It Can Be Done: Diarrhoea and Pneumonia Treatment and the Achievement of MDG4 in Bangladesh

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Bangladesh’s MDG 4 success

Deaths per 1,000 live-births

- 12-59 Month Deaths/1,000 LB
- 1-11 Month Deaths/1,000 LB
- Neonatal Deaths/1,000 LB

1989-93: 133
1992-6: 116
1995-9: 94
1999-2003: 88
2002-6: 65
2007-11: 53

Source: Bangladesh Demographic and Health Surveys
Most causes of under-5 deaths are declining in Bangladesh

Under-5 Deaths per 1,000 live births

- Pneumonia: 12 (2004), 18 (2011) - 37% reduction
- Birth asphyxia: 7 (2004), 13 (2011) - 85% reduction
- Diarrhoea: 1 (2004), 7 (2011)
- Other neonatal: 1 (2004), 3 (2011)
- Other causes (including injury): 3 (2004), 6 (2011)
- Possible serious Infection: 8 (2004), 14 (2011)

Source: Bangladesh Demographic and Health Surveys
## Context: Low GDP, Weak Health System

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>GDP/ Per capita US$</th>
<th>Health Expenditure/ % of GDP</th>
<th>Public Expenditure on Health/ % of total health expenditure</th>
<th>Per capita health expenditure/ US$</th>
<th>Doctors/nurses/ Per 1000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>148.7</td>
<td>673.0</td>
<td>3.4</td>
<td>31.7</td>
<td>18</td>
<td>0.3/0.3</td>
</tr>
<tr>
<td>Pakistan</td>
<td>173.6</td>
<td>1007.0</td>
<td>2.6</td>
<td>32.8</td>
<td>23</td>
<td>0.8/0.5</td>
</tr>
<tr>
<td>Nepal</td>
<td>30.0</td>
<td>524.0</td>
<td>5.8</td>
<td>35.3</td>
<td>25</td>
<td>0.2/0.5</td>
</tr>
<tr>
<td>India</td>
<td>1224.6</td>
<td>1476.0</td>
<td>4.2</td>
<td>32.8</td>
<td>45</td>
<td>0.6/1.3</td>
</tr>
</tbody>
</table>

*Sources: Measure DHSS, UN, World Data Bank*
Contributing Factors: Reliance on Evidence

Effect of zinc supplementation started during diarrhoea on morbidity and mortality in Bangladeshi children: community randomised trial
Abdullah H Baqui, Robert E Black, Shams El Arifeen, Mohammad Yunus, Joysnamoy Chakraborty, Sajiduddin Ahmed, J Patrick Vaughan

Reduction of neonatal tetanus by mass immunization of non-pregnant women: duration of protection provided by one or two doses of aluminium-adsorbed tetanus toxoid*
R. E. Black,¹ D. H. Huber,² & G. T. Curlin³

Transferring Health and Family Planning Service Innovations to the Public Sector: An Experiment in Organization Development in Bangladesh
James F. Phillips, Ruth Simmons, George B. Simmons, and Md. Yunus

Impact of measles vaccination on childhood mortality in rural Bangladesh
M.A. Koenig,¹ M.A. Khan,² B. Wojtyniak,³ J.D. Clemens,⁴ J. Chakraborty,⁵ V. Fauveau,⁶ J.F. Phillips,⁷ J. Akbar,⁸ & U.S. Barua⁹

THE LANCET, SEPTEMBER 7, 1985

Child Health

MOTHERS CAN PREPARE AND USE RICE-SALT ORAL REHYDRATION SOLUTION IN RURAL BANGLADESH
A. S. M. Mizanur Rahman Abdul Bari
A. Majid Molla W. B. Greenough III
International Centre for Diarrhoeal Disease Research, Bangladesh, Dhaka-2, Bangladesh

Effectiveness of Haemophilus influenzae Type B Conjugate Vaccine on Prevention of Pneumonia and Meningitis in Bangladeshi Children
A Case-Control Study
Abdullah H. Baqui, MBBS, MPH, DrPH,* Shams El Arifeen, MBBS, MPH, DrPH,† Samir K. Saha, PhD,‡ Lars-Eke Persson, MD,§ K. Zaman, MBBS, PhD,† Bradford D. Gesner, MD,† Lawrence H. Moulton, PhD,‡ Robert E. Black, MD, MPH,* and Matiur Rahman Sontosh, MD, MPH*
Contributing Factors:
Ability to Scale Up Simple Interventions
Contributing Factors: Concomitant Emphasis on Family Planning

Time trend in contraceptive use prevalence in four service areas of the Family Planning Health Services Project, 1977-84
Total Fertility Rates, Bangladesh

- 1975 BFS: 6.3 Births per woman
- 1991 CPS: 5.1
- 1996-1997 BDHS: 4.3
- 2004 BDHS: 3.4
- 2004 BDHS: 3.3
- 2011 BDHS: 3.3
- 2011 BDHS: 3.3
- 2011 BDHS: 2.7
- 2011 BDHS: 2.3
Bangladesh has made the largest gain in overage of all eight indicator interventions across the continuum of care.

Source: 2012 Report of Countdown to 2015
Contributing Factors: Pluralistic Approach

Government of Bangladesh

NGO’s

Academic Institutions

Multilateral/Bilateral Donors

Private Sector
Contributing factors: Education and empowerment of women

- Education: proportion of girls attending primary school is higher than boys
- Women’s participation in economic activity has increased from 8% in 1983 to 57% in 2011
Example: ORS and Zinc Therapy

- Reliance on evidence: multiple icddr,b trials
- Rapid scale up and nationwide delivery by CHWs both in the government and non-government sectors
- Integration with other interventions
- Public-private partnership in supply of ORS and Zn

Source: Bangladesh Demographic and Health Survey 2011
Lessons Learned:

- Success in achieving MDG4 is possible despite low GDP and weak health system
- Focus on simple, scalable, evidence-based interventions
- Integration of health and family planning
- Creating space for multiple players
- Ensuring equity by deploying women as frontline workers, and increasing education and empowerment of women