Bangladesh: Innovation for Universal Health Coverage 4

Explaining equity gains in child survival in Bangladesh: scale, speed, and selectivity in health and development


By disaggregating gains in child health in Bangladesh over the past several decades, significant improvements in gender and socioeconomic inequities have been revealed. With the use of a social determinants of health approach, key features of the country’s development experience can be identified that help explain its unexpected health trajectory. The systematic equity orientation of health and socioeconomic development in Bangladesh, and the implementation attributes of scale, speed, and selectivity, have been important drivers of health improvement. Despite this impressive pro-equity trajectory, there remain significant residual inequities in survival of girls and lower wealth quintiles as well as a host of new health and development challenges such as urbanisation, chronic disease, and climate change. Further progress in sustaining and enhancing equity-oriented achievements in health hinges on stronger governance and longer-term systems thinking regarding how to effectively promote inclusive and equitable development within and beyond the health system.

Introduction
Over the past four decades, Bangladesh has made remarkable gains in population health and is on course to meet most of its development goals (MDGs). These gains are noteworthy in light of the challenging development context of Bangladesh, characterised by relative declines in the share of public investment in health over time, rapid population growth, and lacklustre improvements in poverty and income inequality. This paper disaggregates gains in child health, revealing significant improvements in gender and socioeconomic inequities over time. Using a social determinants of health approach, key features of the country’s development experience are identified that help explain its unexpected health trajectory. The systematic equity orientation of health and socioeconomic development in Bangladesh, and the implementation attributes of scale, speed, and selectivity, have been important drivers of health achievements especially for women and the rural poor. The experience of Bangladesh supports the view that a deliberate policy and programmatic focus on equity in health yields the greatest population-level improvements, and creates the conditions for long-term economic growth and security. However, current and emerging challenges ranging from chronic diseases to rapid urbanisation and climate change are creating new fault lines of inequity that require urgent systems-level action if progress is to be sustained.

Measuring health equity
Analysis focuses on trends in child survival (infant mortality rate, child mortality rate, and under-5 mortality) and coverage of priority interventions for maternal and child health. The primary stratifiers for equity analysis are the sex of the child and household socioeconomic status expressed as an asset quintile, although geographic, urban residential (slum vs non-slum), and education strata are also acknowledged. Various equity measures are used to describe the distribution and size of differences across social groups and over time. Absolute or difference measures capture the actual size of the gap between two social groups (male vs female, or rich vs low asset quintiles), whereas relative or ratio measures such as the slope index of inequality and the relative concentration index (Prof T G Evans MD)

Key messages
• Time trends in absolute and relative measures of inequity in Bangladesh reveal that gains in health have been disproportionately experienced by the most disadvantaged populations
• Pro-poor and women-focused investments in health and social development such as the Expanded Programme on Immunisation, family planning, female education subsidies, and women’s microcredit have contributed to these gains
• The implementation features of scale, speed, and selectivity in Bangladesh’s health and social development programming are crucial to equity achievements
• An enabling environment characterised by political commitment, tolerance of NGO engagement, and continued donor support have sustained and enhanced equity-oriented performance
• Further progress requires stronger governance and longer-term systems thinking that addresses health workforce shortages, shortfalls in effective coverage of services, and enhanced engagement of partners within and beyond the health system
Scale, speed, and selectivity

Supplementing the social determinants framework is attention to how health and development programmes have been implemented. Drawing on both formal literature and the tacit knowledge of health and development programme implementers, three attributes of programme implementation—scale, speed, and selectivity—emerge as common characteristics of programmes that are linked to equity gains in health.

Scale refers to the practice of thinking and acting in orders of magnitude that correspond with the size of the nation. Bangladesh is one of the most densely populated countries in the world and, since independence, its population has doubled in size, with UN projections estimating almost 200 million people by 2050. This population growth, coupled with endemic poverty, has put a premium on simple, easy-to-implement interventions amenable to scale.

Speed, or the rapid rollout of health and development interventions, is the second feature of service implementation in Bangladesh that is essential to equity. Expectations for rapid change linked to achieving targets, a widespread institutional culture of results-based performance, and sustained support from donor partners, have enabled efficiencies in implementing interventions and achieving outcomes that benefit poor and disadvantaged populations. Reported to have more non-governmental organisations (NGOs) per person than any other developing country, Bangladesh’s strategic public-private partnerships have also enhanced the pace and scale of implementation.

Selectivity refers to the deliberate development priority accorded to two important strata of the population—the poor and women—that has permeated the way in which specific programmes are designed, implemented, and evaluated. This focus is reflected in the policy statements and strategic priorities of government and development partners, and characterises the values, mission, and programmes of much of Bangladesh’s immense NGO sector.

Equity gains in health outcomes

Although Bangladesh ranks among the poorest countries in south and southeast Asia, its recent improvements in terms of life expectancy, and infant, child, and maternal mortality, make it a relatively high performer. Aggregate gains in health, however, do not necessarily correspond with improvements in equity in health. To assess improvements in health equity, trends in infant and child survival are compared over a 17-year period according to asset quintile and sex using nationally representative Demographic and Health Survey data (table 1).

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Absolute change in infant survival (1993/94–2011)</th>
<th>Rate of improvement per year (Q1-Q5)</th>
<th>Relative difference (Q1:Q5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Q5</td>
<td>Q1</td>
<td>Q5</td>
</tr>
<tr>
<td>Infant</td>
<td>1993/94</td>
<td>115</td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>62</td>
<td>30</td>
</tr>
<tr>
<td>Child</td>
<td>1993/94</td>
<td>80</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Under-5</td>
<td>1993/94</td>
<td>186</td>
<td>97</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>78</td>
<td>38</td>
</tr>
</tbody>
</table>

Source: BDHS.18–23

Table 1: Child mortality by asset quintile, 1993/94 and 2011

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Expected ratio (M:F)</th>
<th>Actual ratio (M:F)</th>
<th>Shortfall inequality (M:F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant</td>
<td>1993/94</td>
<td>107</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>Child</td>
<td>1993/94</td>
<td>47</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Under-5</td>
<td>1993/94</td>
<td>149</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>66</td>
<td>61</td>
</tr>
</tbody>
</table>

Source: BDHS.18–23

Table 2: Child mortality by gender, 1993/94 and 2011
in child mortality in the lowest quintile have been sufficiently large to reduce relative inequality from a rate ratio (Q1:Q5) of 2.76 in 1993/94 to 2.0 in 2011 (a 38% improvement). The rate of improvement in infant mortality in the poorest quintile, although superior to the richest quintile, has not been fast enough to close the relative inequality gap, with an increase from 1.64 in 1994 to 2.07 in 2011 (a 21% net deterioration).

**Child survival inequalities by gender**

Assessing gender inequities in survival must take into account that norms for men and women are different across the life course: ie, gender equity does not imply that boys and girls have equal survival. Worldwide, the average survival difference by sex in children is about 20%; there are about 120 deaths in boys for every 100 deaths in girls. This expected gender differential in survival is therefore used to assess the fairness of observed differences. No difference between expected and the actual survival rates corresponds with gender equity, whereas a difference denotes inequity in survival—a positive figure indicating disadvantage against girls, and a negative figure indicating disadvantage against boys.

Table 2 presents data for child mortality by sex according to these measures of inequality. Comparing rates of infant mortality over the two periods captured by the 1993/94 and 2011 Bangladesh Demographic and Health Surveys reveals that infant boys are more likely to die than infant girls. However, relative to the expected ratio, infant girls are dying at a higher rate than expected compared with boys, although this shortfall inequality improves by 33%: from six excess female deaths to four between 1993/94 and 2011. For poor children aged 1–5 years, the picture is very different: girls had higher mortality than boys in 1993/94 and to a much lesser extent in 2011. This finding corresponds with an enormous shortfall inequality of 41 excess female deaths in 1993/94 that decreased to 19 in 2011, or a 54% improvement over 17 years (about 3% per annum).

The more aggregate measure of under-5 mortality captures trends in mortality from infancy to childhood. The under-5 mortality rate moves from near parity in 1993/94 to a significantly lower rate for girls in 2011. Against the expected ratio of male to female mortality, the survival disadvantage of girls is clear, with a shortfall inequality of 21 in 1993/94. This declines to 12 by 2011, an improvement of 48% over 17 years (about 2.9% per year).

A retrospective look at child mortality trends over the past 35 years in Matlab provides further evidence of the magnitude of improvement in gender equity over the long term. After the famine in 1974, a situation of excess female mortality continued until the mid 1980s, with parity in childhood mortality by gender apparent by 1990 and moving towards the expected female advantage by 2009 (figure 1). Figure 2 shows that girls from disadvantaged households (where the household head has no education) exhibit the greatest improvements in child mortality over time. Comparing girls from illiterate households with boys from the highest education group, shortfall inequality drops from 61 in 1982 to 18 in 2009, an improvement of more than 70% over 27 years or about 2.6% per year.

**Equity in health intervention coverage**

The rapid and targeted expansion of large-scale health interventions with known effects on mortality and morbidity is the first and most obvious explanation for disproportionate gains in health by the most disadvantaged children. Evidence supportive of this interpretation is Bangladesh’s superior performance in terms of the scale and coverage of a composite indicator of maternal child services, relative to neighbouring Nepal, India, and Pakistan. A more detailed analysis of absolute and relative changes in coverage of selected maternal and child health interventions by quintile and gender is...
consistent with this assessment but reveals a slightly more complex picture depending on the intervention and equity measure concerned (table 3). In general, gains in absolute coverage over time have been accompanied by improvements in relative equity, although there is some variation between interventions in the magnitude of change. For antenatal care, although absolute differences (Q5:Q1) have changed little between 1993/4 and 2011, levels of relative equity have increased substantially (Q5:Q1 from 4.4 to 1.9; relative concentration index from 0.49 to 0.35). By contrast, absolute differences (Q5:Q1) in use of skilled birth attendants have grown over time yet relative equity has increased (Q5:Q1 from 10.6 to 5.5; relative concentration index from 0.56 to 0.56). Overall levels of coverage, however, remain extremely low for poor populations. Trends in coverage of immunisation, family planning methods, oral rehydration therapy, and acute respiratory illness treatment for children under 3 years of age are shown in figures 3 and 4.

Table 3: Changes in health coverage and inequality indices (1994 and 2011)

<table>
<thead>
<tr>
<th>Intervention</th>
<th>1993/94</th>
<th>2011</th>
<th>Absolute difference</th>
<th>Relative difference</th>
<th>Slope index of inequality</th>
<th>Relative concentration index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal care</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>14.0</td>
<td>48.4</td>
<td>34.4</td>
<td>4.4</td>
<td>10.6</td>
<td>0.49</td>
</tr>
<tr>
<td>Q5</td>
<td>61.2</td>
<td>93.0</td>
<td>31.8</td>
<td>4.4</td>
<td>11.3</td>
<td>0.35</td>
</tr>
<tr>
<td>Skilled birth attendant</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>3.1</td>
<td>11.5</td>
<td>8.4</td>
<td>2.7</td>
<td>5.9</td>
<td>0.66</td>
</tr>
<tr>
<td>Q5</td>
<td>31.0</td>
<td>63.7</td>
<td>32.7</td>
<td>2.7</td>
<td>12.9</td>
<td>0.56</td>
</tr>
<tr>
<td>Complete immunisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>48.6</td>
<td>76.8</td>
<td>28.2</td>
<td>4.5</td>
<td>5.7</td>
<td>0.28</td>
</tr>
<tr>
<td>Q5</td>
<td>73.1</td>
<td>93.5</td>
<td>20.4</td>
<td>4.5</td>
<td>12.7</td>
<td>0.24</td>
</tr>
<tr>
<td>Modern family planning methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>34.5</td>
<td>52.9</td>
<td>18.4</td>
<td>1.2</td>
<td>1.6</td>
<td>0.23</td>
</tr>
<tr>
<td>Q5</td>
<td>42.7</td>
<td>81.1</td>
<td>38.4</td>
<td>1.2</td>
<td>10.7</td>
<td>0.19</td>
</tr>
<tr>
<td>Oral rehydration therapy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>60.0</td>
<td>82.3</td>
<td>22.3</td>
<td>1.2</td>
<td>2.3</td>
<td>0.23</td>
</tr>
<tr>
<td>Q5</td>
<td>71.1</td>
<td>81.0</td>
<td>10.0</td>
<td>1.2</td>
<td>10.1</td>
<td>0.19</td>
</tr>
<tr>
<td>Acute respiratory infection treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>19.3</td>
<td>69.4</td>
<td>50.1</td>
<td>2.2</td>
<td>5.8</td>
<td>0.37</td>
</tr>
<tr>
<td>Q5</td>
<td>42.0</td>
<td>83.3</td>
<td>41.3</td>
<td>2.2</td>
<td>2.1</td>
<td>0.23</td>
</tr>
<tr>
<td>Composite coverage index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>23.7</td>
<td>44.5</td>
<td>20.8</td>
<td>1.7</td>
<td>4.1</td>
<td>0.41</td>
</tr>
<tr>
<td>Q5</td>
<td>40.9</td>
<td>58.7</td>
<td>17.8</td>
<td>1.7</td>
<td>3.2</td>
<td>0.32</td>
</tr>
</tbody>
</table>

Source: BDHS [18–23]
age display consistent equity gains across absolute and relative measures, comparing rich and poor, and across the population, with near equality being achieved for most interventions. Low levels of coverage of family planning and acute respiratory illness irrespective of socioeconomic position remain cause for concern.

Two case studies of immunisation and family planning interventions provide insight into some of the features of programmatic implementation that underlie equity gains in coverage.

Expanded programme on immunisation
Although Bangladesh officially initiated expanded immunisation activities in 1974, programmatic momentum occurred after the country’s 1985 UN commitment to reach universal immunisation coverage by 1990. Receiving strong support from multiple partners including NGOs and donor agencies, the initial years of the programme focused on infrastructural improvement, training, and demand creation through media and health education campaigns. A crucial innovation in implementation was the use of household visits by community health and family planning workers to motivate participation, and delivery of services through outreach sites and satellite clinics to reach the poor and marginalised.29 Bangladesh has been a pioneer in developing the science of community mobilisation and outreach in the areas of expanded immunisation, oral rehydration therapy, family planning, and tuberculosis control as a means of achieving speed and scale in intervention delivery,10,12,29

Over the course of a decade, gender differentials in immunisation coverage disappeared (figure 3). Such trends are also indicated by rate ratios comparing girls and boys that progressively improved over each survey, from 0·89 in 1993–94 to 1·01 in 2007 before exhibiting a slight divergence of 0·97 in 2011. A similar pattern of progressive convergence is apparent when comparing wealth quintiles...
(figure 4), which is largely due to the greater rates of improvement in children from the poorest groups. From a low coverage rate of 49% in 1994, the poorest quintile registered an annual increase of 2.8 percentage points to reach 80% coverage in 2005. Although the wealthiest group began at a higher rate of coverage, over the same period an increase of 1.4 percentage points per year was seen in this group. Underlying this success was the country’s long-term commitment to childhood immunisation as a key mechanism in reducing childhood mortality. Demand creation campaigns involving NGOs, donors, and government health and family planning field workers brought messages about immunisation to even the most marginalised communities. The scale of efforts to reach a population of almost 150 million was shown by the National Immunization Day in 2012. In a single day, a legion of health and family planning field workers, supported by 600,000 volunteers, distributed polio vaccines and vitamin A capsules to 24 million children at 140,000 sites across the country. A 4-day house-to-house follow-up by mobile immunisation teams ensured that no child was left out.

Family planning

Many of the same programmatic features are apparent in Bangladesh’s family planning programme. The rapid rate of fertility decline in Bangladesh, from 6.3 (births per woman) in the early 1970s to 2.5 in 2010, is remarkable in the history of demographic transition. Many factors have contributed to this so-called reproductive revolution, including gains in child survival, increases in the economic and social costs of raising large families, and the presence of a strong family planning programme, all of which supported ideational change towards a smaller family size, and a positive disposition towards modern contraception. These changes in fertility preferences are pervasive, progressively crossing socioeconomic and geographic boundaries where attitudes toward family size have traditionally been considered intransigent (panel 1). Bangladesh’s family planning programme has received particular attention in the analyses of fertility decline. Initial achievements were attributed to strong political commitment towards the goal of population control, and the extraordinary scale of its door-to-door services. Deploying many female outreach workers, the programme provided a range of contraceptive options spanning from sterilisation to oral pills, as well as supportive clinical contraceptive services. It also embarked on an ambitious programme of social marketing that aimed to change norms and attitudes regarding ideal family size and women’s contraception. Together with strong economic push factors, the family planning programme was successful in increasing acceptance and creating a culture of contraception especially in the poorest populations. By the early 1990s, almost all Bangladeshi women were contacted at least once by a family welfare assistant, and more than a third were reached at home every 6 months. This contact was particularly important at a time when women’s mobility was restricted culturally, and geographic isolation limited access to static services.

During the past decade or so, fertility decline has levelled off, and the family planning programme has faltered because of human resource constraints, supply chain challenges, and poor governance. Geographic disparities and high rates of contraceptive discontinuation and unmet need are also of growing programmatic concern. Nevertheless, contraceptive use has continued to increase, and socioeconomic differences have progressively disappeared. With the exception of some non-linearity in these trends, with women belonging to households in the middle wealth quintile reporting the lowest rate of use in the 1990s, over the next two decades contraceptive use across all wealth quintiles increased and socioeconomic gaps were narrowed substantially (figure 6), with equity rate ratios reaching equality in 2011.

Social and economic development for health equity

Trends towards greater equity in coverage of public health interventions in Bangladesh have no doubt contributed to gains in population health, given the scale of delivery efforts, the speed with which they have been rolled out, and the use of selective delivery strategies that ensure that disadvantaged groups are reached. Deliberate social investments and rapid societal and economic change have also been important in creating supply and demand for health services, and have affected health directly by modifying exposure and vulnerability to health threats. Large-scale socioeconomic development interventions range from education, microcredit, social protection and support, to agricultural and economic development, all of which have had an explicit or implicit equity orientation, and display the same features of scale, speed, and selectivity. Two examples are discussed here that exemplify this equity orientation yet also reveal fault lines that need to be addressed. The first is government
commitment to a policy of positive discrimination around primary and secondary education for girls, and the second is massive investment in women-focused microfinance programmes by the country’s large NGO sector.

**Female education subsidies**

In 1970, a year before Bangladesh’s independence, girls made up only 32% of total enrolment in primary schools and 18% in secondary schools. An exponential increase in school enrolment at primary, secondary, and tertiary levels has occurred since this time (figure 7). Also evident is a substantial narrowing of the gender gap that is especially dramatic at the secondary level due to structural shifts towards greater female participation over the decade. By the early 2000s, gender parity at primary and secondary levels was achieved, and enrolment of girls currently surpasses that of boys, with the exception of tertiary level education.

Behind this achievement were several large-scale interventions including: the innovative Food for Education programme that provided a free monthly cereal ration to poor families if their children attend primary school; the expansion of non-formal education led by the NGO sector that prioritised female enrolment; and the Government’s Female Stipend Programme. Initiated in 1994, a primary aim of this nationwide stipend intervention was to delay marriage and childbearing by subsidising the costs of female secondary education based on the fulfilment of three conditions: that girls attend school for at least 75% of the school year, obtain at least 45% in final examinations, and remain unmarried until completion of secondary education. The stipend also included the payment of girl’s tuition fees to all formally registered rural schools, both religious and secular. Although rigorous evaluation has not been undertaken, the stipend programme has been associated with a substantial rise in female enrolment that has effectively reversed the gender gap in secondary education.39 Between 1990 and 2010, the proportion of girls in registered secondary schools rose from 34% to 54% (figure 6). Positive discriminatory programmes have effectively eliminated gender disparities in school enrolment, although ethnic minorities and children from poorer families still lag behind in terms of achievement.40

An upward trend in median age at marriage in women aged 20–24 years from 14·2 in 1996–97 to 15·8 in 2011 has also been recorded, with those completing secondary school marrying almost 3 years later than those with no education.18,23

The contribution of investments in female education to improvements in maternal and child health are well established.41 Of concern moving forward are sustained low rates of school attendance and completion in girls, especially those living in poor families.42 These concerns are seen to be the consequence of poor-quality teaching,43 and prevailing beliefs that marriage is a young woman’s best protection against economic insecurity, physical risk, and unsanctioned sexual activity.42 Geographic inequities also persist with extremely low rates of access in remote areas of the country (panel 1), and elevated rates of dropout in urban slums where many children have difficulty enrolling in government schools since they do not have a legal address.3

**Women’s microcredit**

Another large-scale social intervention with important implications for health equity is women’s microcredit. Focusing on the largest four of more than 200 registered microfinance institutions, figure 8 shows the remarkable growth in female membership to over 33 million members by 2010—an exponential increase in an interval of only 20 years.41
Series

Led by a vanguard of NGOs emerging in the post-liberation period, the microcredit revolution aimed to reduce poverty by providing poor families with access to small collateral-free loans, and through a deliberate focus on women, encourage female economic and social empowerment. Throughout the past two decades, these programmes have been disproportionately taken up by women in lower wealth groups (figure 9). Evidence suggests various positive effects of microcredit on health outcomes such as child mortality, women’s status, income diversification, asset growth, and consumption volatility, although decisive statistical proof remains elusive because of selectivity effects and a paucity of studies using randomised designs.

Microcredit programmes have done little to change the structural conditions that create poverty or the gendered division of labour, but they have brought previously isolated women out of the household. Loans are typically provided to small microcredit groups, whose members function as guarantors for each other, and hold joint responsibility in case of default. These groups meet regularly, providing opportunities for women members to associate, collaborate, and

Panel 2: The science of selectivity: targeting and programming for the ultra poor

One of the hallmarks of the microcredit sector in Bangladesh has been its ability to continually assess its programmes and, on the basis of evidence and lessons learned, adapt and innovate ways to broaden its reach and expand programmes to meet the needs of the poorest.

Microcredit was introduced in the early 1980s by the Grameen Bank and BRAC to provide loans to poor women without collateral who would otherwise be excluded from access to credit and economic opportunity. Based on a shared liability model, individual loans are provided to female microcredit group members and invested into family business and new entrepreneurial ventures. Successful microcredit uptake and high rates of repayment have led to rapid scale-up throughout the country (figure 7).

Evaluation studies of BRAC’s micro-credit programme in the 1990s, however, found that programme benefits were not reaching the extreme or ultra poor due to social exclusion by moderately poor members, lack of education, time-consuming membership requirements, inability to sustain interest payments, chronic ill-health, and belonging to a female-headed household. A period of experimentation led to the development of an alternative programmatic model specifically designed to reach the ultra poor. Launched in 2002, BRAC’s Challenging the Frontiers of Poverty Reduction: Targeting Ultra Poor, Targeting Social Constraints (CFPR-TUP) programme provides a comprehensive, yet tailored package of health, economic, and social support to the ultra-poor population with the objective of assisting them out of extreme poverty into mainstream development programmes. Further strategic programming has ensued with the development of the Special Investment Programme—a full grant-based approach for specially targeted ultra-poor households comprised of supports including asset transfers, life skills and technical training, health care, cash transfers, and a flexible savings scheme. A second group is the other targeted ultra poor, who are marginally less deprived and receive all inputs with the exception of asset transfers, and instead are provided with small flexible microloans.

Research using a randomised control study design indicates that CFPR-TUP has reduced the vulnerability of ultra-poor households by generating self-employment and substantially raising per person income, with effects on food security and asset holdings (table 4). More than two-thirds of those sampled participated at least once in BRAC microfinance, with 96% of TUP members graduating out of poverty. From 2002 to 2012, CFPR-TUP has supported over 400,000 ultra-poor households in areas worst affected by food and nutrition insecurity across the country.
exchange information and new ideas. There is also evidence of increased financial autonomy and role in decision making associated with female-directed loan disbursement, as well as increases in human capital intensive investments in the household. In the context of several of the larger NGOs in Bangladesh’s BRAC, the Association for Social Advancement, and Grameen Bank, diversification beyond microcredit has amplified positive effects for women and their families, by linking them to nonformal education, vocational training, and essential services for health and human and legal rights.

Over the past several decades, the deliberate selectivity of microfinance institutions has engendered benefits for many poor women and their families. In the late 1990s, however, many of the poorest people were being overlooked by these programmes, since they did not have the capacity to support interest payments or invest loans effectively. Subsequent efforts have focused on social protection and capacity development. BRAC’s Targeting the Ultra Poor Programme is one such example, which has scaled and successfully graduated many of its clients into its microfinance programme (panel 2).

**Broader social and structural factors**

Beyond the effects of planned development interventions, a host of other social and economic factors have shaped the context in which programmes operate, as well as exert their own independent effects on equity in health. One of the most pervasive socioeconomic forces is the entrepreneurial spirit that imbues much of the private sector, including Bangladesh’s large NGO community. This spirit is evident in a general receptiveness to innovation and experimentation as a means of testing, contextualising, refining, and standardising innovations to make them as sustainable and scalable as possible. A striking example of experimentation is the story of oral rehydration therapy which began in the late 1960s when scientists and implementers collaborated in identifying a clinically effective and culturally appropriate formula to treat dehydration, and the delivery system best suited to taking this innovation to scale. This solution of salt, gur (unrefined brown sugar), and water later became the focus of a national public health campaign. BRAC spearheaded a door-to-door educational delivery strategy that, over a 10-year period, reached every woman in the country.

Although strong internal management and monitoring systems have been important in sustaining a culture of experimentation and calculated risk-taking among NGOs, even more crucial is having the political, economic, and social space necessary for innovation to occur. Despite frequent changes of government, the private sector and NGOs have been given room to flourish, partly because of a strong culture of service to poor populations that emerged in post-liberation Bangladesh. However, the coexistence of the government and the NGO sector is not without its challenges, with inefficiency, poor coordination, and corruption often working against the achievement of shared public health goals.

Another key factor in enabling scale and speed in implementation has been the ability of NGOs and government to attract long-term support of donors. Coupled with a liberal regulatory regime, this enabling macroeconomic environment has provided needed stability to target, penetrate, and scale up effective interventions. High population density, ethnic homogeneity, and religious tolerance have also enabled rapid programme scale-up, as have investments in roads and communications. Contributing to rapid increases in the female labour force—from 8% in 1983–84 to almost 33% in 2010—is the explosive growth of the ready-made garments sector which ranks second largest in the world, and employs over 2-8 million poor women. It has transformed norms around women’s work and provided important income to their families, although

---

**Panel 3: Urban inequities in primary health care**

Even at replacement levels of fertility, the population of Bangladesh will continue to grow and urbanise. By 2050 the population is estimated to reach 194 million, 52% of whom will live in urban areas, up from 28% in 2010. Already, rapid urban population growth has overwhelmed the capacity of governments to regulate, plan, or provide basic services. It has exacerbated social and economic inequities that benefit the well off, and negatively affect the disadvantaged. The urban poor populations are particularly vulnerable to the health threats of unmanaged urban growth, including contaminated food and water supply, air pollution, inadequate waste removal, unsafe housing, eviction, and road traffic accidents. Despite a greater density of service providers in urban areas, opportunities for health and health care remain out of reach for the urban poor because of limited provision of public health services, the high costs of private curative care, and inadequate information systems. For example, repeated slum-based surveys are unable to locate around 30% of the slum population due to circular migration, eviction, and long or irregular work hours leading to incomplete coverage and follow-up for essential services such as tuberculosis treatment. To deal with some of these problems, the Ministry of Local Government, which is responsible for urban health services, has contracted out primary health-care delivery to NGOs under the Urban Primary Health Care Project. Although NGOs are helping to expand access to essential services, especially family planning and maternal and child health, the range of services is extremely limited and their sustainability linked to the volatility of external funding cycles. An unregulated private and informal sector has emerged to fill this vacuum, but not without consequences such as increased out-of-pocket expenditures, incorrect diagnosis, and inappropriate treatment by informal providers. Together this plurality of actors demands new approaches to governance that are responsive to the dynamic conditions of the urban poor and assure greater effective coverage of comprehensive and continuous essential services.
violations of worker safety and rights continue to compromise its potential. In a similar fashion, the exponential growth in migrant remittances, which now constitute almost 12% of the country’s gross domestic product (US$13 billion in 2012), selectively benefits the poor. A recent study suggests that 71% of these remittances support household consumption in poor families, including improvements in living standards, health, and education.64

Although certain social structural factors have provided enabling conditions for improvements in health and health equity, many challenges exist that threaten further gains, or even risk retrenchment. Chronically weak governance, including the failure to enforce legal frameworks around minimum age at marriage, dowry, and child rights, represents a major obstacle to women’s and children’s health. Health systems constraints such as crucial deficiencies in health workforce availability and management capacity are particularly acute in hard-to-reach and poor coastal, hill tract, and slum dwelling populations.65 The increasing burden of non-communicable diseases and injuries arising from urban squalor, unsafe work environments, and road traffic accidents also disproportionately affects the poor because of the impoverishing costs of medical care and income foregone due to loss of livelihood.

Conclusion
Bangladesh’s achievements in health have been accompanied by impressive overall gains in gender and socioeconomic equity in child survival. The drivers of these equity gains extend beyond the health sector and embrace the broader social and economic development context of the country. Implementation attributes of scale, speed, and selectivity which cross-cut investments in health, social, and economic development, appear important in how these gains have been achieved and offer programmatic insight to countries struggling to redress health inequalities. A recent analysis of 35 MDG Countdown countries offers indirect support to this claim, whereby those countries making the fastest progress in coverage of established public health interventions were those characterised by especially strong gains among the poorest groups.66

Despite this impressive pro-equity trajectory, there remain significant residual inequalities in survival of girls in lower wealth quintiles as well as many new health and development challenges, such as urbanisation (panel 3), chronic disease, and climate change. The legacy of a favourable social and economic development context and the implementation features of scale, speed, and selectivity are a solid foundation to build on. However, further progress in sustaining and enhancing equity-oriented achievements in health hinges on stronger governance and longer-term systems thinking regarding how to effectively promote inclusive and equitable development within and beyond the health system.

Contributors
All authors contributed to the initial conceptualisation of the paper. AMA led the team of authors, and was responsible for the paper’s content and writing. AR did the main data analysis and interpretation, and the construction of tables and figures, and along with TGE, contributed to the paper’s substantial revision based on reviewer comments. SA assisted with the collection of data and logistics. SSM did the literature review and referencing. AA-S contributed to analysis decisions and the acquisition of trend data. SFR helped with literature review. All authors provided written contributions at various stages of paper’s development, and reviewed and approved the final version.

Conflicts of interest
We declare that we have no conflicts of interest.

Acknowledgments
We are grateful to the Bangladesh Lancet Series Advisory Group and the panel of external reviewers for their valuable suggestions. Many thanks to Richard Cash for his editorial support, and to Mabub Elahi Chowdhury, Md Monjur Rahman, and Akib Khan for their assistance with data and data visualisation. This paper is part of a series on Bangladesh sponsored by the Rockefeller Foundation.

References