005 counted about 9,000 slum settlements in the six city corporations that existed at the time, with a total slum population of 5.4 million, or 35 percent of the overall population in these city corporations (Angeles et al., 2009).^{5,6}

Figure 4. Distribution of slum settlements, by administrative division, 2014



Note. Statistics obtained from the Preliminary Report on the Census of Slum Areas and Floating Population 2014.

19. The 2005 independent census had several interesting findings on the characteristics of slum settlements. Four of these findings are notable. First, there were large differences in the population sizes, and housing and public environmental conditions, of slum settlements within and across cities. Large slum settlements were a feature of the larger cities. Second, waste management (garbage disposal and collection, and sanitation) tended to be poorer than other public environmental facilities in slum settlements. Third, the vast majority of slum settlements were situated on private lands, and slum residents tended to have secure tenure. In addition, housing construction tended to be of better quality in slum settlements on private lands, presumably a result of residents having secure tenure. Fourth, a large share of slum residents were rural migrants, mostly from rural communities near to the city corporation.

20. Case studies indicate that slum residents generally observe poor socioeconomic conditions (for example, Hossain, Moniruzzaman, and Islam, 2010; Nahar and Rahman, 2013; Islam, Farukuzzaman, and Islam, 2014). These findings are consistent with evidence for slum residents globally (Marx et al., 2013; UN-Habitat, 2016).

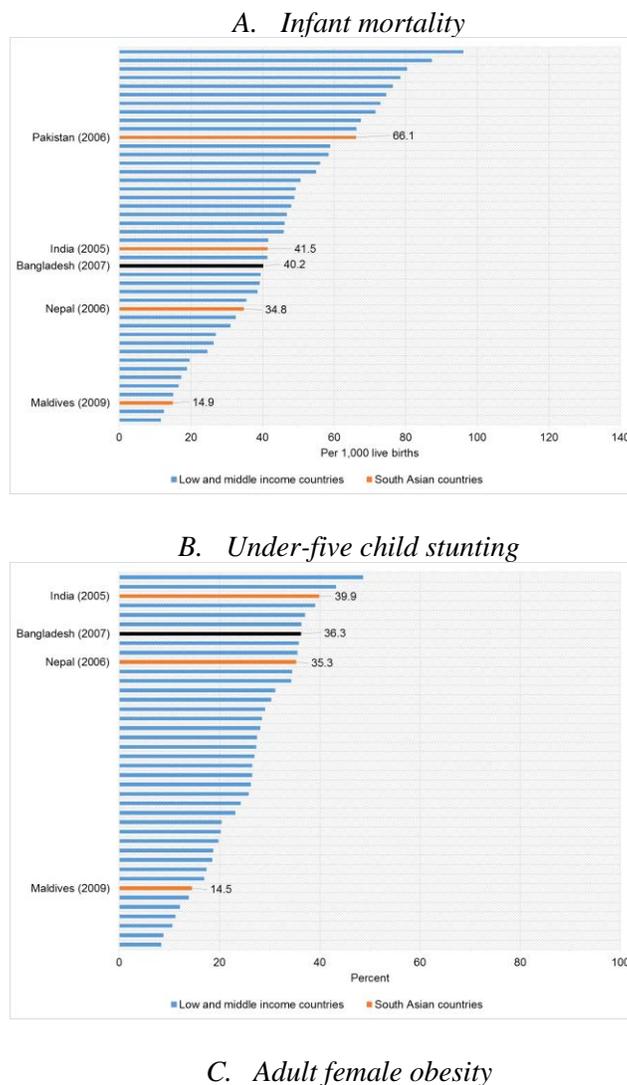
⁵ A settlement was defined to be slum if it had at least 10 households and met four of the following five conditions: poor housing quality, high population density or overcrowded housing, poor water supply and sanitation facilities, insecure tenure, and a majority of households who are poor.

⁶ While the statistics from the 2005 and 2014 censuses may not reconcile easily, the basic message is the same: slum settlements and their populations are a major feature of urban areas in the country.

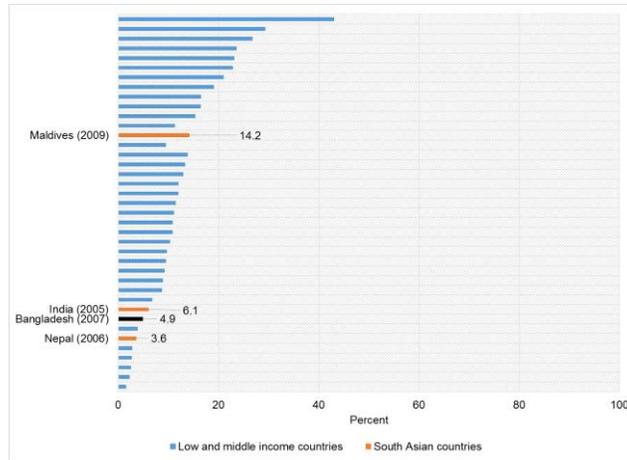
Urban health

21. **Urban health and nutrition status in an international perspective:** Bangladesh's urban health and nutrition picture relative to other developing countries is mixed, and varies by the specific health indicator. According to WHO statistics, Bangladesh ranks better than other countries on urban infant mortality and adult female obesity, but worse on urban child stunting (figure 5). The country's relative status also depends on the urban subpopulation for the indicator, specifically whether the measure is for the poor or the rich. Bangladesh ranks worse than other developing countries with respect to the poor on urban infant mortality and child stunting. It also ranks worse than other countries with respect to the rich on urban adult female obesity (figure 6). These patterns are not unique to urban Bangladesh in South Asia; urban India and urban Nepal exhibit similar patterns.⁷

Figure 5. International differences in urban health and nutrition outcomes



⁷ While analogous figures for rural Bangladesh are not produced, the noted international rank patterns for urban Bangladesh also apply to rural Bangladesh, suggesting that the patterns apply to Bangladesh as a whole.



Source: www.who.int. Last accessed March 13, 2016.

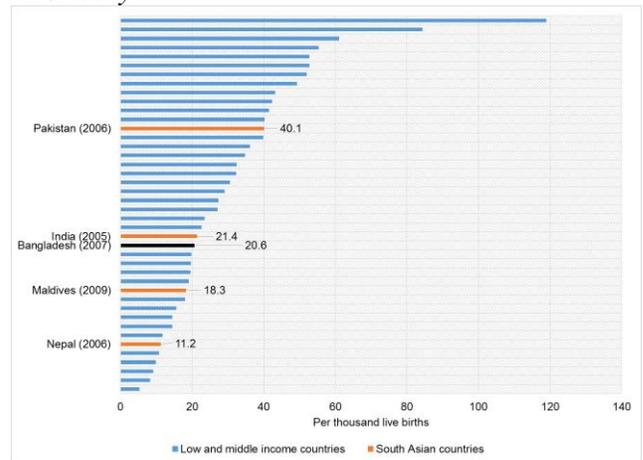
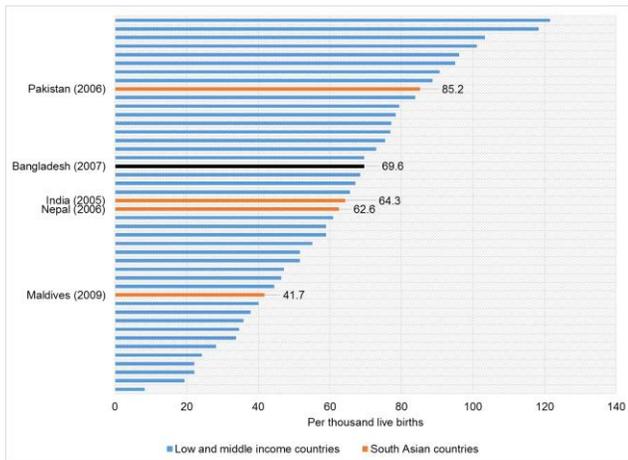
Note: Countries with statistics for the indicators in the period 2005-09 are included in the figure.

Figure 6. International differences in urban health and nutrition outcomes, poorest and richest quintiles

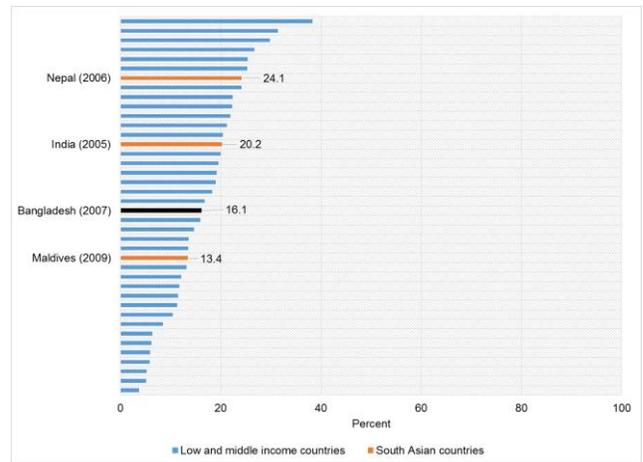
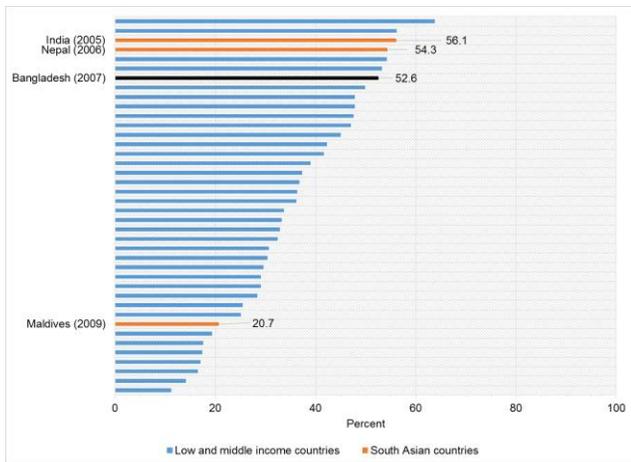
Poorest quintile

Richest quintile

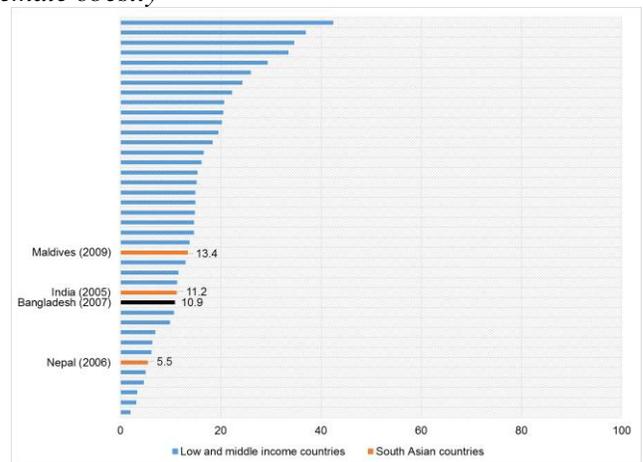
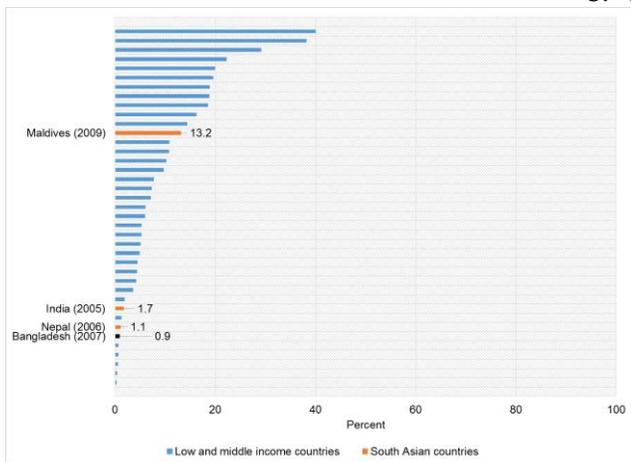
A. Infant mortality



B. Under-five child stunting



C. Adult female obesity



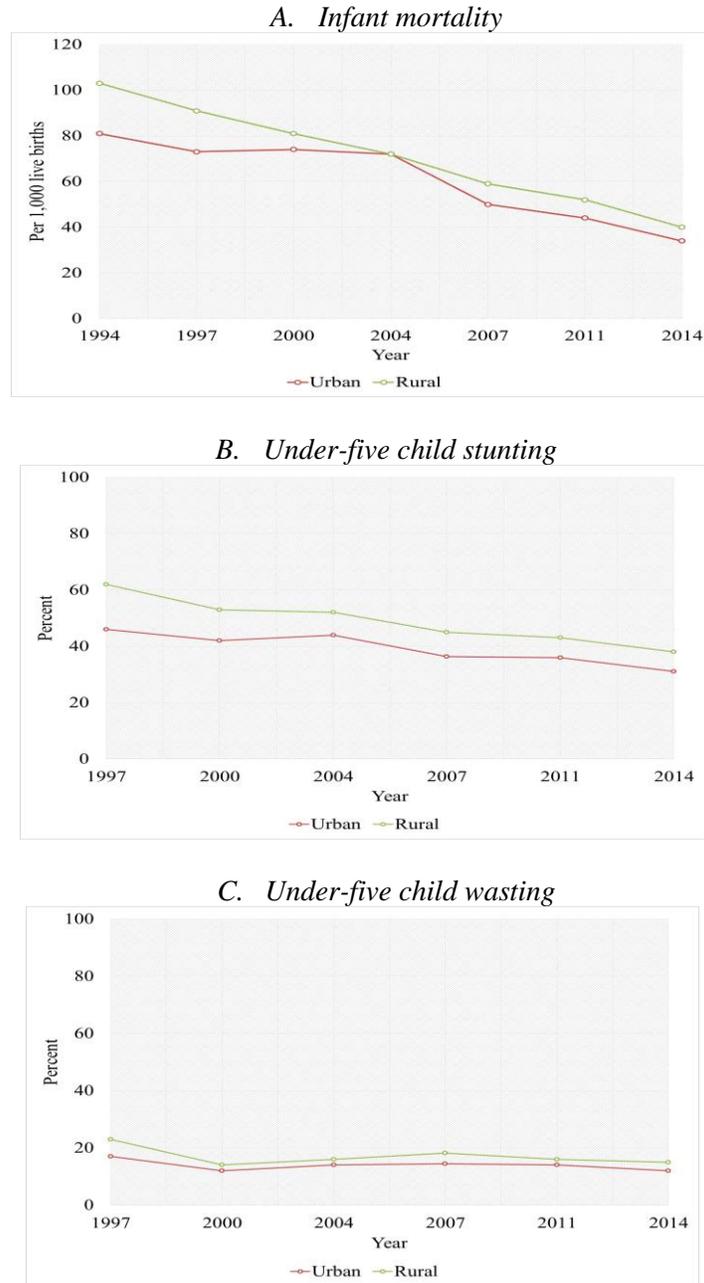
Source: www.who.int. Last accessed March 13, 2016.

Note: Countries with statistics for the indicators in the period 2005-09 are included in the figure.

22. **Urban-rural differences in health and nutrition status:** Differences in average health and nutrition outcomes between urban and rural areas for Bangladesh are consistent with the patterns documented for developing countries (Van de Poel, O'Donnell, and Van Doorslaer, 2007). For children, the rates of infant mortality, under-five stunting, and under-five wasting are lower in urban than in rural areas (figure 7). Based on visual inspection, trends over DHS rounds from the mid 1990's to 2014 do not indicate marked convergence or divergence in these rates between urban and rural areas. For adults, urban-rural patterns in average health outcomes differ by indicator (figure 8). Published statistics from the 2011 DHS indicate that women and men are more likely to be underweight in rural areas, whereas they are more likely to be overweight and suffer from hypertension and diabetes in urban areas.⁸

⁸ While published statistics from the 2014 DHS are available, statistics from the 2011 DHS are reported because health and nutrition data were collected for a wider adult sample in 2011. The 2014 DHS only measured height and weight for women, and measured blood pressure and took blood samples for a selected sample of women with a live birth in the last three years.

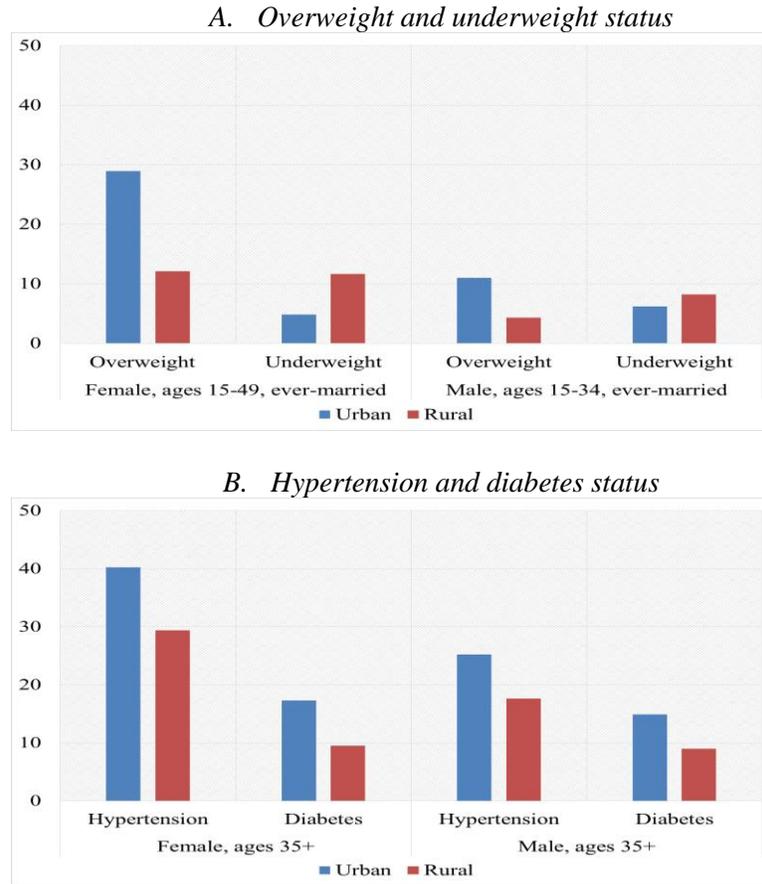
Figure 7. Urban-rural differences in child health and nutrition outcomes



Source: Infant mortality rates were obtained from the Bangladesh Demographic and Health Survey reports for 1993–94, 1996–97, 1999–00, 2004, 2007, 2011, and 2014. Under-five child stunting and wasting rates are own estimates using DHS data for 1993–94, 1996–97, 1999–00, 2004, 2007, and 2011, and published statistics from the 2014 DHS report.

Note: Child stunting and wasting rates for all survey years are based on the WHO 2006 child growth standards.

Figure 8. Urban-rural differences in adult health outcomes, 2011



Source: Statistics obtained from the 2011 Bangladesh Demographic and Health Survey report.

Note: An individual is classified as: (1) overweight if his/her Body Mass Index (BMI) is 25 or higher; (2) underweight if his/her BMI is 17 or lower; (3) having hypertension if s/he has blood pressure levels ≥ 140 millimeters of mercury SBP or ≥ 90 millimeters of mercury DBP, or s/he is currently taking antihypertensive medication; or (4) having diabetes if s/he reports taking medication for diabetes or has fasting blood glucose ≥ 7.0 millimoles per liter.

Organization of urban health services

23. Urban governments are responsible for public health services (for example, sanitation, water supply, drainage, food safety and quality, vector-borne disease control, and public safety) and preventive and curative care through public hospitals, clinics, and dispensaries. Urban governments are also responsible for licensing private health providers. MLGRD&C), through LGD, provides financial and human resources to support urban governments undertake these tasks. MOHFW is responsible for national health and family planning standards, strategy and policy development, and regulation, as well as secondary and tertiary care through its own public hospitals in city corporations and municipal cities and towns (ICDDR, 2015; Adams et al., 2015).

24. Institutional reviews posit several interrelated issues that are perceived to hamper the urban public healthcare service. These issues include poor planning and management capacity; poor coordination between the various authorities; lack of clear, separate roles and responsibilities for the various authorities;

and major service coverage gaps. They also include human resource management issues, such as chronic and acute understaffing, low staff competency, and low staff effort (Afsana and Wahid, 2013; ICDDR, 2015).

25. Overarching all of this, public health service appears to be underprioritized by urban governments. They are legislated to perform 248 and 172 distinct tasks, respectively. In practice, they focus on a much more limited set of tasks such as waste disposal, street lighting, and road and drain maintenance (Rahman and Ahmed, 2015).

26. While NGOs have traditionally played a major role in providing development services in rural Bangladesh, they have more recently expanded their presence and role in urban areas. Urban governments have contracted out the majority of public primary health facilities to NGOs to operate. NGOs also operate their own facilities. Own or contracted NGO facilities tend to serve the poor, providing subsidized or free care (Adams et al., 2012). NGO and public health facilities are virtually the only providers of family planning (especially long-term methods) and maternal and child health services. Urban governments and NGOs also deploy community health workers in poor neighborhoods for health promotion and preventive care outreach.⁹

27. Private providers, which are fee based and for profit, are composed of hospitals, clinics, nursing homes, diagnostic centers, and pharmacies, as well as private practices by medical doctors and nonformal/traditional health practitioners. Private providers tend to provide curative care.

28. Private providers tend to operate without required licenses, and tend to have health service staff that lack required academic and professional qualifications (ICDDR, 2015).¹⁰ Compared to health service staff in public and NGO facilities, private providers are less likely to know government guidelines for health service practice management (ICDDR, 2015).

29. Private facilities are more accessible than public and NGO facilities because of their widespread service coverage and longer and more convenient service hours. A large share of private providers offer services at low fees, making them affordable to the poor, especially when the various monetary and nonmonetary costs of traveling to farther-off public and NGO facilities are factored in (Adams et al., 2015; Afsana and Wahid, 2013).

30. With respect to health service demand by and supply to the poor, slum residents in Dhaka city report that they prefer seeking health services from pharmacies and nonformal/traditional health service practitioners, and prefer home deliveries by traditional birth attendants (Adams et al., 2015). These findings are consistent with other evidence for Bangladesh, as well as evidence for many developing countries that the poor tend to obtain care from informal private health service practitioners, that is, those that lack required academic and professional qualifications and/or are unlicensed to practice (Sudhinaraset et al., 2013).

31. A census of health service providers located in or near a sample of slum settlements in Dhaka city found that over 80 percent were private, 12 percent were public facilities (but contracted out to NGOs to operate), and 6 percent were NGO facilities. Thirty-eight percent of private providers were pharmacies,

⁹ Community health workers in villages are credited for the notable declines in fertility and maternal and child mortality, and gains in child vaccination rates and uptake of oral rehydration therapy in Bangladesh (El Arifeen et al., 2013).

¹⁰ Private healthcare staff report that they often obtain their health knowledge through training courses offered by NGOs, or through learning on the job under the guidance of other staff (Adams et al., 2012).

while 35 percent were nonformal/traditional health service practitioners. Over 60 percent of private health service staff were unqualified, compared to 2 percent of public health service staff. Fifty percent of NGO health service staff were community health workers (Adams et al., 2015).

32. Rigorous, representative evidence on provider quality of care and its determinants are absent for urban Bangladesh. Among what's available, in Dhaka city, sample users were found to rate private hospitals higher than public hospitals in terms of responsiveness, communication, and discipline (Andaleeb, 2000). User satisfaction with NGO primary health facilities in Sylhet city was found to be driven by perceived provider professionalism and courtesy and low-cost/free services (Gazi et al., 2015). A qualitative study of NGO delivery centers in slum settlements in Dhaka City found that service performance varied markedly across centers, that the retention and effort of community health workers were key factors associated with center service performance, and that center hygiene and free services were key factors associated with center use (Banu and Nasreen, 2011).¹¹

33. To the best of the report authors' knowledge, rigorous evidence on whether health service staff are absent from the facility, and what health service staff are doing when present at the facility, is absent for urban Bangladesh. Evidence from public primary health facilities in rural Bangladesh indicates a high rate of vacant staff positions, as well as a high rate of staff absence, particularly for doctors (Chaudhury and Hammer, 2004).

34. Likewise, to the best of report authors' knowledge, direct measures of the quality of health services are absent for either urban or rural Bangladesh. Audit-study evidence from rural and urban India suggest that the quality of care, measured by, for example, completion of checklists for essential and recommended care, correct diagnosis, and correct treatment, were low in both public and private primary health clinics. At the same time, factors such as medical equipment, doctor qualifications, and patient caseloads were either not associated or only weakly associated with quality of care (Das et al., 2012). While private doctors tend to be unqualified, they are found to exert greater effort, and did not perform any worse on diagnosis and treatment than qualified public doctors (Das et al., 2012; Das et al., 2016). Qualified public doctors exerted greater effort and were more likely to provide correct treatment in their private practices than in their public practices (Das et al., 2016). These issues are suspected to also exist in urban Bangladesh.

Approach

Quantitative analysis

35. The quantitative analysis (herein, the study) examines the variation in adult and child health and nutrition in Bangladesh's city corporations. While a basic analysis is performed for a wide set of adult and child health and nutrition outcomes, a deeper analysis is performed for underweight, overweight, and mental health statuses for women and men, and the nutrition status for children under age five, measured by height. The main questions asked is what individual, household, and neighborhood-area factors are associated with the health and nutrition status of children and adults. The question is examined for all residents in city corporations, as well as separately for slum and nonslum residents.

¹¹ Intermediate indicators of worker retention and job effort were found to be associated with financial rewards, and to a lesser degree social recognition and positive community feedback, among sample NGO female volunteer community health workers in Dhaka city (Alam, Tasneem, and Oliveras, 2012a; 2012b).

36. Past empirical research in developing countries has been limited by the lack of data that are representative between and within urban areas. In the case of Bangladesh, health studies have used large-scale national household survey samples to examine urban-rural differences in health and nutrition, or urban health and nutrition treating urban areas as an undifferentiated whole. Other studies have used small-scale convenience or purposive samples of individuals, households or facilities to examine health and nutrition in specific cities and towns (for example, Dhaka and Chittagong) or in specific subpopulations within cities/towns (for example, slum residents).

37. The data situation is changing, and Bangladesh is a relative forerunner. In 2006, the National Institute of Population Research and Training (NIPORT) and others conducted the Bangladesh Urban Health Survey (BUHS), providing, for the first time, extensive data on adult and child health and nutrition outcomes, and potentially relevant factors that are representative for slum and non-slum areas in city corporations, and for district municipalities and large towns. In 2013, the survey was repeated on a new cross-section which is representative for the same domains. The two rounds of the BUHS serve as the source of data for the study.

38. The study investigates patterns and determinants of urban health and nutrition outcomes, with a focus on differences between slum and non-slum residents. The health and nutrition status of slum residents are of interest for several reasons. First, theory and empirical evidence suggest that the study of slum health and nutrition should be treated as distinct from the study of urban health, or the study of poverty and health (Ezeh et al., 2017). One argument for the separate treatment is that slum physical and social environments may act to amplify health risks for residents, and produce negative health externalities that extend across a slum settlement, or even more widely. The exposure to concentrated health risks in slum settlements may be particularly harmful to young children, given that they are more immunologically susceptible than older children and adults. Marx et al. (2013) argue that the potential adverse health effects of slum settlements may create a low human-capital equilibrium which, in turn, contributes to making slum settlements into poverty traps. Second, the literature on slum health and nutrition is scant (see, for example, Ezeh et al., 2017 for a recent review), and the little available evidence points to patterns that require deeper investigation. For example, the evidence indicates that average health and nutrition outcomes of slum residents are worse than for non-slum residents, and are often worse than for rural residents, indicating that the so-called urban health advantage does not appear to apply to slum residents (Ezeh et al., 2017; Mberu et al., 2016). Third, research on health risks and effects of slum settlements are needed to guide the design and implementation of policies and interventions related to slum development in general and slum health in particular (Lilford et al., 2017).

39. Child height is widely regarded as the most relevant measure of overall child nutrition status, and child stunting (a height-for-age z-score [HAZ score] that is more than two standard deviations (SD) below the international reference median, based on 2006 WHO growth standards) is considered the key indicator for tracking progress in addressing child undernutrition. The child stunting rate is one of two indicators selected to measure progress against Target 2.2 on “ending all forms of malnutrition” in the 2030 UN Sustainable Development Goal 2 (UN, 2015b).

40. Child stunting reflects the cumulative effects of poor diet and recurrent infection. Globally in 2004, 15 percent of deaths and another 15 percent of the burden of disease for children below five years of age are attributed to stunting (Black et al., 2008). International evidence indicates that child stunting is associated with lower motor, cognitive, emotional, and social development, and higher rates of illness, disability, and premature death, as well as poorer socioeconomic outcomes in adolescence and adulthood, measured by, for example, education attainment, student academic achievement, employment, and labor earnings (Currie and Vogl, 2013; Black et al., 2013; Cesar et al., 2008).

41. The motivation behind the selected adult health outcomes for the in-depth analysis is threefold. First, the outcomes are already determined to be, or are emerging as, important risks behind mortality and morbidity in developing countries (Whiteford et al., 2013; Black et al., 2008; Murray et al., 2015). Second, averages for these outcomes differ between slum and non-slum residents. Third, the outcomes are relatively understudied in developing countries, but they are garnering greater attention from national health policymakers and practitioners to international donors. As a case in point, the United Nations 2030 Agenda for Sustainable Development explicitly refers to noncommunicable diseases and mental health in the health goals (UN, 2015).

42. **Data and sample:** The 2006 and 2013 BUHS rounds were designed to provide data that were representative of three urban areas: (1) slum neighborhoods in city corporations, (2) non-slum neighborhoods in city corporations, and (3) municipal cities and towns. The 2006 BUHS covered the six city corporations existing at that time, and the 2013 BUHS covered ten of the eleven city corporations existing in 2013.¹²

43. The sample frame for the survey was a complete list of mahallas in the city corporations and sampled municipal cities and towns. A mahalla is an Islamic parish, and an optional, non-elective administrative unit below the ward in cities and towns in Bangladesh. In city corporations, neighborhoods were randomly selected in the first stage of sampling. In each sampled neighborhood, all slum and non-slum areas were mapped through visits. An area was defined to be a slum settlement if it had at least ten households and met four of five conditions: poor housing conditions, insecure housing tenure, high population density, poor sanitation and inadequate water access, and over 75 percent of households appearing to be poor. The second stage of sampling differed slightly between the 2006 and 2013 rounds, but essentially slum and non-slum areas of sampled neighborhoods, the primary sampling units, were randomly drawn stratified by slum status. The primary sampling unit is referred to as neighborhood area.

44. Given the interest in understanding slum-non-slum differences in average health and nutrition status, district municipalities and large towns are excluded from the analysis. Based on the 2011 census, the city corporations in the 2006 and 2013 survey rounds accounted for 38 percent and 41 percent of the country's urban population, respectively. The 2006 survey round collected data on several adult and child health and nutrition outcomes. The 2013 survey round collected data on fewer child health and nutrition outcomes (specifically, child anthropometry, recent fever, and recent ARI symptoms), and did not collect any data on adult health and nutrition outcomes. Given this, the study examines adult health and nutrition outcomes using the 2006 survey round, and child height using the 2013 survey round. Child fever and ARI symptoms are examined as potential determinants of child height.

45. Unless otherwise specified, the child sample for analysis is restricted to children aged 0–59 months. Health and anthropometry data were collected for this age group only. The adult samples for analysis are restricted to women and men aged 18–49 years who are ever married. The ever-married restriction and the age ceiling of 49 years are data driven. Some factors, such as own or joint authority over household decisions, were only collected for adults up to age 49 years. In line with the legal age for entry into adulthood in the country, the age floor for the adult analysis is set at 18 years. The shares of women and men aged 18–49 years who are ever married are 88 percent and 68 percent, respectively.

¹² In the 2006 BUHS, Barisal, Chittagong, Dhaka, Khulna, Rajshahi, and Sylhet were included in the city-corporation statistical domain. In the 2013 BUHS, Barisal, Chittagong, Comilla, Dhaka North, Dhaka South, Khulna, Narayanganj, Rajshahi, Rangpur, Sylhet were included in the city-corporation statistical domain.

46. The actual age range for the adult analysis depends on the health outcome data. For example, data for constructing rates for overweight, underweight, hypertension, and diabetic statuses were only collected for women and men aged 35–59 years. For these outcomes, the adult analysis is restricted to ever-married women and men aged 35–49 years.

47. The mental health measure for women and men is specially constructed. The female and male questionnaires in the 2006 BUHS asked a battery of twenty questions related to mental problems experienced in the last thirty days. The questions are from the Self Reporting Questionnaire (SRQ20) developed by WHO to screen for depression and anxiety related symptoms, particularly in low-income settings (WHO 1994). Responses to the questions are either yes or no. The number of yes's were summed up to arrive at a mental ill-health score from 0 to 20. There is no internationally recommended score cutoff that indicates probable mental disorder. WHO advises that the score cutoff for a setting be determined after validating the SRQ20 instrument in that setting, which was not performed for the BUHS setting. Thus, the mental ill-health scores as a continuous variable were used for the analysis, logging values to reduce the degree of right skewness in the outcome distribution (zeros were set to .1 before the log transformation).

48. *Empirical strategy:* The study first estimates average levels for virtually all health and nutrition outcomes in the BUHS data. It then estimates average levels for an extensive set of demographic and socioeconomic factors that serve as potential determinants in health and nutrition regressions. The study estimates average outcomes and factors for all city-corporation residents, as well as separately slum and nonslum residents in city corporations.

49. The study then estimates regressions to examine the conditional average relationship between health and nutrition outcomes and factors in the full, slum, and nonslum samples. For continuous outcomes, the regression relationships are modeled as linear, based on ordinary least squares. For dichotomous outcomes, the regression relationships are modeled as nonlinear, following a logistic cumulative distribution function, and estimated via maximum likelihood. Estimated logit model parameters (and standard errors) are transformed into odds ratios.

50. To avoid a problem with inference due to potential multicollinearity in the regression analysis for the adult health and nutrition, some factors were combined into index variables based on principal component analysis. For each set of factors combined this way, the derived first component was used, which accounts for most of the variation across the included set of factors. Index variables were constructed for individual decisionmaking authority, housing quality, and neighborhood environmental quality.

51. For the decisionmaking authority index, an individual level variable, data on whether or not the individual has own or joint decisionmaking authority over own health services, children's health services, large household purchases, purchases for daily needs, visits to relatives and friends, and food to cook were combined. Separate decisionmaking authority index variables were constructed for women and men. For the housing quality index, a household-level variable, data on flooring, roofing, walls, drinking water source, improved toilet facility, safe garbage disposal, and clean fuel for cooking, all for the dwelling were combined. For the neighborhood quality index, data on the presence of polluting manufacturing units, residential tenure security, sewerage, flooding, water supply, garbage collection, public electrical safety, and public safety in the neighborhood were combined.

52. The derived first component for the decisionmaking authority index construction accounts for 44 percent to 62 percent of the variation across the included covariates, depending on the sample; for the housing quality index, it is 43 percent; and for the neighborhood quality index, it is 19 percent. All index variables are standardized, with zero average and unit variance. A higher value in the relevant index implies

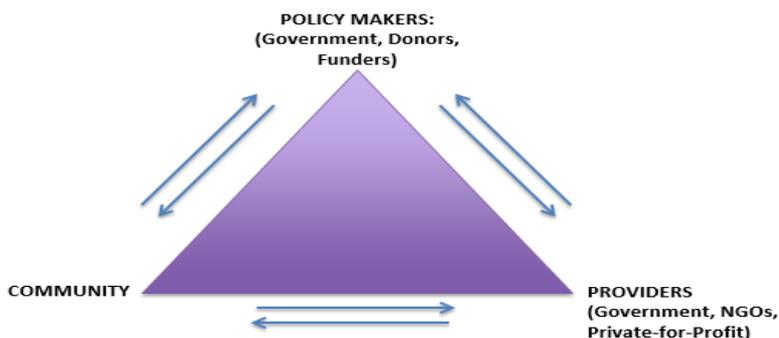
own or joint authority over a wider set of household decisions, better housing quality, or better neighborhood environmental quality.

Qualitative analysis

53. **Definitions:** For the qualitative analysis of urban health governance, governance is defined as “the rules that distribute roles and responsibilities among societal actors and that shape interactions among them” (Brinkerhoff and Bossert USAID/HS20/20, 2008). These rules can be both formal, embodied in institutions, and informal, reflected in behavioral patterns. Governance in health systems is therefore about developing and putting in place effective rules and norms for policies and programs aimed at achieving health sector objectives. While maintaining simplicity, this definition allows us the flexibility to look at what is a key determinant of poor performance of the health system in urban areas — *de jure* and *de facto* relationships among the relevant actors.

54. **Strategy:** The qualitative analysis explores specifically the urban health sector governance architecture, and constraints to good governance, in Bangladesh through an analysis of the relationships among three sets of actors relevant to urban health service delivery, namely the government, service providers and citizens, based on the 2004 World Development Report framework (figure 5) (World Bank 2004). Among state-level actors, the focus is primarily on central and local government entities that have a direct responsibility for the organization, regulation, quality control, monitoring and provision of health services to the urban population. With respect to service providers, the study examines the roles that different types of providers play in service delivery for the urban poor. Finally, with respect to citizens, the study considers the mechanisms by which citizens can hold both the government and the service providers accountable, and the mechanisms they are using to make (informed) choices about where to seek care. The study illustrates the current institutional arrangements, *de jure* and *de facto* roles and relationships, and division of responsibilities between the three groups of actors; and explores how these could influence different dimensions of performance of the urban health system — such as effectiveness, quality, equity, and affordability. The intent is to better understand successful experiences, as well as areas of improvement, and formulate policy options that can help improve the urban health system and, ultimately, health and nutrition outcomes of urban residents, particularly among the poor.

Figure 9: Health Governance Conceptual Framework



55. **Data:** The qualitative analysis draws on both primary and secondary information. The analysis reviews existing regulations, policy documents, research studies and available secondary qualitative and quantitative information. The analysis also uses primary information collected between February 2016 and February 2017 through a combination of semi-structured interviews (a total of 105) and focus groups discussions (a total of 25) with key informants and representatives of the groups of government officials,

service providers, and citizens. The sampling of the interviewees and focus-group participants was purposive, with the aim of reaching, to the extent feasible, all relevant individuals that could provide insights into the research questions. In addition, snowball techniques were used to identify further interviewees and focus groups participants based on the suggestions of those who had already participated in the study. To ensure variety in our sampling, and capture different facets of the topic of interest, data was collected in a sample of big, medium, and small size cities in Bangladesh, selected based on accessibility to informants. An interview guide and a focus group guide were developed to serve as starting points for the primary data collection. This tool was informed by the conceptual framework, the information obtained from secondary data, as well as the research team’s background knowledge on the topic. The tool was piloted in the early stages of data collection and was adjusted to target each of three groups of actors. Multiple interviewers conducted the first stage of data collection to ensure consistency in future data collection rounds. Interview and focus group transcripts were maintained, but the references were anonymized.

56. **Analysis:** The data analysis was done systematically, using a combination of deductive and inductive approaches. The research team met repeatedly during data collection to identify themes emerging from the data (thematic analysis), which also helped guide future rounds of information collection. In accordance with the abovementioned analytical framework, the analysis looks at the role of government, service providers and citizens in the urban health system and identifies key constraints to effective governance. To further validate the analysis, the research plan, as well as the findings, were shared at different points in time with the Advisory Panel and with selected informants before the qualitative study was finalized. All the steps of the research were documented.

Social Determinants of Health and Nutrition Status in Bangladesh’s Cities

Children

Average child height and average levels of factors

57. Table 1 reports average HAZ scores and stunting rates. In the full sample, the average HAZ score was –1.7 SD below the international reference median, the moderate-to-severe stunting rate was 42 percent, and the severe stunting rate was 20 percent.¹³ Slum children are significantly shorter than non-slum children. Compared to non-slum children, slum children have an average HAZ score that is lower by 0.6 SD, a moderate-to-stunting rate that is lower by 16 percentage points, and a severe stunting rate that is lower by 10 percentage points.¹⁴

Table 1: Average HAZ scores and stunting rates

Full	City corporations			2014 DHS	
	Slum	Nonslum	Slum-nonslum	Rural	Urban

¹³ A child is considered to be moderately-to-severely stunted if his or her HAZ score is more than two SD below the international reference population median. A child is considered to be severely stunted if his or her HAZ score is more than three SD below the international reference population median.

¹⁴ The estimated stunting rates are a couple of percentage points off from those reported in the 2013 BUHS, which is suspected to be due to the loss of 100 to 200 children from the study’s sample identified to have invalid anthropometric measurements.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>HAZ scores</i>	-1.69	-1.88	-1.30	-0.58***	-1.60	-1.30
Moderate-to-severe stunting	0.42	0.48	0.31	0.16***	0.38	0.31
Severe stunting	0.20	0.23	0.13	0.10***	0.12	0.10

Note: Estimates are adjusted for sampling weights. Inference is based on robust standard errors, clustered at the neighborhood level. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

58. Comparing statistics for city corporations to published statistics from the 2014 DHS for rural and urban areas, three main findings are noted. First, city corporations have poorer average child height outcomes than all urban areas. For example, the moderate-to-severe stunting rate in the full city-corporation sample is 42 percent, compared to 31 percent in all urban areas. Second, slum children have poorer average height outcomes than rural children. For example, the moderate-to-severe stunting rate for slum children is 48 percent, compared to 38 percent for rural children. Third, nonslum children have a lower moderate-to-severe stunting rate than rural children (31 percent versus 38 percent), but have a comparable severe stunting rate (31 percent). The statistics suggest that average height outcomes for urban areas conceal substantial variation in average outcomes between and within urban centers, and that average outcomes are especially poor for slum children, not just as an urban subpopulation, but as a national subpopulation.

59. Table 2 reports average levels for the set of child, mother, household, and neighborhood-area factors that are included in the multivariate analysis of child HAZ scores.¹⁵ In the full sample, in terms of selected child related factors, three percent experienced an illness with ARI symptoms and 31 percent experienced an illness with fever in the two weeks before the survey. In terms of mother related factors, 86 percent of children were born when their mothers were between 18–34 years of age, an age range considered to have a lower risk of child death (Rustein and Winter, 2014); average education attainment was 5.7 years; 20 percent had mothers that were currently employed; and 85 percent had mothers who were regularly exposed to mass media as measured by watching TV at least one a week (TV was the most popular mass media source). In terms of neighborhood-area related factors, 69 percent of children resided in an area with formal garbage collection; 48 percent in an area with a proper sewerage system; 51 percent in an area served by CHWs; 48 percent in an area with an available NGO health facility; 14 percent in an area with an available public health facility; and 36 percent in an area with an available private health facility. All neighborhood areas had pharmacies.

Table 2: Average levels for factors

¹⁵ The 2013 BUHS did not collect information on potentially relevant factors such as: for the child, birth weight, diarrhea and treatment, immunization, and deworming; for the mother, physical and mental health (for example, underweight status) and decisionmaking authority over household expenditures on own and child health, and over food for the household; and, for the household, food security. The 2006 BUHS collected information on some of these factors; the study finds significant differences in the average levels for several of these factors between slum and nonslum children at that time. While the effects of access to improved toilets are examined later in the paper, the BUHS did not gather information on open defecation. Headey et al. (2015) find that the area-level open defecation rate is negatively associated with HAZ scores particularly in urban areas in Bangladesh. Although the 2013 BUHS collected information on breastfeeding, the study does not examine the effect of this factor because of limited variation: for children under two years of age, mothers reported that 70 percent were breastfed within an hour of birth, and 94 percent were being breastfed at the time of the survey. Also, due to limited variation in the study data, the study does not include micronutrient supplementation as factors in the regressions: for children under five years of age, one percent was given a nutrient mix and three percent were given iron supplements in the day prior to the survey.

Factor	Full	Slum	Nonslum	Slum– Nonslum
	(1)	(2)	(3)	(4)
<i>A. Child related</i>				
Age (in months)	30.12	30.08	30.20	–0.12
Whether female	0.49	0.49	0.50	–0.00
Birth order	2.06	2.16	1.87	0.29***
Whether ill with ARI symptoms	0.03	0.03	0.03	0.00
Where ill with fever	0.31	0.33	0.28	0.05***
<i>B. Mother related</i>				
Whether age at child’s birth <18	0.09	0.11	0.07	0.04***
Whether age at child’s birth 18-34	0.86	0.84	0.89	–0.05***
Whether age at child’s birth >34	0.05	0.05	0.05	0.00
Completed formal education (in years)	5.68	4.33	8.32	–3.98***
Whether employed	0.20	0.24	0.13	0.11***
Whether regularly exposed to mass media	0.85	0.81	0.93	–0.12***
Whether a member of an NGO	0.15	0.18	0.09	0.10***
<i>C. Household related</i>				
Standardized wealth index	–0.36	–0.72	0.34	–1.06***
Size	4.87	4.76	5.07	–0.31***
<i>D. Neighborhood area related</i>				
Whether formal garbage collection available	0.69	0.62	0.84	–0.22***
Whether proper sewerage system available	0.48	0.41	0.62	–0.21***
Whether CHW service available	0.51	0.55	0.44	0.10***
Whether NGO health facility available	0.48	0.48	0.46	0.02
Whether public health facility available	0.14	0.14	0.14	–0.00
Whether pharmacy available	1.00	1.00	1.00	0.00
Whether other private health facility available	0.36	0.33	0.42	–0.09**

Note: RMNCH stands for reproductive, maternal, newborn, and child health. Estimates are adjusted for sampling weights. Inference is based on robust standard errors clustered at the neighborhood level. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

60. The levels of child health (recent illness with fever or ARI symptoms), mother’s age at child birth, mother’s education attainment, mother’s regular exposure to mass media, and formal garbage collection and proper sewerage system in the neighborhood area were less favorable for slum than nonslum children. Household wealth, measured by a standardized household asset index, was a standard deviation lower for slum children. Slum children were more likely to have mothers that were employed (24 percent versus 13 percent). Slum neighborhood areas were more likely to have CHWs (55 percent versus 44 percent) and less likely to have private health facilities (33 percent versus 42 percent). NGO and public health facilities, and pharmacies, were available at similar rates in slum and nonslum neighborhood areas.

Effects of demographic and socioeconomic factors on child height

61. Table 3 reports the effects of various factors on HAZ scores, based on ordinary least squares regressions. Child age has a negative effect in all samples (full, slum, and nonslum). Child illness with fever or ARI symptoms has a significant negative effect in the nonslum sample. In the full sample, compared to child birth when the mother was between 18 and 34 years of age, child birth when the mother was younger

than 18 years of age has a significant negative effect. The full-sample effect is driven by the slum-sample effect.

Table 3. Effects on child HAZ scores, base set of factors

Ordinary least squares regressions

Factor	Full (1)	Slum (2)	Nonslum (3)
<i>Child</i>			
Age	-0.015*** (0.002)	-0.017*** (0.002)	-0.013*** (0.002)
Whether female	0.042 (0.045)	0.041 (0.059)	0.014 (0.068)
Birth order	0.031 (0.024)	0.046 (0.030)	0.006 (0.038)
Whether recently ill with fever or ARI	-0.019 (0.052)	0.031 (0.069)	-0.138* (0.071)
<i>Mother</i>			
Whether age at child's birth <18	-0.220*** (0.085)	-0.292*** (0.104)	0.036 (0.133)
Whether age at child's birth >34	0.087 (0.134)	-0.143 (0.165)	0.525** (0.210)
Completed formal education (in years)	0.034*** (0.008)	0.039*** (0.012)	0.022* (0.012)
Whether employed	-0.063 (0.062)	-0.045 (0.075)	-0.081 (0.101)
Whether regularly exposed to mass media	0.108 (0.066)	0.073 (0.076)	0.247* (0.136)
Whether a member of an NGO	0.081 (0.072)	0.173** (0.083)	-0.195 (0.122)
<i>Household</i>			
Standardized wealth index	0.213*** (0.038)	0.204*** (0.047)	0.244*** (0.064)
Number of members	-0.021* (0.013)	-0.017 (0.017)	-0.030 (0.019)
<i>Neighborhood area</i>			
Whether formal garbage collection available	-0.016 (0.069)	-0.004 (0.083)	-0.082 (0.119)
Whether proper sewerage system available	0.038 (0.056)	0.022 (0.076)	0.058 (0.079)
Whether CHW service available	-0.019 (0.055)	-0.018 (0.072)	-0.052 (0.080)
Whether NGO health facility available	-0.013 (0.059)	-0.068 (0.075)	0.090 (0.079)
Whether public health facility available	-0.081 (0.079)	-0.015 (0.103)	-0.187* (0.110)
Whether private health facility available	0.091* (0.053)	0.133* (0.070)	0.048 (0.077)
Whether nonslum	0.202***	—	—

Table 3. Effects on child HAZ scores, base set of factors
Ordinary least squares regressions

Factor	Full	Slum	Nonslum
	(1)	(2)	(3)
	(0.062)		
Intercept	-1.576*** (0.153)	-1.567*** (0.190)	-1.365*** (0.252)
Observations	7,565	5,000	2,565
R-squared statistic	0.082	0.064	0.064

Note: ARI stands for acute respiratory infection; CHW stands for community health worker. Estimates are adjusted for sampling weights. Robust standard errors, clustered at the neighborhood-area level, are reported in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

62. Mother’s regular exposure to mass media has a significant positive effect in the nonslum sample. Mother’s membership in an NGO has a significant positive effect in the slum sample. Adams, Nababan, and Hanifi (2015) document the positive association between mother’s membership in an NGO and the use of RMNCH services. The effect of NGO membership on HAZ scores that the study finds may be mediated by the use of RMNCH services, which are not controlled for in the regressions.

63. In all samples, mother’s education attainment and household wealth have significant positive effects on HAZ scores. In the full sample, an additional year of mother’s education has a positive effect of 0.03 SD, and a one standard deviation increase in the household wealth (that is, going from the average to the 84th percentile in the index) has a positive effect of 0.21 SD. Household size has a negative effect in the slum and nonslum samples, but only the full-sample effect of -0.02 SD is significant.

64. The availability of CHWs and NGO and public health facilities in the neighborhood area have negative but mostly insignificant effects on HAZ scores. The exception is the nonslum-sample effect of the availability of public health facilities, which is a significant -0.19 SD. The negative effects are likely placement effects – that is, areas served by CHWs, and NGO and public health facilities, may be socioeconomically disadvantaged in ways not fully reflected by household wealth and neighborhood environmental quality factors included in the regressions. Residing in a nonslum neighborhood area has a significant positive effect of 0.20 SD. Factors such as the child’s gender, the mother’s employment status, and the availability of formal garbage collection and a proper sewerage system in the neighborhood area have insignificant effects.

Effects of the use of maternal and child health services on child height

65. The effects on HAZ scores of child antenatal care, delivery, newborn exam at health facilities are examined. The information on child antenatal care, delivery, and newborn exam were gathered in the survey only for the youngest child born in the three years before the survey (61 percent of the study’s full analysis sample).

66. **Average levels:** Table 4 reports the rates of use of health services by provider type. In the full sample, mothers of 70 percent of children received antenatal care in a health facility, 49 percent of children were delivered in a health facility, and 40 percent of children received a newborn exam in a health facility. While there are cases of antenatal care and newborn exam by qualified health professionals at home, the shares are in the low single digits; these cases are combined with no service.

Table 4. Average levels for use of maternal and child health services, youngest child born in the three years before the survey

Type	Full (1)	Slum (2)	Nonslum (3)	Slum–Nonslum (4)
<i>A. Antenatal care</i>				
Any health facility	0.70	0.62	0.86	−0.24***
Public health facility	0.16	0.14	0.18	−0.04**
NGO health facility	0.23	0.27	0.17	0.10***
Private health facility	0.31	0.21	0.52	−0.31***
<i>B. Delivery</i>				
Any health facility	0.49	0.41	0.66	−0.25***
Public health facility	0.14	0.12	0.17	−0.05***
NGO health facility	0.14	0.17	0.09	0.08***
Private health facility	0.21	0.12	0.40	−0.28***
<i>C. Newborn exam</i>				
Any health facility	0.40	0.33	0.55	−0.22***
Public health facility	0.11	0.10	0.15	−0.05***
NGO health facility	0.11	0.13	0.07	0.06***
Private health facility	0.18	0.11	0.33	−0.23***

Note: Estimates are adjusted for sampling weights. Inference is based on robust standard errors clustered at the neighborhood-area level. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

67. The use of private providers and facilities dominates. Mothers of 31 percent of children received antenatal care at a private health facility, 23 percent at a NGO health facility, and 16 percent at a public health facility. Similarly, 21 percent of children were delivered at a private health facility, and 14 percent each at NGO and public health facilities. Eighteen percent of children had a newborn exam at a private health facility, and 11 percent each at NGO and public health facilities.

68. Rates of use of health services are poorer for slum than nonslum children. The rates of antenatal care, delivery, and newborn exam in a health facility are 22–25 percentage points lower for slum children. Rates of use of NGO health facilities for antenatal care, delivery, and newborn exam are higher for slum children, and the rates of use of private health facilities for these services is lower for slum children. For example, 27 percent of slum children received antenatal care from a NGO health facility, compared to 17 percent for nonslum children; 21 percent of slum children received the same service from a private health facility, compared to 52 percent for nonslum children.

69. The survey asked the mother the reason for her choice of delivery site for the youngest child born in the three years before the survey (see Table 5). In the full sample, the main reason that the mother chose to deliver in a health facility was due to pregnancy or delivery complications (55 percent of cases), followed by safety of the health facility (29 percent of cases). In addition, the main reason that the mother chose the specific health facility was safety (33 percent of cases), followed by prior knowledge about the provider or receipt of antenatal care there (17 percent of cases each). Mothers reported cost to be the reason for the choice of the specific health facility for 6 percent of cases, and proximity of the health facility to home for 10 percent of cases. For children that were delivered at home, mothers predominately reported

that they felt that it was not necessary to deliver at a health facility (70 percent of cases). Cost or lack of money was reported only for 12 percent of cases.

Table 5: Distribution of reported reasons for choice of delivery location, youngest child born in the three years before the survey

Reason	Full	Slum	Nonslum	Slum– Nonslum
	(1)	(2)	(3)	(4)
<i>A. Why chose a facility for delivery</i>				
Due to complications	0.55	0.56	0.54	0.02
Referred by doctor/service provider	0.09	0.09	0.08	0.00
It is safe	0.29	0.29	0.29	–0.01
Other (unspecified)	0.07	0.07	0.08	–0.02
<i>B. Why chose specific facility for delivery</i>				
Low cost	0.06	0.09	0.04	0.05***
Near to my house	0.10	0.11	0.07	0.04**
It is safe	0.33	0.32	0.34	–0.02
Provider is known	0.17	0.14	0.21	–0.06***
Had antenatal care here	0.14	0.13	0.15	–0.01
Had previous delivery here	0.03	0.02	0.04	–0.03***
Other (unspecified)	0.17	0.18	0.15	0.03
<i>C. Why chose delivery at home</i>				
Not necessary	0.70	0.70	0.71	–0.01
Costs too much/lack of money	0.12	0.13	0.09	0.04**
Better care at home	0.05	0.05	0.06	–0.01
Other (unspecified)	0.13	0.12	0.14	–0.02

Note: The sample for Panels A and B is youngest child born in a health facility in the three years before the survey; the sample for Panel C is youngest children born at home in the three years before the survey. Estimates are adjusted for sampling weights. Inference is based on robust standard errors clustered at the neighborhood-area level. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

70. Slum mothers were more likely to report cost and distance as the reasons for their choice of the specific health facility than nonslum mothers (cost: nine percent versus four percent of cases; distance: 11 percent versus seven percent of cases). Among those that delivered at home, slum mothers were also more likely to report cost or lack of money to be the reason for their choice than nonslum mothers (13 percent versus nine percent of cases).

71. **Effects:** The type of health facility for child antenatal care or delivery may influence child height, if, for example, the type of health facility is associated with quality of care. Mothers may choose to receive antenatal care or deliver at a specific type of health facility because they expect to obtain better care there for any pregnancy or delivery complications. Even if they obtain better care, complications may induce a negative association between a higher quality health facility/provider type and child height.

72. Table 6 reports the effects on HAZ scores of the use of maternal and child health services at a health facility (Panel A), and at a health facility by type (Panel B), based on regression. The regressions control for other factors. Of note, the regressions control for household wealth, which could influence whether

households use free or subsidized public or NGO health services or fee-based private health services, as well as the availability of RMNCH services in the neighborhood area through CHWs and health facilities.

Table 6. Effects of type of health facility/provider for antenatal care, delivery, and newborn exam on child HAZ scores

Ordinary least squares regressions

	Full (1)	Slum (2)	Nonslum (3)
<i>A. Use of health facility</i>			
Antenatal care at a health facility	0.182** (0.090)	0.158 (0.107)	0.256* (0.136)
Delivery at a health facility	0.022 (0.114)	-0.022 (0.149)	0.037 (0.174)
Newborn exam at a health facility	0.008 (0.114)	0.056 (0.158)	-0.025 (0.152)
<i>B. Use of health facility type</i>			
<i>Antenatal care</i>			
Public health facility	0.171 (0.128)	0.018 (0.159)	0.466** (0.191)
NGO health facility	0.176* (0.105)	0.233* (0.126)	0.054 (0.157)
Private health facility	0.206* (0.105)	0.196 (0.137)	0.267* (0.153)
<i>Delivery</i>			
Public health facility	0.001 (0.192)	-0.012 (0.275)	-0.031 (0.218)
NGO health facility	-0.014 (0.150)	0.034 (0.184)	-0.193 (0.242)
Private health facility	0.091 (0.172)	-0.109 (0.261)	0.202 (0.231)
<i>Newborn exam</i>			
Public health facility	0.244 (0.201)	0.306 (0.293)	0.145 (0.212)
NGO health facility	-0.083 (0.169)	-0.159 (0.206)	0.156 (0.247)
Private health facility	-0.116 (0.173)	0.070 (0.277)	-0.221 (0.215)

Note: Regressions control for the base set of factors (see table 3). Estimates are adjusted for sampling weights. Robust standard errors, clustered at the neighborhood level, are reported in parentheses. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

73. Antenatal care at a health facility has a significant positive effect of 0.18 SD in the full sample. The slum-sample effect of 0.16 SD is insignificant, whereas the nonslum-sample effect of 0.26 SD is significant. The effects of delivery or newborn exam in a health facility are insignificant for all samples. Looking by type of health facility, antenatal care in a public health facility has a significant effect of 0.47 SD in the nonslum sample; antenatal care in a NGO health facility has a significant positive effect of 0.23 SD in the slum sample; and antenatal care in a private health facility has positive effects of 0.20 SD in the slum sample

and 0.27 SD in the nonslum sample but only the latter effect is significant. The effects of delivery and newborn exam by facility type are insignificant in all samples.

Effects of health-protective household amenities on child height

74. **Average levels:** Table 7 reports average levels for potential health-protective household amenities. In the full sample, 45 percent of children belonged to households that had unshared access to piped drinking water, whereas another 19 percent belonged to households that had shared access. Virtually all children belonged to households that had access to an improved toilet, but shared access was common. Thirty-one percent belonged to households that had unshared access to an improved toilet, whereas 37 percent belonged to households that had access to an improved toilet which was shared with up to ten households, and 30 percent belonged to households that had access to an improved toilet which was shared with more than ten households. Fifty-three percent belonged to households that safely disposed of household garbage (through collection or by disposal in an outside bin); 71 percent belonged to households that used a clean cooking fuel (liquid petroleum gas, natural gas, kerosene, or biogas); 84 percent resided in a dwelling with a built floor; and 45 percent belonged to households that had a handwashing site on premises, water, and soap, all observed by the survey interviewer.

Table 7. Average levels for health-protective household amenities

	Full	Slum	Nonslum	Slum– Nonslum
	(1)	(2)	(3)	(4)
No access to piped drinking water	0.36	0.44	0.22	0.21***
Unshared access to piped drinking water	0.19	0.05	0.47	–0.43***
Shared access to piped drinking water	0.45	0.52	0.31	0.21***
Access to improved toilet, unshared	0.31	0.14	0.62	–0.48***
Access to improved toilet, shared with 1–10 hhs.	0.37	0.41	0.30	0.11***
Access to improved toilet, shared with >10 hhs.	0.31	0.42	0.08	0.35***
Safe disposal of garbage	0.53	0.45	0.68	–0.23***
Use of clean cooking fuel	0.71	0.64	0.87	–0.23***
Nonearth floor in dwelling	0.84	0.78	0.95	–0.17***
Handwashing site, with water and soap, at dwelling	0.45	0.29	0.74	–0.45***

Note: Estimates are adjusted for sampling weights. Inference is based on robust standard errors clustered at the neighborhood-area level. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

75. Access to and availability of the household amenities are significantly poorer for slum than nonslum children. Slum children are much more likely to belong to households that share access to piped drinking water and an improved toilet than nonslum children. For example, 42 percent of slum children belonged to households that had access to an improved toilet which was shared with more than ten households, compared to eight percent of nonslum children.

76. **Effects:** Table 8 reports the effects of potential health-protective household amenities on HAZ scores. Given that virtually all households had access to improved toilets, the analysis is restricted to children in such households, and examines the effect of shared access to an improved toilet. The amenities are strongly correlated with the household wealth index, even when they are excluded from the construction of the index. Thus, the effects of the amenities are examined, controlling for other factors, but excluding the household wealth index.

Table 8. Effects of health-protective household amenities on child HAZ scores
Ordinary least squares regressions

	Full (1)	Slum (2)	Nonslum (3)
Unshared access to piped drinking water	0.118 (0.108)	-0.016 (0.170)	0.102 (0.146)
Shared access to piped drinking water	0.066 (0.064)	0.098 (0.076)	-0.044 (0.116)
Access to an improved toilet, shared with 1–10 hhs.	-0.101 (0.093)	-0.130 (0.131)	-0.034 (0.128)
Access to an improved toilet, shared with >10 hhs.	-0.202* (0.103)	-0.272** (0.133)	0.025 (0.174)
Safe disposal of garbage	0.085 (0.062)	0.081 (0.078)	0.116 (0.093)
Use of a clean cooking fuel	-0.002 (0.081)	-0.043 (0.092)	0.203 (0.169)
Nonearth floor in dwelling	0.061 (0.082)	0.102 (0.089)	-0.019 (0.190)
Handwashing site, with water and soap, at dwelling	0.095 (0.061)	0.040 (0.076)	0.239** (0.095)

Note: Sample is restricted to children in households with access to an improved toilet. Regressions control for the base set of factors, except for household wealth index (see table 3). Estimates are adjusted for sampling weights. Robust standard errors, clustered at the neighborhood-area level, are reported in parentheses. *** denote $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

77. Sharing access to an improved toilet with more than ten households has a significant negative effect of -0.20 SD in the full sample. The full-sample effect is driven by the slum-sample effect (-0.27 SD). Sharing access to an improved toilet with less households also has negative effects in all samples but they are insignificant. Handwashing site with soap and water has a significant positive effect of 0.24 SD for nonslum children. The corresponding effect for slum children is 0.04 SD, and insignificant. All other amenities have insignificant effects.

78. As a caveat, the study's analysis of the effects of household amenities does not account for the quality, reliability, or time availability of these amenities. Large-scale evidence on these dimensions is lacking for Bangladesh. The study's finding that households that share toilets with several other households have lower child HAZ scores may be because these communal toilets are particularly unclean and poorly maintained (Alam et al. 2016).

Effects of mother moving to a city corporation on child height

79. Existing evidence on the effects of within-country, rural-urban migration on health and nutrition outcomes in developing countries is highly limited, and mixed (Mu and de Brauw 2015). The study examines the effect on HAZ scores of (1) the type of location from which the mother moved from (another urban center or a rural area), (2) the reason reported by the mother for moving to the current city corporation (work-related, family-related, or other such as education- or property-related), and (3) number of years since the mother moved to the current city corporation. Separate questions were asked to the mother on whether the move to the current city corporation was due to loss from an adverse natural event (salinity, flood, cyclone, drought, or river erosion) or whether any move in the past was due to an adverse natural event. Less than 1 percent of mothers reported adverse natural events as the reason for moving.

80. *Average levels:* Table 9 reports summary statistics for the various dimensions of the mother’s move decision. In the full sample, 12 percent of children had mothers who were born in an urban center other than the current city corporation, and 54 percent had mothers who were born in a rural area. Conditional on moving to the current city corporation, 67 percent of children had mothers who had moved for family reasons, 29 percent for work reasons, and 4 percent for other reasons. Average years since the move was 8.5 years. Slum children were more likely to have mothers who were born in a rural area than nonslum children (57 percent versus 49 percent). Slum children were also more likely to have mothers who had moved to the city corporation for work-related reasons than nonslum children (33 percent versus 20 percent). Average years since the mother’s move were similar for slum and nonslum children.

Table 9. Average values for mother’s migration to current city corporation

	Full	Slum	Nonslum	Slum– Nonslum
	(1)	(2)	(3)	(4)
<i>A. Birth location</i>				
Born in another urban center	0.12	0.11	0.13	–0.02*
Born in a rural area	0.54	0.57	0.49	0.08***
<i>B. Reason for move (conditional on moving)</i>				
For family reasons	0.67	0.63	0.74	–0.11***
For work reasons	0.29	0.33	0.20	0.13***
For other reasons	0.04	0.04	0.06	–0.02**
<i>C. Time since mother’s move (conditional on moving)</i>				
Years since move	8.52	8.60	8.37	0.22

Note: A mother who moved to the current city corporation just before the survey was assigned one month for time since move. “Another urban center” is any urban entity other than the current city corporation. Panels B and C report statistics conditional on the mother moving to the current city corporation. Estimates are adjusted for sampling weights. Inference is based on robust standard errors clustered at the neighborhood-area level. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

81. *Effects:* One can conceive of different mechanisms that generate positive or negative effects on child height due to the mother moving to the current city corporation, the reason for the move, or the number of years residing in the current city corporation, depending on whether the upside or downside risks to health and nutrition from residing in an urban area dominate. Thus, the net effect of mother’s move to the current city corporation on child nutrition status is theoretically ambiguous. Table 10 reports the effects of the mother moving to the current city corporation on HAZ scores, controlling for the base set of factors. The reference category for the effect of birth location is mother born in the current city corporation. The reference category for the effect of reason for move is mother always resided in the current city corporation. Mothers who moved for reasons other than work or family are omitted from the regressions. The regressions for the effect of time since the mother’s move is conditional on moving to the current city corporation.

Table 10. Effects of mother’s migration to current city corporation on child HAZ scores

	Full	Slum	Nonslum
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	(1)	(2)	(3)
A. Birth location			
Born in another urban center	0.181** (0.084)	0.252** (0.110)	0.064 (0.122)
Born in a rural area	0.054 (0.054)	0.016 (0.071)	0.140* (0.078)
B. Reason for move			
For family reasons	0.024 (0.057)	0.018 (0.077)	0.056 (0.079)
For work reasons	0.051 (0.074)	-0.016 (0.090)	0.298*** (0.113)
C. Time since mother's move (conditional on moving)			
Time since move (in years)	0.006 (0.005)	0.007 (0.007)	0.002 (0.008)

Note: A mother who moved to the current city corporation just before the survey was assigned one month for time since move. Regressions control for the base set of factors (see Table 3). The reference category is “mother born in the current city corporation” for factors in Panel A; the reference category is “mother always resided in current city corporation” for factors in Panel B. “Another urban center” is any urban entity other than the current city corporation. Estimates are adjusted for sampling weights. Robust standard errors, clustered at the neighborhood-area level, are reported in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

82. Mother born in another urban center has a significant positive effect of 0.18 SD in the full sample. The full-sample effect is driven by the slum-sample effect (0.25 SD). Mother born in a rural area has a significant positive effect of 0.14 SD in the nonslum sample. Mother moving for work reasons has a significant positive effect of 0.30 SD in the nonslum sample. Consistent with the flat patterns in the bivariate plots in Figure 5, Panel C, time since the mother moved has positive, but insignificant, effects in all samples. Discretizing years since the mother moved to the current city corporation, Ahsan et al. (2017) also find that this factor does not have a significant effect on child stunting status in their slum and nonslum regressions. At the very least, the collective evidence suggests that mother’s migration to the current city corporation, whether to a slum or nonslum neighborhood area, does not appear to have a negative effect on child height.

83. In related research, Islam and Gagnon (2016) use 2006 BUHS data to examine the effects of mother’s migration on the use of RMNCH services. Specifically, the authors look at the effects of whether the mother moved to a city corporation; and, for migrant mothers, how long the mother had resided in the current city corporation, whether the mother was born in a rural area, and whether the mother self-reported moving for employment or education reasons. They find that mother’s migration has significant negative effects on the use of different maternal and child health services, while years lived in the current city corporation only has a positive effect on the use of antenatal care services. Given these findings, the study re-estimates the effects of the various measures related to the mother moving to the current city corporation, controlling for the use of maternal and child health services in the relevant child subsamples. The results generally continue to hold.

Women and men

Average levels

84. The study also examines health and nutrition outcomes for women and men, based on the 2006 BUHS because similar outcome information was not collected in the 2013 BUHS. Tables 9 and 10 report average health and nutrition outcomes for women and men. With respect to women, the study finds that: 16 percent report that they are unhealthy, 20 percent had a serious illness, six percent had a serious injury, and 20 percent have physical difficulty with routine activities. Nineteen percent are underweight, 25 percent are overweight, 12 percent have diabetes, and 28 percent have hypertension. Slum women have higher rates of illness, injury, and difficulty with physical mobility than nonslum women. Slum women also are shorter, have higher mental ill-health scores, and are more likely to be underweight than nonslum women. Conversely, nonslum women are more likely to be overweight and have hypertension and diabetes than slum women. The only health outcome for which the study does not find a significant difference in averages between slum and nonslum women is the rate of injury.

Table 11. Health and nutrition status, women

Variable	City corporations			
	Full (1)	Slum (2)	Nonslum (3)	Slum–nonslum (4)
Self-reported to be unhealthy	0.16	0.19	0.12	0.06***
Serious illness	0.2	0.22	0.18	0.04***
Serious injury	0.06	0.06	0.06	0.00
Difficulty with mobility	0.20	0.22	0.18	0.04***
<i>Log mental ill-health score</i>	1.31	1.39	1.21	0.18**
Height	150.76	150.13	151.33	-1.20***
<i>Underweight</i>	0.19	0.26	0.12	0.14***
<i>Overweight</i>	0.25	0.15	0.34	-0.19***
Diabetes	0.12	0.05	0.17	-0.12***
Hypertension	0.28	0.23	0.32	-0.09*

Note: This table reports estimated averages in columns (1), (2), and (3), and the difference in estimated averages between Columns (2) and (3) in Column (4). Estimates are adjusted for survey sampling weights. Inference for the difference in estimated averages is based on robust p-values clustered at the level of the primary sampling unit. Health/nutrition variables for which regressions are run italicized. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table 12. Health and nutrition status, men

Variable	City corporations			
	Full (1)	Slum (2)	Nonslum (3)	Slum–nonslum (4)
Self-reported to be unhealthy	0.09	0.11	0.07	0.04***
Serious illness	0.16	0.19	0.13	0.06***
Serious injury	0.08	0.09	0.07	0.02**
Difficulty with mobility	0.19	0.23	0.15	0.08***
<i>Log mental ill-health score</i>	0.73	0.85	0.59	0.26**
Height	163.35	162.10	164.33	-2.23***
<i>Underweight</i>	0.26	0.35	0.19	0.16***
<i>Overweight</i>	0.13	0.07	0.18	-0.11***
Diabetes	0.10	0.07	0.12	-0.04
Hypertension	0.17	0.15	0.18	-0.03

Note: This table reports estimated averages in columns (1), (2), and (3), and the difference in estimated averages between Columns (2) and (3) in Column (4). Estimates are adjusted for survey sampling weights. Inference for the difference in estimated averages is based on robust p-values clustered at the level of the primary sampling unit. Health/nutrition variables for which regressions are run are italicized. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

85. With respect to men, 9 percent report that they are unhealthy, 16 percent had a serious illness, eight percent had a serious injury, and 19 percent have physical difficulty with routine activities. Twenty-six percent are underweight, 13 percent are overweight, 10 percent have diabetes, and 17 percent have hypertension. Men have better outcomes than women with respect to mental ill-health, hypertension, and overweight status, while men have a worse outcome than women with respect to underweight status. In general, the patterns in differences in averages between slum and non-slum men mirror those for women. However, in contrast to the patterns for women, the injury rate is higher for slum than non-slum men, and the rates of diabetes and hypertension are similar between slum and non-slum men.

Effects

86. Appendix tables 1 and 2 report regression results for women and men, respectively. All tables are structured similarly. Regression results are reported separately by outcome and sample (full, slum, and non-slum). Given that the outcomes are binary, odds ratios are reported.

87. *Individual factors:* Older age is associated with a lower likelihood of underweight status, a higher likelihood of overweight status, and higher mental ill-health scores for both women and men. Relative to no formal schooling, completing ten years of schooling or higher is associated with a lower likelihood of underweight status, a higher likelihood of overweight status, and lower mental ill-health scores for both men and women. However only 16 percent of women and 22 percent of men have completed at least ten years of schooling. Relative to always residing in the current place, moving to the current place is associated with a lower likelihood of overweight status for women. Employment is associated with lower mental ill-health scores for men. Employment is also associated with a lower likelihood of overweight status for slum women, and higher mental ill-health scores for non-slum women.

88. Higher decisionmaking authority index scores are associated with a lower likelihood of underweight status for slum women and lower mental ill-health scores for non-slum women. Higher decision-making authority index scores are also associated with a lower likelihood of underweight status for slum men and a higher likelihood of overweight status for non-slum men. Higher mental ill-health scores are associated with a higher likelihood of underweight status for men and women. They are also associated with a lower likelihood of overweight status for slum men and non-slum women.

89. *Household factors:* Larger household size is associated with lower mental ill-health scores for non-slum women. It is also associated with a lower likelihood of underweight status for men. Per-capita housing space, housing quality index scores, and log per-capita household consumption expenditure can all be considered to reflect underlying household economic status. Higher values for these factors tend to be associated with a lower likelihood of underweight status, a higher likelihood of overweight status, and lower mental ill-health scores for both women and men. Household experience with food shortages in the last year is associated with a higher likelihood of underweight status for slum women. It is also associated with higher mental ill-health scores for both women and men. Emerging evidence suggests that stress may be the link between mental ill-health and chronic negative conditions (such as low economic status) or acute negative shocks (such as occurrences of food shortage) (Haushofer and Fehr, 2014).

90. *Neighborhood-area factors:* Non-slum residence matters much less frequently when other factors are controlled for. Non-slum residence remains significant only in the case of underweight status for women. Neighborhood environmental quality index scores do not appear to be associated with outcomes for women. However, the scores are associated with a lower likelihood of underweight status and a higher likelihood of overweight status for slum men.

91. Whether a particular type of neighborhood health service availability has an influence depends on the specific outcome and sample. The lack of a significant positive association between health service availability and outcomes in many cases may be due to deficiencies in the coverage and quality of preventive health service supply. It may also be due to low household demand for preventive health service. The availability of a particular health service is at times associated with poorer health outcomes. The negative associations may indicate the dominant role of reverse causality, that is, neighborhoods with poorer health outcomes attract health service. The negative associations may also be spurious, biased by the fact that the regressions do not adequately account for other factors that may be correlated with health service availability.

Urban health sector governance

Analysis of policy makers: Weak coordination in stewardship government

92. The role of the government is central to key health system functions such as regulation, stewardship and organization. While the mandate for government engagement in health services is embedded in the Bangladesh's constitution, it is exercised in an ad-hoc and fragmented manner in urban settings.

93. Urban health service in Bangladesh falls under the responsibility of the Ministry of Health and Family Welfare (MOHFW) and the Ministry of Local Government, Rural Development and Cooperatives (MOLGRD&C). MOHFW is the designated ministry for all matters related to health, and for ensuring and/or arranging health services for the entire country, urban and rural. It is responsible for national level policy, planning and decision-making on all health issues, which are then implemented by different executing and regulatory authorities. MOHFW also has the stewardship functions of setting technical standards, regulation of the sector, and policy development. In urban areas, it is responsible for providing policy and technical guidance, setting standards of services, licensing of private and NGO health providers (including diagnostic centers, laboratories, pharmacies), provision of medical supplies, inspections, monitoring, evaluation and coordination. It is also responsible for the direct provision of urban secondary and tertiary health services.

94. LGD within MOLGRD&C is responsible for providing primary health and public health services in urban areas. The LG/City Corporation Act of 2009 and the Paurashava Act of 2009 clearly mandate LGD to deliver and maintain all social services, including education and basic health services (i.e. provision of preventive and promotive health, and limited curative care, services) in urban areas¹⁶. However, this vision of their role in social service provision in urban areas is not shared uniformly within MOLGRD&C. Urban governments are independent and governed by elected representatives. Since the 1960s, urban governments are mandated to provide a wide range of public services to citizens residing within their jurisdiction and are responsible for the provision and maintenance of basic services and infrastructure in cities and towns.

95. The Paurashava and City Corporation Act, 2009¹⁷ delegates to urban governments a large number of responsibilities that go beyond the basic public health function, including the maintenance of health

¹⁶ Strengthening Stewardship Functions of the Regulatory Bodies under MOHFW; MOHFW; GOVERNMENT OF BANGLADESH: Final Draft, August 2014; Final Report on Technical Assistance for Assessment of Contribution of MOHFW for Urban Health Services: icddr, b, Feb 2015.

¹⁷ Their functions broadly relate to public health (water supply, sewerage and sanitation, etc.); public welfare (public facilities for education, recreation, etc.); regulation (enforcing building by laws, encroachments on public land, etc.); Public safety (fire protection, street lighting, etc.); public works (construction and maintenance of roads, culverts and drainage systems, etc.); and development activities (town planning and development of commercial markets, etc.)

systems; the establishment and maintenance of hospitals and dispensaries, health centers, maternity centers and centers for the welfare of women, infants and children; provision of training for dais or traditional birth attendants; promotion of family planning; adoption of such other measures as may be necessary to promote the health and welfare of women, infants and children; provision of annual registration to private hospitals, clinics, diagnostic centers and paramedical institutes in their jurisdiction, based on the prior approval (No Objection Certificate) from the Directorate General of Health Services (DGHS) of MOHFW; waste removal, drain management, road sweeping, control of wild dogs considered dangerous to humans, removal of the carcasses of dead animals, mosquito control, birth and death registration, provision of different certificates, control of food adulteration, sanitation and EPI activities; and medical waste management (licensing and renewals to those who collect, transport and dispose of medical waste). Perhaps predictably, not all of these provisions of the Act are implemented consistently (Table 13). LGD provides urban governments with budgetary and management support from the central government, with little participation of urban governments in the planning process. Finally, urban governments receive block grants from LGD for the discharge of their functions, but the grants are not earmarked for health (or any other) services; nor have clear monitoring and accountability structures been established for the use of these funds.

Table 9: Local Government Acts (City Corporations & Paurashava) 2009: On Paper and in Practice

Issue/Function	Stated in the Act	Implementation of the Act
Responsibility for Health System	A city corporation/paurashava shall be responsible for the health of the city corporation/paurashava and for this purpose, it may cause such measures to be taken as are required by or under this Ordinance.	Through UPHCSDP, all city corporations (except Chittagong) and selected paurashava implement this with support from international donors, central government and contracted NGOs. There is no separate line for health in city corporation/paurashava budget.
Hospitals and Dispensaries	A city corporation/paurashava may, and if so required by the Government shall, establish and maintain such number of hospitals and dispensaries as may be necessary for the medical relief of the inhabitants of the city corporation/paurashava and the people visiting it.	As there is no Rules to implement the Act, city corporations and paurashavas do not establish and maintain hospitals and dispensaries.
Registration of private hospitals, clinics, diagnostic centers, paramedical institutes	With the effectiveness of this Act and hereinafter, any kind of private hospitals, clinics, diagnostic centers, paramedical institute, etc. are not allowed to administer their activities without the registration from the city corporation.	These institutions take approval (No Objection Certificate) from DGHS of MOHFW before applying for the registration with the city corporation. Based on the approval, city corporations register them subject to the payment of a specific fee determined by the government.
Registration Fees	The city corporation will renew the registration of all private hospitals, clinics, diagnostic centers, paramedical institute, etc. in condition of submitting the fees determined by the city corporation.	The registration renewal is done yearly with submitting the pre-fix fees determined by the government. The city corporations impose a penalty of Taka 5,000 if the private institutions fail to register. If the institution does not close the business within the given timeline Taka 500 per day is charged. The city corporations close them with an arrangement of informing the service recipients; paurashavas are not authorized to undertake such activities like city corporations.

Waste Removal, Collection and Management	A city corporation/paurashava shall make adequate arrangements for the removal of refuse from all public streets, public latrines, urinals, drains, and all buildings and land vested in the city corporation/paurashava and for the collection and proper disposal of such refuse.	Medical waste regulation 2008 authorized the city corporations and paurashavas to provide license, renew and in cases cancellation of the license to the appropriate person/agency for the management and processing of the medical waste.
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96. However, although the responsibility of urban health service delivery is shared by MOHFW and MOLGRD&C through the LGD, the lack of meaningful coordination between them presents a significant challenge to the provision of urban healthcare services, resulting in inadequate healthcare service coverage for the urban poor. Some promising steps have been taken in this regard, mostly related to an enhanced consideration of urban health in policy documents, and the creation of coordinating institutional structures. For instance, the third SWAp “Health, Population and Nutrition Sector Development Program (HPNSDP)” 2011–16, led by MOHFW, includes urban health care in its remit, albeit to a limited extent. One of the priority objectives of the National Health Policy 2011 and the Seventh Five-Year Plan (2015-16 to 2019-20) is specifically to improve urban health service in order to facilitate access to and the effective use of essential health and family planning services by the urban poor and slum dwellers. Further, to facilitate a shared national vision and common platform for urban health, LGD formulated the National Urban Health Strategy, drafted in 2011 and approved by the MLG&RDC in November 2014. Despite acknowledging the necessity of effective coordination between MOHFW and MOLGRD&C, however, the roles and responsibilities, as well as the scope of work of the ministries, are not clearly defined in the strategy. One of the components of the strategy is focused on “strengthening health service programs of the city corporations and municipalities” and emphasizes the need to “increase the capacity of city corporations and Paurashavas so that they can give more attention to public health, preventive health, and family planning services”.¹⁸ The strategy is now being translated into an actionable, time-bound operational plan. However, it appears that this strategy has not yet been endorsed by MOHFW, and these policy and institutional measures on urban health are certainly yet to translate into effective service delivery. Recognizing urban health as an emerging challenge, the Fourth Health, Population and Nutrition Sector Program (2017-2022) emphasizes the need to expand access to basic health services in urban areas, both through government sources and partnerships with NGOs and the private sector; supports analytical and empirical work on urban health, and includes as one of its key performance indicators (i.e. Disbursement Linked indicators or DLIs) improved coordination on urban health.

97. An inter-ministerial “Urban Health Coordination Committee” was formed under the aegis of MOHFW in 2015, with the Secretary of MOHFW as Chair, and the Secretary of LGD as Co-chair. The Committee aims to strengthen coordination between MOHFW and LGD so as to facilitate the delivery of essential health services in urban areas. Per the decision taken in a Committee meeting held on 19 May 2015, an Urban Health Working Group” has been formed under the oversight of the Committee, with the Additional Secretary, Urban Development Wing, LGD as Chair, and members comprising of representatives from city corporations, MOHFW, NGOs, development partners, and UPHCSDP¹⁹. The challenge of following through with the recommendations however remains, including on strengthening coordination between the two ministries; articulating the operational plans; designating a point person to provide oversight for the urban health sector, and ensuring that the Working Group has the remit and the authority to help achieve these objectives. Other initiatives are also being explored to strengthen coordination, particularly at the local level, with city mayors, taking a leading role in this process. Such an approach is currently being piloted in three municipalities (Jessore, Dinajpur and Mymensingh), and is

¹⁸ National Urban Health Strategy 2014, page:15

¹⁹ UHSSP Inception report

showing positive results in terms of the ownership of the initiatives. At the same time, these early experiences highlight the important role that the central government must play in creating a conducive environment for urban governments to be able to effectively manage these initiatives, given their current weak capacity (see also Rahman and Ahmed 2015).

98. Regulation of the urban health system vis-à-vis the responsibilities of the government, as well as the rules for the service providers, appear weak and outdated. Despite the previously mentioned *de jure* shift of focus towards expanded responsibilities of the urban governments for health systems, rather than purely for sanitation as originally defined, *de facto* this has not been supported by a description of their specific responsibilities and parameters. There is a lack of clarity and ambiguity in the terminology used, so that it is difficult to say what specifically is delegated — development of the infrastructure, maintenance of facilities, monitoring and accountability, and/or direct provision of services. More broadly, while urban governments have the mandate for such functions, these are not delegated directly from MOLGRD&C. To overcome this weakness, through the ADB-funded project, an Urban Health unit was constituted within LGD, however, this unit has not been staffed, and is therefore not operational.

99. Regarding the providers, *de jure* every private facility that provides health care services and all pharmacies, needs to obtain a license to operate from MOHFW (DGHS or DGDA) and a registration with the urban government where the facility is located, which needs to be renewed every year. However, enforcement is weak and, even when a license is obtained and registration is renewed, this is purely an administrative exercise, and no quality controls are conducted in situ to assess the appropriateness and quality of the facility. In addition, the Medical Practice, Private Clinics and Laboratories Ordinance that regulate the functioning of private clinics and laboratories prescribes the application process, the criteria to issue license to operate, establishes the maximum applicable fees, dictates inspections, and lists penalties for violations of the rules; however, the Ordinance dates back to 1982, and it is not fully enforced (e.g. in the case of penalties). The Voluntary Social Welfare Agencies (registration and control) Ordinance 1961, the Foreign Donations (voluntary activities) Regulation Ordinance 1978, and the Foreign Contribution (Regulation) Ordinance 1982 regulate the NGOs, which need to be registered with the Department of Social Services/NGO Affairs Bureau and only obtain clearance for health and family planning projects receiving foreign assistance by the Economic Relations Division of the Ministry of Finance and the Ministry of Health and Family Welfare. The public facilities have no separate certification process. An endorsement from MOHFW is provided prior to establishing the facilities. This is valid for their lifetime. There is no separate licensing process and once established, the health service facilities or pharmacies do not require any re-certification.

100. Finally, quality assurance is weak and monitoring and evaluation is fragmented. The provisions for quality control, such as licensing and accreditation, are noted in existing regulations, but are not effectively enforced. The monitoring and evaluation function is not coordinated at the central level. The National Health Management Information System (HMIS) residing within MOHFW covers all MOHFW facilities in rural and urban areas. However, it does not capture data from the other government health facilities, or NGO or private facilities. The information collected by NGO providers is mainly reported to donor-funded project administrators rather than to MOHFW, making it extremely difficult to measure performance within the urban health system, or use data for decision making. This issue is recognized as a major challenge and some pilot locations within the UHSSP have agreed upon a common reporting mechanisms by using an adapted DHIS2, so that data from all service providers in certain areas are captured and reported uniformly. Municipality-wide dashboards are also being created to monitor their performance, and joint visits to the facilities are conducted to check data quality.

Analysis of providers and financing of urban health services: Fragmented service delivery system

101. The delivery of urban health services is also characterized by fragmentation, and the coexistence of a great variety of service providers, especially at the primary health level. The urban primary health system is made up of parallel programs and structures of MOHFW, LGD of MOLGRD&C, and several national and international NGOs. MOHFW provides services through secondary and tertiary hospitals in all divisional cities, district and sub-district health facilities. Its role in the provision of primary health services is, however, limited to community clinics at the union level^{20,21}, 35 Government Outdoor Dispensaries limited mostly to Dhaka and Chittagong city corporations, and some outpatient services in secondary and tertiary public hospitals. Urban governments have legal and administrative mandates for carrying out public responsibilities, including primary health service²². Each city corporation and paurashava has a Health Department, headed by a Chief Health Officer (CHO) and assisted by medical officers, several paramedics, and other staff to deal with public and environmental health, basic sanitation, and water supply. However, the Health Department often has insufficient resources and authority, and no proper job description and clear lines of authority, to effectively provide public health services.

102. Private providers (both formal and informal), including a broad range of facilities from private-for-profit providers to NGOs, deliver an important share of primary health services to the urban population. Pharmacies are often the first point of contact of the population with the health system. The Urban Primary Health Services Project (UPHCP), the Smiling Sun Franchise Program (SSFP) supported by USAID and UK DFID, NGO facility and community-based programs in the slums by BRAC (BRAC Manoshi Program), Marie Stopes Clinics and the SSFP program implemented by NGOs are critical ongoing urban health initiatives. BRAC for example uses female community health workers to provide maternal and child services to urban slums population in Dhaka, but the quality of services and the engagement of the CHWs has been variable (see Alam, Tasneem, and Oliveras 2012). An additional service delivery challenge relates to the ability of such programs to retain healthcare workers, which is influenced by a mix of financial incentives, social prestige, community approval and positive feedback from patients, and household responsibilities (see Alam and Oliveras 2014).

103. The availability of health facilities for urban population varies between metropolitan cities and district towns, in terms of size and type of facilities. The metropolitan/divisional headquarters offer all categories of services—from primary care to tertiary level hospitals, including specialized hospitals. Primary and secondary health service is available in the smaller cities. In addition to modern allopathic medicine based services, traditional and/or alternative medicine practitioners like homeopathic and Ayurvedic/unani practitioners also offer limited health services²³. In Dhaka city, UPHCSDP implemented through NGO clinics is the most dominant provider. In Chittagong, the other metropolitan city, the presence of NGOs is lower than Dhaka (see Box 1). In the relatively smaller district towns, primary health services through NGOs are minimal. The poor rely on government facilities for primary health services. The poor and the middle class are dependent on NGOs and local government facilities for normal child delivery provided at a nominal cost.

²⁰ Union is the smallest rural administrative and local government unit in Bangladesh. Each union is made up of nine wards. Usually one village is designated as a ward. There are 4,554 unions in Bangladesh.

²¹ Adams et al. Who serves the urban poor? A geospatial and descriptive analysis of health services in slum settlements in Dhaka, Bangladesh. *Health Policy and Planning* 2015;30: i32–i45

²² Local Government Institutional Assessment. Urban Primary Health services Services Delivery Project (Rrp Ban 42177)

²³ Under this study the discussion is limited to modern allopathic medicine based service providers.

104. The service delivery system in urban areas is uncoordinated, and does not provide comprehensive care. In terms of horizontal integration, there is no sign of facilities working together to provide a comprehensive range of services to the population in their areas. In terms of vertical integration, the referral system is rudimentary, and patients often opt to access specialized care directly without referrals.

“The referral system does not exist. Sometimes the patients are referred to higher-level facilities but they do not receive any preferred treatment and the facility does not refer them back. Therefore, those who can afford to go to the higher-level facilities, go there directly.”

Independent Expert, Health System, Bangladesh

105. About service offerings, all facilities in urban areas are mandated to provide an essential service package by MOHFW. However, there are gaps in the types of services offered by the facilities, since service provision has generally been focused on maternal and child health services, leaving other groups underserved (including male adults) and other health concerns and conditions overlooked (e.g. prevention, risk factors, noncommunicable disease). While this is an important gap on the supply side, it has also negatively affected the demand for health services overall, because it has reinforced the perception that primary health facilities are not the appropriate place for groups other than mothers and children to seek care.

“We mainly get female patients. Men don’t want to come to clinics because there is a perception that the facility and its services are more oriented to women and children. Men prefer going to pharmacies.”

Partner NGO for NHSDP in Chittagong

106. The quality of care is variable, and quality assurance mechanisms that do exist are not enforced effectively. Regulations on licensing and accreditation exist, but licenses are mostly provided by a desk review of the documents, and rarely supported by rigorous quality control checks. Monitoring of service quality and performance reporting is difficult because it is unclear how many facilities in urban areas report to the national health information system. Within the facilities themselves, there are no standardized systems for quality assurance and patients do not have clear and reliable mechanisms for providing feedback on the quality of services. The professional associations do not seem to play the strong role that they could to ensure compliance with quality of care norms and adherence to standards of practice, and promote relevant behavior change among health service professionals.

107. Given that many providers are contracted by donor-driven projects, reporting is mainly through parallel vertical systems. The national government does not have a complete picture of the health services provided, and the related outputs and outcomes. Consequently, there is no mechanism for feeding data and advice back to the lower levels facilities for the required course corrections. To reduce the fragmentation of the system, MOHFW has recently expressed an intention to work with MOLGRD&C to map all (formal) urban health facilities in order to assign responsibility for the health service needs of the population in the designated catchment area of a given facility (empanelment). While this may be difficult to implement, especially given the mobility of many urban residents, it could still provide a basis for establishing a functioning public sector referral system. It could also help in establishing capitation payments for public facilities, albeit not for NGOs and private facilities, who generate their own revenues. The provision of primary healthcare services through Chittagong Municipal Corporation, is a notable exception, which could perhaps offer lessons, although the replicability of this model is questionable (see Box 1).

108. On the *financing* side, the city corporations and paurashavas do not have a separate line item for health in their budgets; health related activities are embedded in functions like waste removal, mosquito control, etc. Within these line items, the budget for health is only limited to purchasing medicines and chemicals for supplying in emergencies, for use as disinfectants, for pathology tests, and for health-related

national day observances. The health departments of city corporations deliver the vaccinations under the Expanded Programme on Immunization (EPI) through their health assistants and paramedics. The vaccines are provided by the Directorate General of Health Services, and the city corporations distribute the vaccines to different EPI centers and bear the transportation costs. An urban government has sanctioned posts for paramedics and one doctor,²⁴ and salaries come from their own sources of revenue and from donor-funded projects implemented by NGOs. This practice is in line with the overall administrative organization in the country, which does not have fiscal decentralization, and there is no local participation in the resource allocation function. Streamlining the financing for the urban health sector would seem to be a necessary precondition for a fully functioning system.

Box 1: Primary Health Care Services for the Urban Population in Chittagong

Chittagong is the second largest city, and one of the major coastal ports, in Bangladesh. The city became a municipality in 1863 and was upgraded to a city corporation in 1990. With a population of approximately five million, Chittagong city corporation (hereafter Chittagong) is rapidly becoming urbanized. Chittagong is divided into 41 wards, covering an area of 158 square kilometers. There are approximately 210 slum settlements in Chittagong where over one million people reside (AUICK 2010).

Primary health services

Chittagong provides primary health services to its urban population through 1,100 health staff working in five maternity hospitals, one general hospital, 56 primary health centers and dispensaries, and 336 Expanded Program for Immunization (EPI) centers. There is at least one primary health center in each of the 41 wards, providing outpatient services. During the fiscal year 2010-2014 (1 July - 30 June), the 20 charitable dispensaries operated by Chittagong, provided primary health services to a total of 280,503 outdoor patients, with an average number of 10 outpatient visits per day per charitable dispensary. In addition, there are nine homeopathic charitable dispensaries and one charitable homeopathic hospital run by Chittagong. During 2010-2014, 145,312 patients (10 outdoor patients per day per facility) sought health services from these facilities. At least 60 percent of services provided under Chittagong are targeted to the poor and free of cost, with a focus on women and girls (AUICK 2010).

Dynamic leadership

Dhaka and Chittagong municipalities were established in 1864 and 1863, respectively. Discussions with local government experts revealed that Chittagong has been different from Dhaka since the pre-partition period. As Dhaka was designated as the capital city, many of its urban services became a part of the central government system, while Chittagong municipality had to provide its own services to the population. One of the unique features of Chittagong was its leadership. Historically, several mayors have provided dynamic leadership in expanding service coverage, as well as diversifying the sources of income for these services. In 1928, under the leadership of Nur Ahmed, the most prominent Chairman of Chittagong municipality, who governed for 30 years, the local government activity chart had prioritized health and education, which later became institutionalized as programs of the city. In 1994, Mohiuddin Chowdhury, who became the first democratically elected mayor of Chittagong, successfully extended and implemented health and education programs, mainly with funding generated from taxation and from entrance and utilization fees for public places. He established five maternity clinics with specialized neonatal care and advanced gynecological surgery facilities, nine postsecondary colleges, computer-training centers, a midwife training center, a healthcare-technology training center (the first in Bangladesh to train in the operation of health services technology – radiology and radiography, for example) and eight night colleges to expand adult literacy. Mohiuddin was the first mayor in Bangladesh to establish a private university, sponsored by Chittagong. He also ensured that Chittagong had its own assets to generate income.

ADB-funded Urban Health project

Beginning in 1998, the Government of Bangladesh introduced the Urban Primary Health Services Delivery Project (UPHCSDP), an initiative that involves public-private partnerships with national NGOs to improve the health status of the poor in city corporations and selected municipalities by providing an essential package of services. Chittagong participated in the first two stages of the project (UPHCP-I [1998-2005] and UPHCP-II [2005 – 2011]).

²⁴ Number of paramedics depend on the size of the center as well as the volume of work for running the health services.

However, during the third phase 2012), Chittagong opted out once its request to implement the project directly through its preexisting health infrastructure for health was rejected by LGD and the Asian Development Bank, the financier of the program. Hence, Chittagong decided to be a direct provider of services, making it a rather unique case in the Bangladesh urban health landscape.

Financing

The sources of financing of Chittagong include revenues from its own resources, development grants and other sources, including donations. In 2015-16, the contribution of those sources to total revenue was 55.5 percent, 38.4 percent and 6 percent, respectively. Its own income is generated from treatment plants, shopping malls, compressed natural gas or petrol stations, housing projects, and children's parks, among others. During that year, municipal tax and other taxes constituted 68 percent of its revenue from own sources (37.8 percent of the total income). Its health-related entities also generated revenue, which accounted for 1.4 percent of the revenue from own sources (0.8 percent of total income). In 2015-16, 1.1 percent of Chittagong's total expenditure was on health-related activities/entities (excluding spraying for mosquito control). However, health related expenditure as a proportion of health-related income is 0.7 percent.

Reporting

Unlike the other city corporations that have UPHCSDP services, Chittagong's health service data, apart from EPI data and some primary health data (Civil Surgeon (DOH) and family planning data sent to the FP Director, Chittagong and also reported directly to the Local Government Division in Dhaka), are not sent to MOHFW, since it is no longer part of UPHCSDP. Chittagong has an internal reporting system, which is reviewed monthly. A monthly report is sent to MOLGRD&C only.

Replicability and sustainability of the Chittagong model for provision of primary health services

Chittagong had prioritized and developed its health infrastructure from the outset. It may be difficult to replicate this model in other parts of urban Bangladesh, because of the lack of preexisting health infrastructure in the public sector, unless the government is willing to make a large investment in developing health infrastructure. However, the financial sustainability of the model in the long run needs to be explored. It seems likely that Chittagong will struggle to run the network of primary health facilities because of budgetary constraints. Satellite clinics at the local community level, in particular, may gradually fall into disuse because of budgetary constraints. The user fees in Chittagong's hospitals, which are now providing free or subsidized care, may also increase. It is unclear whether, in the long-run, this model will be financially sustainable without an intervention from the central level. On the other hand, though, the NGO-contracting model present in the rest of the country's urban areas does not seem to be sustainable either. Without government investments in sustainable health infrastructure, NGOs themselves do not have the necessary incentives to develop those facilities. In addition, NGOs are typically focusing on the delivery of a subset of health services, mainly related to maternal and child health; while in urban areas there is an increasing need to broaden the spectrum of services offered in a more integrated way.

Analysis of the community: Gaps in health seeking behavior, user satisfaction and voice

109. **Health seeking behavior:** For an illness at its early stage, particularly if it is not too painful physically, patients—especially the poor—forego visits to a physician. For minor illnesses, patients usually seek care from the private sector. Pharmacies are *de facto* the first line of contact for minor illnesses, and the preferred choice, especially for men. When an ailment persists, or becomes serious, patients decide to visit a qualified physician. The selection of an allopathic practitioner running a private practice as the health service provider is often based on the knowledge and perception of family and friends. The presence of an acquaintance as a staff member in a health facility can also be a determining factor. The type of illness also plays a key role in the selection of a private provider. For serious illnesses, which normally require inpatient care, government facilities are most often the preferred choice, due to the availability of qualified physicians and the lower out-of-pocket costs, especially for the poor.

110. The non-poor prefer private health facilities, as they are willing to pay a higher price for shorter waiting periods, a cleaner environment, and competent doctors. The poor and the less educated urban

residents are inclined to wait longer before visiting a qualified doctor. They tend to be less cognizant of the dangers of delaying medical intervention, and are distressed about the high cost of visiting at private facilities – which may well turn them down if they are not able to pay the fees.

“My child was refused access to a doctor in a private clinic as I did not have the full fee for the doctor (Taka 500). I could offer no more than Taka 400.”

Female Interviewee, Mohakhali, Dhaka

111. Closeness to the health facility and the cost of services are two important factors in household selection of health service providers. Overall, availability of facilities in the proximity of the place of residence does not seem to be an issue in most urban areas. However, in order to secure the services of their preferred physician, compromises are made on the inconvenience of traveling to the facility for the patient and his/her attendants. Referrals, when given, are viewed as an advisory note, and not a statutory obligation. Given that, as per the Bangladesh’s health system citizen charter, citizens are entitled to seek treatment from any public hospital, many patients from smaller towns and rural areas opt to go to Dhaka, even if it entails a longer travel distance, with the expectation of better treatment.

112. **User satisfaction:** The level of patients’ satisfaction varies across facilities and by providers. Determinants of contentment includes perception and experience relating to cost, distance, waiting period, behavior of health personnel, hygiene and health outcomes following the visit (Table 14).

Table 10: Strength and Weakness of Different Facilities

STRENGTHS	WEAKNESSES
Public facilities	
<ul style="list-style-type: none"> • Low cost • Qualified doctors 	<ul style="list-style-type: none"> • Shortage of doctors • Insufficient time given by doctors to patients. • Doctors behave poorly with poor patients • Long waiting time • Exploitation by middlemen • Unhygienic conditions (i.e. floors, rooms, equipment) • Often medicine needs to be purchased from outside hospital • Diagnostic tests are frequently required to be done outside hospitals as equipment need repair. • Limited beds for inpatients
Private facilities	
<ul style="list-style-type: none"> • Qualified doctors • More flexible timing • Doctors are well behaved • Cleaner than public facilities 	<ul style="list-style-type: none"> • Unqualified pharmacy personnel • Higher costs • Forced to do many costly laboratory tests • Some not equipped to deal with complicated health issues • Do not want to deal with patients involved in accidents
NGO facilities	
<ul style="list-style-type: none"> • Easy access and low cost. • Doctors are well behaved • Cleaner than government facilities 	<ul style="list-style-type: none"> • Limited services with strong focus on RMNCH services

113. The poor, as well as the nonpoor, are aware that the physicians employed in public hospitals are well-qualified, and many of the senior doctors are nationally renowned. Most of the study’s informants considered the availability and/or access to doctors in those facilities limited and uncertain; however, they were confident that any technical input provided by these medical personnel in terms of diagnosis, treatment and prescription of drugs was going to be effective.

“I bought a drug from a pharmacy but it did not cure me; the same medicine was given to me at the government hospital and it worked.”

Woman, Satpai, Netrokona Sadar

114. On the other hand, overcrowding and the paucity of space were viewed as major constraints. The limited bed capacity means that patients must wait for long periods (ranging from several hours to even days) before a bed is allotted. Most of the interviewees from poor and well as non-poor households, expressed concerns about the unhygienic conditions at government hospitals. The hospital cleaners cannot keep up with keeping the wards, corridors and rest rooms clean and hygienic, partially due to the overcrowding. The availability of medicines in the public hospital is another area where all patient expressed their dissatisfaction. Nevertheless, those who availed of inpatient health services from public facilities expressed satisfaction with the admissions process. Especially when patients are referred by another hospital, getting admitted to a public hospital did not seem to be a problem. However, this is not the case for those who are admitted as emergency patients due to accidents, because of the bureaucracy associated with the record-keeping of accidents, and the number of forms that must be completed for the police before the patient can be admitted.

115. The long waiting periods to receive outpatient primary health services is a major bone of contention. It is more distressing for those who travel long distances, and do not have the family support to attend to their household chores or therefore have to forego work. Outpatient service recipients complain about the inadequate time allocated by the medical personnel during their visit. The shortage or absence of female doctors discourages many to avoid Mother and Child Welfare Centre (MCWC) facilities—entities under the Directorate of Family Planning of MOHFW that offers outpatient and limited inpatient services for mother and child. Some of the poor women interviewed conveyed their negative experience during child delivery at government facilities.

One of the study’s interviewees recalled how she was rushed to a Medical College Hospital in Dhaka for an emergency C-Section. She had to travel a long distance, using public transportation. Her unclean attire and sweaty body irked the nurses and the physician. They rebuked her during the entire C-Section procedure. When recollecting her stressful experience, she stated “I’d rather die than go to a government hospital in the future. Poor people have nobody but Allah to rely upon.”

116. Misbehavior by the doctor or facility staff is a major grievance of the poor who seek care in a public hospital. When people were asked to comment on the quality of care they received, they responded positively if the doctor had given time to listening to their problems, provided free medicine, or if the outcome of the treatment matched their expectations. Those who participated in the group interviews viewed the behavior of the support staff in public hospitals poorly. They alleged that many of these personnel ask for tips and bribes, without which service would not be provided.

117. The infrastructural inadequacies in the numbers and quality of public facilities creates an adversarial environment where forces from within the facility and from outside become active in rent seeking. Hospital staff can become arrogant and less caring, using the alibi that they are attending to more demands than existing resources would enable; ultimately, they are not held accountable for the quality of care provided. External actors like middlemen (“dalals”), and politically, socially or administratively influential people, use their acumen or contacts to access the services for their clients. Corruption also permeates the system; thus, many of the public health facilities are poorly governed, and the weakest voices are those of the poor and the disadvantaged

“Accountability is not in the mindset of the providers. Government officials, including those working in the health sector, have a specific mental scheme: they are accountable to their superior, but not to the citizen. The government intension though is that every facility has some sort of a committee [with participation of different representatives from the community], but they are not functioning. So, for urban health, the Mayor and the elected commissioners, who are involved in developing the system, are accountable to their constituencies and will make these committees accountable. If enough demand can be created [from the bottom-up] this can also trigger the commitment.”

UHSSP Officer, Dhaka

118. Patients seem to be mostly content with the quality of treatment provided by private practitioners. Many interviewees believe that the number of diagnostic tests suggested by private physicians are necessary, although it is alleged that many doctors receive a commission or a share of the revenue from laboratory tests. The high cost of visits, and the physicians’ insistence on laboratory testing in a private facility, is viewed as a financial burden. Often the urban non-poor seek primary care services from private practitioners at their chambers. Patients prefer them for being accessible, and for providing an opportunity for them to discuss their issues in details and develop a personal rapport.

119. Most of the NGO hospitals are viewed favorably for their affordability, overall cleanliness, good behavior of health attendants and the skilled professionals. The limited number of services offered by NGOs is the main complaint and source of frustration for patients. The urban poor and the middle-class individuals interviewed would like to see an increase in the number of NGO health facilities offering a wider range of preventive and curative care services. In general, the poor are satisfied with NGO facilities because of easy access and affordability. The poor also perceive the quality of NGO health services to be good, and they do not feel disrespected by virtue of their social status. Some of the lower middle income families, as well as the poor, expressed satisfaction with hospitals established through public-private partnerships, or as a charitable trust.

120. NGOs offer outpatient services at prescribed hours that are often inconvenient, as they are incompatible with work. Irrespective of economic status, patients are appreciative of the good behavior of doctors and other staff at private and NGO inpatient facilities, who are viewed as more attentive to the needs of the patient. Private and NGO hospitals are usually perceived as cleaner and more secure than government hospitals. NGO and most for-profit hospitals (except tertiary care hospitals like Apollo and United) are viewed to have relatively less skilled staff than those at public hospitals.

121. **Voice:** The socially and economically well-placed are treated better at public facilities, as they are willing and able to pay tips and bribes, and/or use their personal connections and political influence; the poor, however, are in a much weaker position. Their lower social and economic status makes them vulnerable to unfriendly behavior from hospital personnel, and long waiting periods for the same services. Health providers do not feel threatened by potential reprisals from dissatisfied poor patients. The poor and the less educated are least aware of the citizen’s charter, and of their rights and responsibilities vis-a-vis health providers.

122. Discussions with the poor suggest that they are bereft of a collective voice in expressing their grievances and complaints. They are either not aware of existing mechanisms to file complaints, or have no confidence in their effectiveness. On the contrary, filing a complaint is viewed as a risky proposition, as patients may be deprived of the service in the process. Local community leaders, including elected officials, are not willing to confront health service providers to file a complaint. In addition, given the frequency of migration of poor households within or outside a city, it is difficult to create and maintain a sense of ownership in a community that may be changing frequently. In cases of extreme negligence leading to

serious complications or death at a health facility, the community may get aggrieved and the local leaders may become involved. The influential person is likely to become vocal only if the patient is personally known. Such a collective complaint is almost always a transitory affair, with little bearing on fundamental reforms that would ensure greater accountability of providers, and better health service for the poor.

“Doctors to fourth grade staff are all generally politically connected. Hence, it is not possible to take administrative measures against them.”

Civil Surgeon in a District Town

123. Hospital Management Committees exist in each district to monitor the performance of government secondary and tertiary health facilities. Established under the direction of MOHFW, the committee is headed by a Member of Parliament, and comprises representatives of different stakeholders, including junior and senior level medical personnel, elected local officials, and NGO representatives. The committee is expected to meet each month and address issues ranging from infrastructure, hygiene, waste management, to quality of services, including the review of grievances submitted in the Complaint Box. However, there is a lack of commitment or interest among the committee members, and meetings are not held regularly, primarily due to the unavailability of the member of parliament. This mechanism has generally proven to be ineffective in delivering on its objectives.

124. The major departments of public hospitals have a Citizens Charter. The charter provides specific guidelines or instructions on services to be provided. These have been implemented with some success, but not all commitments listed in the Charters are honored by the hospitals. For example, per the Citizen’s Charter for Medical College Hospitals Emergency Department (MCH-ED) (Table 12), all MCH-ED are obligated to provide 24 hours’ services and provide treatment to the patient before doing any administrative work. However, due to the shortage of beds and medical staff, this is not always maintained. Patients also reported they were often asked to complete admission forms, including providing information required by the police, prior to receiving care. The Charter ensures that “nurses, paramedics, ward boys and other support and maintenance staffs are available at the casualty department for emergency patients”. Many of the hospitals are still understaffed, however, and ward boys and other support and maintenance staff are always not available, due to the poor implementation of the regulation. Most patients are unaware of the available stocks of drugs, the principal services they are entitled to, and the list of doctors on duty that are supposed to be displayed in different wards/departments (see Table 15).

“To improve services in government hospitals, the number of specialist doctors needs to be increased and their availability has to be ensured. Legal measures to reduce the nuisance of agents and middlemen are a must”

Focus Group Discussion, NGO representative

125. NGOs appear to be more accountable to citizen’s concerns than public health facilities. Several factors contribute to a relatively friendly environment. Most NGOs are dependent on donor funding, or funding through the government (e.g. for family planning commodities). Any controversy or complaints can have an adverse effect in their relationship with their financiers. Senior management at NGOs accordingly monitor citizens’ complaints. Marie Stopes and Ahsania Mission representatives observed that they publicly display telephone numbers that patients can call to file complaints. Follow-up action is usually taken by the management against grievances. The USAID-supported Shurjer Hashi clinics have citizens’ committees, represented by community leaders. These committees meet with clinic officials periodically, and their members individually or collectively address concerns or make suggestions for improvements. However, NGOs clearly avoid treating patients suffering from acute pain or serious ailments, referring such patients to nearby public hospitals. Through their established network, BRAC clinics help poor patients to get admitted to tertiary hospitals.

Table 11: Citizens' Charter in Medical College Hospitals (Emergency Department)

	Citizen Charter	Field Observation/Findings
1	Emergency department will be open 24 hours a day and patients will be provided treatment immediately.	Yes, this service is offered.
2	After the patient has been provided immediate treatment, other administrative work can be done.	Yes, this service is offered.
3	Sufficient number of full-time medical officers should be there.	Yes, this service is offered.
4	All patients who need to be admitted are admitted.	Yes, this service is offered. However, there is a shortage of beds. Hence patients occupy hospital floors to receive treatment.
5	Nurses, paramedics, ward boys and other support and maintenance staffs are available at the casualty department for emergency patients.	Yes, this service is offered. Shortage of staff. This may occur due to: (i) understaff; or even (ii) lack of regulation in monitoring staff's activities.
6	If a patient dies while on the way to the hospital, he will be declared 'brought dead' and legal proceedings will take place in an appropriate manner.	Yes, this service is offered. However, the implementation of the proceedings often results in difficult and complicated situations for the attendant.
7	Patients of road accidents, failed suicides and any other cases which are called police cases will be provided with treatment.	Yes, this service is offered. However, the implementation of the proceedings often results in difficult and complicated situations for the attendant. The treatment is delayed due to incompleteness of adhering to the proceedings.
8	If an unidentified patient or unconscious patient passes away after being brought in and there is no attendant with him, his belongings will be entrusted to the medical officer.	Yes, this service is offered.
9	In different wards/departments there will be a hung list of stock of drugs, principal services and doctors.	Yes, it is offered. However, patients are not aware of the list and services.

126. Even though citizen groups formally exist, they do not seem to serve the interests of all groups. Cultural norms play an important role in defining which groups can express their views and whose voices can be heard. However, in more informal settings a different picture emerges, which does not always find a way to reach the formal channels of feedback and therefore remains unheard.

127. Citizens do not seem to trust the system, but turn instead to their personal networks for advice on where to seek care. They delay care and, when seeking care because of repeated or persistent problems, they normally access informal providers and pharmacists first – which is in line with findings from other studies (e.g. Ahmed et al. 2010). Finally, they perceive the referral as a mere suggestion, do not see any additional benefits to following the referral, and eventually bypass the system.

128. Financial barriers to access are still present, and are not being addressed in a coherent fashion. For example, exemptions from user fees exist; but, on the one hand, it is very difficult to identify the poor who can benefit from those and, on the other, exemptions are not applied consistently across facilities.

129. Citizen charters are present, but not all provisions are enforced and there are no reliable mechanisms to hold facilities accountable to this. Most often citizens are not aware of their rights. In addition, culturally, it is not considered legitimate behavior to question the quality of care that is received, especially if it is provided by a doctor. Most often the way people react to poor quality of care received is by visiting a different provider the next time they need care, rather than by providing feedback in the first place.

Summary of Findings

130. **Health and nutrition outcomes and determinants.** The collective evidence indicates that average child nutrition status, measured by child height, and socioeconomic conditions are substantially poorer for slum than nonslum residents. The levels of child height, mother's education attainment, household wealth, access to and availability of health-protective household amenities, the use of maternal and child health services, and neighborhood-area environmental quality are all lower for slum than nonslum residents.

131. Child age, mother's age at child birth, mother's education attainment, and household wealth have significant effects on child height. The nonslum neighborhood-area advantage in child height remains significant even after accounting for a range of child, mother, household, and neighborhood-area factors. Facility-based antenatal care has a significant positive effect on child height. The size and significance of the effect however varies by health facility (that is, by public, NGO, or private) and whether the neighborhood area is slum or nonslum. Irrespective of health facility type and area, facility-based delivery and newborn exam have insignificant effects on child height. Access to improved toilets that is shared with a large number of other households has a significant negative effect on slum child height, whereas a handwashing site at the dwelling with soap and water has a significant positive effect on nonslum child height.

132. For adult health outcomes, the study finds that some factors stand out in terms of significant effects for more than one outcome, or for more than one sample. At the individual level, such factors include age, high levels of education attainment, and mental ill-health. At the household level, they include household economic status and household experience with food shortages. At the neighborhood-area level, they include neighborhood-area environmental quality and health service availability. The slum versus nonslum distinction of the neighborhood area matters for fewer outcomes and samples than when unconditional slum-nonslum differences in average outcomes are examined. Administrative divisions matter despite the inclusion of an extensive set of factors in the regressions.

133. **Stewardship and governance.** Two important challenges pertaining to the stewardship and planning function are a paucity of meaningful coordination between MOHFW and MOLGRD&C on the provision of urban health services, and the inability of the urban health system—particularly at the primary health level—to keep pace with urbanization. These factors contribute to the inadequate numbers and poor quality of public facilities, which along with the high cost of private health facilities, frequently result in the denial of basic health services to the urban poor. Some promising steps have been taken in this regard, mostly related to greater consideration of urban health in policy documents, and the creation of coordinating institution structures. For instance, one of the priority objectives of the National Health Policy 2011 as well as the Seventh Five-Year Plan (2015-16 to 2019-20) is specifically to improve urban health services. Further, to facilitate a shared national vision and common platform for urban health, LGD formulated the National Urban Health Strategy, has been developed by LGD. However, this strategy has yet to be endorsed by MOHFW.

134. While the inter-ministerial “Urban Health Coordination Committee” and the “Urban Health Working Group” were created with the aim to strengthen coordination between MOHFW and LGD in order to facilitate the delivery of essential health services in urban areas, the challenge of following through with the recommendations from these bodies, remains. Hopefully, the Fourth Health Sector Program with its DLI on urban coordination will provide the needed impetus. Other initiatives are also being explored to strengthen coordination, particularly at the local level, with city mayors taking a leading role in this process are being piloted. Those experiences highlight the important role that the central government must play in

creating a conducive environment for urban governments to be able to effectively manage these initiatives, given their current weak capacity.

135. In terms of financing, urban governments do not have a separate line item for health in their budgets. Each urban government has sanctioned posts for paramedics and one doctor,²⁶ and salaries come from their own sources of revenue and from donor-funded projects implemented by NGOs. This is in line with the overall administrative organization in the country, which does not have fiscal decentralization, and there is no local participation in the fund allocation function.

136. Some possible steps that could be taken to streamline the financing for the urban health sector as a necessary precondition for a fully functioning system are:

- Standardizing the methods used to identify the poor and the level of exemption from user fees and ensure compliance of providers
- Updating and standardizing user fees for essential services and/or for the most common procedures
- Aligning financing better with responsibilities for urban health – currently most funding comes from international donors, and not directly from MOLGRD&C
- Establishing proper financing targeted at the delivery and coordination of the planned health services from the central level budget, as urban governments play a more active role in planning for health services, and explore options to complement those funds with revenues collected at the local level (for example, in Chittagong), while being mindful of the centralized processes in place in Bangladesh.

137. Regulation of the urban health system appears weak and outdated. Despite the *de jure* shift of focus towards expanded responsibilities of urban governments for health systems rather than purely for sanitation, *de facto* this has not been supported by a description of their specific responsibilities and parameters. Private healthcare providers and pharmacies are required to obtain a license to operate from MOHFW (DGHS or DGDA) and a registration with the urban government where the facility is located, to be renewed every year. However, enforcement is weak and no quality controls are conducted in situ. Public facilities have no separate certification process. An one-off endorsement from MOHFW is provided prior to establishing the facilities.

138. **Service delivery organization.** Much energy seems to have been spent on defining which agency of the government should play an active role in urban health service provision. However, while service delivery represents a fundamental function within the health system, the delivery of urban health services by public facilities in Bangladesh (as in many other developing countries) is often insufficient to satisfy the demand and need for such services. In addition, other important functions of regulation, stewardship, quality assurance and control call for the intervention of a public entity and for a stronger role of the government, predominantly through MOHFW. Given the insufficient number and quality of the public facilities, especially those delivering primary health services, many private providers have entered the field. There is a strong need to regulate these providers, to understand how they are performing, and to ensure there is convergence towards higher quality across the range of providers.

139. The structure of the health delivery system is suboptimal. It is characterized by the presence of different legal entities with low levels of horizontal and vertical integration and a nonexistent referral system; the lack of focus on continuity of care, patient-centeredness, and integrated approaches; and the unavailability of services for certain conditions and/or patient groups, including men and patients with noncommunicable diseases, given the strong focus of the delivery system on reproductive, maternal and

²⁶ Number of paramedics depend on the size of the center as well as the volume of work for running the health services.

child health services. The reliance of NGOs on donor funding is a limiting factor that prevents their facilities from offering a broader range of services to a wider population.

140. The NGO contracting-out model, common in nearly all urban areas in Bangladesh, presents some important challenges. These are more apparent with the ADB-supported UPCHP model, but are generally applicable to the other urban health models in Bangladesh. The challenges include:

- a. Sustainability, not just financial, but also related to the rapid turnover of staff, short duration of contracts, and financial pressures on NGOs to use their own funds before they can be reimbursed contracting mechanisms, quality and negative incentives; fragmented reporting system
- b. Difficulty in assessing the real coverage, since services are also provided to rural patients, with overlapping service providers in the same catchment area (for example, in Khulna)
- c. Unsuitable opening hours for most working urban residents
- d. A limited range of service offerings, since most primary health facilities are focused on RMNCH services
- e. Difficulties in systematically identifying the poor in communities served in order to ensure exemptions from out-of-pocket payments
- f. Poorly standardized exemptions from user fees (usually contractually mandatory and applied to 30 percent of users).

141. The service delivery system in urban areas is uncoordinated, and does not provide comprehensive care. It seems that there is no shortage of facilities at the primary health level – although there remains scope for increasing availability of facilities especially in newer districts (MOHFW 2015) –, but rather that facilities do not have a clear catchment population, and therefore people are not guided on where to go first by the system, but are left to decide on their own on where to seek care. There is no planning at the local government level to avoid duplication of services between facilities serving the same communities, and to ensure that these offer a comprehensive range of services to the population in their areas. In terms of vertical integration, the referral system is dysfunctional. Patients have access to specialized care even without the referral and, even when they do have the referral, it appears that they often disregard it or, in any case, do not follow it.

142. Quality of care is variable across providers, and quality assurance mechanisms are not enforced effectively. Some regulation requiring licensing and accreditation exists, but it is not enforced uniformly and should be updated. The monitoring and evaluation function is not coordinated at the central level. Within the facilities, there are no clear and consistent mechanisms for quality assurance, reporting and dealing with complaints. This is consistent with findings from other recent assessments of the sector (e.g. MOHFW 2015). Professional associations could play a bigger role in promoting a stronger patient-centered culture among providers, but this is yet to happen on a large scale.

143. Given that many providers are contracted by donor projects, reporting is still mainly through vertical programs. The central government does not have a complete picture of the services provided and the related outputs and outcomes. Therefore, there is no mechanisms for feeding data back to the lower levels and to facilities for course corrections.

144. To reduce the fragmentation of the system, MOHFW has recently expressed the intention of working with MOLGRD&C to map all (formal) urban health facilities to assign the responsibility to care for the population in the catchment area to a given facility (empanelment). While this will be difficult to implement, especially considering the mobile nature of many urban residents, it could provide a basis for establishing a functioning referral system with the use of capitation payment for the public facilities. NGO and private facilities will continue to generate their own revenues, as they are currently doing.

145. **Responsiveness and accountability.** An additional challenge emerges because of the fragmentation of the service delivery system: it is unable to provide care in an integrated manner. At the global level, there has been an increasing focus on the promotion of patient-centered and integrated models of care, which ensure continuity and coordination, as an essential step towards the progressive realization of universal health coverage. As Bangladesh moves towards universal health coverage, there is a recognition that such elements are fundamentally compromised in urban Bangladesh. Patients do not enter the system from a designated point and are not guided through it. The coordination among facilities is weak, given the difficulties in enforcing empanelment of mobile populations, and the non-existence of referral and counter-referral system.

146. There does not seem to be adequate emphasis on the accountability of the system, and there is no clarity on patients' rights. Care is provided episodically with no focus on prevention and the patients' responsibility for their health and well-being. No sense of trust is established between the provider and the patients over the course of time, and the relationship is hierarchical. Patients delay seeking care and turn to their personal networks for advice first; when reaching out to the health system, their first points of contacts are often private pharmacies. Patients do not have a clear and reliable way of providing feedback on quality of services, and in some cases fear retaliation if they do provide feedback. As such, most often the way patients react to the poor quality of care received is by visiting a different provider the next time they need care, rather than by providing feedback in the first place.

147. Patient groups exist formally, and are helpful to some extent; however, often they do not ensure that all perspectives are voiced adequately. Often, while representatives from all patient groups might be part of those groups, socio-cultural norms dictate who can speak, and whose voices are therefore heard. Perhaps, there should be different mechanisms to ensure representation and voice of separate groups.

148. Overall, the culture of accountability is weak. To make sure that the mentality starts shifting, it will be important to work not only on the supply side (i.e. changing the mindset of the providers and of the government), but also on the demand side by increasing citizens' awareness of their rights and responsibilities.

Looking to the Future

Policy Implications and Options

149. Overall, urbanization and the urban health milieu in Bangladesh have evolved rapidly, without a concurrent emergence of a vision of how the urban health system should work. As such, there is a pressing need for the development of a shared urban health policy, undertaken in consultation with relevant stakeholders. In addition to underlining a stronger stewardship role for the government, the study findings suggest that existing urban health policies need to reflect better the evolving operating environment, including increasingly relevant issues such as rural-urban migration, the changing epidemiological/demographic profiles of urban areas, the expansion and proliferation of slum settlements, the potential for multisectoral action to influence health and nutrition indicators, the unique urban governance structures, the needs of a working population, and the health human resource, financing and service provision realities on the ground.

150. For example, fairly consistent international evidence exists on the large positive effect of mother's education on child nutrition status. For example, using microdata for a large set of developing countries, Alderman and Headey (2017) find that the effect of mother's education on child nutrition status increases with years of education, is larger than the effect of father's education, and is larger for countries with high

stunting rates. Maternal education is theorized to affect child nutrition status through a household income effect arising from greater labor earnings, which we attempt to control for based on household asset-based wealth. Maternal education is also theorized to affect child nutrition status through the direct delivery of health and nutrition information; delayed age of marriage and age at child's birth; greater ability to acquire, absorb, and apply health and nutrition information from other sources; greater openness to RMNCH services; greater decisionmaking authority within the household with respect to food, health, and care; and access to more-educated social networks (Ruel et al., 2013). Using data from a slum settlement in Dhaka, Fakir and Khan (2015) find that the effect of mother's education attainment on child underweight status appears to be partially mediated through her knowledge of health-promoting behaviors. Our data do not allow us to test potential pathways. Nevertheless, the results suggest that policies and programs that aim to raise girls' education attainment are appropriate, and should receive greater priority.

151. Similarly, fairly consistent international evidence exists on the large positive effect of household economic status on child nutrition status. Cash transfers is one way to raise household income. Manley, Gitter, and Slavchevska (2013) find that, while the international evidence of the effects of unconditional and conditional cash transfer programs in developing countries is mixed, the overall effect on child height is small and insignificant. Although not always significant, the review finds that the overall effect of transfer programs is larger for the youngest children and girls; for children in households with longer program participation; in settings with poorer health outcomes and health service use at baseline, when transfers are conditioned on health service use. These insights on the variation of effects are useful for program design. In addition, Alderman and Headey (2017) find that mother's education and household wealth are generally complements in developing countries, suggesting that policies and programs that succeed in raising household income may also raise the child nutrition payoffs from parental education attainment.

152. The evidence suggests that the development and improvement of nutrition-sensitive programs is key. The nutrition sensitivity of programs can be enhanced by incorporating explicit nutrition goals and by targeting women and children that are more nutritionally vulnerable from a physiological perspective (Ruel et al. 2013). Given that slum residents face multiple disadvantages in their conditions, saturating slum settlements with a wide array of nutrition-sensitive programs may be needed to generate large, durable nutrition gains. Notwithstanding, nutrition-specific interventions should remain part of the policy package for slum residents. In their review of the international evidence, Goudet et al. (2017) find that nutrition-specific interventions in slum settlements—such as micronutrient supplementation, nutrition promotion, school feeding, and treatment of acute malnutrition—tend to have positive effects on child nutrition status.

153. Among the various nutrition-sensitive areas, water, sanitation, and hygiene amenities, services, and practices stand out as critical for improving the health and nutrition status of urban residents, in particular slum residents. Poor urban WASH services are a major threat to public health. While open defecation is negligible in urban Bangladesh, toilet facilities that are shared among households in common. The new dimensions of the urban sanitation problem lie in keeping shared toilets clean and usable, and providing wide, safe, and reliable formal fecal sludge management (FSM) services, across the entire chain from proper containment in on-site toilet facilities and emptying to treatment and disposal (Peal et al. 2014). Relatively easy and inexpensive interventions such as door-to-door behavior-change communication campaigns, combined with basic provisions at toilet facilities such as flush and water storage buckets and signage, have been shown to dramatically improve the cleanliness of shared toilets in slum settlements in Dhaka (Alam et al. 2016). Such and other interventions based on careful context-specific formative research would need to be developed to address the many and often complex sources of environmental risks to health that households face. Formal, well-functioning FSM services will first and foremost require government regulatory actions, coupled with models to strengthen private FSM services, and interventions to stimulate household demand for FSM services (Ross, Scott, and Joseph 2016).

154. In addition to developing and updating policies, implementation of existing policies and regulations is a key bottleneck. Therefore, importantly, existing and future policies need to be enforced more consistently, accompanied by the establishment of viable clinical quality assurance mechanisms, as well as periodic audits by MOHFW to monitor compliance of providers with standards, in collaboration with the relevant professional associations.

155. Given the key roles of MOHFW, MOLGRD&C and urban governments in urban health, especially at the primary health level, it is important to delineate clearly their respective responsibilities, and improve the coordination among these entities at the national as well as the local levels, perhaps building on existing/new models. The aim should be to understand and implement at scale practical ways of ensuring coordination and ownership at the local levels, with the active participation of mayors, while recognizing the differences among cities of different sizes. Such action would strengthen accountability of the system by attributing more responsibilities to those closer to communities. Coordination efforts should include international donors that have been supporting specific urban health projects in Bangladesh. At the same time, MOHFW has an important role to play in providing technical leadership and support to this process, while helping to build capacity at the local level. By the same token, raising awareness among citizens about their rights and responsibilities for their health and wellbeing (for example, right to receive care with dignity, risks of delaying medical care, prevention, types of services and facilities available, costs and fee exemptions), and ensuring the participation of beneficiaries in the design and implementation of effective urban health service delivery systems, are important, albeit often overlooked, priorities. An engagement of citizens is pivotal for setting up a system that can respond to their evolving needs. Although Bangladesh has quite a centralized system, the example of Brazil could be helpful, insofar as decentralization in the country (which has been relatively successful) was in fact demanded first and foremost by civil society.

156. To better support decisionmaking, data systems, quality and reporting need to be strengthened, leveraging existing technology to the extent possible. Routine monitoring should be combined with operations research and periodic survey based evaluations. Bangladesh has already established a national Health Management Information System, which collects data from rural areas and from secondary and tertiary health facilities in urban areas. It would be important to consolidate information on urban primary health service through this system so that information can flow to the central level, and be fed back to the lower levels and to facilities. Meanwhile, there are some promising initiatives on collecting additional data more consistently from the various urban primary health facilities through the rollout of the DHS2 survey; it would be worthwhile to consider the possibility of building on such experiences.

157. The success of NGOs in health development in rural Bangladesh is attributed to decades of experience, characterized by continuous learning and adaptation of interventions. NGO engagement in the provision of urban primary health services is much more recent, but a similar learning process would be needed. Notwithstanding, the health development record in rural Bangladesh is mixed. The government and NGOs have been especially successful in promoting family planning through contraceptives, infectious disease prevention through vaccinations, and diarrheal treatment through oral rehydration, whereas they have been less successful in other areas of maternal and child health, and in addressing maternal and child undernutrition (El Arifeen et al., 2013). Hence, there is an even greater need for iterative learning from testing interventions for improving the quality and increasing the use of health services—irrespective of whether the service provider is public, NGO, or private—by the urban poor and slum residents. The scope of such interventions needs to move beyond maternal and child health services to also respond to the epidemic of noncommunicable diseases, as well as reach out to underserved groups, including men.

158. Most households in urban Bangladesh, including poor ones, seek health care from private providers. Given this, policies, programs, and partnerships should aim to ensure quality of care among such

providers. A variety of (typically small-scale) interventions have been tested in different developing-country settings with the aim of improving the utilization and quality of private health services. These include social marketing, vouchers, franchising, regulation, accreditation, and contracting. While empirical evidence remains scarce on the effects of these interventions, and the evidence that exists is generally of poor quality (Patouillard et al., 2007; Madhavan et al., 2010), recent rigorous evidence is promising. For example, Bennett and Yin (2014) and Bjorkman-Nyqvist, Svensson, and Yanagizawa-Drott (2012) find that the entry of better providers motivates incumbent private providers to respond by improving quality and reducing prices in local drug markets. Under an experimental evaluation, Das et al. (2016) find that general training offered to informal private health providers in rural West Bengal, India increased correct case management for selected common conditions (respiratory distress, child diarrhea, and chest pain) based on information gathered from standardized patients.

159. Based on the above discussion, several strategic directions—relevant to the various facets of urban health—could be considered by the government. Table 16 summarizes these directions.

Table 12: Summary of key issues and policy recommendations

Key Issues Identified	Policy Recommendation	Key Actors
<p>Stewardship and Governance</p> <p>Two important challenges are the lack of meaningful coordination between MOHFW and MOLGRD&C on the provision of technical leadership of urban health service delivery, and the inability of the urban health system to keep pace with the rapid urbanization (Ref: Para 104).</p>	<p><i>Establishing an institutional structure for the delivery of urban health services by putting urban governments at the center of urban primary health service delivery; ensuring adequate HRH capacities; providing clarity on the relative roles and responsibilities of the different actors; and improving the coordination among these entities at the national as well as the local levels, building on existing models or creating new ones. (SHORT-TERM)</i></p> <p>Such action would strengthen the accountability of the system by assigning more responsibility for service delivery to those responsible for implementation and closer to communities. Coordination efforts should also include the International donors that support urban health projects in Bangladesh. Specifically, this might entail:</p> <ul style="list-style-type: none"> • Exploring coordination mechanisms at local level, whereby Mayors—who are more directly accountable to the citizens—can take ownership, with support from the central level to strengthen the local capacity for coordination, planning and oversight through appropriately trained staff and finances. • Bringing cohesion between MOHFW, MOLGRD&C, other Ministries offering tertiary level health services, and the NGO and private sector by agreeing on an unambiguous division of responsibility between all the actors, aligning financial resources and accountability, and building further capacity. This process could be furthered by building on the existing urban health coordination committee established by the government. Such inter-ministerial collaboration should also be used further multisectoral action, e.g. improving mother’s education, and the design and implementation of nutrition-sensitive programs, that have a bearing on health and nutrition outcomes. • Aligning all the international donors’ support for urban health—including those related to service delivery, reporting and quality control, mapping of facilities to certain catchment areas and enlisting of the poor with periodic updates—with the Government of Bangladesh’s strategy for Urban Health. 	<p><u>Leading role:</u></p> <p>Ministry of Planning; MOHFW; MOLGRD&C/Local Government Directorate; urban governments</p> <p><u>Supporting role:</u></p> <p>Other Ministries providing urban services; International donors for technical support and financial assistance, as required</p>
<p>Regulation</p> <p>Regulation appears weak and outdated and the implementation of existing policies and regulations is a key bottleneck. There are</p>	<p><i>Strengthening the regulatory structures and processes for urban health services delivery</i></p> <p>Selective new regulations will need to be formulated, and both new and existing regulations will need to be enforced adequately and consistently. The regulatory measures must be accompanied by the establishment of viable clinical quality assurance mechanisms, as well as periodic audits by MOHFW to monitor compliance of providers with standards, in collaboration with the relevant professional associations. Such measure would include:</p>	<p><u>Leading role:</u></p> <p>MOHFW; MOLGRD&C</p>

<p>provisions for quality control, but these are not effectively enforced and are often purely an administrative exercise. Similarly, the regulation of private providers, the medical practice, private clinics and laboratories ordinance dates back to 1982, and is also not fully enforced (Ref: Paras 108, 109)</p>	<ul style="list-style-type: none"> • Revising and updating regulations on licensing and registration and ensuring that quality controls are conducted periodically to monitor adequacy of infrastructure, human resources, and adherence to standards and protocols (at least for those services listed in the essential service package), with appropriate follow-up on filling identified gaps. • Making Hospital Management Committees a mandatory part of the hospital/health facilities management structure, including ensuring effective representation from civil society, and engaging them actively in addressing the challenges of hospitals and suggesting changes. • Encouraging the professional associations to play a bigger role in promoting a stronger patient-centered culture among providers. 	
<p>Financing</p> <p>There is no fiscal decentralization for urban health sector, and no local participation in the resource allocation function. The <i>de jure</i> focus on expanding the responsibilities of urban governments for health service delivery has not been accompanied by separate line item budgets for health (Ref: Paras 106, 107).</p>	<p><i>Ensuring sustainable financing for urban health and for urban governments to deliver urban health services</i></p> <p>Potential options to achieve this might include:</p> <ul style="list-style-type: none"> • Aligning financing with responsibilities for urban health by ensuring adequate financing targeted at the delivery and coordination of the planned health services from the central level budget, as urban governments play a more active role in planning for urban health services in their areas, and exploring options to complement those funds with revenues collected at the local level (as in the Chittagong Municipal Corporation), while being mindful of the centralized processes in place in Bangladesh • Updating and standardizing user fees for essential services and/or for the most common procedures • Standardizing the methods used to identify the poor and the levels of exemption from user fees, and ensure the full compliance of providers with these exemptions. • Exploring the use of cash transfers to induce behavior change (especially for reducing stunting, which is a critical development challenge, and where other countries have had success in the use of such transfers) in urban areas in Bangladesh. This is an area where the World Bank, with its rich experience with cash transfer programs around the world might be able to assist Bangladesh. 	<p><u>Leading role:</u></p> <p>Ministry of Finance/Finance Division; Ministry of Planning; MOHFW; MOLGRD&C</p> <p><u>Supporting role:</u></p> <p>Academic institutions; NGOs; International donors for technical support and financial assistance, as necessary</p>
<p>Service Delivery</p> <p>The delivery of urban health services by the public is</p>	<p><i>Establishing a people centered integrated care health system and fostering public-private collaboration in the delivery of urban health services</i></p> <p>As a way of reducing the fragmentation of the delivery system, it would be important to shift the model from an approach that targets specific groups of the population, to one that</p>	<p><u>Leading role:</u></p>

insufficient to satisfy the demand and need for such services. There is no planning at the local government level to avoid duplication of services and to ensure that these offer a comprehensive range of services. The referral system is dysfunctional. The public and private sector, including the NGOs, have been especially successful in promoting family planning, infectious disease prevention, and diarrheal treatment, but less successful areas of maternal and child undernutrition a critical need in urban areas (Ref: Paras 110-116)

addresses the needs of the entire population and moves towards a culture of patient-centeredness. Steps that could be taken in this regard include:

- Making sure that providers are offering services that cater to the needs of the entire population. There is a need for iterative learning from testing interventions for improving the quality and increasing the use of health services—irrespective of whether the service provider is public, NGO, or private—by the urban poor and slum residents. The scope of interventions needs to move beyond maternal and child health services to respond to the epidemic of noncommunicable diseases, as well as reach out to underserved groups, including working males.
- Making services more accessible to the working population by expanding the hours of operations to early morning and late evening both at the facilities as well as outreach services and clinics in slum settlements
- Actively pursuing the current plans for establishing a functioning referral system by ensuring proper population empanelment, especially for the permanent population, and exploring mechanisms by which all facilities, including the private ones, are committed to providing services to the identified population in a catchment area. This should become a key responsibility of urban governments.
- Working with the Professional Associations to promote a culture of patient-centeredness, quality and accountability among providers
- Considering the feasibility of implementing interventions, such as social marketing, vouchers, franchising, regulation, accreditation, and contracting, that have been tested in various developing country settings to improve the utilization and quality of private RMNCH services. The government should carefully explore and test options—in areas such as financing, insurance, service delivery contracting, regulation, and accreditation—that may improve the quality of care provided by the private sector (while minimizing any negative effects on the viability of private providers). Such efforts should be accompanied by rigorous formative and evaluative research.
- Ensuring that patients arriving at the secondary or tertiary level facility with referrals from lower levels receive timely treatment, as opposed to those who do not have referrals, to change the perception that referrals are merely suggestions.
- Ensuring facilities have anonymous mechanisms to report staff behavior to management and that sanctions are enforced on staff who do not treat patients with respect- this would include identifying and enforcing effective ways of receiving and addressing complaints through the dialogue with representatives of the local communities
- Requiring regular reporting to the central level (not only to international donors) on overall performance, including quality of care.
- Given that the private sector (for- and non-profit) is the main provider of health services in urban areas, including to the poor, effective partnerships are necessary to help ensure

MOHFW;
MOLGRD&C

Supporting role:

Public and private sector service providers;
Academic institutions;
NGOs; International donors for technical support and financial assistance, as necessary

	<p>private-provider quality of care. The government should carefully explore and test options—in areas such as financing, insurance, service delivery contracting, regulation, and accreditation—that would facilitate collaboration and improve the quality of care in the private health sector. The involvement of the pharmacies/pharmacists, who are integral to urban health service delivery, in this process is critical.</p>	
<p>Monitoring and evaluation</p> <p>The monitoring and evaluation function is not coordinated at the central level. The National Health Management Information System (HMIS), residing within MOHFW, covers all MOHFW facilities in rural and urban areas, but it does not capture data from the other government facilities, NGOs, and the for-profit private sector. There is no mechanism for feeding data back to the lower levels and to facilities for on-course corrections (Ref: Para 109).</p>	<p><i>Building a comprehensive M&E system to facilitate effective monitoring of public and private urban health services and programs, and evidence based decision-making</i></p> <p>This system would entail consistent and comprehensive reporting and monitoring of all conditions through the HMIS, so that the national HMIS covers not only the rural areas and the secondary and tertiary facilities under MOHFW, but also all primary health facilities in urban areas, including NGO run and the private for-profit facilities. The monitoring and evaluation efforts can be strengthened considerably by leveraging existing technology. Specifically:</p> <ul style="list-style-type: none"> • Bangladesh has already established a national Health Management Information System (HMIS), which collects data from rural areas and from secondary and tertiary facilities in urban areas. It would be important to consolidate information on urban primary healthcare through this system, so that information can flow to the central level, and be fed back to the lower levels and the facilities. • There are some promising initiatives for collecting more data more consistently from the various urban primary health facilities, and scaling up existing efforts of common reporting of all facilities through the rollout of the DHS2 survey (UHSSP pilot); it would be worthwhile to consider building on such experiences. • The routine monitoring should be buttressed by strategic use of operations research as well as periodic survey based project/program evaluations to guide policymaking. 	<p><u>Leading role:</u></p> <p>MOHFW</p> <p><u>Supporting role:</u></p> <p>MOLGRD&C/LGD; urban governments; NGOs and Private Providers; International donors</p>
<p>Voice and accountability</p> <p>The culture of accountability within the health system is weak, and there is no clarity on patients’ rights. There is a limited sense of trust established between the provider and the patients, and</p>	<p><i>Strengthening accountability in the delivery of urban health services</i></p> <p>This could be undertaken through measures such as:</p> <ul style="list-style-type: none"> • Encouraging the health departments of urban governments to work with the existing channels of community representation to strengthen citizens’ understanding of health promotion, prevention, and citizens’ rights vis-à-vis the health system, including information on service offerings, types of formal/registered facilities available in the area, hours of operation, risks and hidden costs of delaying medical care etc. 	<p><u>Leading role:</u></p> <p>Urban governments; NGOs focusing on human rights; Professional Associations; Public and private sector health providers</p>

<p>the relationship is hierarchical (Ref: Paras 117-120)</p>	<ul style="list-style-type: none"> • Increasing voice by exploring more effective ways to organize citizens' representation to ensure the voice of different groups are expressed (e.g. women's groups and appropriate representation in the Hospital Management Committee). • Establishing, over time, a more regular patient-provider relationship through population empanelment and enforcement of (some level of) gatekeeping. 	
<p>Urban and Urban Health Policy</p> <p>Urbanization and the urban health milieu in Bangladesh have evolved rapidly, without a concurrent emergence of a vision of how the urban health system should work (Ref: Paras 121-127)</p>	<p>Developing a shared urban health policy, within the broader context of urbanization and urban policy, with a strong focus on the needs of slum residents</p> <p>Such a policy would need to:</p> <ul style="list-style-type: none"> • Underline a stronger stewardship role for the government, reflecting better the evolving operating environment, including increasingly relevant issues such as rural-urban migration, the changing epidemiological/demographic profiles of urban areas, the rapid development of slum settlements, the potential for multisectoral action to influence health and nutrition indicators, the unique urban governance structures, the needs of a working population, and the health human resource, financing and service provision realities on the ground • Effectively addressing maternal and child undernutrition in urban (slum) areas especially focusing on two higher level actions, namely: a) higher political and bureaucratic prioritization of nutrition in the country's health development agenda in particular, and its economic development agenda more generally; and b) a more central treatment of maternal and child nutrition for the urban poor and slum residents in the development and implementation of government national health strategies and operational plans, including in the strategies and plans related to urban health. This would include the government also having to adjust its policy stance regarding slum settlements, to one that actively promotes the interests and welfare of slum residents and treats slum residents as a primary target group in the country's development agenda. 	<p><u>Leading role:</u></p> <p>Prime Minister's Office; Ministry of Planning; MOHFW; MOLGRD&C</p> <p><u>Supporting role:</u></p> <p>Other Ministries; International donors to support with experiences from other countries</p>

Getting there from here – Charting a way forward

160. Based on the findings of this study and the strategic options identified, a four-pronged approach is presented below for charting an initial way forward on urban health in Bangladesh and help the country realize its universal health coverage aspirations. While these recommendations are not intended to be prescriptive, the study's findings suggest that an exploration of these options could be a useful starting point for a more comprehensive and inclusive dialogue on urban health policy.

A. Establishing an institutional structure for the delivery of urban health services

161. ***Putting urban governments at the center of primary health service delivery:*** Urban governments in Bangladesh have been mandated to provide social services, including primary health services, in urban areas. Urban governments also have the advantage of being closer to the communities that they serve, and the elected officials are also directly accountable to the people in their constituencies. Given this, it seems logical to task urban governments, led by the mayors in city corporations and the heads of the municipalities, with the responsibility of providing for the primary healthcare needs of their populations. This could include an extension of this function to involve primary and secondary prevention of noncommunicable diseases. Given the existing gaps in their capacity to undertake this function, it is important that they receive adequate technical guidance and support from MOHFW, financial and administrative support from MOLGRD&C, and collaboration on multisectoral health and nutrition action across the relevant ministries. The joint participation of urban governments and MOHFW (who are responsible for secondary and tertiary health services) in the delivery of health services in urban areas would also help in strengthening referral systems. Furthermore, multisectoral action directed at health may be well be easier at the urban government level, where all the relevant sectors come together. The lessons learned from urban health capacity building projects funded by international donors would be a good starting point to assess the capabilities and constraints of urban governments in leading on primary health service delivery. While the experience of Chittagong is somewhat unique in Bangladesh given the history of the city and its relative affluence, certain aspects (such as the ownership and leadership of the city corporation in taking responsibility for health) could be leveraged by other urban governments for the development of effective primary health services.

162. ***Ensuring sustainable financing for urban governments:*** For urban governments to effectively implement health programs, it is vital that they receive adequate and reliable financing. By the same token, it is important that urban governments be held accountable for the effective use of provided funds. In cities in many other developing countries, urban governments have the authority and ability to independently raise revenues for delivering health services. It may be worthwhile to explore the possibility of such revenue generation by at least by city corporations in Bangladesh. In addition, it is conceivable that a portion of the block grants provided by MOLGRD&C to urban governments could be earmarked for the delivery of health services. Such earmarking should be accompanied by effective accountability systems so that the urban governments' use of funds for the delivery of health services can be monitored and assessed.

163. ***Building Human Resources for Health capacities in urban governments:*** It is important to ensure that the cadres of health professionals and para-professionals have a clear career path within urban governments. An option is to have the hiring of these cadres be undertaken using the same systems that are in place within MOHFW, so that professionals can move seamlessly between MOHFW and urban government structures. Such a recruitment system should be accompanied by effective capacity building and a system of continuing education.

B. Fostering public-private partnership in the delivery of urban health services

164. *Leveraging private and NGO health service delivery more effectively:* The private sector is the main provider of health services in urban Bangladesh, including to the poor. Urban governments contract NGOs to provide health services; the available evidence often suggests modest or no effects on health outcomes of interest, even if NGO health service utilization increases. Urban governments should seek to go beyond regulation, and consider actively partnering with the private sector. This would include experimenting with alternative approaches, focused on extending the scope of the private sector into preventive and promotive health services, as well as ensuring a minimum level of service quality that is affordable to the poor. Given that pharmacies are so ubiquitous and, therefore, such critical entities in urban health service delivery, effort should be made to engage them in this dialogue, and to foster an active collaboration that entails a combination of accreditation of pharmacies, and training and continuing education of pharmacists, in partnership with their professional association. Contracting arrangements with NGOs should be adapted to go beyond coverage and utilization to service quality considerations. As noted earlier, these partnerships with NGO and private health providers should also go beyond the provision of RMNCH services to the prevention and treatment of noncommunicable diseases, given the already high and rapidly rising contribution of noncommunicable diseases to death and disability in urban areas.

C. Building a comprehensive monitoring and evaluation system to facilitate effective monitoring of public and private urban health programs and evidence-based decisionmaking

165. *Instituting a monitoring and evaluation system for urban health:* Instituting an urban health sector Management Information System (MIS) that provides reliable and regular information, and ready access to statistics by decisionmakers, is a priority. The potential value of the health sector MIS would be higher to the extent that it covers not only public health facilities, but also NGO and private health providers, and to the extent that it can collect data on quality-of-care indicators. It should cover city corporations, municipalities, and other urban areas; and should ideally be integrated with other sources of administrative and survey data on public environmental conditions and services gathered by relevant urban government units, ministries, and the Bangladesh Bureau of Statistics.

D. Putting slums at the center of urban (including urban health) policy

166. *Elaborating a clear policy on slum settlements:* Developing clear, sound policies on the treatment of slum settlements, and on the provision of public environmental and health services in slum settlements, is an imperative. Given that urban areas face multiple health risks arising from poor environmental conditions and services (with amplified risks in slum settlements and other poor neighborhoods), policies and regulations should span health-sensitive ministries such as water resources, social welfare, food and disaster management, education, fisheries and livestock, industries, and environment. Efforts are currently underway in Bangladesh to formulate an urban health policy and operational plan. These sector-level efforts should be accompanied by an effort to introduce supportive policies and regulations toward slum settlements.

Appendices

Appendix Table A.1: Correlates of underweight, overweight, and mental ill-health status

ever-married females ages 18–49 years

Factor	Underweight			Overweight			Log mental ill-health scores		
				City corporations					
	Full (1)	Slum (2)	Nonslum (3)	Full (4)	Slum (5)	Nonslum (6)	Full (7)	Slum (8)	Nonslum (9)
Age	0.973*** (0.008)	0.986* (0.008)	0.948*** (0.016)	1.059*** (0.010)	1.068*** (0.011)	1.054*** (0.016)	0.021*** (0.003)	0.025*** (0.002)	0.016*** (0.006)
Highest ed.: preschool-grade 4	0.787 (0.127)	0.965 (0.164)	0.505* (0.184)	1.483** (0.262)	1.124 (0.231)	1.870** (0.503)	−0.007 (0.077)	0.070 (0.075)	−0.132 (0.176)
Highest ed.: grades 5-7	0.732* (0.128)	0.856 (0.154)	0.513* (0.197)	1.947*** (0.316)	1.840*** (0.291)	2.162*** (0.615)	−0.025 (0.069)	−0.089 (0.066)	0.056 (0.142)
Highest ed.: grades 6-9	1.093 (0.203)	1.128 (0.264)	0.908 (0.301)	1.571* (0.366)	1.615* (0.409)	1.650 (0.580)	−0.101 (0.080)	−0.048 (0.107)	−0.126 (0.134)
Highest ed.: grades 10-11	0.865 (0.270)	0.679 (0.281)	0.819 (0.377)	1.666** (0.393)	1.603 (0.523)	1.773* (0.579)	−0.349*** (0.110)	−0.332** (0.128)	−0.376** (0.156)
Highest ed.: grade 12 or higher	0.274*** (0.109)	0.861 (0.492)	0.153*** (0.072)	1.793* (0.540)	2.530** (1.062)	1.838 (0.708)	−0.522*** (0.097)	−0.559*** (0.181)	−0.552*** (0.131)
Moved to current place	1.061 (0.141)	0.952 (0.127)	1.136 (0.340)	0.699*** (0.075)	0.722** (0.104)	0.689** (0.103)	−0.021 (0.051)	−0.078* (0.041)	0.034 (0.093)
Employed	1.159 (0.140)	1.088 (0.144)	1.276 (0.313)	0.658*** (0.096)	0.606*** (0.102)	0.686 (0.158)	0.126*** (0.048)	0.081 (0.053)	0.219** (0.086)
Own/joint hdm authority score	0.899* (0.050)	0.867** (0.049)	0.985 (0.112)	0.999 (0.054)	0.943 (0.060)	1.037 (0.082)	−0.059*** (0.019)	−0.029 (0.022)	−0.098*** (0.034)
Log mental ill-health score	1.204*** (0.068)	1.118* (0.066)	1.371** (0.166)	0.916** (0.040)	0.982 (0.057)	0.889** (0.053)	—	—	—
Household size	0.988 (0.030)	0.991 (0.033)	0.982 (0.059)	1.055* (0.032)	1.028 (0.037)	1.068 (0.048)	−0.032** (0.014)	−0.014 (0.013)	−0.052** (0.022)
Housing space per member	0.986 (0.024)	0.931** (0.032)	1.024 (0.020)	1.008 (0.011)	1.036 (0.023)	1.005 (0.012)	−0.007** (0.004)	−0.006 (0.005)	−0.007 (0.005)
Housing quality index	0.800*** (0.062)	0.841** (0.064)	0.724 (0.146)	1.397*** (0.105)	1.496*** (0.109)	1.319** (0.164)	−0.077** (0.031)	−0.095*** (0.034)	−0.049 (0.055)

ever-married females ages 18–49 years

Factor	Underweight			Overweight			Log mental ill-health scores		
				City corporations					
	Full (1)	Slum (2)	Nonslum (3)	Full (4)	Slum (5)	Nonslum (6)	Full (7)	Slum (8)	Nonslum (9)
Household faced food shortage	1.166 (0.203)	1.396** (0.224)	0.617 (0.372)	1.148 (0.425)	0.840 (0.297)	1.884 (1.370)	0.455*** (0.063)	0.376*** (0.061)	0.682*** (0.142)
Log per-member hh con expenditures	0.556*** (0.066)	0.683** (0.101)	0.410*** (0.071)	2.429*** (0.319)	1.986*** (0.293)	2.610*** (0.487)	0.007 (0.055)	-0.006 (0.050)	0.028 (0.091)
Neighborhood quality index	0.986 (0.061)	0.955 (0.065)	0.892 (0.139)	1.009 (0.050)	1.036 (0.063)	0.897 (0.085)	0.003 (0.033)	-0.003 (0.033)	0.048 (0.097)
Pharmacy in neighborhood	0.995 (0.122)	1.091 (0.167)	0.777 (0.150)	0.846* (0.075)	1.034 (0.135)	0.723*** (0.082)	0.033 (0.094)	0.095 (0.114)	-0.141 (0.139)
Qualified doctor in neighborhood	0.999 (0.105)	1.039 (0.137)	0.905 (0.154)	1.169* (0.100)	0.962 (0.125)	1.366*** (0.150)	0.022 (0.094)	-0.035 (0.130)	0.081 (0.113)
HFP fieldworker in neighborhood	0.936 (0.110)	1.038 (0.146)	0.735 (0.160)	0.933 (0.099)	0.990 (0.144)	0.901 (0.147)	-0.059 (0.082)	0.058 (0.092)	-0.200 (0.134)
Gov. healthcare facility in neighborhood	1.130 (0.316)	1.026 (0.365)	1.554 (0.583)	1.222 (0.178)	1.343* (0.217)	1.240 (0.309)	-0.003 (0.103)	0.093 (0.172)	-0.127 (0.108)
Prv. healthcare facility in neighborhood	1.053 (0.142)	1.118 (0.151)	0.949 (0.286)	1.007 (0.076)	1.043 (0.128)	1.052 (0.115)	0.186*** (0.068)	0.120 (0.087)	0.319*** (0.099)
NGO healthcare facility in neighborhood	0.718*** (0.078)	0.734** (0.087)	0.686* (0.149)	1.266*** (0.098)	1.245* (0.140)	1.263** (0.137)	0.047 (0.090)	0.034 (0.106)	0.108 (0.117)
Nonslum neighborhood	0.669*** (0.094)	—	—	1.141 (0.116)	—	—	-0.028 (0.078)	—	—
Barisal	1.147 (0.236)	0.899 (0.196)	0.939 (0.399)	0.835 (0.218)	0.938 (0.373)	0.802 (0.311)	0.168* (0.101)	-0.010 (0.118)	0.349** (0.166)
Chittagong	0.992 (0.123)	1.088 (0.160)	0.997 (0.216)	1.124 (0.100)	1.070 (0.147)	1.199 (0.133)	0.112 (0.077)	0.195** (0.088)	0.050 (0.130)
Khulna	0.694 (0.155)	0.790 (0.222)	0.576 (0.224)	1.262 (0.211)	1.202 (0.290)	1.249 (0.272)	0.370*** (0.062)	0.280*** (0.080)	0.448*** (0.095)
Rajshahi	0.926 (0.172)	0.910 (0.262)	0.909 (0.259)	0.898 (0.214)	1.207 (0.272)	0.778 (0.204)	-0.182 (0.124)	-0.071 (0.092)	-0.313 (0.237)
Sylhet	1.455** (0.226)	1.774*** (0.312)	1.350 (0.377)	0.712*** (0.089)	0.679 (0.361)	0.846 (0.134)	0.298** (0.129)	0.353*** (0.121)	0.276* (0.153)

ever-married females ages 18–49 years

Factor	Underweight			Overweight			Log mental ill-health scores		
	City corporations						Full	Slum	Nonslum
	Full	Slum	Nonslum	Full	Slum	Nonslum			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
R-squared statistic	—	—	—	—	—	—	0.080	0.068	0.102
Observations	4,877	2,427	2,450	4,877	2,427	2,450	8,887	4,972	3,915

Note: Columns (1)-(6) report odds ratios calculated after estimating maximum likelihood binomial logit regressions; columns (7)-(9) report coefficients from estimating ordinary least squares regressions. Regression factors comprise of individual, household, and neighborhood characteristics, and indicators for administrative divisions. Estimates are adjusted for sampling weights. Robust standard errors, clustered at the neighborhood level, are reported in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. Data are at the individual level, and come from the 2006 Bangladesh Urban Health Survey.

Appendix Table A.2: Correlates of underweight, overweight, and mental ill-health status

ever-married men ages 18–49 years

Factor	Underweight			Overweight			Log mental ill-health scores		
	City corporations						Full	Slum	Nonslum
	Full	Slum	Nonslum	Full	Slum	Nonslum			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Age	0.976*** (0.008)	0.989 (0.008)	0.946*** (0.015)	1.058*** (0.011)	1.043*** (0.015)	1.072*** (0.016)	0.010** (0.005)	0.012* (0.006)	0.006 (0.006)
Highest ed.: preschool-grade 4	0.897 (0.123)	0.890 (0.125)	0.823 (0.282)	1.575 (0.448)	1.124 (0.416)	2.011* (0.770)	0.072 (0.078)	0.139 (0.087)	-0.122 (0.146)
Highest ed.: grades 5-7	0.898 (0.173)	0.766 (0.130)	1.143 (0.472)	2.050** (0.709)	1.721* (0.515)	2.184 (1.142)	0.057 (0.087)	0.048 (0.100)	-0.019 (0.150)
Highest ed.: grades 6-9	0.769 (0.129)	0.663** (0.111)	0.853 (0.306)	2.351*** (0.694)	2.898*** (0.821)	2.203* (1.035)	-0.166 (0.105)	0.014 (0.113)	-0.436** (0.185)
Highest ed.: grades 10-11	0.390*** (0.083)	0.519** (0.135)	0.296*** (0.117)	2.130*** (0.528)	2.040* (0.870)	2.175** (0.780)	-0.524*** (0.169)	-0.320* (0.192)	-0.800*** (0.261)
Highest ed.: grade 12 or higher	0.214*** (0.063)	0.314** (0.144)	0.195*** (0.078)	2.189*** (0.643)	2.763*** (0.891)	2.210* (0.996)	-0.522*** (0.140)	-0.343** (0.164)	-0.712*** (0.216)
Moved to current place	0.996 (0.144)	0.975 (0.135)	0.992 (0.304)	0.758 (0.157)	0.881 (0.262)	0.727 (0.219)	-0.041 (0.072)	0.019 (0.085)	-0.067 (0.108)
Employed	0.717	0.874	0.539	0.853	0.825	1.049	-0.608***	-0.587***	-0.564***

ever-married men ages 18–49 years

Factor	Underweight			Overweight			Log mental ill-health scores		
	City corporations						Full	Slum	Nonslum
	Full	Slum	Nonslum	Full	Slum	Nonslum			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Own/joint hdm authority score	0.260	0.351	0.328	0.436	0.532	0.864	0.089	0.107	0.161
	0.884**	0.882**	0.905	1.198*	1.005	1.314**	-0.031	-0.025	-0.027
	(0.045)	(0.052)	(0.082)	(0.113)	(0.110)	(0.172)	(0.027)	(0.028)	(0.051)
Log mental ill-health score	1.124***	1.133***	1.159**	0.948	0.833**	0.990	—	—	—
	(0.042)	(0.047)	(0.087)	(0.042)	(0.070)	(0.050)			
Household size	0.892***	0.943*	0.810***	1.062	1.030	1.065	0.005	-0.007	0.006
	(0.031)	(0.030)	(0.062)	(0.039)	(0.064)	(0.052)	(0.021)	(0.015)	(0.038)
Housing space per member	0.953**	0.968	0.947	1.023	1.008	1.031*	-0.025***	-0.017*	-0.026***
	(0.019)	(0.019)	(0.037)	(0.015)	(0.034)	(0.018)	(0.005)	(0.009)	(0.006)
Housing quality index	0.776***	0.824**	0.696**	1.674***	1.281	1.914***	-0.086*	-0.078	-0.098
	(0.057)	(0.062)	(0.104)	(0.227)	(0.207)	(0.408)	(0.052)	(0.055)	(0.098)
Household faced food shortage	0.994	0.956	0.818	0.611	0.468	1.020	0.376***	0.400***	0.395**
	(0.240)	(0.191)	(0.557)	(0.276)	(0.249)	(0.657)	(0.093)	(0.111)	(0.158)
Log per-member hh con expenditure	0.433***	0.519***	0.280***	1.781**	2.622***	1.470	0.097	0.037	0.160
	(0.055)	(0.084)	(0.057)	(0.506)	(0.590)	(0.528)	(0.067)	(0.060)	(0.103)
Neighborhood quality index	0.891*	0.855**	1.043	1.142	1.271*	0.966	-0.038	-0.033	-0.060
	(0.056)	(0.054)	(0.200)	(0.100)	(0.160)	(0.116)	(0.037)	(0.041)	(0.096)
Pharmacy in neighborhood	0.898	1.124	0.627	0.642***	0.572**	0.747	0.015	-0.079	0.281
	(0.117)	(0.152)	(0.203)	(0.108)	(0.145)	(0.197)	(0.107)	(0.085)	(0.305)
Qualified doctor in neighborhood	0.959	0.753**	1.476**	0.996	0.998	0.996	-0.017	-0.086	0.110
	(0.113)	(0.097)	(0.258)	(0.146)	(0.248)	(0.196)	(0.081)	(0.091)	(0.125)
HFP fieldworker in neighborhood	0.853	0.996	0.939	0.896	0.811	0.936	0.124*	0.161*	0.044
	(0.102)	(0.136)	(0.190)	(0.138)	(0.209)	(0.165)	(0.075)	(0.091)	(0.136)
Gov. healthcare facility in neighborhood	1.253	1.402	1.178	1.435	2.054***	1.134	-0.041	-0.032	-0.148
	(0.276)	(0.333)	(0.510)	(0.317)	(0.539)	(0.275)	(0.123)	(0.177)	(0.134)
Prv. healthcare facility in neighborhood	0.907	1.195	0.523*	1.145	0.910	1.344	0.121	-0.011	0.253*
	(0.139)	(0.163)	(0.190)	(0.222)	(0.281)	(0.344)	(0.088)	(0.095)	(0.133)
NGO healthcare facility in neighborhood	0.936	0.777*	1.021	1.076	0.993	1.172	0.108	0.078	0.143
	(0.122)	(0.111)	(0.228)	(0.180)	(0.231)	(0.271)	(0.081)	(0.092)	(0.140)
Nonslum neighborhood	0.986	—	—	1.278	—	—	-0.031	—	—

ever-married men ages 18–49 years

Factor	Underweight			Overweight			Log mental ill-health scores		
	City corporations						Full	Slum	Nonslum
	Full	Slum	Nonslum	Full	Slum	Nonslum			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Barisal	(0.121) 0.769	1.087	0.510	(0.208) 0.639	0.395	0.630	(0.103) 0.153	−0.101	0.582*
Chittagong	(0.193) 1.314**	(0.224) 1.374**	(0.291) 1.229	(0.208) 1.129	(0.261) 1.189	(0.284) 1.086	(0.143) 0.321***	(0.122) 0.294***	(0.330) 0.359***
Khulna	(0.175) 1.051	(0.212) 1.230	(0.299) 0.654	(0.186) 1.346	(0.355) 1.486	(0.233) 1.306	(0.077) 0.113	(0.098) −0.032	(0.124) 0.210
Rajshahi	(0.192) 0.663*	(0.283) 0.726	(0.231) 0.499	(0.268) 1.387	(0.583) 3.607***	(0.315) 0.833	(0.095) 0.110	(0.111) 0.265*	(0.185) −0.172
Sylhet	(0.149) 0.584	(0.154) 1.723*	(0.229) 0.293	(0.446) 0.579**	(1.242) 1.045	(0.249) 0.623*	(0.167) 0.236*	(0.144) 0.317*	(0.262) 0.235
	(0.353)	(0.540)	(0.255)	(0.132)	(0.665)	(0.177)	(0.127)	(0.188)	(0.178)
<i>R</i> -squared statistic	—	—	—	—	—	—	0.082	0.044	0.128
Observations	3,534	1,840	1,694	3,534	1,840	1,694	6,555	3,817	2,738

Note: Columns (1)-(6) report average marginal effects calculated after estimating maximum likelihood binomial probit regressions; columns (7)-(9) report coefficients from estimating ordinary least squares regressions. Regression factors comprise of individual, household, and neighborhood characteristics, and indicators for administrative divisions. Estimates are adjusted for sampling weights. Robust standard errors, clustered at the neighborhood level, are reported in parentheses. *** denotes $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$. Data are at the individual level, and come from the 2006 Bangladesh Urban Health Survey.

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