SECOND GAVI EVALUATION

GAVI ALLIANCE

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SUPPORTING PAPER 4.1:

BANGLADESH COUNTRY STUDY REPORT

Submitted by:

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
APR	Annual Progress Report
BAP	Bangladesh AIDS Project
BBS	Bangladesh Bureau of Statistics
BCG	Bacille-Calmette-Guerin
BDHS	Bangladesh Demographic and Health Survey
CBN	Cost of Basic Needs
CC	Community Clinic
CCM	Country Coordination Mechanism
CGA	Controller General of Accounts
CIDA	Canadian International Development Agency
CPR	Contraceptive Prevalence Rate
CSO	Civil Society Organisation
DFID	Department for International Development
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DIMO	District Immunisation Medical Officer
DPT	Diphtheria, Pertussis and Tetanus
DQA	Data Quality Audit
DQS	Data Quality Self-assessment
EC	European Commission
EPI	Expanded Program on Immunisation
ESD	Essential Service Delivery
EU	European Union
EVSM	Effective Vaccine Store Management
FMA	Financial Management Assessment
FVC	Fully Vaccinated Children
GAVI	Global Alliance for Vaccine and Immunisation
GDP	Gross Domestic Product
GFATM	Global Fund to fight AIDS, Tuberculosis and Malaria
GOB	Government of Bangladesh

GNI	Gross National Income
GTZ	German Technical Cooperation
HAPP	HIV/AIDS Prevention Project
HDI	Human Development Index
Hep B	Hepatitis B
HEU	Health Economics Unit
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HNP	Health, Nutrition and Population
HNPSP	Health, Nutrition and Population Sector Program
HPI	Human Poverty Index
HPSP	Health Population Sector Program
HSS	Health Systems Strengthening
ICC	Inter-agency Coordination Committee
ICDDRB	International Centre for Diarrhoeal Disease Research, Bangladesh
IDA	International Development Agency
IDB	Islamic Development Bank
IEC	Information, Education and Communication
INS	Injection Safety Support
ISS	Immunisation Services Support
JDCF	Japan Debt Cancellation Fund
JICA	Japan International Cooperation Agency
KFW	Kreditanstalt für Wiederaufbau
MCH/RH	Maternal and Child Health/ Reproductive Health Services
MDG	Millennium Development Goals
MMR	Maternal Mortality Rate
MoD	Ministry of Defence
MoF	Ministry of Finance
MoHFW	Ministry of Health and Family Welfare
MIS	Management Information System
NHA	National Health Accounts
NGO	Non-government Organisation

NNP	National Nutrition Program
NVS	New and underused Vaccine Support
OPV	Oral Polio Vaccine
OOP	Out-of-Pocket
PPP	Purchasing Power Parity
PPP	Public Private Partnership
PR	Principle Recipient
PRSP	Poverty Reduction Strategy Paper
RMG	Ready Made Garments
ROW	Rest of the World/donors
SEARO	South East Asian Regional Office
SG	Strategic Goal
SIDA	Swedish International Development Agency
SMO	Surveillance Medical Officer
STC	Save The Children
SVRS	Sample Vital Registration Survey
TAP	Transparency and Accountability Policy
TB	Tuberculosis
TFR	Total Fertility Rate
THE	Total Health Expenditure
ToT	Training of Trainers
TT	Tetanus Toxoid
UCI	Universal Child Immunisation
UHC	Upazila Health Complex
UHFPO	Upazila Health and Family Planning Officer
UHFWC	Union Health and Family Welfare Centre
UK	United Kingdom
UNDP	United Nations Development Program
UNFPA	United Nations Fund for Population Activates
UNICEF	United Nations International Children Emergency Fund
UPHC	Urban Primary Health Care
USAID	United States Agency for International Development

USC	Union Sub Centre
VAC	Vitamin A Capsule
VAD	Vitamin A Deficiency
VMA	Vaccine Management Assessment
WB	World Bank
WFP	World Food Program
WHO	World Health Organisation

EXECUTIVE SUMMARY

This executive summary forms a part of the report on the performance evaluation of the GAVI programs in Bangladesh, conducted on the GAVI Second Evaluation assignment.[1]

The report provides contextual information on Bangladesh's health and immunisation sector, and assesses the results and value add of GAVI programs in the country from the country stakeholders' perspective. The key conclusions are based on evidence gathered during a field visit to Bangladesh in the week of 5 April, as well as desk research of relevant GAVI material and wider health/ immunisation literature and data.

GAVI's performance in Bangladesh has varied across the four Strategic Goals (SG)[2] of the Alliance. Below are our overall judgements on results and value add with respect to each of the Goals, drawing on feedback from the country visit and available data.

- **Health Systems Strengthening (SG1):** Bangladesh has received support on two GAVI programs under this Goal i.e. Injection Safety Support (INS) and Immunisation Services Support (ISS). GAVI is the first and only donor that has funded injection safety in the country. Stakeholders were unanimous in their view that the INS program has added strong value in Bangladesh. INS has resulted in the introduction of a national policy on injection safety, and has achieved the widespread use of safety kits in immunisation (and more widely in other health areas). However, limited success has been achieved in the safe disposal of health waste.

  Feedback on ISS performance in Bangladesh was more mixed. It is reported to have strengthened the country's immunisation systems especially at district levels, and contributed towards achievement of high coverage levels particularly in remote areas. GAVI is the only source of donor funding that is specifically aimed at increasing immunisation coverage – for example, through its funding of the salaries of the District Immunisation Medical Officers (DIMOs). Another important contribution of GAVI ISS has been in enhancing capacity for data collection and reporting at all levels of service delivery.

  However, the incentive effects of the ISS reward-based funding have reduced progressively over the years once high levels of coverage were achieved (thereby reducing the rewards earned by Bangladesh). Also, feedback on the ISS 'flexible cash' feature was mixed – since the funds may not be spent in the areas of greatest immunisation need.

  Although Bangladesh has been approved for Health Systems Strengthening Support (HSS), the funds have not yet been disbursed on account of a delay in the government

[1] A CEPA (Cambridge Economic Policy Associates; www.cepa.co.uk) led Consortium was appointed for this evaluation, undertaken between November 2009 and July 2010.

[2] GAVI's four strategic goals for 2007-10 are: (1) Contribute to strengthening the capacity of the health system to deliver immunisation and other health services in a sustainable manner; (2) Accelerating the uptake and use of underused and new vaccines and associated technologies and improve vaccine supply security; (3) Increase the predictability and sustainability of long-term financing for national immunisation programs; and (4) Increase and assess the added-value of GAVI as a public private global health partnership through improved, efficiency, increased advocacy, and continued innovation.

signing the FMA aide-memoire[3]. The funds are planned to be used to operationalise and strengthen Community Clinics in 13 districts of the country.[4] The delay in funds disbursement has highlighted a range of institutional and procedural issues, including the separation of institutional responsibilities in the Ministry of Health (EPI versus planning) for GAVI HSS and immunisation programs, different oversight body (HNP Forum rather than the ICC), and delay in GAVI processes due to the latterly introduction of FMA.

Bangladesh has not applied for Type A Civil Society Organisation (CSO) support.[5] Our consultations revealed limited awareness regarding this window of GAVI support, both among the government and NGOs, despite the latter's presence being quite strong in Bangladesh. Some lessons from the Global Fund CSO financing have been provided.

- **Vaccine Support (SG2):** Country stakeholders unequivocally attribute the successful introduction of the Hepatitis B and pentavalent vaccines in Bangladesh's routine immunisation services to the GAVI New and underused Vaccine Support (NVS) program. The vaccine introduction grants were found to be useful in training, advocacy, and awareness building in facilitating the introduction of these vaccines. However, it was felt that GAVI needs to do more in terms of reducing vaccine prices to make them affordable – some suggested that GAVI could support more emerging market vaccine suppliers to enable price reductions.
- **Financing (SG3):** Bangladesh is successfully co-financing its mandated share of the Hep B and pentavalent vaccines. However the country contributes a very small proportion of the price of the vaccine - officials were candid that at the current high prices of these vaccines, Bangladesh would not be able to finance them on their own, as they are highly reliant on donor support for their health budget. There is therefore considerable concern on the stability/ continuity of GAVI financing for these newly introduced vaccines. An important achievement in terms of sustainability is that the government has been fully funding the procurement of safety kits (from a local manufacturer – JMI Bangla) since the end of GAVI INS.
- **Added value as a global Public Private Partnership (PPP) (SG4):** The multi-stakeholder partnership model of GAVI works reasonably well in Bangladesh, and was considered more effective and collaborative than the Global Fund Country Coordination Mechanism. While the partnership between the government, WHO and UNICEF operates well in delivering a strong EPI program, consultees felt that there is scope for increased participation by the private sector and civil society. The Inter-agency Coordination Committee (ICC) serves as an effective platform for the government and development partners to work together to achieve immunisation and other child health objectives, particularly through the work of its Technical Sub Committees. The feedback on the Health, Nutrition and Population (HNP) forum (HSCC committee equivalent)

[3] The process is now complete - the FMA Aide Memoire has been signed by GAVI's Deputy CEO and has been couriered to Dhaka for GoB signature.

[4] The goal of the HSS proposal is to provide universal Maternal and Child Health (MCH) service delivery through stronger human resource management, logistics management, and increased community participation and demand.

[5] It is not eligible for Type B support as it is not one of the GAVI pilot countries.

was less positive – as it meets less often and all member partners are not as involved as on the ICC.

1. INTRODUCTION

1.1. Background and purpose

This is the Country Evaluation Report for Bangladesh, developed as part of the Second Evaluation of Global Alliance for Vaccines and Immunisation (GAVI). The report is prepared by CEPA[6] in partnership with the country consultant, Data International.

The purpose of the report is to provide an evaluation of the results and value add of GAVI in Bangladesh, drawing on country stakeholder perspectives.

1.2. Methodology

This report has been informed by the following sources of evidence:

- Analysis of country data on health and immunisation. Annex A presents the data.
- A review of the relevant literature, including country reports, academic papers, country health plans, GAVI documentation, etc. Annex B sets out the bibliography.
- Interviews with relevant country stakeholders during a field trip to Bangladesh in the week of 5th April 2010, and some subsequent meetings. Annex C lists the consultees.

1.3. Structure of the report

The report is structured as follows:

- Section 2 provides some background in terms of an overview of the key political and economic developments, and the health sector in the country.
- Section 3 synthesises the history and current state of the country's immunisation sector.
- Section 4 provides an overview of GAVI support to Bangladesh to date.
- Section 5 provides an assessment of GAVI's support for health systems strengthening programs in the country (Strategic Goal 1[7]).
- Section 6 assesses GAVI's support for vaccines in country (Strategic Goal 2).
- Section 7 discusses the sustainability of GAVI funding in Bangladesh (Strategic Goal 3).
- Section 8 reviews the effectiveness of GAVI structures and processes in country (Strategic Goal 4).
- Section 9 presents a summary evaluation of GAVI's results and value added in Bangladesh across the programs.

[6] A Consortium led by CEPA (www.cepa.co.uk) has been appointed by the GAVI Alliance to undertake its second evaluation.

[7] SG1 programs cover Immunisation Services Support (ISS), Injection Safety Support (INS), Civil Society Organisations support (CSO), and Health Systems Strengthening support (HSS).

2. OVERVIEW OF COUNTRY CONTEXT

2.1. Background: demographic, social, and economic profile

Bangladesh is one of the most densely populated countries of the world, with a population of 150.8 million (2009). The majority of Bangladeshis (76%) live in rural areas. However, the population growth rate (1.5%) is lower than most of its neighbouring countries.

Bangladesh's Gross Domestic Product (GDP) was US$68,445m in 2007 and per capita income is close to US$620 (US$1,470 when adjusted for purchasing power parity, 2009). The economy has grown at around 6% in recent years, and inflation has remained below 7%. Bangladesh has made reasonable progress in human development and poverty reduction, and is likely to attain most of the Millennium Development Goals (MDGs). Income poverty has declined from 59% (2000) to 40% (2007), with an average annual decline of 1.3% between 1991 and 2005. The Human Poverty Index (HPI) suggests steady improvements over the 1993-2004 period.

2.2. Background to the health sector

2.2.1. Structure of the health sector

The healthcare system in Bangladesh is pluralistic, comprising of three types of providers:

- *Public providers:* The primary public sector provider is the Ministry of Health and Family Welfare (MoHFW). The administrative tier includes seven divisions, 64 districts, 482 upazilas, and 4,498 unions.
- *Private providers:* These range from registered village-based traditional healers and birth attendants to well equipped hospitals, modern diagnostic and imaging centres, and ambulatory services.
- *NGO providers:* NGOs are mainly involved in the provision of preventive and information services. A few such as Gonoshasthyo, the Bangladesh Rural Advancement Committee (BRAC), and Grameen provide facility-based curative care.

Further details on the structure of the health and family planning sectors in Bangladesh, including available facilities and key providers have been provided in Annex A.2.

2.2.2. Health sector policy and financing[8]

The Government of Bangladesh (GoB) health programs are primarily guided by the Health, Nutrition and Population Sector Program (HNPSP), 2003-2010. One of the key objectives of the

[8] Information on the health sector expenditure presented under this sub-section is based on the unpublished Third Round Bangladesh National Health Accounts (NHA) database. It should be noted that the NHA framework estimates are based on actual outlays and not budgeted or planned expenditure. In estimating donors' contribution to the health sector, funds provided to the government as loan or grants under multilateral agreement (termed as "pool funding") have been treated as GoB funds, as per international NHA guidelines.

HNPSP is to reduce infant and under five mortality[9]. The objectives of HNPSP are identified in Annex A.4., along with the country's progress in attaining those targets.

Expenditure and financing

Bangladesh's Total Health Expenditure (THE) in 2007 was US$2.3bn, which constituted 3.4% of the GDP. THE has grown at a nominal rate of 7% over the period 1998-2007. However, as a percentage of GDP, THE has shown a steady increase from 2.7% in 1997 to 3.4% in 2007.

There are four major players in the health sector of Bangladesh involved in the provision of financing: households, government, NGOs, and donors. As shown in Figure 2.1 below, the largest financiers of THE are households (64%), followed by the public sector (26%).

Detailed data on the amount and financing of THE is presented in Annex A.3.

Key health indicators

The immunisation program in combination with a successful family planning effort significantly contributed to the decline in Infant Mortality Rate (IMR) – from 54 per 1,000 live births in 2000 to 40 in 2007. The Under-5 Mortality Rate (U5MR) dropped from 84 per 1,000 live births in 2000 to 61 in 2007.

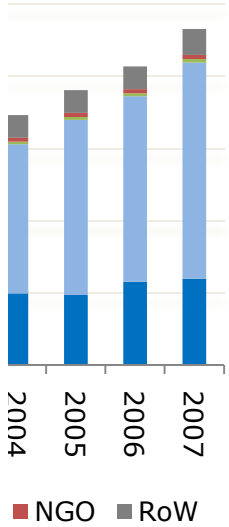
Table 2.1: Health Statistics, 2002-2007

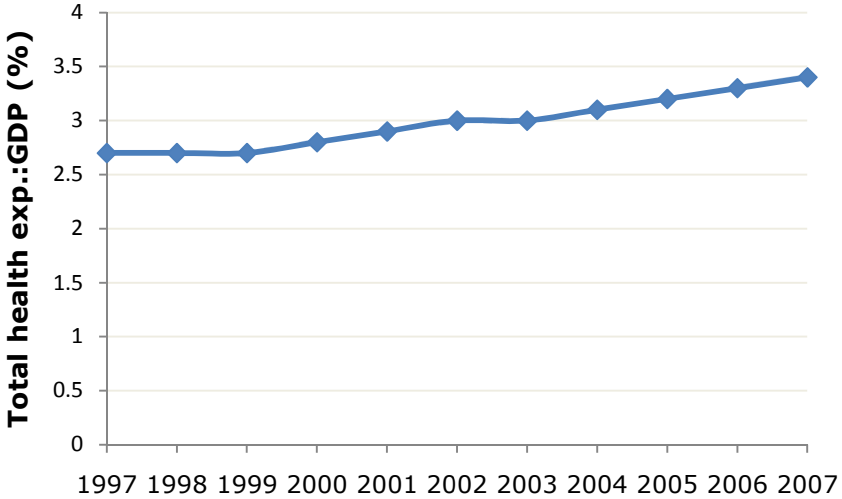
Indicator	**2000**	**2004**	**2005**	**2006**	**2007**
Infant mortality rate (per thousand live births)	58	52	50	45	40
Under 5 mortality rate	84	74			61

Source: Bangladesh Economic Review 2007; Report on Sample Vital Registration System 2004; Statistical Yearbook of Bangladesh 2007, BBS, Statistical Pocket Book of Bangladesh 2008, BBS

[9] Other objectives of the HNPSP: (i) reducing the Maternal Mortality Rate (MMR); (ii) bringing down malnutrition; (iii) lowering the incidence of Tuberculosis (TB) and other diseases; and (iv) preventing and controlling non-communicable diseases, including injuries.

Figure 2.1: Bangladesh Total Health Expenditure, 1997-2007



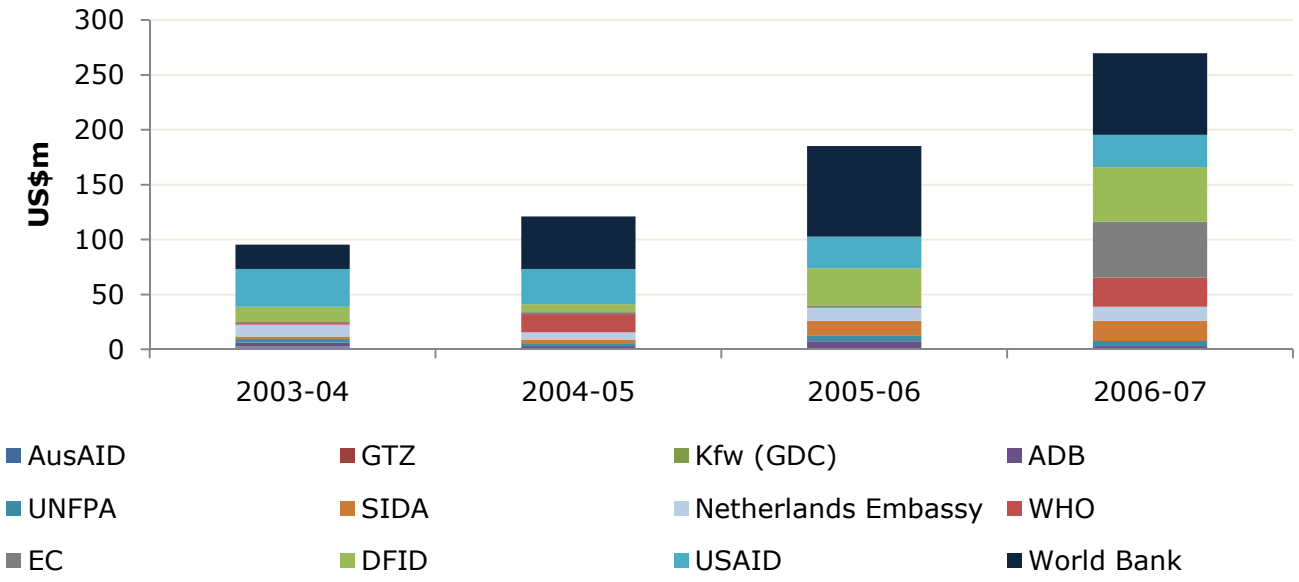


Source: Bangladesh National Health Accounts 1997-2007, unpublished report

2.2.3. Key health sector donors

Donors have been a major financing source in the health sector of Bangladesh. The funding is provided mainly through GoB and NGOs. Apart from financial assistance, they actively provide technical assistance, and contribute to capacity building and formulation of health policies. Figure 2.2 presents donor disbursements in the health sector between 2003-04 and 2006-07.

Figure 2.2: Donor disbursements in the health sector



Key trends in donor disbursements are:

- Donors collectively disbursed over US$270m for healthcare in 2006-07, as compared to less than US$100m in 2003-04.
- In 2006-07, the World Bank's share (27.6%) was the highest, followed by the European Commission (EC) (18.9%) and Department of International Development (DFID) (18.4%).
- In recent years, the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) has been providing support to the government's efforts aimed at prevention, control and care of HIV/AIDS. GFATM's outlay in 2007 was US$4.6 m.
- There is wide variation amongst donors in the proportion of total programming funding that is allocated to health. WHO (93%), Swedish International Development Cooperation Agency (SIDA) (65%), and United Nations Population Fund (UNFPA) (64%) use much of their funding in the health sector, while World Bank (2%) and Asia Development Bank (ADB) (1.5%) apportion a relatively smaller amount.

The Health Bulletin 2009 provides a listing of donors with their respective commitments to the collective donor commitment to HNPSP during 2005-2011 which amounts to US$1.38 bn (Table A.5.2, Annex A.5). The leading contributors are the World Bank/International Development Agency (IDA) (US$321m; 23%).

Annex A.6 presents the key strengths and weaknesses of the health sector in Bangladesh.

3. IMMUNISATION SECTOR

3.1 Policy developments and key actors

The Expanded Program on Immunisation (EPI) began in 1979 with the objective of reducing child mortality and morbidity by providing vaccines against six vaccine preventable diseases: Bacille-Calmette-Guerin vaccine (BCG), Oral Polio Vaccine (OPV), Diphtheria, Pertussis and Tetanus (DPT) and measles. The Tetanus Toxoid (TT) vaccination for pregnant women was later included under the EPI service delivery mechanism. At the early stage of the program, EPI services covered district headquarters and major municipalities. Initiated in 1985, the Universal Child Immunisation (UCI) program achieved its goal of national coverage of the targeted population by 1990.

In rural Bangladesh, immunisation services are primarily provided through the MoHFW outreach centres. Each administrative union has 24 such facilities. According to an unpublished EPI document, there are 108,888 such outreach centres. The lowest administrative tier of health service is the ward, which typically covers around three square kilometres in urban locations and seven square kilometres in rural areas. The per capita allocation of health centres varies by division, with Dhaka having the lowest allocation – one centre for 1,498 persons.

3.1. Funding and support for the immunisation sector

Apart from GAVI that has been contributing to the EPI program since 2003, other immunisation donors include UNICEF, WHO, DFID, Japan International Cooperation Agency (JICA), and CIDA. UNICEF and WHO have used their own resources as well as the GoB and other foreign donor funding in procurement activities, capacity building, and monitoring.

Other donors have supported the immunisation sector in Bangladesh in the following ways:

- DFID supports the HNPSP (provided £100m over seven years), funds an urban PHC project administered by the ADB, and also has two programs on maternal, newborn and child health with the UN agencies and with BRAC respectively. All of these programs include vaccination services.
- JICA has been providing technical assistance in monitoring immunisation activities.
- CIDA has various programs related to immunisation in Bangladesh[10]:
    - 5-year Bangladesh Health Commodities Project that funded essential drugs and vaccines procured through UNFPA and United Nations International Children Emergency Fund (UNICEF). CIDA is considering funding an additional US$4m for vaccine procurement through UNICEF over the next two years. This project was preceded by a Central Health Commodities Project with UNICEF for vaccine procurement.
    - In 2005, CIDA funded upgrading and expansion of the national cold chain facility, which had significant impact in terms of the government being able to store six months of vaccine stocks.

[10] Source: Consultations with CIDA in Bangladesh.

- A proposal is being discussed to provide $1.5m for improving refrigeration facilities at District level.

3.3 Performance of immunisation sector

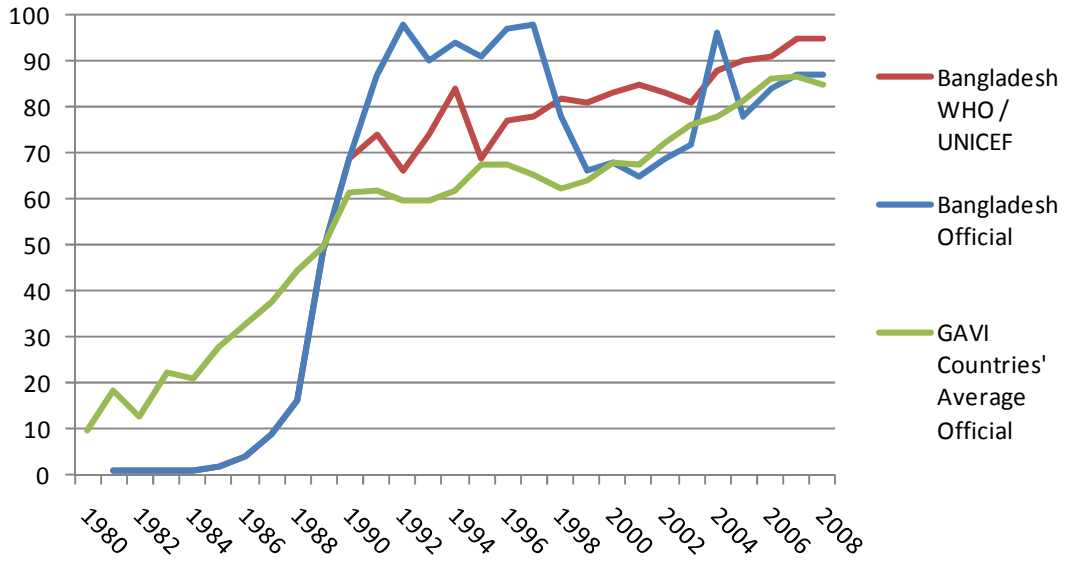
The immunisation programs are targeted at children under 1 year of age (4 million) and women of child bearing age (15-49 years; 35 million). The overall objective is to achieve 95% Fully Vaccinated Children (FVC) nationally, and at least 80% in each of the 64 districts.

The EPI program has witnessed significant success in coverage following its acceptance of UCI and assistance received from GAVI.

DTP3 coverage

Figure 3.1 shows DTP3 coverage rates in Bangladesh – official figures as well as WHO/UNICEF estimates, vis-a-vis average official figures for all GAVI eligible countries. Coverage rates in Bangladesh have mostly remained above GAVI countries' average over the past two decades, and have risen steeply since early 1990s. In recent years, the WHO/ UNICEF coverage estimates have been higher than the national reported figures.

Figure 3.1: Bangladesh - DTP3 Vaccine coverage figures - Official figures and WHO/UNICEF estimates (%)[11]



Annex A.7 presents coverage rates for BCG, OPV, measles, TT, FCV and polio, and Annex A.8 provides an assessment of the immunisation sector of the country in terms of its key strengths and weaknesses.

[11] Figures sourced from "CEPA - GAVI Phase I & II consolidated approvals & disbursements" spreadsheet, received directly from GAVI.

4. OVERVIEW OF GAVI SUPPORT IN BANGLADESH[12]

Bangladesh has received GAVI support across three programs – Immunisation Safety Support (ISS), Injection Safety Support (INS), and New and underused Vaccines Support (NVS). ISS support has been provided since 2001, INS support covered the period 2004-06, and NVS has been provided since 2003. Funding under Health System Strengthening support (HSS) was also approved in 2008 for the period covering 2008 to 2010. The HSS money has however, not been disbursed yet.[13]

During 2001-10, the total approved support amounts to US$152.9m, and a sum of US$102.7m has been disbursed. As shown in Figure 4.1, approvals and disbursements coincide until 2008. A large part of the difference between approvals and disbursements in 2009 is accounted for by the approved HSS funds that have not been disbursed[14].

Figure 4.1: Bangladesh - GAVI disbursements versus approvals (US$m) [15]

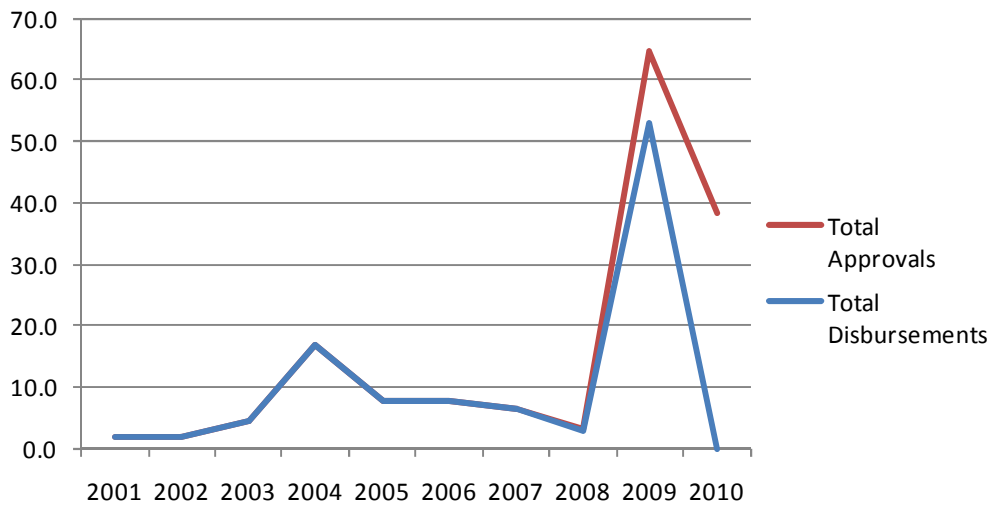


Figure 4.2 below shows the breakdown of approved and disbursed funds, across years and by GAVI program. Almost 70% of both the approvals and disbursements have been made under the NVS program. In terms of disbursed funds, the second largest program is ISS (US$23.3m disbursements).

[12] Figures sourced from "CEPA - GAVI Phase I & II consolidated approvals & disbursements" spreadsheet, received from the GAVI Secretariat.

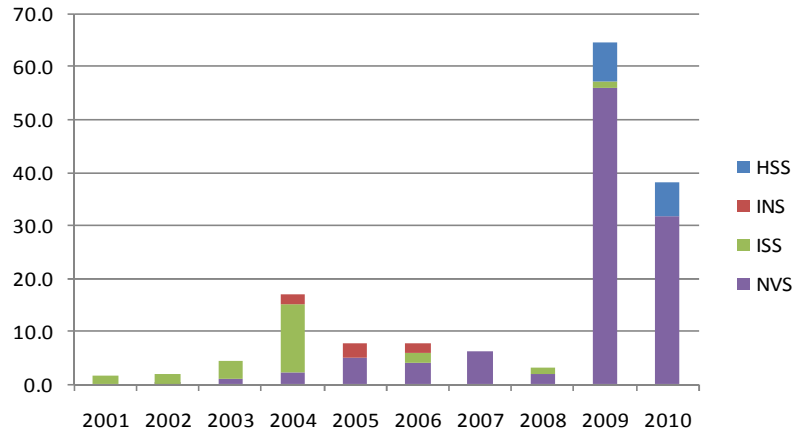
[13] Reasons for the delay in disbursement have been discussed in detail in Section 5.

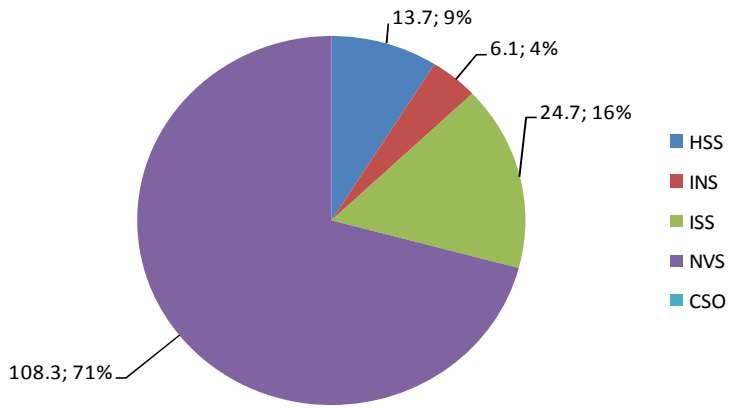
[14] In 2009, US$7.2m and US$1.4m were approved for HSS and ISS respectively, but not disbursed. US$55.9m was approved for NVS (penta) of which US$51.8m was disbursed.

[15] Where lines overlap, disbursements are equal to approvals.

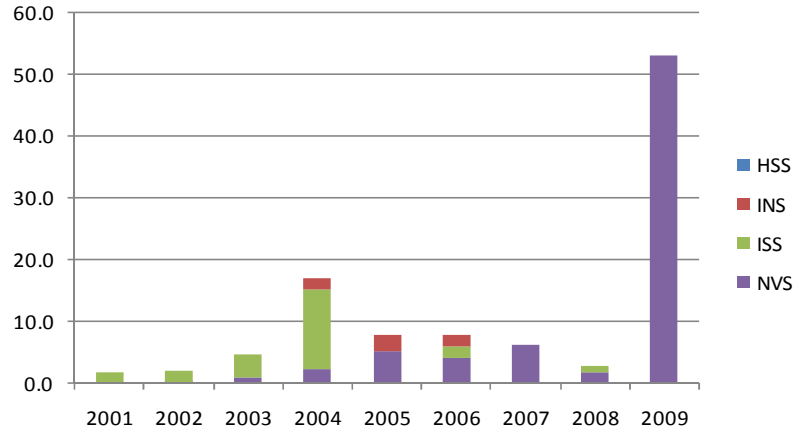
Figure 4.2: GAVI approvals and disbursements data 2001-10 ($m)

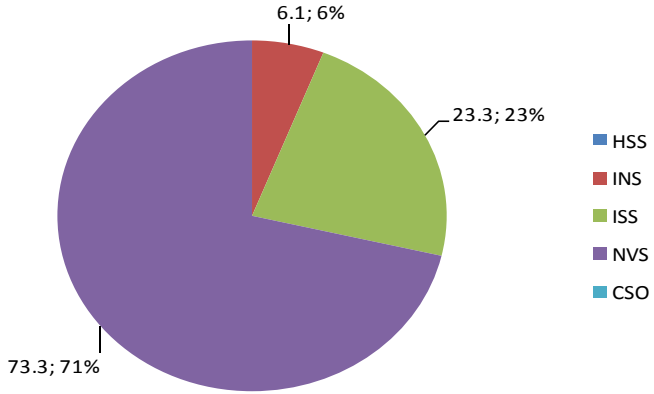
Approvals





Disbursements





5. ASSESSMENT OF GAVI HEALTH SYSTEMS STRENGTHENING SUPPORT (SG 1)

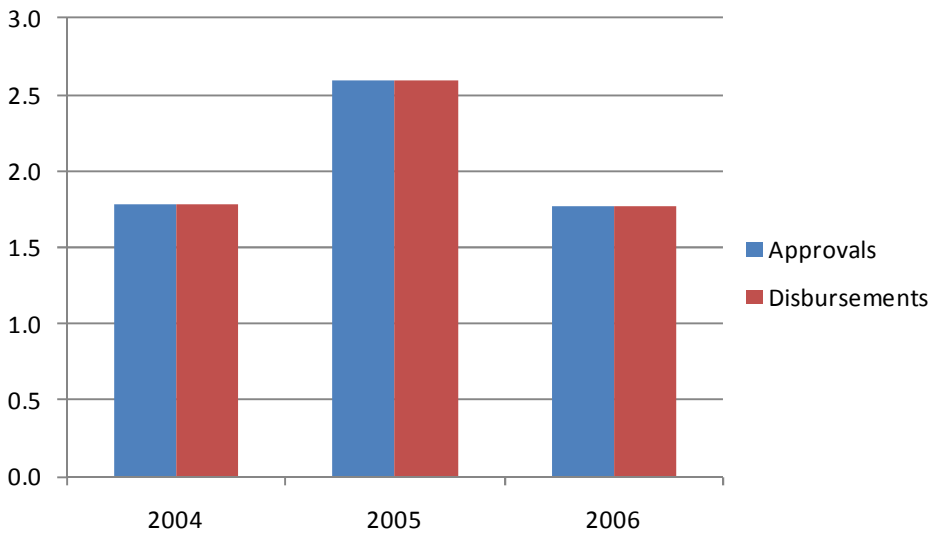
GAVI's first goal (Strategic Goal 1 – SG1) is to contribute to strengthening the capacity of country health systems to deliver immunisation and other health services in a sustainable manner. This goal covers the following GAVI programs: Health Systems Strengthening (HSS), Immunisation Services Support (ISS), Injection Safety Support (INS), and Civil Society Organisations (CSO).

This section provides a description of the support received from GAVI as well as an assessment of the results and value add, for the programs relevant for Bangladesh.

5.1. Assessment of GAVI INS support

Bangladesh received in-kind INS support amounting to US$6.2m during the period 2004-06. Figure 5.1 shows that all of the approved INS funds have been disbursed.

Figure 5.1: GAVI INS: approvals and disbursements (US$m)



5.1.1. Description of INS application, approval and implementation process

Bangladesh submitted an application for INS in April 2003, and support was approved to cover the period 2004-06. Use of Auto-Disable (AD) syringes and safety boxes was started throughout the country in all routine immunisation in July 2004.

The proposal was endorsed by the Inter-agency Coordination Committee (ICC) comprising representatives from the government, GAVI implementing partners, other donors and NGOs[16]. The proposal was also signed by the Secretary, MoHFW.

[16] Detailed description of the structure of the ICC is provided in section 8.1.

Bangladesh received AD syringes, reconstitution syringes, and safety boxes for the year 2004 in 2003. Inconsistency between required and approved quantities was reported in the 2003 Annual Progress Report (APR)[17]. While the expected shortage in AD syringes was not observed in 2004 on account of delay in the phase-wise introduction of Hepatitis B vaccines, there was a shortage of reconstitution syringes for BCG and measles. After approval from ICC, the EPI procured available reconstitution syringes from local manufacturers[18]. ICC also approved the procurement of additional AD syringes through UNICEF as there was no local manufacturer for AD syringes in Bangladesh at that time.

No major problems were reported in switching over from reusable syringes to AD syringes. In the beginning, there was some problem in the use of BCG AD syringes as the technique for its use was different from that of the other types of AD syringes. To address these problems, training of field staff was organised by Surveillance Medical Officers (SMOs) and EPI facilitators of WHO.

The introduction of different types of AD syringes in the immunisation program at different points of time did however, create confusion among the users and as a result, there was some wastage of AD syringes initially.

5.1.2. Results and value add of INS support

GAVI INS support is agreed to have resulted in the introduction of the injection safety policy of Bangladesh. Owing to the INS program, AD syringes and safety boxes are now in use in immunisation programs across the country. There has however, been relatively limited success in waste safe disposal and management. This section discusses each of the results of GAVI INS in Bangladesh in detail.

Introduction of safety kit

Interviewees were unanimous in attributing the introduction of safety kit in Bangladesh to GAVI's support. Prior to 2004, Bangladesh used glass syringes which had to be sterilised and were more difficult/ expensive to transport.

Further, a national policy on injection safety was approved by the Cabinet in 2004. This was a condition laid down by GAVI for approval of Bangladesh's application for INS support.

Given the absence of both safety policies and practices in Bangladesh prior to GAVI support and no other donor in this area, their introduction and sustained adoption are perceived as clear 'value add' of GAVI.

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[17] The approved quantities were below the required quantities for AD syringes for vaccines other than BCG (shortfall: 2,048,642), reconstitution syringes for BCG (shortfall: 1,244,891), reconstitution syringes for measles (shortfall: 1,075,191) and safety boxes (shortfall: 48,494). The requirements for AD and reconstitution syringes had not been computed accurately, leading to shortages.

[18] EPI procured 1,500,000 3 ml. syringes for BCG (2 ml. syringes not manufactured by local manufacturer) and 1,500,000 5 ml. syringes for measles from the local manufacturers (APR 2004). Government procured from their own funds an additional 3,125,000 3 ml. reconstitution syringes for BCG and the same number of 5 ml. reconstitution syringes for Measles in 2005 (APR 2005). The shortfall was met through procurement from local manufacturers in the year 2006 as well (APR 2006).

Sustainability of usage and funding of safety kit

Overall, all stakeholders provided positive feedback on Bangladesh's sustained use of safety kit for immunisation, even after GAVI support ended. Further, the government has also sustained funding from its annual development funds.

Since GAVI INS support ended in 2006, AD syringes and safety boxes were continued to be used at health facilities across the country. EPI has been procuring safety material from an existing local manufacturing company, JMI Bangla, which was identified with technical assistance from WHO[19]. JMI Bangla is the only AD syringe manufacturer in Bangladesh (refer Figure 5.2).

The company has capacity to supply the required number of syringes for all routine EPI vaccines in the country, and no shortages have been reported at any level. The procurement is funded through the government's development budget.

Bangladesh is one of the two GAVI-eligible countries (the other being India) that successfully produces AD syringes locally, following the end of GAVI INS support.

Figure 5.2: Note on JMI Bangla

JMI – Bangla Co. Ltd.: AD syringe manufacturers in Bangladesh

Established in 1991, JMI Bangla is a joint venture by JMI Bangla Pharma Co. Ltd. and a Korean firm, Sun Myung International (Pvt.) Ltd. It however started production of AD syringes and safety boxes in 2007, after GAVI support ended.

JMI entered into a contract with the government in 2005, according to which the government committed to buy syringes from JMI for a period of five years, at a price controlled by the government. The technology for production has been licensed from Star Syringe UK. The price of syringes is Tk 6/piece (US$0.09/piece) including VAT @ 1.5%. This is lower than the price at which UNICEF was procuring syringes until 2006 (Tk 6.6/piece i.e. US$0.1/piece), notwithstanding inflation effects since 2006 .

Their current capacity for production of AD syringes is close to 220 million pieces/year. About half of the total revenue (US$11m in 2009) comes from the sale of AD syringes, their remaining products include IV infusion sets, suction tubes, catheters etc. The company claims that 10-15% of total production is exported to countries such as Peru, Nepal, Bhutan and Pakistan.

Safe disposal/ waste management

Proper sharps waste management continues to be a challenge for the Government of Bangladesh, and they have reported to require GAVI support in this area (APR 2008). GAVI implementing partners in the country are of the view that there has been limited progress in

[19] WHO supported a feasibility study that revealed that local manufacturers are capable of acquiring technology to produce AD syringes. Following the study, WHO gave JMI Bangla approval to be a Pre-Qualified Supplier (PQS).

waste management and greater investment is required. Officials at the MoHFW do report some positive impact of GAVI INS support in the form of greater awareness among health workers with respect to waste management and adoption of more scientific methods of collection and segregation of wastes. However, a lot remains to be done in terms of waste disposal practices.

We discuss below the status of both the policy and practices on health waste management in Bangladesh.

Towards the end of GAVI INS support, a committee was formed to finalise the *national policy* on sharps waste management. Healthcare waste management is one of the ten "Policy responses to 2010" as laid down under the HNP Strategic Investment Plan (July 2003 – June 2010)[20]. The MoHFW has initiated healthcare waste management under its Improved Hospital Management initiative and has published a manual for distribution to health facilities. The MoHFW intends to adopt and implement an Action Plan that would cover all health facilities, both public and private, and establish minimum targets for handling and treatment of healthcare waste. The Medical Waste Management and Disposal Act 2008 ordinance has been issued by the Ministry of Environment and Forest, Government of Bangladesh.

In terms of *current practice*, the recommended disposal of sharps waste of routine EPI are through incineration or open burning. The use of incinerators is confined to urban areas, where incinerators are available. For instance, at the Dhamrai Upazila Health Complex in the district of Dhaka, all medical waste from the lower level health facilities is collected and brought to the Health Complex, where it is burnt in open pits.

Many of the public hospitals have waste management programs. These however, have poor capacity and quality and accountability is weak. A few NGOs in Dhaka (e.g. PRISM, SHAPNA, BASHA) offer waste management services, but are ill-equipped in terms of skilled workers and capital goods i.e. incinerators. A short note on PRISM, who we met with, is in Figure 5.3 below.

[20] The HNP Strategic Investment Plan (2003-2010) is the overarching framework for the health sector in Bangladesh. It is the basis of the HNPSP Revised Programme Implementation Plan (HNPSP – RPIP) July 2003 – June 2010.

Figure 5.3: Note on PRISM

Project in Agricultural Rural Industries Science and Medicine (PRISM)

PRISM, an NGO established in 1989, works in the area of medical waste management in Dhaka city. They have 315 clients/locations from where medical waste is collected, and cover all kinds of health facilities and medical waste (including AD syringes). WHO guidelines for healthcare waste management are followed in the provision of their services.

The medical waste is collected using specialised vans, and undergoes one of the following: (i) Industrial autoclave (sterilisation), (ii) Chemical disinfection, (iii) Safe burial, or (iv) Incineration. The AD syringes with safety boxes are considered safe for burning. AD syringe disposal costs Tk 17-20/kg (US$0.25-0.30/kg). PRISM received two incinerators from donors, one of which was provided by JICA.

PRISM also provides training and guidance to health facilities for segregation and temporary storage of waste. Their workers are trained in waste management and occupational safety.

Safety practices in broader country health systems other than immunisation

The national policy on injection safety states that AD syringes are to be used in all routine EPI programs in the country, i.e. not just GAVI supported vaccines. Attempts are being made to gradually introduce the use of the safety kit in curative care as well. According to officials at the MoHFW and GAVI's implementing partners, injection safety practices are also observed in family planning and HIV/ AIDS programs.

GAVI value add

The strongest area of GAVI value add with respect to INS is the introduction and adoption of injection safety policies and practices for immunisation, which consultees suggested would not have happened in the absence of GAVI support. Once the program was introduced and the benefits were visible, the government has been able to sustain usage of and funding for safety kit even after GAVI support ended.

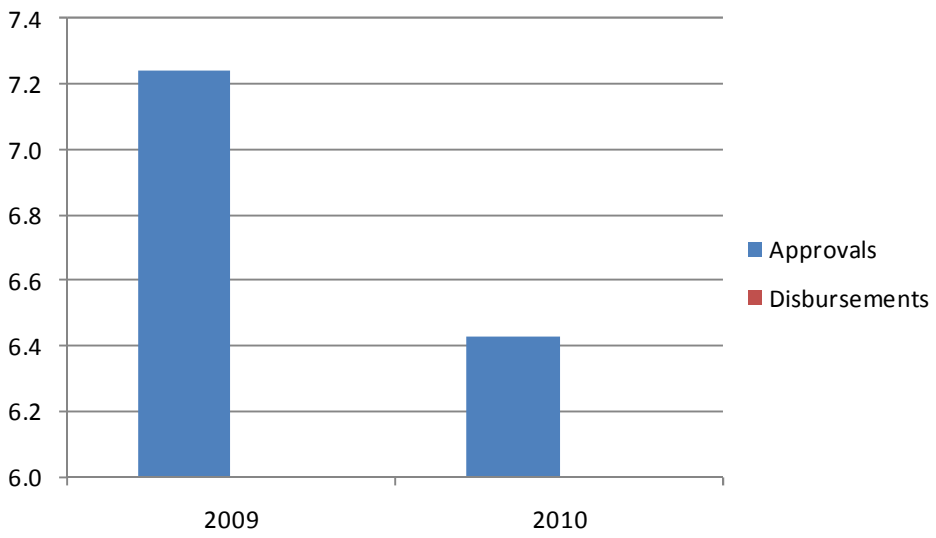
There have also been no other donors funding injection safety in Bangladesh – enhancing the value of GAVI's support.[21]

5.2. Assessment of GAVI HSS support

A total of US$13.7m was approved for Bangladesh under the GAVI HSS window for 2009-10. However, no disbursements have been made so far.

[21] However, WHO has provided some technical assistance in this area, and UNICEF was responsible for procurement until GAVI support ended, when now the GoB procures directly from JMI Bangla.

Figure 5.4: HSS - GAVI approvals and disbursements data ($m)



5.2.1. Description of HSS application, approval and implementation process

Bangladesh first submitted an HSS application in June 2008. Following the rejection of this application, it was resubmitted in September 2008. The proposal development process is largely considered to be participatory and inclusive. It was led by the MoHFW, with inputs from development partners, NGOs, and sub-national health officers. The final proposal was endorsed by the HNP Forum (HSCC equivalent), which is chaired by the Secretary of MoHFW and composed of representatives from various ministries, development partners, UN departments, specialised agencies and NGOs. The application was also signed by the MoHFW and MoF.

The final HSS approval was given by GAVI in November 2008 for funding in 2009 and 2010.

However, HSS funds have not yet been disbursed to Bangladesh. The recent introduction of Transparency and Accountability Policy (TAP) and Financial Management Assessment (FMA) procedures by GAVI required that Bangladesh undertake an FMA before the approved cash program grants are disbursed. Therefore, the HSS disbursement was put on hold until the FMA process was satisfactorily completed.[22] Following the completion of the FMA, the aide memoire is still be signed by the GoB[23]. The delays here are primarily procedural/ institutional:

- *Signatories in the GoB:* GAVI requires the aide memoire to be signed by all signatories of the HSS application i.e. Secretary, MoHFW (Planning Division) and Joint Secretary, MOF. However, as per G0B rules, any foreign funding contract is to be signed by the concerned ministry and the Economic Relations Division (ERD) in the MoF.

[22] According to GAVI implementing partners in Bangladesh, the sudden introduction of FMA was not in the spirit of the Paris Declaration and caused a significant delay in the disbursement of approved funds. They are of the opinion that GAVI could have reviewed if the country's pooled fund and financial management systems (that other donors follow) were satisfactory, rather than instituting another procedure.

[23] The process is now complete - the FMA Aide Memoire has been signed by GAVI's Deputy CEO and has been couriered to Dhaka for GoB signature.

- *Institutional division of responsibility in MoHFW:* The NVS and ISS programs fall under the responsibility of the EPI Division of the MoHFW, whilst HSS is managed by the Planning Division. Given the linkages between these programs, the institutional distinction has increased transaction costs/ delays. Further, with the introduction of the FMA, ISS and HSS are treated similarly on account of both being cash based programs. Therefore, the FMA aide memoire needs to pass through both divisions in the MoHFW that traditionally have not worked together on immunisation programs.
- *Oversight body:* Whilst the ICC oversees the EPI programs, the HNP Forum is the main coordinating body for the HSS program (similar institutional division of oversight like in the MoHFW). In Bangladesh, this Forum does not meet very regularly and, most often, does not have full attendance of its members. Some donor members of the Forum mentioned that they were not aware, until recently, of the delays in the HSS disbursement.
- *Disagreement on the arbitration clause:* Further delay in signature was caused on account of the Ministry of Law raising issues in relation to GAVI's arbitration clause.[24] After much discussion, GAVI has now, in principle, agreed to amend the clause as suggested by Bangladesh.

It is now expected that the final aide memoire would receive the required signatures to become effective, so that the HSS grant can be disbursed.

5.2.2. Results of HSS support

Since the HSS money has not been disbursed to Bangladesh, results and value add cannot be assessed. Instead, we describe here the 'expected' results as defined in the HSS proposal, and some feedback from country stakeholders on these.

The overarching operational aim of the HSS proposal is to ensure that Community Clinics (CCs) - which are the backbone of the new operational strategy for Primary Healthcare delivery - have minimum functional capacities and infrastructure to deliver safe and effective Maternal and Child Health (MCH) and immunisation services. GAVI HSS support is planned to be used to accelerate this plan in 13 districts[25] of Bangladesh.[26]

[24] GAVI's clause suggested that it would appoint an arbitrator for any dispute up to US$1m, whilst tripartite resolution (including GAVI, GoB, and an external arbitrator) would be the practice for larger dispute values. Bangladesh preferred a tripartite arrangement for all disputes, irrespective of their value (essentially making the clause more stringent, but as per its laws).

[25] All of these districts are situated in remote areas, with few roads. Most of these can only be accessed by boat.

[26] Measles immunisation coverage survey was used as the basis for selection of districts (i.e. districts with lowest coverage). At present, these districts have one CC per 13,400 population, which is below the national norm of one CC per 6,000 population in rural areas.

Figure 5.5: Expected results of GAVI HSS support

According to the HSS proposal, the expected results at the end of the GAVI HSS support are:

i. better efficiency in personnel management and supervision;

ii. better quality of MCH and immunisation services;

iii. more effective and accountable community-based service provision; and

iv. increased access to facility-based childhood survival and safe motherhood services.

Through training and engagement of Village Health Workers, the GAVI HSS program was expected to enhance community demand for services that would increase the number of fully immunised children. The funds were also planned to be used to pilot operational research activities in the targeted districts, and nationally-focused studies, to increase the evidence base (GAVI HSS Proposal 2008).

The expected results defined in the HSS proposal are mostly qualitative (improved efficiency, quality, accountability etc.), which may be difficult to measure and attribute to GAVI's support. Further, our consultations pointed to a divided house on the expected efficacy of focusing GAVI's HSS support on CCs in 13 districts. The new operational strategy of moving from the existing 'outreach' to 'clinic/ centre' based immunisation in only 13 poor-performing districts was contested by some.

In this context, we also examine whether the proposed HSS activities might address the main immunisation related health systems bottlenecks in Bangladesh. The key health sector bottlenecks highlighted by GAVI stakeholders in the country, include (a) inadequate manpower and human resource management issues; (b) poor capacity; and (c) infrastructure bottlenecks that hinder efficient service delivery. The broad goal of GAVI HSS support as laid down in the proposal does acknowledge the need for strengthening human resource and logistics management. However, it seeks to do so through the plan of re-establishing CCs. There do not seem to be any clear proposed interventions to directly address the widespread problems of high vacancy rates and absenteeism among health workers, especially in rural areas.

5.2.1. HSS value add

In order to assess the potential impact of GAVI HSS interventions in Bangladesh, it is important to first understand the country contextual factors. This is followed by a brief note on other donors that support health systems activities in Bangladesh and how their approach compares with the proposed GAVI approach. This analysis should be interpreted in the context of comparing GAVI's HSS approach / proposed activities to other donors rather than results, since HSS funds have not yet been disbursed. Further, none of the health donors in Bangladesh have an explicit HSS program, albeit their funding contributes to some aspects of health systems strengthening.

Bangladesh context

The country context is described in terms of the HSS aid architecture, quality of governance, and the general level of development.

- *HSS aid architecture:* The Government's health programs are primarily guided by and implemented under the HNPSP 2003-10. There are various development partners such as the WHO, World Bank, USAID etc. that actively support the health sector in Bangladesh. However, donors do not have explicit health systems strengthening programs. A majority of the donors contribute to the pooled fund (like a SwAP) which is used to finance all developmental activities.
- *Governance quality*: According to the World Bank's worldwide governance indicators[27], Bangladesh had a worldwide percentile rank of 9.6[28] (4th in South Asia[29]) in political stability, and 22.7 (2nd lowest in South Asia) in government effectiveness in 2008. Hence, overall, the quality of governance is relatively poor.
- *General development level*: With a Gross National Income (GNI) per capita of US$620 (2009), Bangladesh is a poor country and the general development level is low.

Comparison of GAVI to other HSS donors

Table 5.1 characterises the main development partners supporting HSS in Bangladesh as per their HSS strategies/principles, in order to assess the potential value add of GAVI. The other donors considered here are the Global Fund, World Bank, USAID, and GTZ. The key relative strengths of GAVI are:

- its alignment with national plans and existing implementing structures;
- predictability of funding; and
- flexibility in the use of HSS money.

However, it appears to be less strong in terms of harmonisation (given separate stream of HSS funding, separate FMA compared to other donors' financial assessments, separate reporting, etc.); and results orientation (some other donors have linked disbursement to measurable milestones).

[27] Kaufmann D., A. Kraay, and M. Mastruzzi 2009: Governance Matters VIII: Governance Indicators for 1996-2008

[28] 0 corresponds to lowest rank and 100 corresponds to highest rank, among all countries in the world.

[29] Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

Table 5.1: Comparison of GAVI to other HSS donors

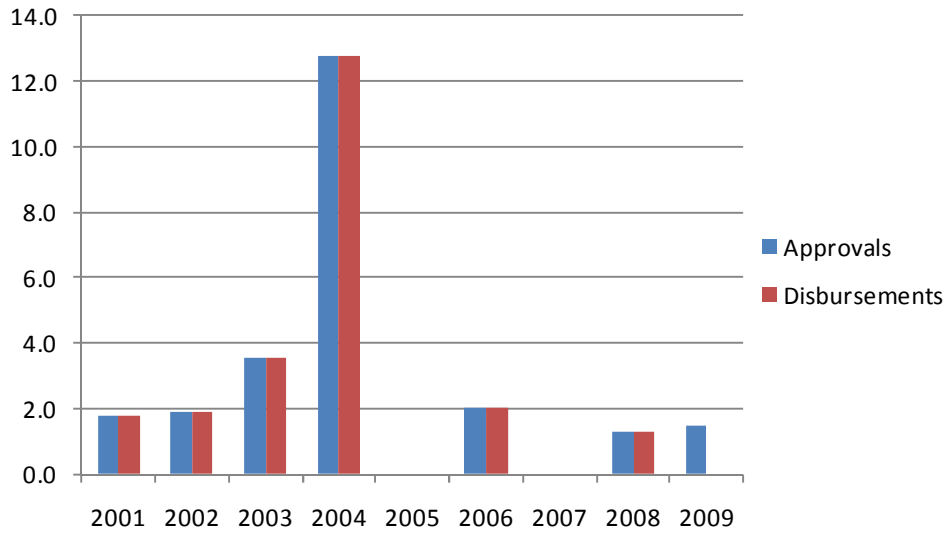
HSS principles/ strategies	GAVI	GFATM	World Bank	USAID	GTZ
Ownership (respecting the strategies of the host country)	Seeks to support national HSS efforts; Fill financial gaps in implementing national plans.	Seeks to complement government's efforts aimed at reducing the burden of HIV/AIDS, TB and malaria.	Provides both parallel funding and contribution to the pooled fund in support of health policy goals.	Works towards the goals and objectives of the government's family planning program.	Provides both parallel funding and contribution to the pooled fund in support of health policy goals.
Alignment (aligning behind strategic objectives and using local systems for HSS interventions)	Country proposal needs to be aligned with cMYP; implementation of program is planned to be through existing structures (HNP Forum; GoB)	Sets up its own structures for grant implementation, monitoring and reporting.	Sector-wide approach is pursued, with HSS interventions being a key component of technical and financial support.	Supports governmental and non-governmental family planning programs through HSS interventions.	Supports monitoring and evaluation activities of MoHFW.
Harmonisation (co-ordinating with the bigger group of donors, help to simplify procedures and share information to avoid duplication)	GAVI HSS funds do not go into the pooled fund; GAVI is committed to identification of best practices and sharing of experiences with other donors.	GF funds do not go into the pooled fund.	Takes the lead among donors in committing and disbursing pooled funds.	Bilateral agreement with the government is the guiding principle; relatively less emphasis on coordination with other donors.	Contributes through pooled and parallel funding.
Results orientation (focusing on results and measuring outcomes and impact)	Recipient countries report on performance through Annual Progress Reports; Impact/outcome indicators laid down	Stringent reporting requirements, monitoring and evaluation mechanisms; Disbursement of funds contingent	Release of funds is contingent upon intermediate results.	Financial intermediaries oversee service delivery by recipients of funds.	MDG indicator on HIV/AIDS prevention and incidence monitored.

HSS principles/ strategies	GAVI	GFATM	World Bank	USAID	GTZ
	in HSS proposal but not quite precise.	upon achievement of milestones.			
Predictability (providing 3-5 years advance notice on development plans)	Funding provided for duration of national plan.	Grants are initially approved for two years and decision on continued funding is based on performance. During the grant period, disbursements of tranches of grants are linked to periodic demonstrations of programmatic progress and financial accountability.	Pooled funding targets sector wide multi-year program goals and objectives.	Family Planning programmes are multi-year activities.	Not very predictable. Programme strategies strongly influenced by GTZ's global strategy and programs.
Untying health aid from rules of buying goods and services according to preset conditions of where and from whom.	High degree of flexibility in use of HSS funds by the country.	Flexible within the scope of the three disease programs. Competitive selection of LFAs and implementing agencies.	IDA guidelines and government's Public Procurement Regulation (PPR) to be followed.	USAID procurement rules are to be adhered to in purchasing equipment and services.	GTZ procurement policies need to be adhered to.

5.3. Assessment of GAVI ISS support

A total amount of US$23.3m has been disbursed to Bangladesh under the ISS window, between 2001 and 2008. In addition, US$1.4m has been approved in 2009, but not yet disbursed.

Figure 5.6: Bangladesh - ISS - GAVI approvals and disbursements data ($m)



5.3.1. Description of ISS application, approval and implementation process

The application for ISS funding was submitted to GAVI in April 2001 by the ICC. The application was signed by the Secretary, MoHFW.

The first tranche of ISS funds were received in December 2001. The ICC agreed to establish a financial management sub-committee to develop a separate Financial Management System for the administration of GAVI funds (ISS, INS and NVS). [30] By 2004, accounting and inventory software had been established at the EPI Headquarters, relevant training to the staff was provided, and related manuals were finalised.

The implementation of planned ISS activities began in 2003. The selection of activities and preparation of budget is undertaken by the Technical Sub-Committee (TSC) of the ICC, following which the budget is presented to the ICC for approval. Based on the approved budget, the national EPI executes the planned activities, within existing GoB policies and guidelines. The Joint Secretary (Public Health and WHO) and the Program Manager, Child health are the joint signatories for operating the GAVI fund. An audit is conducted by Foreign Aided – Project Audit Directorate (FAPAD) each financial year. In the past, problems have been reported in terms of delays in carrying out planned activities on account of lengthy government procedures involved in expending any approved budget, and change of signatories.

[30] For this purpose, a private accounting firm called A. Qasem and Co. were hired. They started their work in March 2003.

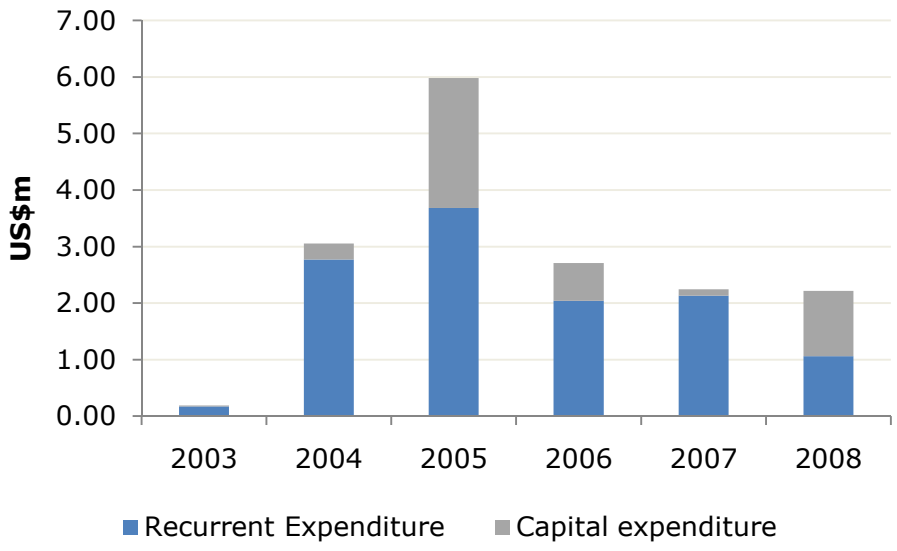
5.3.2. Results of ISS support

GAVI ISS support to Bangladesh is reported to have strengthened its immunisation systems, and contributed towards achievement of high coverage levels, particularly in remote areas. This section describes the use of GAVI ISS funds in Bangladesh and specific areas of value addition.

Use of ISS funds

Over the years, Bangladesh has used ISS funding primarily for recurrent expenditures such as injection supplies, personnel, transportation, maintenance and overheads, training, consultancy, Information Education and Communication (IEC)/mobilisation, etc. ISS funds have also been used to procure capital equipment such as vehicles, cold chain, Effective Vaccine Storage Management (EVSM), M&E, work on EPI building/store, equipment etc. Figure 5.7 below depicts the allocation of ISS expenditure between recurrent and capital expenditures across years. Stakeholders generally shared the view that ISS financing helped bridge the immunisation system gaps that impeded wider coverage. Recurrent expenses on training, communication, and awareness helped in the introduction and adoption of the Hep B and pentavalent vaccines.

Figure 5.7: ISS expenditure: Recurrent versus Capital expenditure ($m)



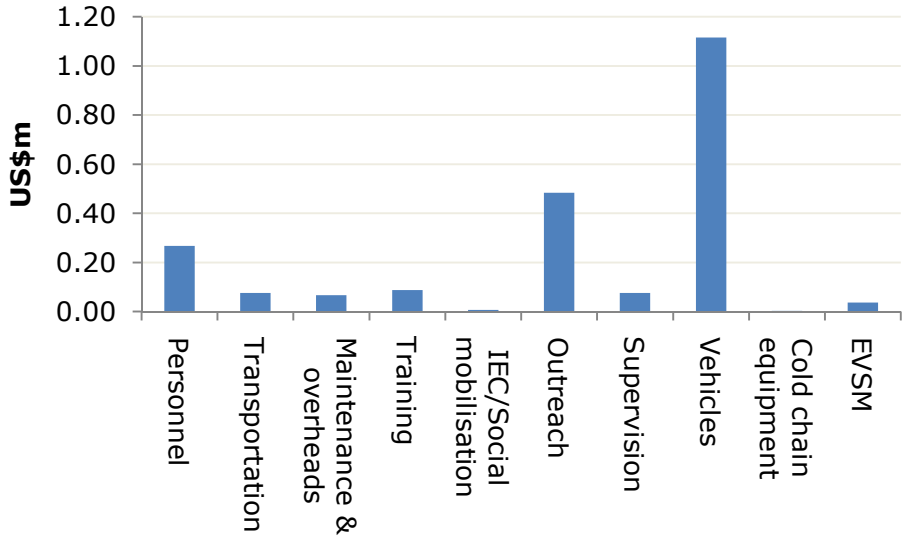
In 2008[31], a total of US$2.2m was spent on various areas of ISS. Close to 95% of this amount was spent at the district level, and the remaining at the central level. The large percentage of expenditure at sub-national level is considered to be an effective use of funds where it is needed most.

While the ISS areas funded and the associated expenditures varied across years, Figure 5.8 below presents this information for the year 2008 as an indication of the allocation of expenditure. The two highest areas of expenditure are vehicles and outreach. Consultees were somewhat divided on whether these were the largest areas of unmet need at the district level. Also, the effectiveness

[31] The ISS activities carried out in 2008 were funded using ISS money carried forward from 2007 (US$5.5m).

of spending in these areas was regarded as diminishing over the years, as coverage levels were higher.

Figure 5.8: ISS spending by areas of expenditure, 2008 ($m)



'Flexible cash'

Views regarding the flexible nature of GAVI funding are mixed:

- A few of the country stakeholders believe that the flexibility enables the government to plan the use of funds more efficiently in filling gaps in implementation of plans, and also assists financing district level improvements.[32] This characteristic of GAVI is welcomed compared to say, the Global Fund and World Bank, which are more prescriptive in use of funds.

- On the other hand, some of GAVI's implementing partners are of the view that this flexibility is not an asset and that the money could be more effectively spent by the Government. The ISS funds have primarily been spent on construction, HR, etc. and not directly used to strengthen immunisation.

  It was also mentioned that other donors in Bangladesh are not happy about the 'free flow' of money from GAVI, as GAVI does not ask the government any 'tough questions'. It was felt that greater the flexibility of funds, the greater are chances of abuse and corruption. This is of particular concern in Bangladesh that lacks strong governance and systems of accountability. In this respect, one of the donors felt that the close working and involvement of WHO and UNICEF with the GoB has limited misuse of ISS funds and strengthening reporting quality for reward funding.

[32] GAVI funds go towards rural immunisation which is the responsibility of MoHFW. The Ministry of Local Government looks after urban areas, under a USAID and ADB funded healthcare program.

Reward based funding

The general consensus on reward-based ISS funding is that the incentive works well initially, but less so at later stages as it is difficult to get additional rewards funding once high levels of coverage have been achieved (as is the case in Bangladesh). The incentives were initially useful to the extent that they enabled interest and cooperation from the government machinery.

Consultees made several suggestions regarding revising the criteria for rewards funding, to ensure that the incentive effects continue at higher levels of coverage:

- One of the views was that after a certain level of coverage is achieved, rewards should be related to also sustaining that level, rather than only increasing it.
- A few said that US$20 per additional child immunised is not adequate for increasing coverage beyond a certain level, as it becomes progressively more expensive to reach unreached children at that stage. Further, one of the donors felt that the reward funding has perversely diverted the interest of health care workers at district and community levels from other pressing child health concerns that do not have a similar incentive.
- Some asked whether GAVI's focus is on increasing immunisation coverage or reducing child mortality – if it is the latter, beyond a certain coverage level, the returns would be higher to spend an additional dollar on health systems rather than to provide incentives for further increase in coverage.

DPT3 coverage in Bangladesh has increased from 83% in 2000 prior to the start of GAVI support to 95% in 2008[33]. A majority of the stakeholders acknowledge GAVI's contribution in the achievement. GAVI has contributed through the provision of inputs, resources, assistance in ground level planning, and introduction of additional staff for immunisation at the district level.[34] While the country's immunisation sector was always considered to be strong, it was generally agreed GAVI has helped expand outreach, especially in remote rural areas, and improved the quality of the immunisation program (through for example, financing better cold storage, vehicles for vaccine transportation, etc.).

Data Quality Audit (DQA)

A DQA was conducted in Bangladesh in 2002 by external and internal auditors, supported by WHO and UNICEF. The DQA reported discrepancies between reported vaccinations and vaccinations recorded in the EPI Child Register.[35] Some of the steps taken after this DQA was to strengthen the record keeping and reporting system, including revision of the child card, child registration book, tally book, and monthly report book. A second DQA was undertaken in 2003 to assess the level of implementation of the recommendations of the first DQA. It is reported that most of the major issues have been addressed (Bangladesh APR 2005), and regular monitoring of the implementation of the action plan is done.

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[33] WHO/UNICEF estimates

[34] DIMOs salaries and training are financed by GAVI ISS funds, strengthening the district level immunisation resources (particularly valued in Bangladesh given the current 'outreach' based immunisation model).

[35] A. Qasem & Co. (2003): "Report on the Data Quality Audit of the year 2002", GAVI.

Since 2007, the Bangladesh EPI has been following the Data Quality Self Assessment (DQS) tool instead of DQA. A total of 151 DQS were conducted at the sub-district level in 2008. Training on DQS was completed for District Immunisation Medical Officers (DIMOs) and SMOs, and efforts were made to institutionalise DQS by imparting training to two persons from each district and City Corporation.

The general feedback is that the quality of data in Bangladesh has improved in recent years. Sub-national health officers report no major problems in the system of reporting and monitoring currently in practice.[36]

It was widely acknowledged that the DQA process and the ISS rewards based funding helped government to enhance their capacity in this area, and strengthen reliability of information capture and reporting at all levels of service delivery.

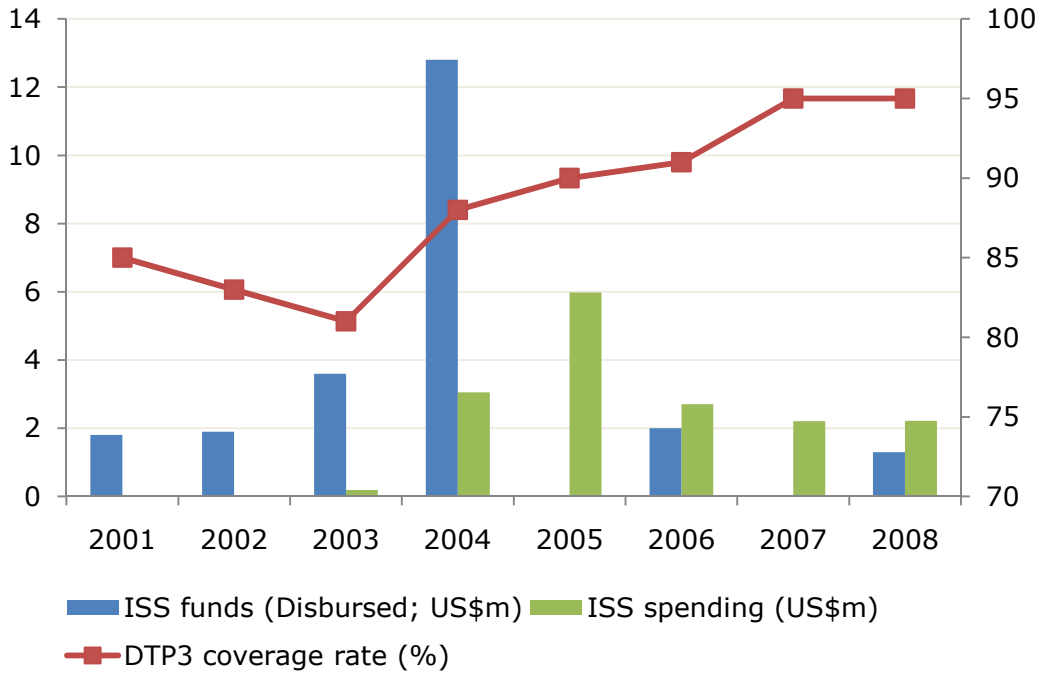
5.3.3. GAVI ISS value add

GAVI ISS is the only source of funding available to the GOB for increasing immunisation coverage, particularly in the remote areas. An example of value add at the sub-national level is the funding of the salaries of DIMOs that has increased local capacities for immunisation. Moreover, at least in the initial years, performance-based ISS funding helped incentivise the government to prioritise routine immunisation and achieve significant increase in coverage rates. This may not have been possible in the absence of GAVI as other donors do not provide funding specifically targeted at increasing routine immunisation coverage.

Figure 5.9 below shows a clear, positive correlation of DTP3 coverage rates with both ISS disbursed funds and ISS spending during the 2003-04 period.

[36] Starting from the grass root level, when a child is immunised, the vaccinator makes a record in the child card (given to the patient) and also on a tally sheet. All such tally sheets are sent to the outreach centre, and finally to the upazila health complex. There are weekly meetings at the upazila level for the compilation of sheets and performance evaluation. A consolidated report is sent by the Upazila Health and Family Planning Officer to the Civil Surgeon, and from there to the EPI HQ. These are scrutinised by the Medical Officer and entered into the computerised data reporting system (available throughout the country) in the appropriate format. (Source: Visit to Dhamrai Upazila District Complex, District of Dhaka)

Figure 5.9: Disbursed GAVI ISS funds, ISS spending and DTP3 coverage rates, 2001-08[37]



Another area of GAVI value add is the improvement of the quality of data reporting and monitoring for immunisation, as a result of the first DQA process. The transition to DQS has also enabled the training of a large number of sub-national health officers on data reporting.

5.4. GAVI CSO support

Bangladesh has not applied for GAVI Type A Civil Society Organisation (CSO) support, and is not one of the pilot countries eligible for Type B support. There is a general lack of awareness regarding this window of GAVI support, both among the civil society and government officials. Moreover, the Government has little incentive to go through the application process in order to procure funds that are small in size, and are channelled to the NGOs.

Given the active engagement of the CSO sector in healthcare in Bangladesh, it is believed that funding CSOs directly might be particularly beneficial in terms of increasing immunisation coverage in remote areas, advocacy/ awareness building, etc. Since the adoption of the health Sector Wide Approach (SWAp), the CSOs generally no longer receive direct funding from donors and are required to access the pooled fund on their own (with the exception of the Global Fund that finances CSOs through its dual track financing initiative).

Figure 5.10 below provides some lessons from the Global Fund's experience of financing CSOs for its programs in Bangladesh.

[37] Data sources: (i) Figures for ISS disbursed funds sourced from "CEPA - GAVI Phase I & II consolidated approvals & disbursements" spreadsheet, received from the GAVI Secretariat. (ii) DTP3 coverage rates are WHO/UNICEF estimates. (iii) ISS spending figures sourced from country APRs for Bangladesh.

Figure 5.10: Global Fund CSO experience in Bangladesh

Lessons from Global Fund's experience in Bangladesh

- CSOs are eligible to be Principle Recipients (PRs) of Global Fund (GF) grants as long as they meet minimum requirements in terms of capacities and systems. Funds are disbursed directly to CSO PRs. For instance, Save the Children (STC) is currently a PR of GF in Bangladesh.

- STC further disburses funds to seven local NGO consortiums and manages their grant implementation. Thus, there is a network of CSOs that receive funds and deliver services.

- GF has rigorous monitoring and evaluation mechanisms and the same apply to CSO PRs. Each PR monitors the performance of its sub-PRs. PRs and their sub-recipients are rated based on financial and programmatic performance, and subsequent tranches of funding are contingent on good performance.

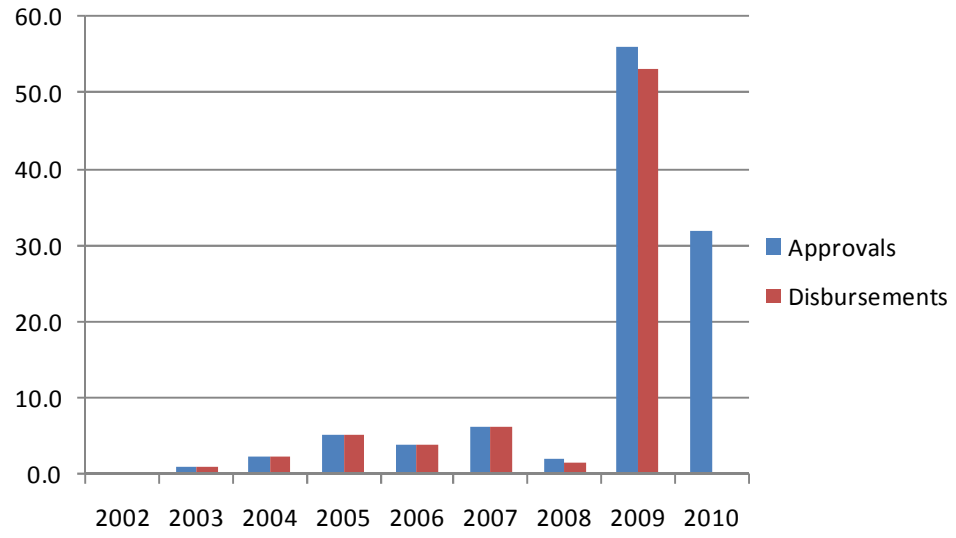
- GF awards well-sized grants to CSOs and there is flexibility in the use of funds. STC has been awarded a 5-year grant worth US$40m in January 2010.

6. ASSESSMENT OF GAVI VACCINE SUPPORT TO BANGLADESH (SG 2)

GAVI's second strategic goal (SG2) is to: 'accelerate the uptake and use of underused and new vaccines and associated technologies and improve vaccine supply security'.

This section provides a description of the vaccine support received by Bangladesh as well as an assessment of the program's results and value add. Bangladesh has been receiving NVS support from GAVI since 2003. Total support worth US$73.3m has been provided between 2003 and 2009. Figure 6.1 shows approvals and disbursements made under this window across the years of support.

Figure 6.1: ***NVS*** *- GAVI approvals and disbursements data* ***($m)***



6.1. Description of GAVI support for vaccines

Table 6.1 outlines GAVI's support to Bangladesh in relation to the introduction of Hepatitis B in the year 2003, and Hib vaccine in pentavalent form in 2008.

Table 6.1: Introduction of underused vaccines

New/underused vaccine	Year of introduction	Total disbursement (US$m)	Vaccine Introduction grant (Amount in US$m/uses)
Hepatitis B (Hep B)	2003	20.2	0.1 (spent on training, development of material, advocacy, collection of baseline information)[38]
Pentavalent	2008	51.8	1.3[39]

[38] A total of US$0.5m was required for these activities, of which US$0.4m was covered through the ISS account.
[39] The funds were received on 15 December 2008.

6.2. Assessment of GAVI vaccine support

6.2.1. Description of application and approval process

The application for the introduction of Hepatitis B vaccine was made in April 2001, along with the application for ISS funding[40]. In 2006, an application was submitted for the Hepatitis B single dose vaccine in pentavalent form. We understand that the government is considering the introduction of rota, pneumo, Hep B burst dose, and Measles second dose vaccines in 2011.

There was a delay in the introduction of the Hepatitis B vaccine. The first approval was for a DTP-HepB combo but this was later changed to a monovalent on account of a global shortage of the combo vaccine. Following this change, the selection of areas on a limited scale and finalisation of a political leader to launch the vaccine took some time. Moreover, polio eradication activities were a priority in Bangladesh during that period.

However, the introduction of these vaccines into routine immunisation has by and large been reported to be smooth. No major problems were reported at the national or sub-national levels. It is believed that the staff has been adequately trained and logistics in terms of storage, cold chain etc., and vaccine delivery has been managed well. The doses per vial came through as required by the country, and the shipments were planned in advance in accordance with storage capacity. The smooth introduction is also attributed to the already existing well-functioning immunisation systems in Bangladesh.

6.2.2. Results and value add of GAVI NVS support

As a result of GAVI NVS support, Bangladesh has successfully introduced the Hepatitis B vaccine (2003) and the pentavalent vaccine (2008) in its routine immunisation program. Funds were provided by GAVI not just for the vaccines, but also for overall logistics support.

The general view of GAVI stakeholders in Bangladesh, particularly the Ministry of Health, is that NVS has been a major area of GAVI's value add in the country. Without the existence of GAVI, Bangladesh would not have been able to introduce these new and underused vaccines.

Vaccine adoption

Awareness regarding new and underused vaccines has increased as a result of GAVI support. Specifically, the Alliance's role in adoption of these vaccines has been to:

- Support the assessment of disease burden for Hep B and Hib, and show its linkages to the government goals on reduction of child mortality. WHO supports with disease surveillance and pays for the SMOs.
- Subsidising the cost of the vaccine, so that the Government pays only the small co-financing contribution (without such support, Bangladesh could not have afforded the introduction of these vaccines).

[40] Description of process/organisation involved in 5.3.1.

Vaccine introduction

Bangladesh required a lot of preparation and increase in staff capacity to introduce the new vaccines. Hep B vaccine was introduced in phases, which proved slow and cumbersome. Learning from this, pentavalent was introduced nation-wide in a single roll-out. GAVI's new vaccine introduction grant helped in training and orienting health workers. CIDA's support to GOB in increasing EPI cold storage capacity also helped in introduction of these new vaccines. WHO and UNICEF provided technical assistance. The coordinated working of country GAVI partners with the government is viewed as a unique success factor of its EPI program.

The pentavalent vaccine, being a single dose vaccine, is particularly suitable in the Bangladesh context because most immunisation is outreach-based. The wastage rate of this vaccine has been reported to be a lot lower than that of BCG or measles vaccines that have wastage rates as high as 80%.

As per the 2008 APR, GAVI undertook the following activities in relation to introduction of the above mentioned vaccines, phasing-in, service strengthening etc.:

- Mass communication activities were conducted in 2005 by EPI with assistance from UNICEF.
- Training of managers, supervisors, and field workers at the regional and field level was conducted prior to vaccine introduction.
- In November 2008, WHO conducted a Training of Trainers (ToT) on EVSM/VMA (Vaccine Management Assessment) to national core staff, followed by field assessments by the participants in order to master the VMA tool and to better understand the current practices in vaccine management.

Vaccine prices

While officials at the MoHFW believe that the introduction of new vaccines has helped in bringing down the price of substitute vaccines, further reductions would be essential to make these vaccines affordable by a poor country such as Bangladesh. For example, it is expected that the pentavalent prices would fall from $3/dose to about $1.8/dose.

7. SUSTAINABILITY OF GAVI FUNDING AT THE COUNTRY LEVEL (SG 3)

GAVI's third goal relates to financing of its programs, and is to 'increase the predictability and sustainability of long-term financing for national immunisation programs'. The focus of the country-level evaluation is to analyse to what extent GAVI has promoted and increased the sustainability of immunisation funding in the country. We undertake this analysis by reviewing the Bangladesh cMYP and collating feedback from the country visit on sustainability.

7.1. Review of Bangladesh's comprehensive Multi-Year Plan (cMYP) 2008-10

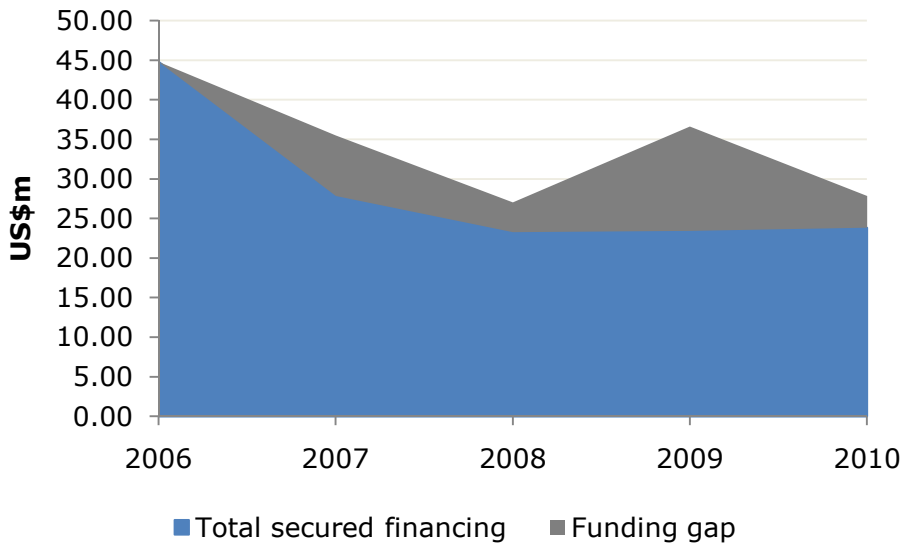
The cMYP for immunisation is linked to the national Strategic Investment Plan (SIP) and the Program Implementation Plan (PIP), and has been developed within the framework of the HNPSP. The cMYP presents an analysis of the current state of immunisation sector in the country and key program issues to be addressed. It also contains the costs of the immunisation program and financial scenarios to guide the investments of MoHFW and other partners, to ensure sustainability and high performance.

The costing and financing analysis indicates that implementation of the Plan would imply increased costs over the 2008-10 period. The increase in costs are mainly driven by new vaccine introduction, supplementary immunisation activities and increase in number of children to be vaccinated due to anticipated coverage improvement and increase in annual birth cohort.

A total funding gap of US$28.6m (17% of the total requirement of US$171.8m) is estimated for the period 2006-10. The total secured funding amounts to US$143.3m of which the contribution of the government is close to 35% (US$50.8m) and GAVI contributes 17% (US$24.7m).

Figure 7.1 shows the levels of secured financing and estimated funding gap for 2006-10.

Figure 7.1: Estimated funding gap, 2006-10



Source: Bangladesh cMYP costing and financing tool, October 2005

With respect to financing, the key barriers laid down in the Plan are as follows:

- With the end of GAVI Phase I support, a funding gap is likely.
- Resource constraints are anticipated, especially with respect to new vaccine introduction.

The Plan seeks to address these gaps through increased GoB support for immunisation, and opportunities for funding through GAVI Phase II and HSS funds. It is planned to negotiate for a possible 10% annual increase in GoB funding, with a goal to fully fund vaccine procurement through government funds by 2015. The bulk of remaining program operational costs may be covered by additional support mobilised from other sources.

7.2. Stakeholder views on the sustainability of GAVI funding

Most stakeholders are of the view that sustainability of GAVI funding in Bangladesh is difficult to achieve. It would be tough for Bangladesh to self-fund entirely the immunisation activities that are currently being funded by GAVI. The co-financing policy is a step in the right direction as it is one of the factors the government considers in introducing a new vaccine.

- It is pointed out that the health budget of the country is mostly donor-funded, and the funding is likely to come from one or the other donor after GAVI ends its support. Developmental activities in Bangladesh are funded by the pooled fund or parallel/ bilateral funds. Hence, it might not be straightforward to secure greater allocation of money for immunisation.
- There is particular concern regarding the sustainability of new and underused vaccines. Given the high cost of GAVI supported vaccines and that the per capita government expenditure on all essential health services is just US$4.28, it seems unlikely that Bangladesh would be able to afford these vaccines on its own. However, it is recognised that GAVI has contributed to developing 'sustainable systems and processes' for delivery of these vaccines.
- Government officials felt that sustainability is possible only by the reduction of vaccine prices. The government is trying to encourage local vaccine producers and suggested that GAVI could consider providing technical assistance to improve capacity of local pharmaceutical companies to produce new and underused vaccines.

An important success in terms of sustainability is the INS program where, since the end of GAVI INS funding, the government has been able to sustain financing of safety kit from its own budget (procuring it from a local manufacturer).

8. GAVI'S STRUCTURES AND PROCESSES IN BANGLADESH (SG 4)

This section describes the GAVI institutional structures in Bangladesh and the role of technical partners in proposal development and grant implementation. There is also a discussion of the key strengths and weaknesses of the structures and processes, and the working of GAVI's Alliance model at the country level.

8.1. Institutional structures

They two key institutional structures in Bangladesh that are involved in the proposal development, implementation, monitoring and reporting processes with respect to GAVI are the ICC and the HNP Forum (HSCC equivalent).

The current ICC at Bangladesh was established in 1985, and its major function is to strengthen immunisation programs in the country and coordinate the activities of all partners in order to achieve the national immunisation goals. The ICC comprises the MoHFW, MoF, Ministry of Local Government, Rural Development and Cooperatives, Ministry of Forestry and Environment, Ministry of Education, BRAC, DFID, International Centre for Diarrhoeal Disease Research (ICDDRB), CIDA, Government of Japan, World Bank, Rotary international, UNICEF, USAID, and WHO. There are sub-committees within ICC such as the Technical Sub Committee, Recruitment Sub Committee, Financial Management Sub Committee and the Procurement Sub Committee. The frequency of meetings is about four times in a year.

Bangladesh has a National Committee on Immunisation headed by the Health Secretary that makes key decisions on EPI. The ICC is responsible for development/ approval of all GAVI program proposals except for HSS, guiding and coordinating implementation of programs, and monitoring and evaluation. The feedback on the functioning of ICC has been positive. ICC as well as its sub-committees meet frequently, and there are detailed discussions and planning with respect to routine vaccination.

The HSS proposal development process was led by the MoHFW, with inputs from development partners, NGOs and sub-national health officers. The final proposal was endorsed by the HNP Forum, which is chaired by the Secretary of MoHFW and composed of representatives from various ministries, development partners, UN departments, specialised agencies and NGOs. There has been less positive feedback in relation to the HNP Forum on account of the following reasons:

- The Forum has met less frequently and it was felt by some member donors that it should have overseen the HSS application/ disbursement process more effectively to prevent/ reduce the delay in signing the FMA aide-memoire.
- Having two separate institutional bodies for GAVI activities – ICC and HNP Forum – increases duplication and reduces coordination between the health systems and immunisation focused programs.

8.2. Stakeholder views on the 'Alliance' model at the country level

A majority of the stakeholders in Bangladesh believe that the multi-stakeholder partnership model of GAVI is working reasonably well at the country level. Broadly, the alliance between the government, WHO, and UNICEF is effective. However, there is limited involvement of the CSO and private sector at country level.

A few issues that were pointed out are:

- A few government and donor officials were of the view that GAVI should have an in-country office or representative in order to enable better coordination and communication, given its large operations. Alternatively, GAVI could assign the grant management and coordination role to one of the implementing partners in country. Some others felt that if GAVI's oversight is strengthened, it might not need country presence as the partners are working well towards its goals.
- It is acknowledged that there is a potential conflict of interest in the role of WHO and UNICEF in the GAVI processes, since they are a part of the ICC that endorses proposals made to GAVI, and they also receive money from GAVI for implementation. The ICC/Technical Sub Committee does serve as a control mechanism in this regard.
- Most donors felt that GAVI's Alliance model at country level works better than the Global Fund Country Coordination Mechanism (CCM), which is less transparent, meets less frequently, and does not consult on issues with all stakeholders. Unlike the ICC, it does not have technical sub committees that deliberate on issues at the technical level. This is seen as a value add of GAVI, in whose absence, the partners may not have worked so well together towards achieving immunisation and child health objectives.

8.3. Country level advocacy

Country feedback suggested that the EPI program in Bangladesh is supported by mass media communication and social mobilisation activities. The Government, supported by UNICEF and WHO, conducts mass media coverage at national level, supplemented by some door to door visits to increase awareness on vaccination. GAVI's vaccine introduction grant has been used to develop communication material for print media at district level, conduct workshops in districts, etc.

The two advocacy related areas where GAVI could have done better are:

- Greater awareness building and publicity efforts should have been undertaken when the pentavalent vaccine was introduced. There was some confusion among mothers, particularly in rural areas, on the most appropriate dosage of the vaccines.
- Recently, the uncertainties around GAVI's finances and the temporary suspension of new program approval have created some negative publicity whether GAVI can sustain the funding of new vaccines in Bangladesh. Clear messaging in this area is vital as part of the country level advocacy.

9. CONCLUSIONS

This section brings together the findings on results and value add across GAVI programs in Bangladesh. Table 9.1 below consolidates the evidence from our analysis on areas where GAVI has demonstrated relatively better or weaker performance across its four Strategic Goals.

Table 9.1: Performance of GAVI programs in Bangladesh

Strategic Goal	Positive results/value add	Weaker results/value add
SG1: Health systems strengthening	• INS led to introduction of national policy on injection safety; only INS donor • Sustained use of safety kits in immunisation after INS support • ISS led to stronger immunisation systems and higher coverage, especially in remote areas • Reward-based ISS funding incentivised GoB to prioritise routine immunisation, at least during the initial period of support • Flexibility of ISS funds has enabled government to use the money efficiently in filling gaps in implementing national plans – e.g. enhanced quality of immunisation program (e.g. financing cold storage, other logistics) • Capacity-building in information capture and reporting at all levels of service delivery through DQA	• Limited success in INS waste safe disposal and management • Delay in disbursement of HSS funds • Incentives of reward-based ISS funding reduces in later years; difficult to get additional rewards once high levels of coverage achieved • Greater flexibility of funds leads to greater chances of abuse and corruption, particularly when governance and accountability systems are weak • Lack of awareness regarding CSO window among government and civil society • Given the small size of grants, GoB has little incentive to apply for CSO funds to channel money to NGOs
SG2: Vaccine support	• Successful introduction and adoption of Hep B and penta vaccines in routine immunisation	• Further reduction in price of vaccines required to enable affordability
SG3: Financing	• Safety kits funded from a local manufacturer through GoB's own funds since INS support ended	• Health budget is mostly donor-funded; particular concern regarding sustainability of new and underused vaccines at current high prices. However, co-financing policy is a step in the right direction
SG4: Added value as a global Public Private Partnership (PPP)	• Alliance model works more effectively and transparently than the Global Fund's CCM • Well-functioning ICC and its technical sub-committees – frequent meetings, detailed discussions and planning with respect to routine vaccination	• Scope for increased participation by private sector and civil society • Two institutional bodies i.e. ICC and HNP forum - increases duplication and creates coordination problems • HNP forum could have overseen the HSS application/disbursement process to prevent/reduce the delay in signing the FMA aide-memoire

ANNEX A.1: DEMOGRAPHIC PROFILE

Table A.1.1.: Demographic statistics, 2000- 2007

Indicator	2000	2004	2005	2006	2007	2009
Population (in million)	130	135	137	139	143	144
Natural population growth (%)	1	2	1	1	2	1
Crude birth rate (per thousand)	19	21	21	21	20	-
Crude death rate (per thousand)	5	6	6	6	6	-
Total fertility rate (per women)	3	3	3	2	2	-
Life expectancy (both sexes)	64	65	65	65	67	-

Source: Bangladesh Economic Review 2007; Report on Sample Vital Registration System, 2004; Statistical Yearbook of Bangladesh 2007, BBS, Statistical Pocket book of Bangladesh 2008, BBS, Country Partnership Strategy Midterm Review Bangladesh 2006-2010, Asian Development Bank, page 19; Population Census 2001, BBS

ANNEX A.2: STRUCTURE OF THE HEALTH SECTOR

A.2.1: The Health and Family Planning Management Structure in Bangladesh[41]

This section provides an overview of the institutional structures and key personnel involved in the health and family planning management sectors, key providers, and health facilities available in Bangladesh.

The Secretariat: The Honourable Minister is the Chief Executive of the Ministry of Health and Family Welfare. The Secretary, who heads the Secretariat, is also the Principal Accounting Office of the Ministry. The Secretariat is staffed by civil servants from within the Civil Service system.

Directorates:

i. Directorate General of Health Services: Supervises all health implementation activities;

ii. Directorate of Family Planning: Supervises, besides family planning, a significant part of maternal and child health services;

iii. Directorate of Drug Administration: Supervises national drug regulation and manufacture; and,

iv. Directorate of Nursing Services: This directorate oversees nurses as a profession.

The Directorates are (almost entirely) staffed by professionals and technicians. The Directorates are based in Dhaka and are housed separately from the Secretariat and from each other.

Six Regions (Divisions): Divisional Directors from both Health and Family Planning (FP) Directorates; Responsible for overall support and HRD functions, but have no direct line-management role in service provision.

64 Districts: Consist of separate management structures for Health and FP. District health management (Civil Surgeon) reports to the Health Directorate, and is responsible for general health services and the district level referral hospitals. Family planning management (Deputy Director FP) reports to FP Directorate and is responsible for FP and related Maternal Child Health (MCH) and reproductive health services.

397 Rural Upazilas: Upazila Health Complexes (31-50 hospital beds each; of which 6 are reserved for MCH/FP) serve as the first-level referral level facility and provide outpatient general health services, MCH services and inpatient care.

Unions and Wards: Union-level Health and Family Welfare Centres (HFWCs) are established based on administrative sub-divisions, regardless of population sizes. Community Clinics are intended to serve a population of about 6,000. Services provided at this level are mainly EPI, MCH, FP and limited curative care. Some HFWCs are staffed and equipped for normal deliveries, obstetric first aid and adolescent health services.

[41] Source: HNP Strategic Investment Plan (July 2003 – June 2010), November 2004, pg 17.

Table A.2.1.: Key healthcare providers in Bangladesh

Government of Bangladesh	Private	NGOs
University and Medical College Hospitals	Private Clinics and Hospitals	NGO Hospitals
District Hospitals	Private Practitioners	NGO clinics
Upazila Health Complex	Traditional Providers	
Union Health and Family Welfare Center	Homeopathic Providers	
Community Clinics	Unqualified providers	
Specialized hospitals	Drug Retail Outlets	
Other facilities	Retail sale of other medical goods	
Health facilities in other ministries and autonomous corporations		

Table A.2.2: Outpatient public health facilities, 2008

Type of Facility	No. of facility
Under DGHS	
Rheumatic Fever and heart disease	1
School Health Clinics	23
Urban Dispensaries	35
Union sub-centers	1,362
Total	1,421
Under DGFP	
Community Health Facility	3,500
Maternal and Child Welfare Center	97
MCH-FP Clinic	471
NGO clinic supported by DGFP	177
Model Clinic	8
Hospital	2
Total	4,255
Grand Total	5,676

Source: Health Bulletin 2009, Management Information System, Directorate General of Health Services, page 47

Table A.2.3: Number of NGOs working in the health sector

Type of NGO	2000	2001	2002	2003	2004	2005	2006	2007
Registered with NGO Bureau	351	380	401	404	406	415	428	444
Registered with Social Welfare	3,687	3,682	3,685	3,698	3,710	3,702	3,719	3,732
Total	4,038	4,062	4,086	4,101	4,116	4,117	4,147	4,176

Source: Bangladesh National Health Accounts 1997-2007, unpublished report

ANNEX A.3: HEALTH SECTOR EXPENDITURE AND FINANCING

This section of the annex presents detailed data on the amount, growth and financing of THE over the years, THE as a proportion of GDP, and the composition of household OOP expenditures.

Table A.3.1: Total Health Expenditure, GDP, annual growth rates and share of health in GDP, 2000-2007

Year	Total Health Expenditure		GDP		
	Amount ($ Million)	Nominal Growth rate (%)	Amount ($ Million)	Nominal Growth rate (%)	Ratio of Health Expenditure to GDP (%)
1997	1,140		42,319		2.7
1998	1,179	3	44,034	4.1	2.7
1999	1,237	5	45,713	3.8	2.7
2000	1,302	5	47,125	3.1	2.8
2001	1,375	6	46,988	-0.3	2.9
2002	1,445	5	47,563	1.2	3.0
2003	1,549	7	51,914	9.1	3.0
2004	1,734	12	56,494	8.8	3.1
2005	1,907	10	60,386	6.9	3.2
2006	2,071	9	61,975	2.6	3.3
2007	2,331	13	68,445	10.4	3.4
Average annual growth rate					
1998-2002		5		2.4	2.8
2003-2007		10		7.6	3.2
1998-2007		7		5.0	3.0

Source: Bangladesh National Health Accounts 1997-2007, unpublished report

Table A.3.2: Total Expenditure on health by financing agent, 1997 – 2007

Year	Public sector		Households		Private firms		NGO		Rest of World		THE
	$m	Row %	$m	Row %	$m	Row %	$m	Row %	$m	Row %	$m
1997	414	36	646	57	14	1	13	1		5	1,140
1998	403	34	683	58	14	1	15	1	63	5	1,179
1999	401	32	730	59	11	1	18	1	77	6	1,237
2000	402	31	770	59	19	1	20	2	91	7	1,302
2001	429	31	805	59	13	1	23	2	105	8	1,375
2002	439	30	852	59	13	1	22	2	118	8	1,445
2003	428	28	941	61	17	1	25	2	138	9	1,549
2004	497	29	1,036	60	17	1	27	2	157	9	1,734
2005	487	26	1,214	64	19	1	29	2	159	8	1,907
2006	577	28	1,288	62	20	1	29	1	157	8	2,071
2007	599	26	1,499	64	24	1	30	1	179	8	2,331

Source: Bangladesh National Health Accounts 1997-2007, unpublished report

Table A.3.3: THE as percentage of GDP (current price) by financing agent, 1997-2007

Year	Public Sector	Households	Private Firms	NGOs	Rest of World	THE as % of GDP
1997	1.0	1.5	0.0	0.0	0.1	2.7
1998	0.9	1.6	0.0	0.0	0.1	2.7
1999	0.9	1.6	0.0	0.0	0.2	2.7
2000	0.9	1.6	0.0	0.0	0.2	2.8
2001	0.9	1.7	0.0	0.0	0.2	2.9
2002	0.9	1.8	0.0	0.0	0.2	3.0
2003	0.8	1.8	0.0	0.0	0.3	3.0
2004	0.9	1.8	0.0	0.0	0.3	3.1
2005	0.8	2.0	0.0	0.0	0.3	3.2
2006	0.9	2.1	0.0	0.0	0.3	3.3
2007	0.9	2.2	0.0	0.0	0.3	3.4

Source: Bangladesh National Health Accounts 1997-2007, unpublished report

Table A.3.4: Composition of household OOP, 2000-2007 (in million US $)

	2000	2001	2002	2003	2004	2005	2006	2007
Public Hospital	4	4	4	4	5	5	5	9
Private Hospital	51	63	85	103	124	183	206	236
Public Doctors	0	0	0	0	1	1	1	2
Private Doctors	83	85	87	96	105	114	118	133
Private Dental Providers	2	2	2	3	3	4	4	5
Homeopathic and Ayurvedic	23	22	22	23	25	26	26	29
Diagnostic and Imaging Services	51	53	55	62	69	76	81	93
Pharmacies	541	557	574	623	675	772	809	949
Other Medical Supplies	15	18	22	26	30	33	37	44
Total Household Expenditure	770	805	852	941	1,036	1,214	1,288	1,499
Percentage Distribution								
Public Hospital	1	0	1	0	0	0	0	1
Private Hospital	7	8	10	11	12	15	16	16
Public Doctors	0	0	0	0	0	0	0	0
Private Doctors	11	11	10	10	10	9	9	9
Private Dental Providers	0	0	0	0	0	0	0	0
Homeopathic and Ayurvedic	3	3	3	2	2	2	2	2
Diagnostic and Imaging Services	7	7	6	7	7	6	6	6
Pharmacies	70	69	67	66	65	64	63	63
Other Medical Supplies	2	2	3	3	3	3	3	3
Total Household Expenditure	100	100	100	100	100	100	100	100

Source: Bangladesh National Health Accounts 1997-2007, unpublished report

ANNEX A.4: MAIN HEALTH POLICY DEVELOPMENTS

The table below outlines the key objectives, indicators, targets and achievements, as laid down under the HNSP.

Table A.4.1: HNSP key objectives, indicators, benchmarks, and achievements

HNPSP Priority Objectives	Units of Measurement	Benchmark (with reference period and source)	Achievement with reference period and source	Projected Target Mid 2011
Reducing maternal mortality	Proportion of births attended by skilled health personnel	15.5% (BDHS 2004	18% (BDHS 2007)	40%
	Maternal deaths per 1,000 live births	3.2 (BMMS, 2001)	2.75 (ESD, HS 2005)	2.4
Reducing the total fertility rate	Lifetime number of births per woman at current period age – specific fertility rates	3.00 (BDHS 2004)	2.7 (BDHS 2007)	2.2
Reducing malnutrition	% of underweight children age 6 to 59 months (weight-for-age z- score ,-2)	50.9% (child nutrition survey of Bangladesh 2000)		36%
	% of severely underweight children age 6 to 59 months	12.9% (child nutrition survey of Bangladesh 2000)		<2%
Reducing infant and under-five mortality	Infant deaths per 1,000 live births	65.0 (BDHS, 2004)	52 (BDHS 2007)	37
	Deaths in children under 5 per 1,000 live births	88.0 (BDHS, 2004)	65 (BDHS, 2007)	52
Reducing the burden of HIV/AIDS, TB, malaria and others diseases	Case detection: proportion of estimated new smear positive TB cases detected in a given year	38% (NTP, 2003)	72% (NTP 2007)	70%
	Cure rate: proportion of registered smear positive TB cases successfully treated under DOTS in a given year	83.7% (NTP, 2003)	92% (NTP 2007)	Over 85%

Source: Year Book -2008, Management Information System, Directorate General of Health Services, page 9

ANNEX A.5.: KEY HEALTH SECTOR DONORS

The tables below provide data on total disbursements made by various development partners over the years in the health sector in Bangladesh, share of health budget in the total program budget of the donors, commitments to HNPSP and an outline of the current health sector activities being carried out by the partners.

Table A.5.1.: Annual disbursement of health expenditure: major development partners 2003-04 to 2006-07

Development partner	Total disbursement (in million US$)	Health budget as % of total program	Percentage share of disbursement
2006-07			
Kfw (GDC)	-		-
World Bank	74.6	2	27.6
EC	51.1	48	18.9
DFID	49.6	24	18.4
USAID	29.3	N/A	10.9
WHO	26.6	93	9.8
SIDA	18.4	64.7	6.8
Netherlands Embassy	12.7	16	4.7
UNFPA	4.7	64.03	1.8
ADB	1.6	1.48	0.6
GTZ	0.9	17	0.3
AusAID	0.4	14.75	0.1
Total	270.0	100	
2005-06			
World Bank	82.4	3	44.6
DFID	34.1	16	18.4
USAID	28.9	N/A	15.6
SIDA	13.8	40	7.5
Netherlands Embassy	11.8	20.8	6.4
ADB	6.4	0.98	3.5
UNFPA	5	71.84	2.7
EC	1.2	2	0.7
WHO	0.7	91	0.4
AusAID	0.4	16.25	0.2
GTZ	0.4	4.5	0.2

Development partner	Total disbursement (in million US$)	Health budget as % of total program	Percentage share of disbursement
Kfw (GDC)	-	44	0
World Bank	82.4	3	44.6
2004-05			
World Bank	47.9	4	39.6
USAID	31.9	N/A	26.4
WHO	16.7	90	13.8
DFID	7.2	3	6
Netherlands Embassy	6.9	15.6	5.7
SIDA	2.9	12.4	2.4
UNFPA	2.6	54.17	2.2
ADB	2.5	3.33	2
EC	1.9	3	1.6
AusAID	0.4	15.5	0.3
GTZ	0.1	2	0.1
Kfw (GDC)	-		0
Total	120.9	100.0	
2003-04			
USAID	34.5	N/A	36.2
World Bank	22	1	23.1
DFID	13.9	6	14.5
Netherlands Embassy	10.8	11.9	11.3
ADB	3.7	2.1	3.9
UNFPA	3.2	52.81	3.4
SIDA	2.2	10.9	2.4
EC	1.9	2	2
Kfw (GDC)	1.9	18	2
WHO	0.6	90	0.6
GTZ	0.5	10	0.5
AusAID	0.1	9	0.1
Total	**95.4**	**100.0**	

Source: Bangladesh National Health Accounts 1997-2007, unpublished report

Table A.5.2: Development partners commitment to HNPSP, 2005 to 2011

Source	(In million US$) Pooled	(In million US$) Non Pooled	Total	
			In million US$	% share
IDA	320.74		320.74	23.32
DFID & EC	194.8	14.58	209.38	15.23
CIDA	5.05	193.76	198.81	14.46
EU	108.37		108.37	7.88
USAID		90.4	90.4	6.57
WHO		82.01	82.01	5.96
GFATM		76.07	76.07	5.53
SIDA	75.87		75.87	5.52
KFW	55.07	9	64.07	4.66
The Netherlands	45		45	3.27
GAVI		41.83	41.83	3.04
UNICEF		14.68	14.68	1.07
UNFPA	1	10	11	0.8
Investment Income	10.35		10.35	0.75
Govt. of Japan		7.06	7.06	0.51
JICA		6.14	6.14	0.45
ARC		3.77	3.77	0.27
IDB		3	3	0.22
GFD		2.6	2.6	0.19
GTZ		1.53	1.53	0.11
SFD		1.05	1.05	0.08
Sight Savers		1.08	1.08	0.08
ORBIS		0.33	0.33	0.02
Total	**816.25**	**558.89**	**1,375.14**	**100.00**

Source: Year Book -2008, Management Information System (MIS), Directorate General of Health Services (DGHS), Page 11

Table A.5.3: Current donor involvement in health and social protection activities

Other development partners' strategies and main activities			
Multilateral institutions and the UN system		**Bilateral**	
ADB	Urban primary health care; maternal, child and reproductive healthcare; capacity building		
DFID/SIDA/ UNFPA	Urban primary health care		
UNDP	Safety net; disaster response and preparedness	Australia	Food security; SIDR response through WFP, UNICEF, NGOs; support for Rohingya refugees; livelihood support for the ultra poor
UNFPA	Reproductive health	Sweden	Non-discriminatory healthcare for the poor
UNICEF	Program for hard-to-reach children	UK (DFID)	Safely-net program; civil society initiatives for socially excluded groups and extreme poor; access to justice
		USA	Reintegration support for trafficking survivors
		Netherlands	Sexual and reproductive health
		Sweden	Non-discriminatory healthcare for the poor
UNICEF/ WHO	Health Economics Unit (HEU)	GTZ, KFW	HEU
WB	Clinical contraception services delivery		
WB	Family planning field services delivery	CIDA, KFW, USAID	Family planning field services delivery
WB	National Nutrition Program (NNP)	CIDA, JDCF	NNP
WB	Micronutrient and supplementation		
WB, UNFPA WHO	Essential service delivery	CIDA, GTZ, UK (DFID), EU, Netherlands, Sida, KFW	Essential service delivery
WB, UNFPA,	IEC	USAID	IEC
WB, UNFPA WHO	Maternal and child health and reproductive health services	UK (DFID) and EC, JICA,	MCH/RH

Other development partners' strategies and main activities			
	(MCH/RH)		
WB, UNICEF WHO	Hospital services management		
WB, UNICEF WHO	MIS (health services and personnel)		MIS
WB, WHO	Nursing education services		
WB, WHO	Strengthening of drug administration and management	JDCF	Drug administration
WB, WHO	MIS (family planning)		MIS (family planning)
WFP	Income and nutrition support for vulnerable women	Germany	Community policing for protection from crime
WHO	Surveillance system for major communicable diseases; preparedness and response capacity for outbreak investigations and interventions; reduction of health consequence of emergencies, disasters, crises, and conflicts	Canada	Early childhood development; service delivery, with particular focus on poor

Source: Derived from ADB's country partnership strategy midterm review, Bangladesh 2006-2010

ANNEX A.6: STRENGTHS AND WEAKNESSES OF THE HEALTH SECTOR

This section presents an assessment of the health sector in Bangladesh, in terms of its key strengths and weaknesses.

Strengths:

- A well-developed and functional administrative hierarchy of the MoHFW that facilitates delivery of services, monitoring, and collaboration with stakeholders.
- Public awareness efforts on health, nutrition, family planning have been effective through decades of collective effort of the government, NGOs, and the donor community.
- A strong network of NGOs complement government's efforts in community level health delivery and awareness creation, particularly in the areas of maternal and child health, family planning and nutrition.
- Significant growth in the private sector's capacity to provide outpatient and inpatient secondary and tertiary health care, and diagnostic facilities.
- The government's drug policy has contained the price of pharmaceutical drugs, making them more affordable. The availability of drugs is ensured through a robust supply of drugs manufactured locally, and distributed through over 200,000 retail drug stores across the country.

Weaknesses:

- High rates of absenteeism and vacancy in medical staff at public facilities, and extraction of unofficial fees by health service personnel compel patients to seek private sector services or forego treatment altogether.
- Inadequate quantity and poor quality of health support personnel.
- Weak regulatory environment coupled with poor implementation practices allows both public and private health providers to extract economic rent from the consumers (households) of all economic strata. Better protection of consumer rights can ensure considerably lower out-of-pocket medical expenditure.
- Almost two-third of household out-of-pocket health expenditure is on pharmaceutical drugs. Over prescription of antibiotics and a high propensity to self-prescribe are major contributing factors.
- Medical insurance is available on a very limited scale. The absence of medical insurance coupled with limited and poor quality of services at public health facilities contribute to huge economic and financial burden in case of catastrophic illness. Benefit Incidence Analysis suggests that health expenditures are highly regressive in Bangladesh.

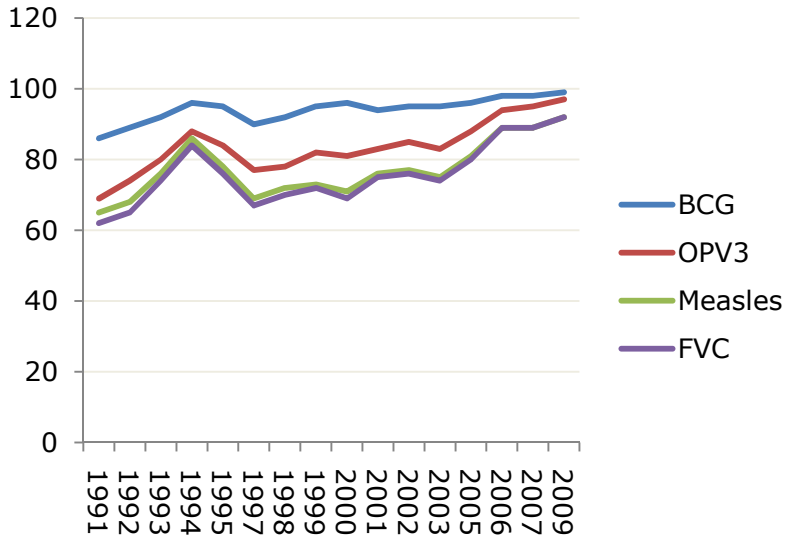
ANNEX A.7: PERFORMANCE OF THE IMMUNISATION SECTOR

This annex provides an overview of the performance of the immunisation sector by presenting trends in coverage levels of various vaccines.

A.7.1. BCG, OPV, measles and FVC coverage

As seen in Figure A.7.1, BCG coverage in children under 24 months of age has been in the range of 86-99% during the period 1991-2009, and has increased steadily since 2001. The percentage of FVC has also shown a general upward trend during the past decade. The coverage rates for BCG, OPV and measles were 97% and 92% respectively, in 2009 (Bangladesh EPI Coverage Evaluation Survey 2009)

Figure [A.7.1]: Trends in National Vaccination Coverage (%) among 12-23 months old children, 1991-2009

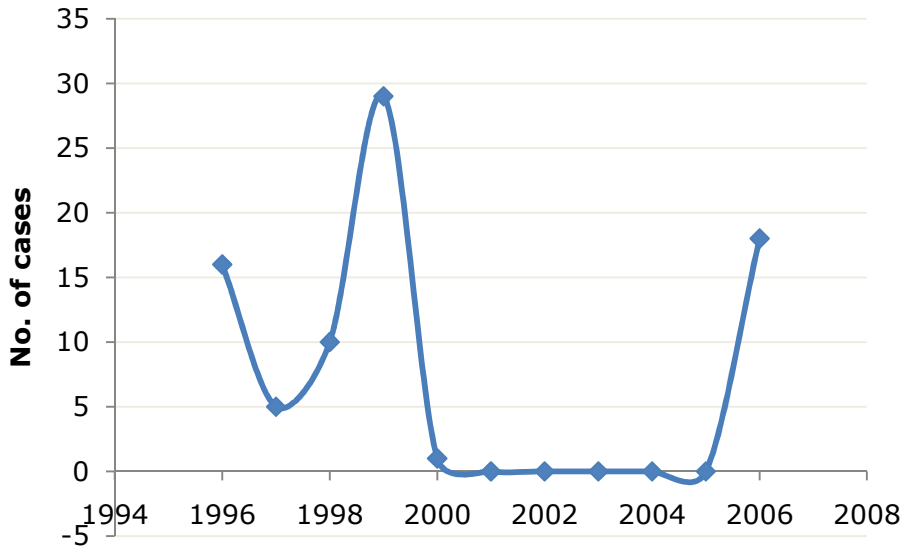


Source: Bangladesh EPI Coverage Evaluation Survey 2009, Prepared by AC Nielsen Bangladesh for the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of Bangladesh, page 27.

A.7.2. Polio coverage

There have been no reported cases of polio in Bangladesh in recent years with the exception of 2006, when 18 cases were reported.

Figure [A.7.2.]:Polio cases in Bangladesh, 1996-2006

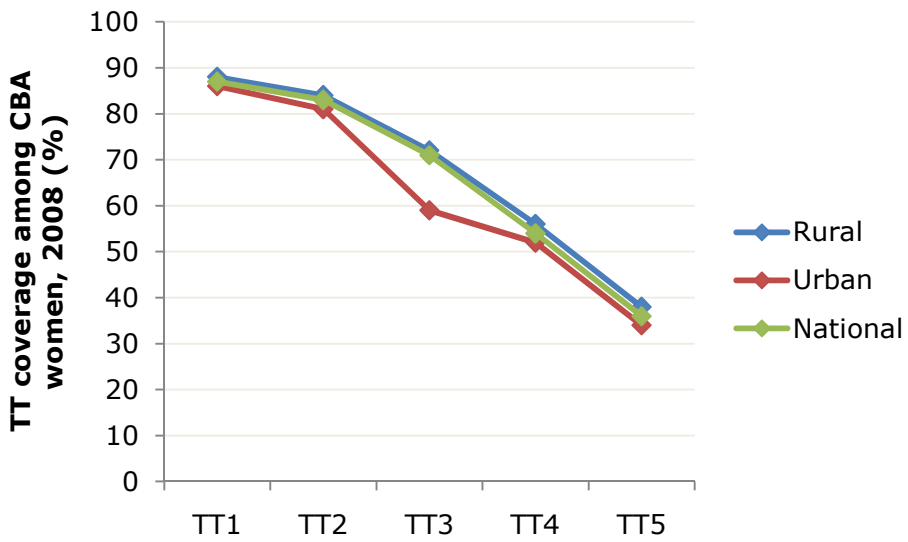


Source: Source: Health Bulletin 2009, Management Information System (MIS), Directorate General of Health Services (DGHS), page 21

A.7.3. TT coverage

The national level TT coverage among women of child bearing age is the highest for TT1 vaccine (87%) followed by TT2 and TT3. The coverage of TT5 is low – around 36% nationally, 38% in rural areas, and 34% in urban locations. Urban coverage is consistently lower than rural coverage for the five types of TT vaccines. The relatively poor urban performance can partly be explained by the absence of outreach health centres (as is the case in rural areas) and the high mobility of urban populace, especially the poor. Immunization services are provided by the local governments through contracted NGO facilities.

Figure [A.7.3]:TT coverage among Child Bearing Age women, 2008 (%)



Source: Health Bulletin 2009, Management Information System, Directorate General of Health Services, page 32

A.7.4. Vaccination coverage levels for 1-year olds

Table A.7.4 provides vaccination coverage rates for 1-year olds for various vaccines.

Table A.7.4.: Coverage of 1-year olds by type of vaccination, 2008

Immunisation	Percentage
1-year old children immunized against: TB, corresponding vaccines: BCG	98
1-year old children immunized against: DPT, corresponding vaccines: DPT 1B	98
1-year old children immunized against: DPT, corresponding vaccines: DPT 3B	95
1-year old children immunized against: Polio, corresponding vaccines: Polio3	95
1-year old children immunized against: Measles, corresponding vaccines: measles	89
1-year old children immunized against: HepB, corresponding vaccines: HepB3	95

Source: www. unicef.org/infobycountry/bangladesh_bangladesh_statistics.html

ANNEX A.8: KEY STRENGTHS AND WEAKNESSES OF THE IMMUNISATION SECTOR

In general, feedback from our field visit highlighted the success of the routine immunisation program in Bangladesh, which has been accorded high priority by the Government and enjoys a high degree of awareness (and demand) by the local population.[42] Coverage rates across vaccines have therefore improved substantially since the 1990s, and the public outreach centres being well equipped to deliver immunisation services.

Strengths:

- Provision of free vaccination through the EPI, and with GAVI assistance, has been of great benefit to the poor.
- High degree of commitment and motivation at all levels of the government to ensure success of the immunisation program.
- Presence of a well-established health administrative tier and facilities of the MoHFW and the Ministry of Local Government have complemented immunisation efforts.
- The donor community has supported the immunisation program over the years. The alliance between the government and donor agencies has complemented policy formulation and implementation.
- Awareness programs regarding the benefits of immunisation have been effective in reaching the targeted population.

Weaknesses:

- Weak management of waste disposal of immunisation programs. There is a lack of technical capacity, inadequate infrastructure inappropriate regulatory and pricing policy in this area.
- The immunisation program is highly donor dependent for technical as well as financial support. Policy directives are driven or influenced by donors.
- Inadequate local capacity for surveillance, monitoring, evaluation, and fund-raising for immunisation activities. High turnover of government officials and difficulty in filling up vacant positions accentuates dependence on external support.
- Heavy dependence on imported vaccines and drugs as local pharmaceutical companies do find it lucrative to produce them. Without reduction in international price on vaccinations, subsidisation of the immunisation program through government resources or donor money will continue to be significant.

[42] As mentioned by a donor, the emphasis on immunisation has sometimes been at the cost of other child/ maternal health services delivery.

ANNEX B: BIBLIOGRAPHY

AC Nielsen Bangladesh, 2009. *Bangladesh EPI Coverage Evaluation Survey 2009*, Prepared for the Directorate General of Health Services, Ministry of Health and Family Welfare, Government of Bangladesh.

Ahmad, Alia, 2007. *Provision of Primary Healthcare Services in Urban areas of Bangladesh- the Case of Urban Primary Health Care Project.*

Ali, Zulfiqar and Sharifa Begum, 2006. *Trends in Poverty and Social Indicators: An Update,* Prepared for Bangladesh Institute of Development Studies.

Asian development Bank, 2009. *Country Partnership Strategy Midterm Review, Bangladesh 2006-2010.*

Bangladesh Bureau of Statistics, 2008. *National Accounts Statistics (Provisional Estimates of GDP, 2007-08 and Final Estimates of GDP, 2006-07).*

Data International Ltd., 2003. *Bangladesh National Health Accounts, 1999-2001*, Prepared for the Health Economics Unit/Ministry of Health and Family Welfare, Government of Bangladesh.

Data International Ltd., 2010. *Bangladesh National Health Accounts, 1997-2007*, Prepared for the Health Economics Unit/Ministry of Health and Family Welfare, Government of Bangladesh.

Government of the People's Republic of Bangladesh, *Annual Progress Reports*, 2002-2008.

Hossain, Najmul, 2008. *Attaining United Nations Health and Education MDG Goals- Bangladesh's Score Card.*

Management Information System, Directorate General of Health Services, 2009. *Health Bulletin 2009.*

Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, *GAVI HSS Application*, 2008.

Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, *Comprehensive Multi-Year Plan 2008-10.*

Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, 2004. *HNP Strategic Investment Plan July 2003-June 2010.*

Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, *Proposal for support submitted to GAVI for ISS and NVS*, 2001

Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, *Proposal for support submitted to GAVI for INS*, 2003

Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, *Year Book, 2008.*

National Institute of Population Research and Training, Mitra and Associates and Demographic and Health Surveys, 2009. *Bangladesh Demographic and Health Survey 2007.*

STI/AIDS Network of Bangladesh, 2006. *Member's Directory 2006.*

The Federation of NGOs in Bangladesh, 2006. *NGO Directory.*

World Health Organisation, 2008. *World Health Statistics 2008*.

World Health Organisation, 2009. *World Health Statistics 2009*.

ANNEX C: LIST OF CONSULTEES

Table C.1: Country Evaluation consultees

Stakeholder category	Organisation	Position	Person
Government	MOHFW	Joint Secretary	Dr. Syed Umar Khayam
		Joint Secretary and Line Director, Health Economics Unit	Dr. Md. Anwar Hossain Munshi
		Team Leader, Program Support Unit	Dr. M. Abdus Sabur
		Program Manager, EPI	Dr. Abdul Jalil Mondal
		Deputy Chief; Senior Assistant Chief, Planning Wing	Saifuddin Ahmed, Md. Nazrul Islam Sarker
		Upazila Health and Family Planning Officer	Dr. Shukumar Sarkar
	Sub-national	Civil Surgeon, Dhaka	Dr. Jasimuddin Khan
		Upazila Health and Family Planning Officer	Dr. Shukumar Sarkar
Other Donor Organisations	DFID	Health and Population Adviser	Dr. Shehlina Ahmed
	Canadian High Commission	First Secretary, Development	Hilary Syme
	UNICEF	Immunisation Specialist, Health and Nutrition Section	Dr. Ataur Rahman
	USAID	Senior Clinical Officer	Dr. Shukumar Sarker
	WHO	Medical Officer, IVD	Dr. Serguei Diorditsa
	WHO	Public Health Administrator	Dr. Farank H. Paulin
	World Bank	Health Policy Specialist; Senior Health Economist	Bushra Binte Alam, Tania Dmytraczenko
Civil Society	BRAC	Director, Health Program	Faruque Ahmed
	Save the Children, USA	Country Director	Mr. Kelland Stevenson
	Marie Stopes	Country Management Consultant	Dr. Reena Yasmin
	PRISM (Medical waste management)	Program Coordinator	Tarit Kanti Biswas
Syringe manufacturer	JMI Bangladesh	Managing Director	Md. Abur Razzaq