# PSRBangladesh

# Programme Support Rationale

**[Strategic period (duration of PSR): 2018-2022]**

**The Programme Support Rationale (PSR) presents the rationale and high level objectives for the programming of Gavi's support for the upcoming period (and together with the Vaccine Support Rationale mentioned below), replaces the application forms previously used to request new support).**

- The PSolr is developed approximately once every five years based on and in alignment with the national health and immunisation strategic plan(s) and budgets.
- It incorporates the **joint appraisal** in the year of its review.
- **Stock levels and requests for renewals or product switches need to be reported on the Gavi Country Portal between late March and May 15th, 2017**
- The PSR builds upon robust analysis of country data and evidence of progress made (or persistent challenges) on the coverage and equity situation.
- In parallel to the PSR, the operational workplan & budget and Gavi grant performance framework (GPF) are developed to complement the objectives presented in the PSR. The operational budget and workplan will be updated annually to align with country's operational planning processes, and informed by the joint appraisal.
- The PSR will be reviewed by independent technical experts who will make a recommendation to Gavi on the full portfolio of support for the duration of the PSR, including any current support that needs to be renewed.
- **A complementary Vaccine Support Request will be developed to support requests and Gavi approval for New Vaccines Support nearer the time of their implementation (~12-18 months ahead of launch).**

For more information about the processes supporting the development, review and approval of the support requests consolidated in the PSR, please see **Guidance on Gavi's country engagement framework** (available from the Gavi SCM)**.**A list of mandatory country documents is provided there (Annex 4).

## Signatures – Endorsement of the PSR

Please note that final approval of Gavi's support will require signatures of both the Minister of Health and Minister of Finance or their delegated authority (and Minister of Education for HPV support).

Gavi also requires endorsement of the PSR and the grant performance framework by the relevant government-led Coordination Forum (Inter-Agency Coordinating Committee (ICC), Health Sector Coordinating Committee (HSCC) or equivalent body), through submission of Coordination Forum member signatures together with the minutes of the endorsing meeting.

Signatures and endorsement of the PSR are required before a recommendation for support can be issued by Gavi's independent reviewers.

| ***We, the undersigned, affirm that the objectives and activities in the Gavi PSR are fully aligned with the national health and immunization strategic plans (or equivalent), and that funds for implementing all activities, including domestic funds and any needed vaccine co-financing will be included in the annual budget of the Ministry of Health.*** | |
|---|---|
| **Minister of Health** (or delegated authority) | **Minister of Finance** (or delegated authority) |
| **Name:** | **Name:** |
| **Signature:** | **Signature:** |
| **Date** | **Date:** |

# Part A: Overview of portfolio of support

## 1. Vaccines: Country co-financing and Gavi support requested for current and new Gavi funded vaccines

| 1.1 Current vaccines supported by Gavi | | Estimated projections[1] | | | | |
|---|---|---|---|---|---|---|
| | | 2018 | 2019 | 2020 | 2021 | 2022 |
| *Pentavalent Routine, 2009-present* | Country co-financing (US$) | $1,709,824 | $1,572,099 | $1,840,230 | $2,147,055 | $2,504,915 |
| | Gavi support (US$) | $16,280,074 | $12,811,226 | $12,800,197 | $12,706,378 | $12,563,892 |
| *Pneumo Routine, 2014-present* | Country co-financing (US$) | $4,006,811 | $3,684,065 | $4,312,405 | $5,031,419 | $5,870,030 |
| | Gavi support (US$) | $38,150,808 | $30,021,893 | $29,996,046 | $29,776,191 | $29,442,289 |
| *Rotavirus Routine, from 2018* | Country co-financing (US$) | $458,402 | $1,896,587 | $1,874,781 | $2,187,367 | $2,551,946 |
| | Gavi support (US$) | $4,364,669 | $15,455,522 | $13,040,527 | $12,944,946 | $12,799,786 |
| *IPV Routine, 2014-present* | Country co-financing (US$) | | | | | |
| | Gavi support (US$) | $3,697,969 | $2,956,609 | $3,009,458 | $3,053,243 | $3,097,515 |
| a) Total Country co-financing for current vaccines (US$) | | **$6,175,036** | **$7,152,751** | **$8,027,416** | **$9,365,840** | **$10,926,891** |
| b) Total Gavi support for current vaccines (US$) | | **$62,493,519** | **$61,245,249** | **$58,846,228** | **$58,480,757** | **$57,903,482** |
| **c) Total cost of current vaccines (a+b) (US$)** | | **$68,668,556** | **$68,398,000** | **$66,873,644** | **$67,846,597** | **$68,830,373** |
| **1.2 New vaccine support requested** | | | | | | |
| *Measles-Rubella (MR) Follow-up Campaign MR 10d, October 2019* | Population in the target age cohort (#) | | 15,656,575 | | | 16,555,767 |
| | Target population (first or only dose) (#) | | 15,656,575 | | | 16,555,767 |
| | Target population for last dose (#) | | | | | |
| | Estimated wastage rates | | 10% | | | 10% |
| | Country co-financing (US$) | $ | $ | $ | $ | $ |
| | Gavi support (US$) | | $14,579,654 | | | 16136114 |
| d) Total Country co-financing for new vaccines requested (US$) | | | $823,600 | $1,731,940 | $2,920,503 | $4,195,586 |
| e) Total Gavi support for new vaccines requested (US$) | | | $21,291,270 | $12,046,955 | $17,283,686 | $37,179,897 |
| **f) Total cost of new vaccines requested (d+e) (US$)** | | | **$22,114,870** | **$13,778,895** | **$20,204,189** | **$41,375,483** |
| **1.3 Total cost and co-financing summary** | | | | | | |
| **g) Total Country co-financing for current and new vaccines requested (a+d) (US$)** | | **$5,031,710** | **$7,976,351** | **$9,759,356** | **$12,286,343** | **$15,122,477** |

[1] These estimates provide visibility to the total funding needs that a country should plan to complement the Gavi financing. These estimates are projections and may differ from actual commitments, which are calculated year-by-year and reflected in Gavi decision letters. The source of these estimates is the latest input received from country, with adjustments performed by the Gavi Secretariat (e.g. price updates, supply constraints, etc).

| | | | | | | |
|---|---|---|---|---|---|---|
| h) | Total Gavi support for current and new vaccines requested (b+e) (US$) | $50,867,749 | $82,536,519 | $70,893,183 | $75,764,443 | $95,083,379 |
| i) | Total cost of current and new vaccines requested (g+h) (US$) | $55,899,459 | $90,512,870 | $80,652,539 | $88,050,786 | $110,205,856 |

**1.4 Request for vaccine presentation switches for current support (if applicable)[2]. Please note that this requires further documents** containing cold chain capacity, stock levels of the current product, and a costed activity plan (to submit via the Country Portal in the "Supporting Documents" section).

Gavi aims to meet country's preferences on **vaccine presentation** to the extent possible. When there is not enough supply of a desired product to meet country demand, Gavi will consider the rationale for the switch in order to prioritise supply between countries.

| Desired presentation | Desired introduction month | Rationale for the switch in presentation including any anticipated impact on coverage and equity |
|---|---|---|
| … | … | … |

**1.4 Vaccine presentation and implementation dates: Country to complete all columns for each new vaccine introduction and campaign planned over the duration of the PSR and for which the country seeks support.**

| Programme and type of support | Preferred presentation[3] | Desired date for vaccines to arrive | Planned launch date | Support requested until |
|---|---|---|---|---|
| **MR follow-up SIA** | MR 10 dose/vial LYO | August 2019 | October 2019 (3 weeks) | 2019 |
| **HPV nationwide introduction** | No decision yet | | | |

[2] For a detailed description of the vaccine product profiles, visit the Gavi website (click on 3rd tab): http://www.gavi.org/about/gavis-business-model/vaccine-supply-and-procurement/
[3] For vaccine presentations, please refer to the detailed product profiles available here: http://www.gavi.org/library/gavi-documents/supply-procurement/detailed-product-profiles/

## 2. Financial support

### 2.1 Currently active Gavi financial support (only amounts already approved but not yet completed) Entire table prefilled by Gavi Sec (PO)

| Type of support | Amount approved | Amount disbursed | Amount remaining | Year(s) of support |
|---|---|---|---|---|
| *HSS 1* | *$13,671,500* | *$13,671,500* | *Gavi undisbursed: $0*<br>*Cash in country: $23,119 (May 2018)* | *2009-2016* |
| *HSS 2* | *$22,973,726* | *$14,949,680* | *Gavi undisbursed: $8,024,046* | *2016-2019* |
| *ISS* | *$23,340,200* | *$23,340,200* | *Gavi undisbursed: $0*<br>*Cash in country: $104,956 (May 2018)* | *2001-2017* |
| *HPV Demo Cash Support* | *$333,500* | *$333,500* | *Gavi undisbursed: $25,000*<br>*Cash in country: $153,169 (May 2018)* | *2015-2016* |
| *IPV VIG* | *$2,498,000* | *$2,498,000* | *Gavi undisbursed: $0*<br>*Cash in country: $2,267,512 (May 2018)* | *2014-2017/18* |
| *Pneumo VIG* | *$3,233,500* | *$3,233,500* | *Gavi undisbursed: $0*<br>*Cash in country: $1,814,603 (May 2018)* | *2013-2014* |
| *MR Operational Cost* | *$33,586,500* | *$33,586,500* | *Gavi undisbursed: $0*<br>*Cash in country: $15,684,635 (June 2017)* | *2013-2014* |
| *Measles VIG* | *$1,195,500* | *$1,195,500* | *Gavi undisbursed: $0*<br>*Cash in country: $0 (June 2017)* | *2012-2013* |
| *PCV Product Switch Grant* | *$279,715* | *$279,715* | *Gavi undisbursed: $0* | *2018-2019* |
| *Additional Op Cost for Refugees* | *$451,257* | *$451,257* | *Gavi undisbursed: $0* | *2018* |
| *Rota VIG* | *$2,696,500* | *Funds not yet disbursed due to global supply constraints* | *Gavi undisbursed: $2,696,500* | *TBC* |

### 2.2 New financial support requested Country to complete table below

| **Please note the country's total HSS ceiling for the coming 5 years[4]: (US$ ceiling amount)** | **2018-19** | **2019-20** | **2020-21** | **2021-22** | **Total** |
|---|---|---|---|---|---|
| **Health Systems Strengthening support (HSS)** | | | | | |
| *Objective 1: Support 4th HPNSP sector wide approach (SWAp) through multi-donor trust fund (pooled fund) to strengthen health system* | 7,143,000.00 | 14,286,000.00 | 14,286,000.00 | 14,285,000.00 | **50,000,000.00** |
| *Objective 2: Strengthen service delivery system for improving coverage and equity of immunization services in 16 target districts and 4 target City Corporations* | 5,100,445.20 | 5,553,321.49 | 4,799,291.27 | 4,596,680.65 | **20,049,738.61** |

[4]If circumstances warrant, and the source of the CCEOP country joint-investment is Gavi HSS, this amount should be deducted from the HSS ceiling.

| | | | | | |
|---|---|---|---|---|---|
| *Objective 3: Ensure effective vaccine and cold-chain management and uninterrupted supply of quality vaccines and injection supplies* | 1,458,696.00 | 2,557,695.00 | 1,186,646.00 | 381,744.00 | **5,584,781.00** |
| *Objective 4: Strengthen leadership and management capacity of EPI and Planning Wing of MOHFW* | 259,266.72 | 646,251.04 | 542,696.82 | 468,455.86 | **1,916,670.43** |
| *Objective 5: Strengthen capacity of health system of the country for implementation of VPD surveillance and real-time health management information system* | 548,332.00 | 3,920,213.93 | 4,765,516.25 | 4,043,598.30 | **13,277,660.48** |
| **Total HSS (US$)*** | **14,509,739.92** | **26,963,481.46** | **25,580,150.34** | **23,775,478.80** | **90,828,850.52** |
| CCEOP Gavi joint investment[5] | | | | | |
| • National funds | 0 | 0 | 0 | 0 | **0** |
| • Gavi HSS (with this amount clearly budgeted for within the HSS ceiling to avoid double counting) | 564,242 | 778,160 | 475,031 | 224,508 | **2,041,941** |
| • Other partners | 0 | 0 | 0 | 0 | **0** |
| **Total CCEOP[6] (US$)** | 1,128,485 | 1,556,319 | 950,062 | 449,016 | **4,083,882** |
| *Operational Support for MR follow-up SIA* | | 8,610,708 | | | **8,610,708** |
| **Total HSIS support requested (US$)** | **15,073,981.92** | **36,352,349.46** | **26,055,181.34** | **23,999,986.80** | **101,481,499.52** |

*PSC not included

### 2.3 Data verification options for calculating HSS/Performance Based Funding (PBF) payments Country to complete entire table

| | | | | | |
|---|---|---|---|---|---|
| Use of country admin data (Yes/No): | No | Use of WHO/UNICEF estimates (Yes/No): | Yes | Use of surveys (Yes/No): | No |

[5] CCEOP Gavi joint investment = 50% or 80% of the total amount for CCEOP, depending on the World Bank GNI group (and Gavi co-financing status)
[6] Total CCEOP = CCEOP country joint investment + CCEOP Gavi joint investment

## Part B: Country immunisation system analysis

> **!** The **Gavi Strategy 2016-2020**focuses on increasing **coverage and equity** of immunisation services to reach every child with vaccine support. The analysis presented in **Part B**is key to identifying those areas of low coverage and inequities that may need to be targeted with future Gavi support (described in **Part D**).

### 3. Country contextual information

| | |
|---|---|
| **Years of National Health Plan** | Jul 2017- June 2022 |
| **Years of immunisation strategy** (e.g. cMYP) | 2018-2022 |
| **Start and end dates of fiscal period** | July to June |
| **Timing of annual national operational work-planning** | July to June |
| **Transition and co-financing status** (list the status: initial self-financing, preparatory transition phase, accelerated) | Preparatory Transition Phase |
| **Total annual immunisation budget for Government and partners** (past yr.) | US$97M (2017) |
| **Total health expenditure/per capita** (past yr.) | US$ 37/ US$ 102(PPP) (2015, NHA) |
| **Total spending on routine immunisation per child** (from JRF and UNWPP data) | US$11.24 (2016) |
| **Vaccines** (not financed by Gavi) **in the current immunization schedule** (e.g. OPV) | BCG, OPV, TT, MR |
| **Other status relevant within Gavi** (e.g. PEF tier, Fragility, Ebola, Coverage & Equity) | PEF Tier 3 |

### 4. Status of country's performance against key immunisation indicators

as per the Gavi Strategy (2016-2020), based on the country's updated performance framework (including source and year)

| | |
|---|---|
| **Penta 3 coverage at national level** (Penta 3[7]) | *Admin: 117% (2017)*<br>*Official: 90% (2017)*<br>*Survey: 90.1% (2016)*<br>*WUENIC: 97% (2017)* |
| **Measles containing vaccine** (first dose) **coverage** at national level (MCV1) | *Admin: 116% (2017)*<br>*Official: 92% (2017)*<br>*Survey: 87.5% (2016)*<br>*WUENIC: 94% (2017)* |
| **Drop-out rate** between Penta 1 and Penta 3 | *Admin: 1% (2017)*<br>*Official: 8% (2017)*<br>*Survey: 1.4% (2016)*<br>*WUENIC: 2% (2017)* |
| **Equity of vaccine coverage by geography:** percentage of districts or equivalent administrative area with Penta 3 coverage greater than 80% | *Admin: 100% (2016)* |
| **Equity of vaccination coverage by poverty status:** percentage point difference in penta3 coverage in highest vs. lowest wealth quintile) | *CES 0.8% (2016)* |
| **Vaccination coverage by education status of mother/caretaker:** percentage point difference in penta3 | *DHS Survey:15% (2013)* |

[7]See Annex 3 in CEF Guidance for the minimum requirements for eligibility

| | |
|---|---|
| coverage among children whose mother/caretaker received no education vs. completed secondary education or higher | |
| **Data quality:** percentage point difference between Penta 3 national administrative coverage and survey point estimate | *CES vs admin: 27.9% (2016)* |
| **Country composite score on last Effective Vaccine Management (EVM)** (year and aggregate score) | *EVM 2014: 82%* |

## 5. Coverage and equity situation

Improving sustainable coverage and addressing inequities requires the ability to identify the populations that are not getting vaccinated, understand the bottlenecks or challenges that keep them from being vaccinated, and tailor interventions to address those specific bottlenecks. This section sets the context for targeting specific populations, communities or geographic areas for intensive support in an effort to improve equitable coverage among such groups.

**5.1** Describe national and sub-national evidence on the coverage and equity of immunisation in the country and constraints to improvement. In particular, identify the areas and groups of low coverage or high inequity relative to geographic, socioeconomic, cultural or female literacy considerations, as well as systematically marginalised communities. Specify both the areas and/or populations with low coverage (%) and those with the largest absolute numbers of un-/under-vaccinated children. Among data sources, consider administrative data, coverage surveys, DHS/MCS, equity analyses, Knowledge-Attitude-Practice surveys, and patterns of diseases like measles.

**5.2** Describe the challenges underlying the performance of the immunisation system, including in vaccine supply chain, demand generation/ community mobilisation, data quality/ availability/ use and leadership, management and coordination

**5.3** Describe any issues related to the financing of the immunisation programme that impact the ability to increase coverage, including bottlenecks related to planning, budgeting, disbursement and execution of resources.

**5.4** Describe lessons learned and best practices on effectiveness of implemented activities to improve coverage and equity; recommendations on changes or new interventions that might be required to accelerate progress (include data to support any findings, recommendations)

### 5.1 Coverage and Equity

Achievement of universal health coverage (UHC) for maternal, newborn, child, and adolescent health (MNCAH) services is one of the objectives included in the Government of Bangladesh's (GOB) 4$^{th}$Health, Population and Nutrition Sector Programme (4$^{th}$HPNSP). The country's immunization programme is hailed as a global success with significantly improving coverage, especially after establishment of the Expanded Programme on Immunization (EPI) in 1979. For example, country official estimates for DTP3 coverage increased from 66% in 1999 to 90% in 2017. With strong government ownership at the Directorate General of Health Services (DGHS) of the Ministry of Health and Family Welfare (MOHFW), EPI is maintaining high national coverage levels and reducing drop-out rates. Reported immunization coverage rates, as well as WHO/UNICEF coverage estimates, have remained over 90% for more than ten years.

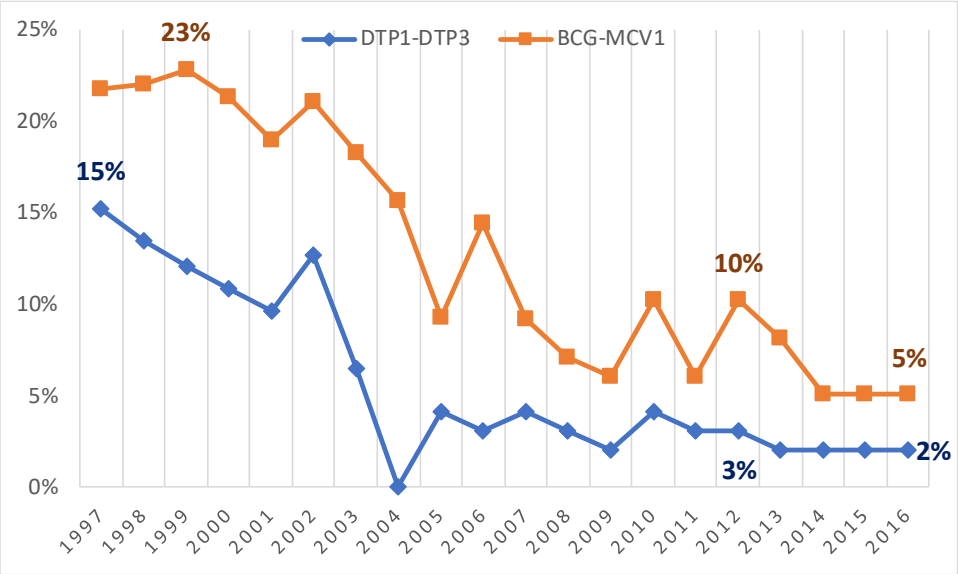
According to the most recent Coverage Evaluation Survey (CES 2016), the national estimate for Penta3 was 93.6% coverage, and for measles-rubella (MR) / MCV1, 84.5%. In addition, coverage of fully vaccinated children (FVC) was 82.3% (i.e., BCG, TT, DTP3, OPV3, and MCV). The gap between DTP3 and MR1 remains relatively high over the years as evidenced by JRF reports and CES. This trend is linked to multiple factors, including inadequate knowledge among parents about the importance and timing of MCV1 and MCV2, and inadequate follow-up by health workers. The following activities are proposed by EPI to address these deficits: social mobilization with adequate

information on the importance and timing of MR1 and MR2; roll-out of an e-Tracking system; and activities to strengthen microplanning, supervision, and monitoring.

The WHO/UNICEF estimate of national immunization coverage for DTP3 was 97% in 2016 (WUENIC), while administrative data for DTP3 shows 118% coverage. Official estimates of MCV1 and MCV2 coverage were 94% and 80.5% respectively, while administrative data shows 118% coverage. As discussed below, Bangladesh is continuing to address concerns with the administrative data reporting caused by denominator issues.

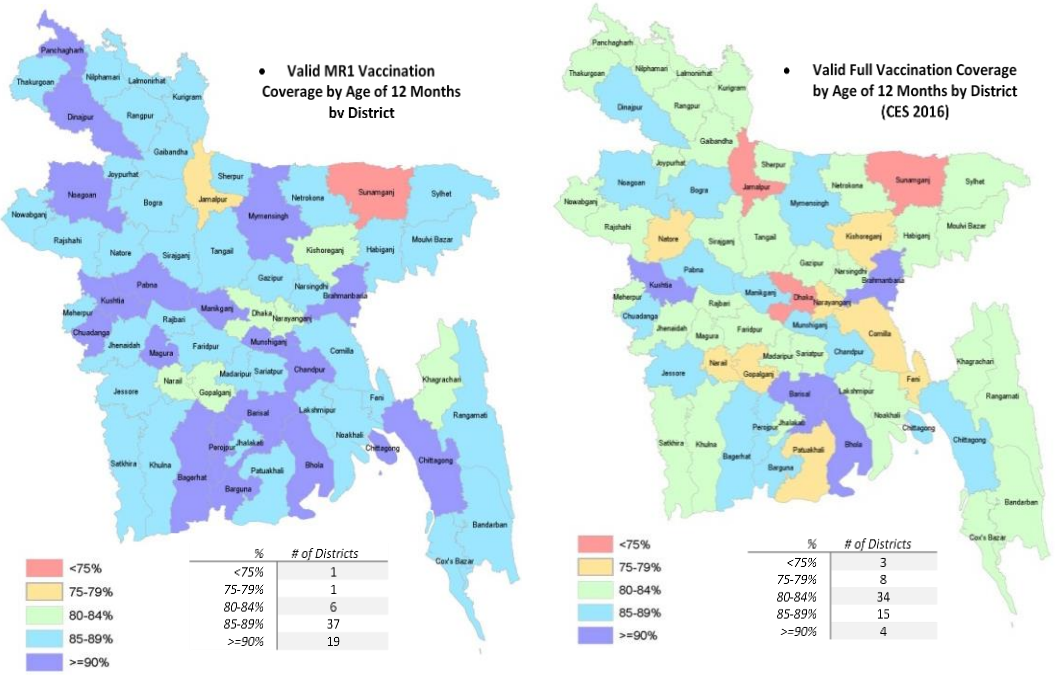
Drop-out rates have reduced substantially during recent years. Drop-out from BCG to MCV1 declined from 10% in 2012 to 5% in 2016, and DTP1 to DTP3 from 15% to 2% in 2016, as shown in Figure 1 below.

*Figure 1: Trends in Drop-out Rates between DTP1 -DTP3 and between BCG and MCV1(Source: WUENIC 2017)*




Despite overall progress towards achievement of the EPI objectives, inequities persist. In particular, the programme is not yet reaching all children across different socioeconomic groups and geographical locations equally. According to the 2016 CES, EPI performance varies significantly between districts. For example, the gap in coverage of the first dose of measles-rubella (MR1) between the district with the highest (96.5%) and the lowest (74.7%) coverage was 21.8%. In terms of FVC, the gap between the highest (92.6%, Kushtia) and lowest (68.4%, Sunamganj) performing districts was more than 24%. Only 19 out of 64 districts achieved higher than 90% coverage for MR1, and in only four districts, more than 90% of children were fully vaccinated. There was one district achieving less than 75% MR1 coverage, and three districts with less than 75% FVC. See Figure 2 for more detail.

*Figure 2: Map of Valid MR1 and Full Vaccination Coverage by Age of 12 Months by District (Source: CES 2016)*




Coverage within a single district is also not uniform, due to existence of pockets of underserved communities and/or hard-to-reach geographical areas. This means that there is variation between upazilas of the same district and between unions of the same upazila. However, the official estimates and CES data analyze only upto district level and not below. Efforts are underway to improve the administrative data for high quality reporting for sub-district level estimates.

**Urban vs. Rural Inequities**

A critical challenge for Bangladesh is reaching the remaining pockets of unvaccinated and unprotected children and women of reproductive age living in urban and/or hard-to-reach areas. Therefore, one of the key priority actions for Bangladesh EPI is identification and reaching out to these vulnerable groups for significantly improving overall performance of the immunization system, protecting underserved groups of the population against VPD and preventing potential outbreaks.

Improvement of coverage in urban areas is a key factor for ensuring equity in service delivery. In contrast to other countries, FVC coverage in urban areas (77.1%) is lagging behind rural areas (83.5%) (CES 2016). Seven out of the 11 City Corporations (CCs) have under 80% FVC coverage. In the capital, Dhaka North CC and Dhaka South CC are the lowest performing areas in the country, with FVC coverage at 67%-68%. Approximately a quarter of Dhaka's population (about 14 million people) live in slum areas. According to the 2016 CES, there is no significant difference in vaccination coverage between Dhaka slum and the total for Dhaka CC. In comparison, FVC coverage in Chittagong slum is 70.8% compared to 81.1% in total for Chittagong CC. While many causes have been identified, innovative approaches are required and proposed here to further improve coverage and equity of immunization service delivery, especially in urban areas.

The 2016 CES revealed that a driver for low immunization coverage in urban areas is inadequate knowledge among target communities about the benefits of immunization. The main reasons for partial vaccination were: mothers/caregivers were too busy (17.2%); lack of information about vaccination of subsequent doses (14%); and sickness of child at the time of vaccination (15.9%). See Figure 3. In particular, this analysis illustrates the critical importance of targeted and focused communication for caregivers to improve urban vaccination coverage.

*Figure 3: Reason for Never and Partial Vaccination in Urban Areas (source: CES 2016)*

| ***Never Vaccination*** | | ***Partial Vaccination*** | |
|---|---|---|---|
| ***Reasons*** | ***%*** | ***Reasons*** | ***%*** |
| Mother was not at home during vaccination | 22.1 | Was busy and so couldn't give vaccine | 17.2 |
| Didn't know that my child should be given vaccine | 19.1 | Child was sick, was not taken for vaccination | 15.9 |
| Don't believe in vaccination | 14.4 | Don't remember | 14.0 |
| Fearing side effects | 7.1 | Didn't know when to go for vaccine of MR | 13.2 |
| Child was sick, was not taken for vaccination | 6.4 | Fearing side effects | 6.3 |
| Didn't know where to go for vaccine | 4.3 | Didn't know that my child should be given vaccine | 4.8 |
| They charge money to take vaccine | 3.6 | The session time was inconvenient | 4.4 |
| Was busy and so couldn't give vaccine | 2.6 | Didn't know when to go for the second/third dose | 4.3 |

Insufficient immunization coverage in urban areas is also related to weaknesses in the health system. City corporations and municipalities are autonomous bodies under the Ministry of Local Government Institutes (LGI); provision of health services in urban areas is therefore not a direct responsibility of MOHFW. CCs have limited numbers of health staff, and health services are mainly provided by different international and national nongovernmental organizations (NGOs) or the private sector. Although vaccines for city populations are provided by EPI, there is less control over the amount and quality of immunization services provided. The level of coordination, micro-planning, supervision, and monitoring of services provided by different NGOs is sub-optimal. The catchment area of each individual NGO is not strictly demarcated and there is a high possibility of both overlapping and overlooked areas. Moreover, there is high internal migration among slum dwellers making it difficult to keep track of missed individuals or drop-outs. To improve coverage in both urban slum and non-slum areas, a multi-pronged strategy with involvement of all parties is proposed in the current PSR.

**Socioeconomic Inequities**

DTP3 coverage was 94.2% for male children and 92.9% for female children at the national level according to the CES 2015. The 2016 CES also found no significant gender inequities in immunization coverage at national or sub-national levels. The same survey also found no coverage gap between the richest and poorest children. In comparison, children born to mothers with an educational history of 12 or more years had a higher probability of being vaccinated than those born to illiterate mothers (90.4% and 81% respectively) according to the CES 2016.

The Bangladesh Demographic and Health Survey (BDHS) presents a different picture: the gap in DTP3 coverage gap between the richest and poorest increased from 7.5 percentage points (90.3% among poorest and 97.8% among richest) in 2011 to 15.3 percentage points (81.1% among poorest and 96.3%) in 2014, while the measles coverage gap reached 20.2 percentage points(72.7% among poorest and 92.2% among richest) (from 14.4 percentage points in 2011 (79.2% among poorest and 93.2% among richest). As expected, the mother's education and wealth status were positively associated with the likelihood of a child being fully vaccinated. For instance, 95% of children whose mothers completed secondary or higher education were fully vaccinated, compared with 74% of children whose mothers had no education (BDHS 2014).

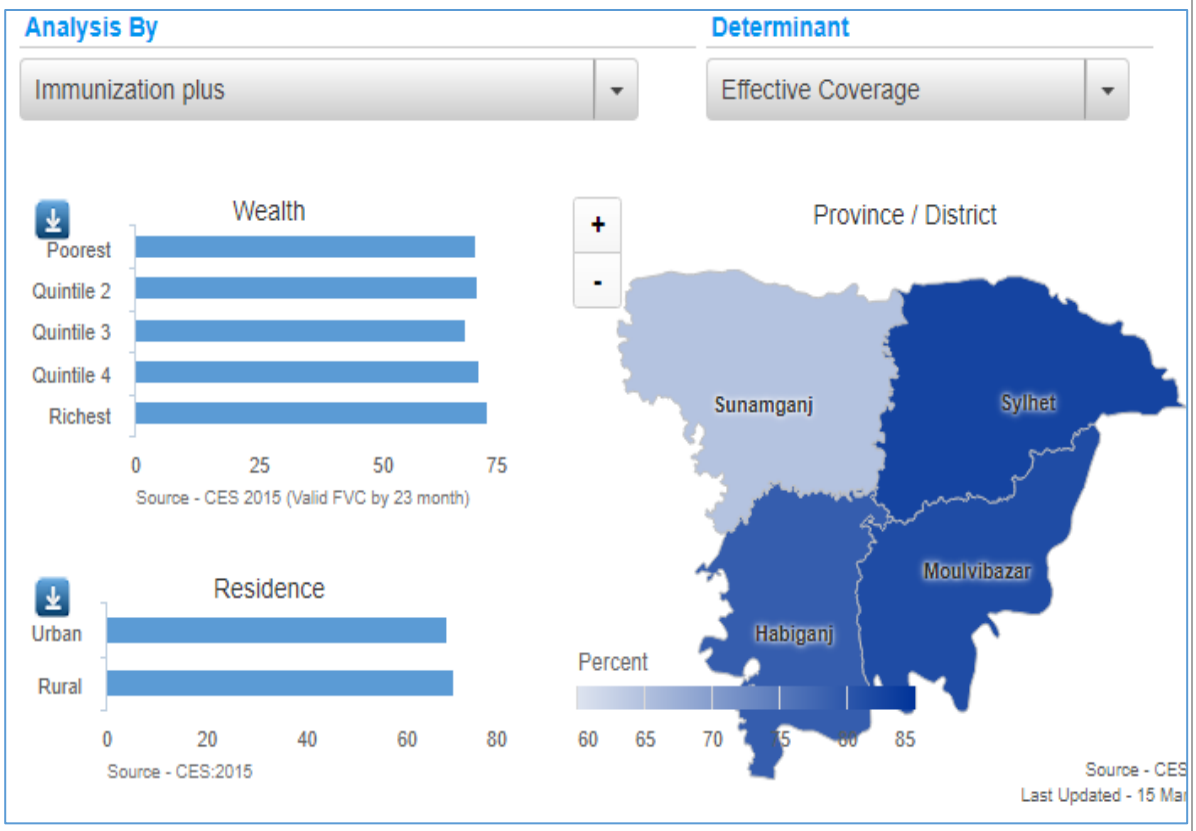
Details of inequities, including geographical, urban/rural, socioeconomic inequities in immunization coverage are presented in the Comprehensive Multi-Year Plan (cMYP) 2018-2022, Section 1.3.2.

**EQUIST Analysis in Sylhet and Chittagong Divisions: Review of Immunization Data**

Sylhet and Chittagong divisions both have key health indicators below national averages, not only in EPI coverage but also in other areas of health service performance. Results of the 2017 EQUIST analysis carried out in these two divisions confirms their under-performance. In addition, the analysis was instrumental in defining the main immunization bottlenecks in Chittagong and Sylhet, and for informing planning of essential interventions to address existing challenges. The data review and development of an equitable immunization strategy was carried out with participation by all 15 districts in Chittagong and Sylhet. The EQUIST analysis also included relevant City Corporations (Sylhet and Chittagong). The most recent CES was used for the Chittagong and Sylhet equity profile analysis.

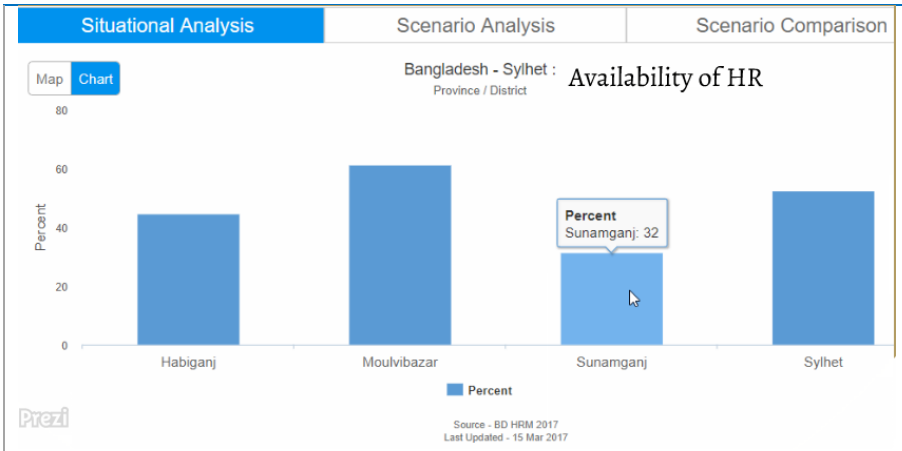
**Sylhet Division:** The use of data through EQUIST enabled participants to see that certain populations within the division (particularly people living in remote, hard-to-reach upazilas, especially of Sunamganj District) were less likely to access and use key services. Differences by wealth quintile were not significant in Sylhet, as shown in Figure 4 below.

*Figure 4: FVC Analysis in Sylhet using Geographic and Wealth Quintile (Source: EQUIST report, UNICEF, 2017)*




The analysis revealed a difference in immunization coverage. For example, in Sylhet and Moulvibazar, the FVC rate was over 85%, falling to 82% in Habiganj and 65% in Sunamganj. In addition, the study shows a correlation between low immunization performance and availability of health workers responsible for vaccination. Figure 5 below shows that in Sunamganj, where the FVC rate was 68%, only 32% of sanctioned health worker posts responsible for immunization were occupied. In Habiganj, about 45% of vaccinators were available, and in Sylhet and Moulvibazar, this number was 55% and 60% respectively.

*Figure 5: Availability of Human Resources (HR) to provide Preventive Health Services by District, Sylhet Division, 2017 (Source: EQUIST Report, UNICEF 2017)*

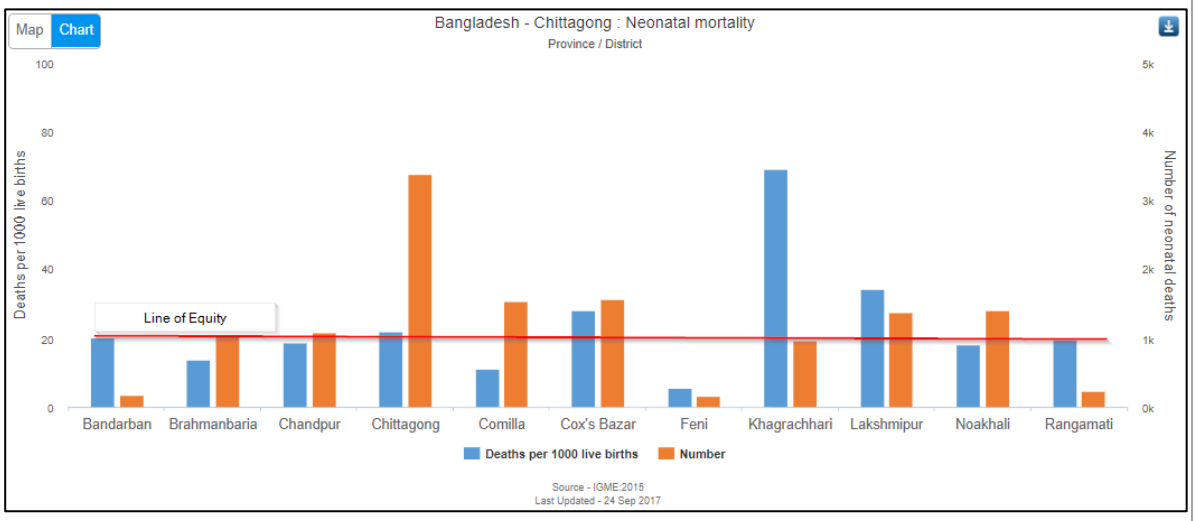



The number and causes of death among children under the age of five years (U5) also varies by district within Sylhet. Sylhet division has the highest U5 mortality rate compared to other divisions, and Habiganj has the highest U5 mortality among all districts in Bangladesh.

**Chittagong Division:** Chittagong Hill Tracts (CHT) and parts of Chittagong and Cox's Bazar districts contain many hard-to-reach areas. With the exception of Feni, the districts have wide areas of hard-to-reach terrain typical of a coastal belt and riverine area, as well as mountainous terrain and under-developed roads and other communication systems. In addition, Chittagong Hill Tracts is characterized by groups of tribal people living in remote, sparsely populated villages. Some parts are only accessible by boat during the rainy season. The situation is further compounded by the influx of large numbers of Myanmar citizens along the border from time-to-time.

Chittagong Hill Tracts faces striking inequities in terms of access to health services, including immunization services. As shown in Figure 6, Chittagong Hill Tracts also has the highest number of newborn deaths and the highest neonatal mortality rate (NMR) across districts.

*Figure 6: Inequalities in NMR among different regions of Chittagong (Source: EPI/UNICEF 2017)*




EQUIST workshops were conducted in Sylhet and Chittagong with participants from each district to tailor analysis and planning according to the needs of each. Several priority challenges were identified at both the divisional workshops. These along with related causes identified were as follows:

| **Determinant of coverage** | **Priority challenges** | **Causes** |
|---|---|---|
| Availability | Commodity shortages (e.g., vaccine cards and syringes). | Inadequate capacity in supply chain management, including storage and distribution of commodities. |

| | | |
|---|---|---|
| Accessibility | Insufficient immunization outreach posts; some posts lack staff. | Remote, inaccessible areas in all districts except Feni; security problems in hard-to-reach areas; staff shortages (especially in Cox's Bazar). |
| Affordability | Populations unable to pay transport costs to reach services. | Poverty; long distances to facilities in Sunamganj and hard-to-reach districts. |
| Acceptability | Some tribal communities have difficulty accepting vaccination. | Sociocultural norms; language barriers; beliefs and attitudes; low literacy and weak social support for healthy practices. |
| Continuity | All districts have high levels of initial utilization according to the 2016 CES but lower levels of continuity. | Inadequate awareness about the quantity and interval of visits required for completion of immunization schedule. |
| Quality | Inadequate cold chain; inappropriate vaccination techniques. | Providers lack the necessary skills in appropriate vaccination techniques; inadequate management of and incentives for providers. |

Overall the EQUIST analysis revealed three key barriers to immunization in Sylhet and Chittagong: 1) geographical accessibility, 2) sociocultural acceptability; and 3) to a lesser extent, financial affordability. The workshops concluded that the availability of HR and sociocultural barriers were the two main causes of inequity in coverage, and therefore need to be addressed to improve immunization coverage in Sylhet and Chittagong divisions.

Based on the workshop findings, strategies to strengthen immunization were identified by the two teams. These can be summarized as follows:

**Availability**: Use an online requisition system to prevent stockouts; provide solar direct-drive refrigerators in some priority remote areas (e.g., Chittagong Hill Tracts); fill vacant posts for health assistants (using external support, e.g. from Gavi, to recruit and deploy temporary staff until the already initiated government process is in place after resolving the current legal barrier).

**Accessibility:** Allocate special funds to ensure EPI services are provided in hard-to-reach areas (e.g., establish more outreach immunization posts or mobile clinics with appropriate cold chain support).

**Affordability:** Provide support to vaccinators to set up mobile clinics in remote areas, in addition to the existing outreach posts.

**Acceptability:** Conduct advocacy, communication, and social mobilization (ACSM), including among community and religious leaders; involve key stakeholders; ensure community involvement and participation.

**Continuity:** Provide training on: follow-up to reduce drop-outs; importance of IEC materials distribution; updating vaccination cards; and counselling for caregivers regarding next scheduled immunization visit.

**Quality:** Build capacity and place trained service providers; ensure vaccine quality through adequate cold chain; ensure supportive supervision; ensure monitoring, motivation, and accountability mechanism for quality care.

The results of the EQUIST analysis were used to identify the root causes of inadequate coverage and inequities and form the basis of proposed activities in Objective 2 of the current HSS3 PSR.

## 5.2 Challenges Underlying Performance of the Immunization System in Bangladesh

EPI is an integral part of MNCAH and is implemented within the framework the 4th HPNSP (2017-22). Challenges with EPI in Bangladesh can be divided into two: 1) overall health system challenges; and 2) immunization system specific challenges.

Health system challenges are summarized in the comprehensive multi-year plan for immunization (2018-22), as follows:

- Low access to and use of primary health care (PHC) services, including immunization;
- Inadequate service delivery;
- Absence of facilities in certain areas and insufficient number and qualification of staff;
- Inability of existing facilities to function properly due to inadequate staff and funding for operational and recurrent costs;
- Low demand for MNCAH and immunization services in certain sections of the population (i.e., sociocultural barriers); and
- High dependence on external funding.

Immunization system specific challenges are summarized as follows:

- Inadequate coordination between national and sub-national levels (CCs and municipalities);
- Insufficient number and inadequate distribution of service providers across the country;
- Insufficient qualifications of front-line service providers in urban areas;
- Ageing cold-chain equipment; and
- Poor financial transaction processes (e.g., for fund release and procurement).

A bottleneck analysis on immunization services was carried out in 2014 in relation to development of a proposal for Gavi cash support (HSS2). This highlights the critical areas of intervention needed in relation to the health system bottlenecks: vaccine introduction (requires attention in all seven health system building blocks), surveillance (five building blocks), and cold chain and effective vaccine management (six building blocks). Figure 7 below demonstrates the health system building blocks that need attention. These are: health workforce (four intervention areas), health service delivery (four interventions), health management information systems (four interventions), and essential medical products and technologies (three interventions).

*Figure 7: Health System Bottlenecks to Immunization Performance. (Source: Bangladesh cMYP 2018-2022)*

| | Health System Building Blocks | | | | | | |
|---|---|---|---|---|---|---|---|
| **Interventions for Health System Strengthening through the Gavi Alliance** | Leadership and Governance | Health Financing | Health Workforce | Essential Medical Products and Technologies | Health Service Delivery | Health MIS | Community Ownership and Partnership |
| Vaccine Introduction | | | * | * | * | * | * |
| Vaccine Security | | | | | | | |
| Service Delivery | | | | | | | |
| Surveillance | | | | | | | |
| Cold Chain and Effective Vaccine Management | | | | | | | |
| Data improvement | | | | | | | |

*Depicted as significant because the group listed these as Major/Significant/Mild

| Not a bottleneck | Mild Bottleneck | Significant Bottleneck | Major bottleneck |
|---|---|---|---|

The cMYP 2018-2022 includes the summary of health system enablers and bottlenecks to immunization performance, a detailed situational analysis and root causes of immunization system performance problems and underlying health system barriers

In June 2018, a workshop was held in Savar on immunization for Gavi HSS3 PSR. The stakeholders underscored that the bottlenecks to and underlying causes of stagnation in some areas of EPI performance were not new; they had been consistently identified in past coverage surveys and during EQUIST analysis in Sylhet and Chittagong. Participants emphasized that these bottlenecks could not be resolved by traditional approaches but required additional innovations relevant to their particular root causes.

For **rural areas**, the following strategies were suggested to address coverage and equity issues:

- Establish Community Clinic Support Groups to identify local immunization workers/volunteers, to be employed as community mobilizers and vaccinators and paid on the basis of sessions organized.
- Track individual children using mobile technology to reach the never vaccinated or drop-outs.
- Revise session plans based on geographical access, taking into consideration seasonal variations, with need-based inclusion of additional sites (mobile or static) in hard-to-reach areas.
- Tailor immunization sessions to local needs (e.g., using morning or afternoon/evening sessions, and workplace sessions in market places garment factories)—this suggestion is also applicable to urban settings.
- Use social mobilization to create demand and increase awareness about immunization (e.g., use a tailored and targeted local level behavioural communication strategy especially for tea gardens, Chittagong Hill Tracts, and ethnic minorities; and mobilize religious leaders and use religious places for communication and awareness).
- Involve school teachers, school children, and community members to facilitate services provided by male vaccinators to address the social taboo, if prevalent in the community.

The following recommendations were made for **urban areas**:

- Strengthen communication and collaboration between MOHFW and Ministry of Local Government, Rural Development and Cooperatives (MOLGRDC) to improve immunization service delivery to urban populations.
- Review and finalize the Urban Immunization Strategy implementation plan.
- Develop micro-plan for immunization in CCs, focusing on unvaccinated children and CBAW (through, for example, evening sessions, house-to-house registration, and special campaigns).
- Engage civil society organizations (CSOs) to improve immunization services in high risk populations of selected CCs using new approaches to service delivery and demand generation.
- Provide additional HR for immunization in large CCs; provide refresher training on immunization to service providers and mid-level managers from NGOs, private clinics/medical colleges, and public hospitals; and ensure facilities report regularly on immunization services.
- Consider innovative approaches, such as the use of the social media and mobile networks, to disseminate immunization messages and for defaulter tracking; engage local leadership at the ward level to take ownership of the program; use religious leaders to promote immunization (for example, during Friday prayers).

GOB reconstituted the Urban Health Coordination Committee on 18th June 2018 with a view to strengthening coordination of urban health services provided by MOHFW and MOLGRDC. Chaired by the Secretary, MOHFW, this committee has high-level representation from MOLGRDC, MOHFW, developmental partners, and leading NGOs. MOHFW has also initiated efforts to strengthen PHC

services, including EPI, through revitalizing Urban Health Dispensaries, in addition to existing services provided through medical college hospitals and specialized hospitals.

The challenges and opportunities in relation to coverage and equity were considered while planning proposed HSS3 activities, especially in relation to Objective 2. Sixteen low performing districts and four CCs were selected for priority interventions based on: proportion of FVC found during the recent CES; estimated number of unvaccinated or under-vaccinated children; presence of hard-to-reach areas; and presence of ethnic minority groups/ populations. In rural areas, 360 immunization wards will be targeted during development of an equity-focused strategy during the first year of HSS3 implementation.

The following table summarizes the scoring system for selection of the 16 low performing districts with a relative high number of unvaccinated and/or under-vaccinated children.

*Figure 8: Selection of target districts for Gavi HSS3 funding (Source: Analysis by Gavi HSS3 PSR preparation team)*

**Selected Districts : To strengthen service delivery system for improving coverage and equity of immunization services in in low-performing, hard-to-reach and high-risk communities**

| Sl No. | Division | District | CES 2016 FVC by 12 Months | Hard to reach District | Ethnic group present in the District | Estimated under one children 2016 | Fully vaccinated children | Not fully vaccinated | High priority district (score 1 for each risk factor) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Sylhet | Sunamganj | 68.5 | Yes | Yes | 75321 | 51595 | 23726 | 3 | |
| 2 | Chittagram | Khagrachari | 80.6 | Yes | Yes | 14325 | 11546 | 2779 | 2 | |
| 3 | Chittagram | Bandarban | 80.9 | Yes | Yes | 10404 | 8417 | 1987 | 2 | |
| 4 | Chittagram | Rangamati | 81.3 | Yes | Yes | 12113 | 9848 | 2265 | 2 | |
| 5 | Sylhet | Habiganj | 84.4 | Yes | Yes | 53679 | 45305 | 8374 | 2 | |
| 6 | Mymensingh | Jamalpur | 74.5 | Yes | | 47483 | 35375 | 12108 | 2 | |
| 7 | Dhaka | Kishoreganj | 78.1 | Yes | | 70665 | 55189 | 15476 | 2 | |
| 8 | Mymensingh | Netrokona | 81.7 | Yes | | 53403 | 43630 | 9773 | 1 | |
| 9 | Chittagram | Cox's Bazar | 83.4 | | Refugees | 63123 | 52645 | 10478 | 1 | 63070 Refugees children <1 years |
| 10 | Sylhet | Moulvi Bazar | 83.6 | | Yes | 44253 | 36996 | 7257 | 1 | |
| 11 | Sylhet | Sylhet | 83.8 | | Yes | 77596 | 65025 | 12571 | 1 | |
| 12 | Dhaka | Dhaka | 72.5 | | | 106027 | 76870 | 29157 | 1 | |
| 13 | Dhaka | Narayanganj | 76.7 | | | 47089 | 36117 | 10972 | 1 | |
| 14 | Chittagram | Comilla | 77.5 | | | 121125 | 93872 | 27253 | 1 | |
| 15 | Khulna | Narail | 78.8 | | | 15462 | 12184 | 3278 | 1 | |
| 16 | Dhaka | Gopalganj | 79.1 | | | 25258 | 19979 | 5279 | 1 | |
| Total | | | | | | 837326 | 654592 | 182734 | | |

**Uninterrupted vaccine supply**

EPI have been facing problems with securing financial support needed to maintain uninterrupted supply of quality vaccines from the WHO prequalified vaccine producers. This had been caused by inadequate supply of some of the vaccines at the Global market from time to time. GOB is considering strengthening of National Regulatory Authority which would make local vaccine producers capable of obtaining WHO prequalification.

## 5.3 Health and Immunization Financing in Bangladesh

The overall economy of Bangladesh is growing at around 7% per year and the country is projected to achieve lower middle-income status in 2021. With overall growth in the country's gross

domestic product (GDP), funding in health is also increasing in absolute terms. However, the percentage contribution of GDP to health is still very low. Public health spending comprises less than 1% of GDP, and total health expenditure (THE) has remained low in recent years at around 3% of GDP. The country's fiscal space is restricted; Bangladesh has one of the lowest tax-to-GDP ratios in the world, and this limits GOB's capacity to translate growth into public revenue. Out-of-pocket expenditure on health (i.e., spending directly by households at the time of seeking health care) is very high at 67% of THE (Bangladesh National Health Accounts or BNHA, 2015). There is increasing recognition that this will need to be reduced to improve financial protection for health and achieve UHC. . (See detailed analysis and data in the Bangladesh National Health Accounts or BNHA, 2015).

GOB has consistently shown commitment to ensure sustainable financing for health care. The Health Care Financing Strategy (HCFS, 2012) has been approved; this proposes to cover the entire formal and non-formal sectors and those below the poverty line under a common financing scheme. The HCFS has recently been embedded in the approved National Social Security Strategy (NSSS) 2015, which focuses on strengthening financial risk protection and extending health services and population coverage, especially to poor and vulnerable groups, to achieve UHC.

As part of HCFS implementation, the Health Economics Unit of the MOHFW has started to pilot a health protection scheme for the poor (Shasthyo Shurokhsha Karmasuchi or SSK) and for garment workers (the Ready-Made Garment Workers' Scheme). A social health protection scheme for the formal sector is being designed, the required law has been drafted, and a communication strategy approved. A resource allocation formula has been developed by MOHFW for needs-based allocation to districts.

Despite these initiatives, households constitute a major financing source of THE at 67%, followed by GOB (23%) and development partners (8.4%), while voluntary health insurance is only 5.25% (BNHA, 2015). Every year, 14.2% of households in Bangladesh face catastrophic health spending and 3.5% of the population falls into poverty due to health expenditures. Major challenges include: inadequate pre-payment mechanisms to protect people from catastrophic spending; very little revenue raised through pre-payment of insurance contributions (0.2% of total THE); slower than expected progress in SSK implementation; and little progress in other pilot initiatives.

However, out-of-pocket or household expenditure for immunization services is low, and is mostly an indirect cost related to transport to immunization posts/clinics. In urban settings, some service providers (i.e., NGOs and CSOs) charge a nominal amount for the service. Advocacy is ongoing with relevant NGOs and private sector providers to exempt immunization activities from service charges. During HSS3 implementation, CSOs along with CC health staff are expected to address this issue.

### Framework for EPI and HSS

The health, nutrition and population (HNP) sector policy is defined in the national health plan of Bangladesh i.e., the 4th Health, Population and Nutrition Sector Program (4th HPNSP) and is guided by a set of policy documents such as: "Government Vision 2021", National Health Policy (2011), National Population Policy (2012) and National Nutrition Policy (2015). The policy framework of the HNP sector has been further laid down in the HNP Sector Investment Plan (SIP) and the Program Implementation Plan (PIP) of 4th HPNSP. See Part D for further details on 4th HPNSP and the Multi Donor Trust Fund (MDTF).

The goal of the 4th HPNSP is to ensure that all citizens of Bangladesh enjoy health and well-being by expanding access to quality and equitable health care in a healthy environment. The objective is to have focused improvements in increasing access to quality health care and improving equity along with efficiency by gradually achieving UHC.

The 4th HPNSP is also linked to the Sustainable Development Goals (SDGs). Out of the 17 SDGs, SDG 3 specifically relates to good health and well-being, while several SDGs have bearing on the determinants of health like improvements in hunger, food security and nutrition (SDG 2),

inclusive and equitable quality education (SDG 4), water and sanitation (SDG 6), environment (SDG 13, 14 & 15), reducing inequality (SDG 10), gender equity and empowerment of women and girls (SDG 5), etc.

SDG 3 aims, among others, to achieve UHC, and provide access to safe and effective medicines and vaccines for all. The SDG 3 targets are numerous and wide-ranging and cover issues of communicable and non-communicable diseases, lifestyle and healthy environment and provide a holistic framework for development of national responses. The SDGs provide new background to looking at health, nutrition and population in a more holistic and multi- sectoral way and this is also reflected in the 4th HPNSP.

There are 8 strategic objectives (Sos) included in the 4th HPNSP. They are:

SO1: To strengthen governance and stewardship of public and private health sectors;

SO2: To undertake institutional development for improved performance at all levels of the system;

SO3: To provide sustainable financing for equitable access to health care for the population and accelerated progress towards universal health coverage;

SO4: To strengthen the capacity of the MOHFW's core health systems (financial management, procurement, infrastructure development);

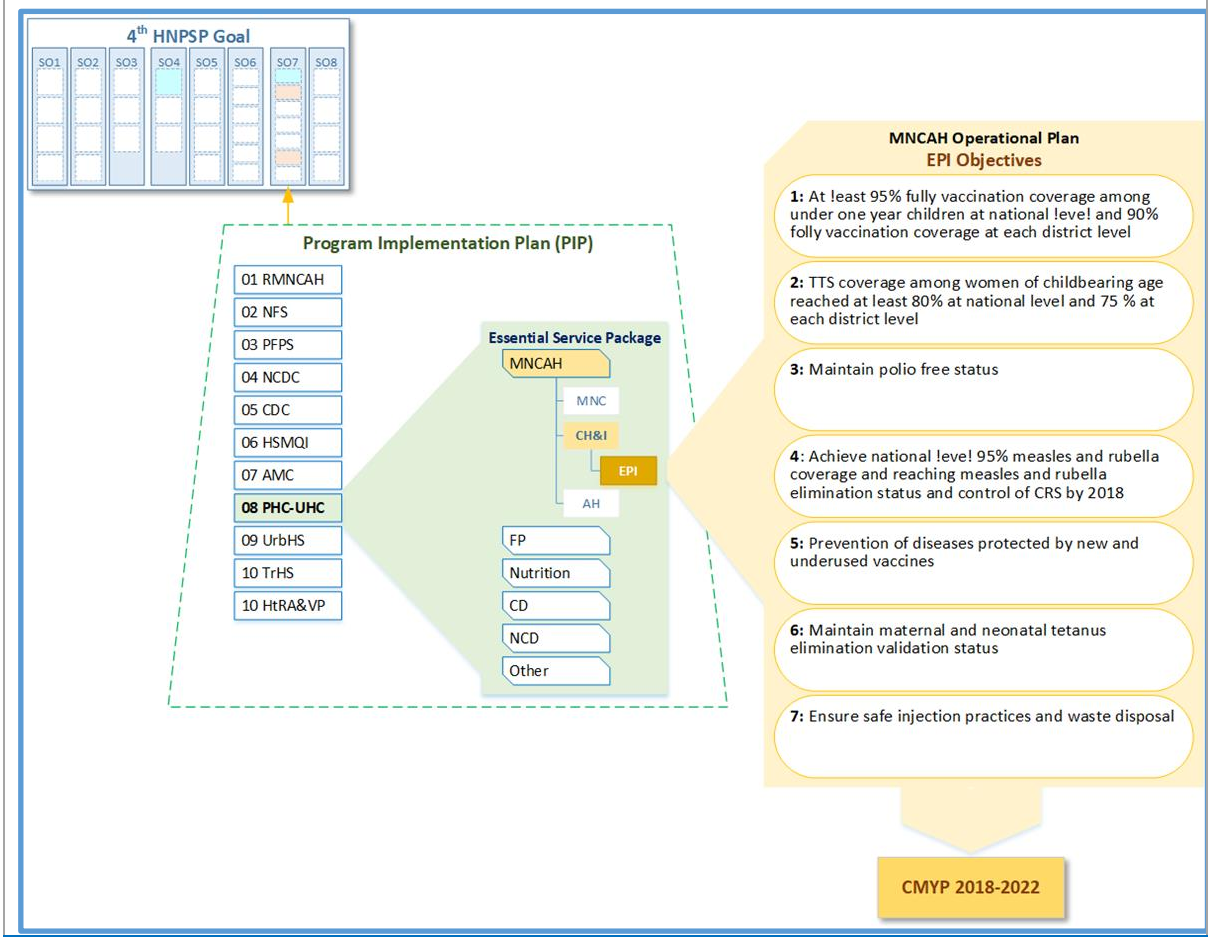
SO5: To establish a high-quality health workforce available to public and private health service providers;

SO6: To improve health measurement and accountability mechanisms and build a robust evidence-base for decision making;

SO7: To improve equitable access to and utilization of quality health, nutrition and family planning services; and

SO8: To promote healthy lifestyle choices and a healthy environment.

*Figure 9: Health Policy Framework and EPI ( Source: cMYP 2018-2022)*



SO7 includes the main service delivery component of the 4th HPNSP. It captures primary, secondary and tertiary services including preventive and curative services. As shown in the figure 9 above, EPI programme is included within Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH), which is one of the priority programme areas of 4th HPNSP.

EPI objectives are defined in essential service package component on Maternal, Neonatal, Child and Adolescent Health (MNCAH) OP. The main objectives are to strengthen and expand EPI service delivery with special focus on hard to reach and low performing areas, maintaining polio free and maternal and neonatal tetanus elimination status, attaining and sustaining measles elimination and ensuring safe injection practices and waste disposal. The logical connection between different policy instruments and positioning of immunization within the policy framework is illustrated in figure**Error! Reference source not found.** 9. The content of key policy instruments is summarized below, but details are available in the cMYP 2018-2022, section 1.2.2 "Governance".

**EPI Financing**

Currently EPI receives aid from development partners, both in the form of Reimbursable Project Aid (RPA) through the pooled fund (as part of the MNCAH Operational Plan of the 4th HNPSP) and in the form of Direct Project Aid (DPA). Although, both mechanisms are intended to support EPI, there is a difference between them. When a development partner provides resources for the pooled fund, this is used in accordance with the SWAp framework; the donor agrees with the activity plan and can monitor the impact/outcome of their grant through measuring results against agreed indicators. DPA on the other hand can be provided directly to the programme or through partners present in the country (e.g., WHO or UNICEF). This means interventions can be timelier, and there is also an opportunity for partners to track progress through intermediate process or input indicators as the data on DPA support to EPI is readily available.

**Future Resource Requirements for EPI**

The cMYP (2018-22) was prepared in 2017 and considers the overall programme requirements to achieve EPI objectives. Detailed projected financial requirements can be found in Section 3.3 of the cMYP—key issues are highlighted below.

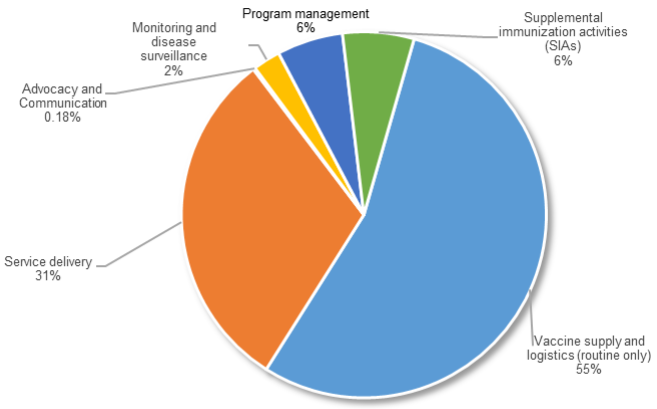
***Overview of the resource requirement structure.*** The total resource requirements for 2018-2022 are estimated at US$1,269 million (including shared health system costs), or approximately US$ 803 million without shared health system costs. See Figure 10 below.

*Figure 10: EPI costs (in USD) – Basic Scenario (Source: Bangladesh cMYP 2018-2022)*

| Immunization system components | Expenditures | Future resource requirements | | | | | |
|---|---|---|---|---|---|---|---|
| | 2016 | 2018 | 2019 | 2020 | 2021 | 2022 | Total 2018 - 2022 |
| Vaccine supply and logistics (routine only) | 95,253,945 | 80,784,584 | 96,077,357 | 88,223,877 | 86,361,461 | 86,616,071 | **438,063,351** |
| Service delivery | 48,712,080 | 49,061,131 | 49,353,840 | 49,378,160 | 49,214,883 | 49,227,638 | **246,235,651** |
| Advocacy and Communication | 225,786 | 115,466 | 390,500 | 314,085 | 259,085 | 384,085 | **1,463,221** |
| Monitoring and disease surveillance | 2,786,287 | 6,813,930 | 3,033,181 | 3,262,367 | 3,094,472 | 3,371,787 | **19,575,737** |
| Program management | 3,276,922 | 10,537,634 | 10,535,602 | 5,537,407 | 10,168,583 | 10,298,235 | **47,077,460** |
| Supplemental immunization activities (SIAs) | 0 | 24,704,682 | 0 | 0 | 0 | 26,073,567 | **50,778,249** |
| **Total immunization Immunization costs** | **150,255,020** | **172,017,428** | **159,390,480** | **146,715,895** | **149,098,484** | **175,971,383** | **803,193,670** |
| Shared Health Systems Costs (EPI Portion) | 93,095,290 | 93,098,934 | 93,102,650 | 93,106,440 | 93,110,306 | 93,114,250 | **465,532,579** |
| **Total immunization resource requirements** | **243,350,310** | **265,116,361** | **252,493,130** | **239,822,335** | **242,208,790** | **269,085,633** | **1,268,726,249** |

For the cMYP period (2018-22), "vaccine supply and logistics" will account for approximately 55% of total immunization specific costs (excluding shared health system costs), as shown in Figure 11 below. "Service Delivery" is the second major cost driver, and will account for 31% of resource requirements. "Shared health system costs" are estimated at 58% of future immunization specific resource requirements.

*Figure 11: Future Total Resource Requirement Structure by cMYP Components (excluding shared costs)*




***Future financing and funding gaps.*** **GOB** will be the major source of financing for EPI, contributing US$ 370 million or 45% of the total funding when shared health system costs are excluded, or US$ 836 million or 65% of all program funding when shared health system costs are included.

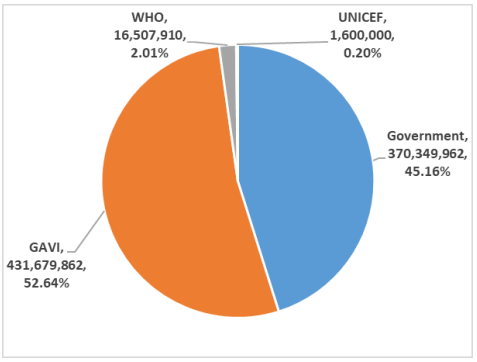
**Gavi** will be the second major source of financing, contributing US$ 414.7 million. This accounts for 53% of total funding when shared health system costs are excluded, or 34% when shared health system costs are included. Gavi financing is expected to be channeled through different support windows:

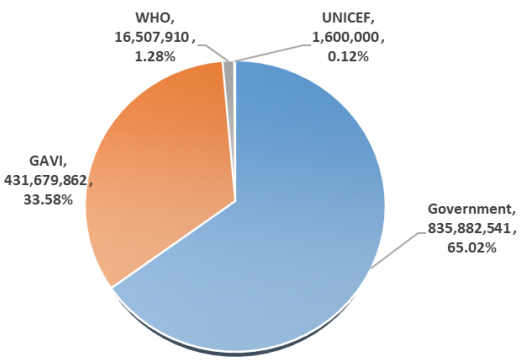
- *New Vaccine Support (NVS)* program – US$ 344.9 million (43% of all funding without shared health system costs or 27% including shared health system costs).
- *Health System Strengthening 2 Cash Support (HSS2)* – approximately US$ 17 million, which constitutes 2.1% of total funding excluding shared health system costs or 1.3% of total secured financing when the shared health system costs are included. The HSS2 funding has already been approved by Gavi and continues irrespective of approval of HSS3 funding reflected below. Considering the duration of HSS2 (2016-2019), HSS2 funding was carried forward from the previous cMYP, as actual expenditures are expected over the course of implementation of the cMYP (2018-2022).
- *Health System Strengthening 3 Cash Support (HSS3)* – approximately US$ 37 million (6.3% of all funding excluding health system costs or 4% of total funding including shared health system costs). This amount will be channeled through DPA to the MOHFW, WHO, and UNICEF. This includes funding for *Cold Chain Equipment Optimization Platform (CCEOP)* – amounting to US$ 2.2 million, or 0.3% of all funding excluding shared health system costs or 0.2% of total funding including share health system costs.
- *Health System Strengthening 3 Cash Support (HSS3)* – approximately US$ 50 million that will be channeled through SWAp for supporting Bangladesh Health Sector Support Project.

**WHO** will contribute approximately US$ 16.5 million, which will constitute 2% of total secured funding when shared health system costs are included or 1.3% when shared health system costs are excluded. The total contribution from **UNICEF** is projected at US$ 1.6 million over the cMYP period, which will account for 0.12% of total secured financing when shared health system costs are included or 0.20% excluding shared health system costs. See details in Figure 12 below.

*Figure 12: Structure of Future EPI Financing (with secured and probable funds) (Source cMYP 2018-2022)*

| Excluding shared health system costs | Including shared health system costs |
|---|---|




Eighty-five percent (or US$ 685 million) of total funding (US$ 803 million) is considered secured (excluding shared health system costs). When health system costs are included, this figure is 94% (or US$ 1,016 million) of total funding (US$ 1,086 million). As shown in Figure 13, when only secured funding is considered (excluding shared health system costs): GOB financing accounts for approximately 45% of total secured funding; the share of Gavi contribution is 53%; WHO expected contribution accounts for 2.01%; and UNICEF is expected to contribute approximately 0.22% of total secured funding.

When both secured and probable funds are considered (excluding shared health system costs):

- The share of Government contribution is approximately 64% of total secured and probable funding;
- Gavi contribution accounts for 34.88% of total secured and probable funding;
- WHO contribution constitutes 1.52% of secured and probable funding; and
- UNICEF contribution will account for 0.15% of total secured and probable funding.

The total secured financing amounts to US$ 1,016 million and is sufficient to cover 94% of the total immunization-specific resource requirements for the period 2018-2022 (without shared health system costs). The total funding gap with only secured financing accounts for 6% (or US$70 million) of total resource requirements, as shown in Figure 14 below. The part of the graph indicated in orange color showing funding gap with secured funding, indicates the expected support from Gavi.

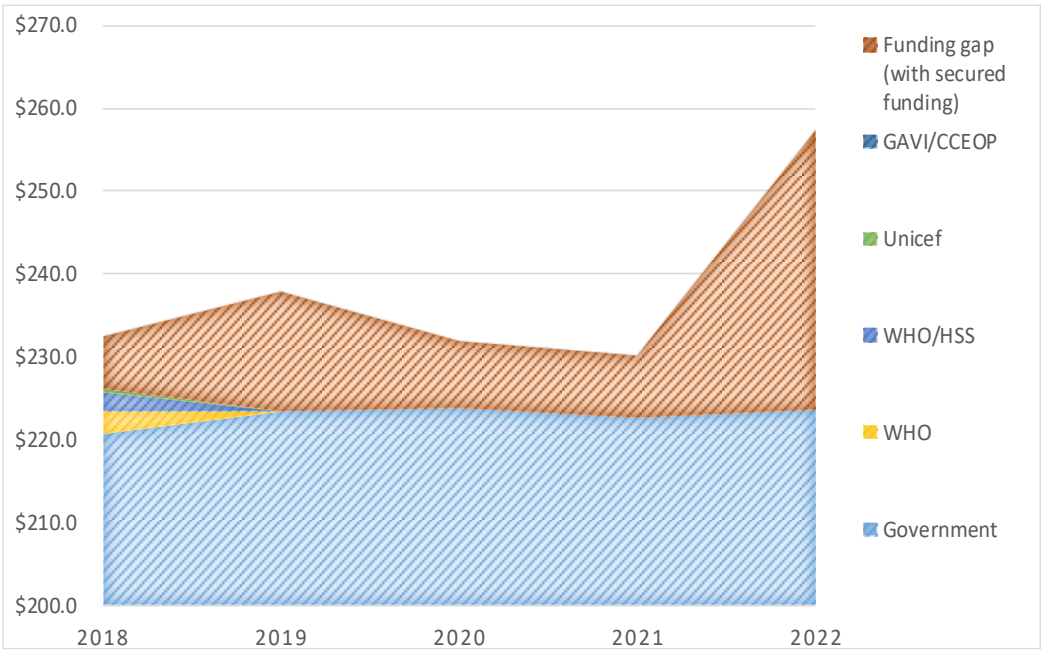



*Figure 13: Funding Gap during the cMYP Period 2018-22*

## 5.4 Lessons Learned and Best Practices

This section presents a synopsis from a number of evaluations and reports that demonstrate lessons learned and best practices related to new vaccines, implementation of campaigns, or routine immunization activities.

**Polio Eradication Initiative (PEI)**: The polio eradication programme successfully reached every child, including those in the most underserved communities, such as migrants, nomads, and people living in remote and hard-to-reach areas. Keys to success were: 1) preparation of micro-plans and maps prior to each round of Supplemental Immunization Activities (SIAs); 2) mobilization of political and social support; 3) partnership development and coordination; 4) development of programme strategies and operation plans; 5) supportive supervision; and 6) independent monitoring. These experiences can and are being replicated to strengthen routine immunization, new vaccine introduction, and for SIAs related to other disease control/elimination programmes. For example, mapping of catchment area of a particular area (ward, union, upazila) was used extensively during the polio SIAs, and now they are being used for RI and for other SIAs with a little updating.

**VPD surveillance:** In 1995, when the polio eradication programme was launched in Bangladesh, the AFP surveillance system was not strong enough to detect chains of transmission. With assistance from the Global Polio Eradication Initiative (GPEI), the AFP surveillance structure and functions were built around a medical officer's surveillance network functioning from the WHO country office, with a national polio laboratory at the Institute of Public Health (IPH) in Dhaka. This network has been instrumental in establishing a strong surveillance system and has been meeting all indicators for global certification standards. Functions have since been extended to include surveillance of all VPDs, including measles, rubella, and neonatal tetanus, as well as adverse events following immunization (AEFI). The role of the surveillance network has been widely acclaimed and the lessons learnt are valuable for strengthening disease surveillance system. In 2019, GPEI is withdrawing its support for the network and GOB has prepared a transition plan aimed at gradual merging of the functions, structure and assets of the program to mainstream surveillance system of the country. This plan will need support from development partners, especially Gavi. Details can be found in the Bangladesh National Polio Transition Plan 2018.

**SIAs**: EPI has benefited from accumulated knowledge and best practices on mobilizing social and community support during vaccine introductions and SIAs. These lessons and experiences can inform future EPI implementation. In particular, difficulties in service delivery, vaccine supply and transportation, and social mobilization have been identified, and measures are planned to avoid or resolve them.

**New vaccine introduction:** EPI has introduced several new vaccines since 2005, including Hepatitis B vaccine (Hep B), Hib, MR, PCV and IPV. Bangladesh also participated in the HPV demonstration project. A key lesson for the successful introduction of new vaccines is the importance of operational planning. This should include consideration of vaccine and logistics requirements (including cold chain), technical guidance, training for providers using practical sessions, social mobilization, and supervision and monitoring from planning to a post-evaluation assessment. Bangladesh has faced different challenges while introducing new vaccines (e.g., changes to initial plans during the joint introduction of PCV/IPV vaccines, and re-scheduling of the HPV demonstration project). These challenges were resolved due to the high level of management capacity at all levels of the immunization system.

**Technical assistance (TA)**: TA is of critical importance for planning EPI activities, such as during the introduction of a new vaccine, comprehensive multi-year planning, development of training modules, or new grant applications. While TA builds EPI capacity, better results are achieved when EPI takes a lead in all aspects of the new grant application process, and when priority is given to national TA providers who are familiar with the country context. Engagement of national TA resources fosters country ownership and institutional capacity strengthening. The shift in focus

by SIMOs to immunization and other wider health system issues provides the opportunity for continuous TA at sub-national levels.

**Governance:** The National Committee for Immunization Practice (NCIP) provides independent guidance to MOHFW during decision-making around the introduction of new vaccines and implementation of routine immunization activities. NCIP is able to make independent decisions about the need for a new vaccine or application of new strategies for routine immunization by reviewing existing local evidence generated through research and surveillance activities. This advisory body is a best practice in terms of how high-level national technical experts can guide the development of health programmes; similar advisory bodies could help other public health programmes in the country. The present NCIP structure is fairly large committee and there is a need to reformulate the body with assigning more technical role in line with National Immunization Technical Advisory Groups (NITAG) functioning in other countries. There are a few other national bodies such as Local Consultative Group (LCG) on Sector Program and Interagency Coordination Committee (ICC) on immunization which play governance role for national immunization program.

**cMYP**: The high-quality comprehensive multi-year plan for immunization clearly highlights all EPI strategic plans. Because it is aligned to the national health strategy and sub-national planning, it is supported by the government and major implementing partners and is therefore critical for successful implementation of EPI in the country.

**Effective Vaccine Management (EVM):** An EVM assessment conducted in 2014 identified key weaknesses in different levels of the vaccine supply chain. Based on the findings, GOB prepared a vaccine management improvement plan in September 2014. Rehabilitation and expansion activities began in 2016, and 65% of improvement plan activities were fully implemented by June 2018. These include:

- Establishment of 15 walk-in cold rooms with a remote temperature monitoring device – beyond wireless has already been installed in nine large districts to increase capacity, and 20 district stores are in process to augment cold chain capacity.
- Installation of continuous temperature monitoring devices in all ILRs across the country including SP level since 2016.
- Integration of the cold chain and logistics management information system (LMIS) with DHIS2 across the country, with monitoring of cold chain equipment as part of the system.
- Development and dissemination of standard operating procedures (SOPs) for health workers, managers, and technicians.
- Provision of a two-week residential training in India for 25 departmental engineers and technicians on the repair, maintenance, and management of cold equipment.
- Provision of training in data management for staff, including District EPI Superintendents, Asst. Store Keepers, and Medical Technologists.
- Outsourcing maintenance for high-end equipment with supervision and funding from GOB.

**Advocacy and communication**: Lessons learned from the MR SIA showed that the door-to-door registration carried out during the preparatory phase of the campaign significantly improved the quality of communication between service providers and caregivers. This can be used as best practice for improving communication for routine immunization. In addition, involvement of community groups in Community Clinic Management Committees through regular orientations, monthly meetings, and group meetings, increases ownership among communities, and can contribute significantly to demand for child and maternal health services.

**Urban areas**: TA, vaccines, and logistics supply provided by MOHFW to the Local Governments Division ensures a high level of immunization services in urban areas. There are gaps in performance and coverage, especially in large cities; further coordination and collaboration

between CCs/municipality staff and EPI can contribute to improved performance of the immunization program, especially among underserved groups in urban settings.

**Role of NGOs in urban areas:** In Bangladesh, customarily national health infrastructure was put in place to serve the health needs of a predominantly rural population. However, this infrastructure does not extend to urban areas, where the provision of primary healthcare services falls under the purview of local government, except for a handful of urban dispensaries in several large cities, and outpatient services in the public hospitals. They cater this large demand of primary health care service delivery in large cities two group of NGOs where hired through competitive biddings, first group 'Advancing Universal Health Coverage' (Smiling Sun Clinics) funded by USAID. The other group is 'Urban Primary Health Care Service delivery Project' (Rainbow Clinics) under the Ministry of Local Government Division. Since, City Corporation has no or very little service delivery points, these two NGO groups are the main service providers including immunization for the urban population. City Corporations also partners with some smaller NGOs (apart from the NGOs mentioned above) and Hospital to ensure better immunization coverage for the City Dwellers. The number of NGOs vary from 20 to 50 depending on the City.

**Capacity building**: Recent experiences have demonstrated the crucial importance of adequate planning for trainings and other capacity building activities. Other lessons for filling HR gaps at all levels of the immunization system include the importance of: carefully structured cascade trainings with adequate time allocation; inclusion of opportunities for acquiring practical skills pertinent to routine immunization; and active involvement of NGO staff and new recruits.

## 6. Programme, vaccine and financial management

Summarise the priority needs to be addressed in subsequent objectives **(Part D)** to strengthen programmatic, vaccine and financial management components to be strengthened, considering findings from the **Programme Capacity Assessment** (PCA), **recent audits,** and **EVM assessment** (if applicable).

**6.1** Programme management: leadership and management capacity and challenges of the national EPI team; effectiveness and challenges of the relevant Coordination Forum (ICC, HSCC or equivalent body); constraints to coverage and equity due to sub-national management capacity in priority areas.

**6.2** Vaccine stock management: Priority areas for improvement to manage risks to vaccine stocks, e.g. based upon recent audits or assessments.

**6.3** Financial management: Priority areas to address financial management gaps.

### 6.1 Programme Management

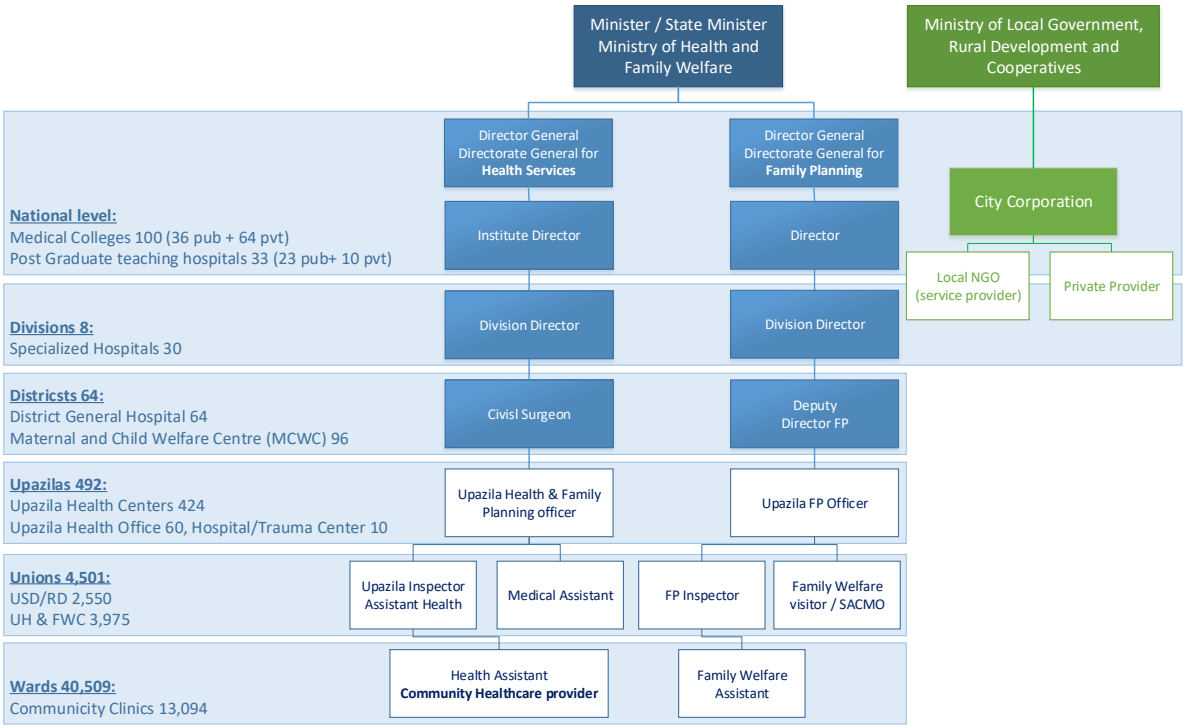
The EPI in Bangladesh has a strong, centralized management system. The overall management functions for EPI are assigned to the Line Director of MNCAH, who is also responsible for overseeing implementation of the other major components of the MNCAH Operational Plan. Responsibility for day-to-day management of EPI at all levels is assigned to the EPI Program Management team, led by the EPI Program Manager and four Deputy Program Managers (DPM): DPM-EPI and Surveillance, DPM-Procurement and Supplies, DPM- Field Services and DPM-IEC and Social and Behaviour Change (SBC).

NCIP is the principal agency responsible for making technical recommendations on immunization schedules, immunization practices, and new vaccines and technologies. NCIP appoints sub-committees for immunization related programmes for disease prevention and control, elimination, eradication, and safety.

MOHFW, through its Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP), manages general health and family planning services through District Hospitals (DHs), Upazila Health Complexes (UHC) at sub-district level, Union Health and Family Welfare Centres (UH&FWC) at union level, and Community Clinics at ward level. The Local Government Division manages PHC and family planning services in urban areas through their own and/or NGO staff. EPI provides technical support, including training, and vaccine and logistic supply.

Immunization services delivered at different administrative levels within the health system are managed by respective representatives of MOHFW, as shown in Figure 15.

*Figure 14: Health Service Delivery Facilities and Administrative Arrangements (Source: MOHFW Website)*




More details about programme management for immunization are provided in cMYP 2018-2022, Section 1.2.2 "Governance" and Section 1.3.3. (1) "Governance / decision making". For role of LCG and ICC in decision making please refer to 8.2 of the current document.

## Program Capacity Assessment

Gavi's Program Capacity Assessment for MOHFW was implemented in June 2017. Results from the capacity assessment of Program Management, Financial Management, and Vaccine and Cold Chain Management, are summarized below. The overall capacity risk rating for the project was "*Moderate Risk*" subject to the conditions of the GMR /GMA.

PCA reports that the Program Management Capacity of the project is generally adequate to effectively implement the HSS2 grant and was assessed as "*Moderate* Risk".

Based on the PCA assessment, Vaccine and Cold Chain Management capacity is generally adequate to properly manage Gavi funded supplies and activities. PCA assessed this area as *"Moderate Risk*" and provided recommendations for improvement.

Grant Management Requirements (GMRs) are in place since 23 September 2018 and aim to strengthen the ICC governance, programme coordination, human resources (including Polio Transition Plan for HR back to MOHFW) and the financial management of MOHFW in order for Gavi to eventually channel funds through Government. The GMRs are available as part of the application package.

### Performance of the Immunization System

As discussed under section 5.1 (above), Bangladesh has high vaccination coverage with all districts reporting >80% coverage. According to WUENIC estimates, DPT3 coverage was 97% for the last three years, and MCV1 coverage was 94%. MCV2 coverage increased from 83% in 2015 to 93% in 2016. The CES 2016 shows >90% coverage for DPT3 and 88% for MCV. However, as also discussed, there are differences in coverage among geographical areas, between urban and rural areas, according to the mother's educational level, and according to wealth status.

Official estimates in 2017 showed Penta3 coverage at 90% and PCV3 coverage at 99%. This was due to the change in schedule of the third dose of PCV from 18 to 14 weeks. For one month, both the 18 and 14-week cohorts were included, resulting in high reported PCV3 coverage. The

drop-out rate among MCV1 and MCV2 children remains high and requires urgent intervention. There are also high rates of invalid doses.

GOB has initiated several activities to strengthen routine immunization. Capacity building of health workers, including mid-level managers, is ongoing. Special focus has been placed on reaching hard-to-reach areas, including through evening sessions, defaulter tracing, and a focus on invalid doses. GOB recruited national and international consultants to review projected population and denominator issues. A data improvement plan was developed and is being implemented. In addition, World Immunization Week (WIW) is used as an opportunity to identify defaulter and missed children for MR vaccination, and around 50,000 children were vaccinated during the week in 2017.

VPD surveillance is mainly supported by the SIMO network. The last case of wild poliovirus was detected in 2006. MNT elimination was achieved in 2008 and has been maintained. AFP surveillance meets certification standard, Measles non-measles discarded rate meets regional target. JE, IBD, MNT and rota surveillance is ongoing. VPD surveillance generates information about disease burdens, responses, and the impact of new vaccines. For example, surveillance has shown an increase in the number of measles outbreaks and cases from 2015 to 2017. This is due to an increase in susceptible children (i.e., children missed by vaccination). Based on this information, Bangladesh is planning an MR vaccination follow-up campaign in 2019. Bangladesh has set the target of Measles, Rubella, and Congenital Rubella Syndrome (CRS) elimination by 2020. A high-level advocacy meeting was held on 5th August 2018. The meeting was participated by the Minister for Health and other high-level officials and was held in coordination with the Bangladesh Pediatric Association to push the elimination agenda.

A joint EPI-VPD surveillance review was conducted from 26th July to 6th August 2018. The review identified problems in relation to HR, including: high numbers of field worker vacancies; lack of dedicated HR in urban areas; inadequate number of sanctioned posts relative to population density; high staff turnover; incomplete coordination between MOHFW and MOLGRDC; dependency on NGOs; and inadequate training. Data quality issues were also identified (e.g., problem with denominator, inadequate skills in data analysis or use of data for action, insufficient training on DHIS2, and discrepancies between vials used and total children vaccinated). Problems in relation to demand generation include the absence of a comprehensive SBC strategy. For VPD surveillance, there is dependency on the SIMO network, an inadequate number of dedicated staffs at local level for surveillance, and insufficient resource allocation. GOB has committed to review the findings and recommendations for follow-up action.

Deputation and deployment practices frequently attract attention. Studies show that the deployment of physicians and nurses is significantly skewed towards urban areas (particularly the capital city) compared to rural areas. Sometimes staff (especially physicians) take advantage of the deputation policy for studying postgraduate courses. In addition, absenteeism and untimely attendance of staff, particularly in rural, remote and hard-to-reach areas, are frequently reported in the media. Absenteeism is detrimental to service delivery; unauthorized absence is regarded as misconduct but due to weak monitoring and supervision, there is insufficient follow-up. Increased frequency of supervisory visits by national, divisional, and district level managers with follow-up actions using HMIS are needed to improve the situation.

Vacancies are a common phenomenon for all health programs in Bangladesh, including EPI. Currently only 75.6% of sanctioned Health Assistant (HA) posts are filled – see Figure 16. Retention of a rural workforce is a particular challenge for MOHFW, and high rates of staff turnover remain problematic. In urban areas, NGOs provide substantial support but this is insufficient to overcome existing HR shortages. In 2016, Gavi funds were used to recruit "volunteers" to address shortfalls. However, this funding ended in July 2017. As discussed elsewhere, MOHFW now is recruiting vaccinators (Health Assistants), which will address the shortfall.

*Figure 15: Staffing Level for Health Assistants (HAs) by Division (2017) (Source: MOHFW website)*

| Division | Sanction HA Position | Filled HA Position | Vacant HA Position |
|---|---|---|---|
| Barisal | 1,939 | 1,617 | 322 |

| | | | |
|---|---|---|---|
| Chittagong | 4,219 | 3,066 | 1,153 |
| Dhaka | 5,912 | 4,612 | 1,300 |
| Khulna | 2,430 | 1,544 | 886 |
| Rajshahi | 2,662 | 2,041 | 621 |
| Rangpur | 2,180 | 1,678 | 502 |
| Sylhet | 1,528 | 1,213 | 315 |
| National | 20,870 | 15,771 | 5,099 |

One of the reasons for the HR shortfall is a legal barrier, which has recently been removed by the High Court. The recruitment process after lifting the legal bar has already been initiated, and 4,755 HAs will be recruited soon. Moreover, GOB has recognized the need to increase the number of sanctioned posts in relation to the increase in population size. GOB will soon start increasing the number of vaccinators in both rural and urban areas. This includes the CCs and PHC services, including all urban dispensaries, whose numbers will also be increased.

## 6.2 Vaccine Stock Management

### Background

As discussed under Section 5.4 (above), an EVM assessment was conducted in 2014 and an improvement plan finalized in 2014. The overall performance of vaccine management was "very good" with an 82% aggregated rate across all criteria, which is substantially better than the norm. The next EVM assessment is scheduled for 2019 to allow time to complete recommendations in the 2014 assessment.

Data management of health statistics across a number of disciplines in Bangladesh is undergoing major reform, with substantial progress towards an eHealth system. Within the framework of the EVM implementation plan (funded through HSS2), the manual system for vaccine stocks and movements was digitalized and migrated to DHIS2. DHIS2 is well-adapted to the real-time and dynamic needs of EPI data. Recently DHIS2 was upgraded with a real-time Immunization Supply Chain and Logistics (ISCL) management information system, developed by MOHFW. This includes data management for vaccines, cold-chain equipment, storage, temperature, distribution, and other logistics. Detailed information about progress in the development and integration of the ISCL system is given in Section 7, *Past Grant Performance, Implementation Challenges and Lessons" (Performance of Gavi Grants).*

### Challenges

Despite progress in improving stock management practices, there are some challenges. These include the following:

- Current approaches to monitoring data quality focus more on completeness than accuracy. DHIS2 data-checking functions on their own are insufficient to guarantee good quality data. Efforts to improve routine information are in progress, and include data quality assessments and using software for data checking and triangulation.
- Monitoring implementation of the EVM improvement plan is a challenge; this is essential to ensure existing needs for improvement of the cold-chain and logistics system are addressed, and the system is prepared for the introduction of new vaccines.
- Maintaining stock levels using the current manual system of vaccine and dry good stock management at the central store is labour intensive. In addition, the current system only partially complies with WHO requirements—it does not minimize stock levels and does not provide EPI management with accurate and timely data for good stock management practices. The EVM implementation plan includes the following solutions to address these problems:
    - Improve the present manual stock management system and assign personnel to manage stock movements;

- Progress development of a computerized stock management system, compatible with the MSH-supported package for family planning commodities; and
- Work with the Directorate General for MIS to build a stock management system, which is fully integrated within DHIS2.

- Vaccine stock and dry goods management and reconciliation with stock registers at the central store requires improvement. This will be addressed through updates to SOPs (e.g., review stock record forms, incorporation of the missing critical fields, and different forms of wastage).

**Vaccine supply and role of National Regulatory Authority (NRA)**

Bangladesh has a considerable pharmaceutical manufacturing capacity including 269 Allopathic, 206 Ayurvedic, 266 Unani, 32 Herbal and 79 Homeopathic pharmaceutical manufacturing companies. Among these companies, a growing number is either manufacturing or scaling up their capacity for the manufacture of biological products.

The WHO process for prequalification of vaccines requires that the national regulatory authority achieves maturity level three, in all of nine main functions of the NRA, according to the WHO GBT, or that appropriate measures are put in place for reliance on another regulatory authority with maturity level three or above (surrogate NRA) for performing all or some of the regulatory functions.

The national regulatory authority in Bangladesh is the Directorate General of Drug Administration (DGDA). DGDA, with technical support from WHO and other technical partners has been steadily progressing towards maturity level 3. However, special attention is needed for the regulatory functions related to vaccines as there are some distinctions to the general regulatory control which concerns all medical products.

DGDA has an institutional development plan (IDP) established to address the gaps identified in self-assessment using WHO Global Benchmarking Tool (GBT). The self-assessment is an ongoing process which has taken place three times thus far, each round resulting in an updated IDP.

## 6.3 Financial Management

Financial management was identified as one of the core health system reform areas for development in 1998. Since then, three SWAps have shaped and strengthened financial management, and there have been positive developments in budgeting procedures and planning of resource allocations for Operational Plans. In addition, capacity has been built in conducting the Medium-term Budget Framework (MtBF), in fund disbursements, and in financial monitoring and reporting.

During the 3rd SWAp, achievements included:

- Finalization and approval of the Financial Management and Audit Unit's (FMAU's) approved organizational structure along with revised recruitment rules by the Ministry of Public Administration (MOPA);
- Drafting of an Audit and Financial Management Strategy;
- Training of officials;
- Outsourcing of internal audit; and
- Strengthening the management of revenue budget and audit functions by putting them under the FMAU of MOHFW.

All the achievements were made in close coordination and monitoring of the FM actions by the World Bank and other DPs.

Key challenges to be addressed in the 4th HPNSP are as follows:

***Public Financial Management (PFM):*** Apart from the Ministry of Finance (MOF), PFM improvements have been limited in line ministries, including the MOHFW. MOHFW has yet to implement adequate arrangements aligned with the GOB's policy of effective and efficient fiscal management and oversight functions. At the Directorate level, PFM functions are carried out in a

fragmented manner by different units with limited coordination amongst them. Due to the lack of clear assignment of responsibilities for Operational Plans and cost centres, capacity building efforts from the PFM Operational Plan remain incomplete. This is aggravated in part by shifting responsibilities among personnel.

***Fund Flows and Treasury Management:*** Drawing-down funds from the foreign exchange account to reimburse MOHFW for quarterly (pre-financed) expenditure remains a challenge. Delays occur in various offices involving the Chief Accounts Officer, Controller General of Accounts, and the Bangladesh Bank (for issuing authorization to process the fund transfer to the GOB's consolidated fund). Due to delays with the release of funds, spending agencies cannot plan expenditure properly, resulting in under-spending. In addition, a rush of expenditure at the end of the financial year increases the risk of waste and financial irregularities.

***Expenditure Tracking:*** Automating expenditure tracking is critical if reliable monitoring of foreign aid funds - advanced for program implementation - is to be achieved in a harmonized manner. Replacing parallel and manual systems with an integrated budget and accounting system (iBAS++) is in progress. Internal audit is still being outsourced and is not yet an integral and strategic function within the MOHFW. Delayed response from the Foreign Aided Project Audit Directorate (FAPAD) is one of the reasons for delays in settling audit observations. At the same time, Line Directors (LDs), responsible for implementation of operational plans, find it difficult to meet the FAPAD audit objections on DPA expenditures, as these are incurred by development partners, and LDs have no access to vouchers or other relevant papers for meeting audit objections.

***Accounting and Reporting:*** The FMAU finds it challenging to submit financial reports on time (within 45 days after the quarter-end) because they need to reconcile the closing balance in the Internal Unaudited Financial Report (IUFR) with records at the Chief Accounts Office and the Controller General of Accounts. Another important issue relates to recording of the advance drawn by LDs as final expenditure before adjustment. This means that when money is drawn as an advance to meet emergencies, no voucher is required, and it is recorded under a temporary heading until it is adjusted for final expenditure by producing relevant vouchers. This in effect creates scope for spending without any evidence. There is a general lack of understanding at the operational level about the internal control framework and its implementation to establish propriety in public spending.

Within the framework of the 4th HPNSP, the MOHFW will focus on overcoming existing challenges, increasing efficiencies, and reducing financial and fiduciary risks. This will be achieved through three core interventions: capacity building, strengthening internal supervision, and strengthening control systems. Specific activities in the 4th HPNSP include:

1) Recruit capable HR as the FMAU structure and recruitment rules are approved;
2) Enhance and extend the existing FMAU training modality—develop and distribute training manuals among trainees and among other officials to serve as references;
3) Conduct regular training and capacity building of officials at different levels regarding financial management and audit issues; and
4) Include a provision in Operational Plans to engage capable personnel with a relevant educational background and experience in GOB financial management and audit, and relevant public financial rules and regulations to support financial management related issues.

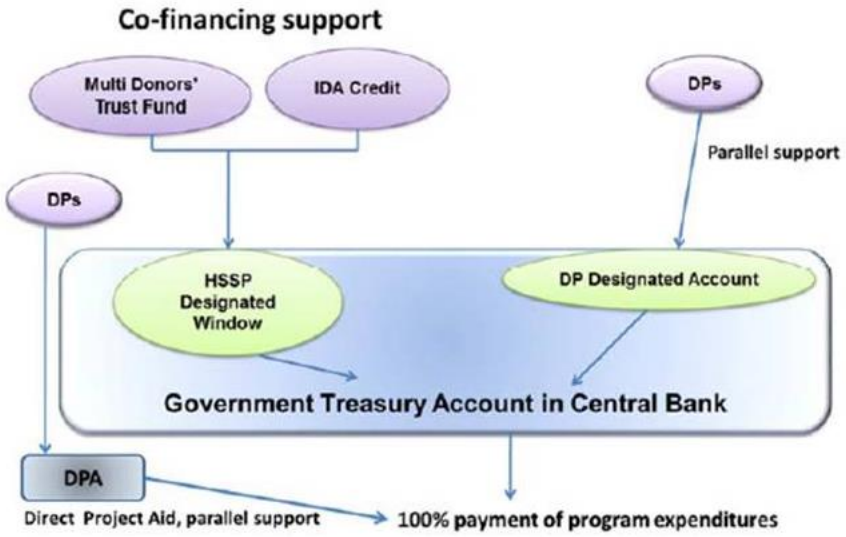
In addition, MOHFW will closely work with FAPAD to reduce the frequency of audits through synchronization. An institutional framework will be developed to ensure time-bound responses from the LDs on audit objections, and for resolving issues through regular tri- and bi-partite meetings with concerned stakeholders.

Moreover, a new fiduciary action plan has been made a part of the current World Bank loan to the 4th HPNSP. This includes 10 actions in the areas of budget planning, capacity building of financial management staff, asset management and development of a training manual, external auditing, internal audit, resolution of audit observation, rolling out iBAS++, contract management guidelines, and development of generic technical specifications required for major medical

equipment. The World Bank's Programme Appraisal Document describes in detail the financial arrangements for managing the multi donor trust fund for the 4th HPNSP.

The flow of funds from IDA Credit and Trust Funds are illustrated in Figure 17.

*Figure 16: Fund Flow of the 4th HPNSP (Source: World Bank PAD 2017)*




**Financial Management for Gavi DPA**

Under the Bangladesh SWAp arrangements, there is no special financial management and procurement arrangements for funds received as DPA from any source, including from Gavi. In case of the funds to be implemented by government, the financial rules of the Government are followed. WHO and UNICEF follow their own internal policies and financial rules for utilization of the Gavi funds they receive.

## Part C: Review of implementation progress (to replace the Joint Appraisal) (3-4 pages)

**Part C** describes **the progress achieved in the past year** in the immunisation system. By **complementing the data as reported via the country portal** (e.g. the updated grant performance framework, financial reports, data quality assessment etc.), this section **explains over and under achievement of goals and targets**, **associated implementation challenges** and **key lessons** from the past reporting period (thus replacing the **Joint Appraisal** report for this year). Persistent challenges described here are to be considered in **Part D** for future programming.

## 7. Past grant performance, implementation challenges and lessons

**Briefly comment** on the performance of the vaccine support and health systems and immunisation strengthening support (HSS, Ops, VIGs, CCEOP) received from Gavi:

**7.1** Performance of the immunisation system, in terms of

- Implementation of annual operational plan for immunisation
- Engagement of different stakeholders (including WHO, UNICEF, CSOs, DPs) in the immunisation system

**7.2** Performance of Gavi grants, in terms of

- Achievements against agreed targets
- Overall implementation progress, lessons learned and best practices
- Progress and achievements specifically obtained with Gavi's HSS and CCEOP support
- Usage and results achieved with performance based funding (PBF)

**7.3** Financial management performance, in terms of

- Financial absorption and utilisation rates
- Compliance with financial reporting and progress in addressing audit requirements
- Major issues arising from cash programme audits or monitoring reviews
- Financial management systems, including any modifications from previous arrangements

**7.4** Sustainability and (if applicable) transition planning

- Fulfilment of co-financing commitment
- For countries with a transition plan, implementation progress of planned activities

### 7.1 Performance of the Immunization System

***Implementation of annual operational plan for immunisation.***

EPI is part of the MNCAH Operational Plan of the 4th HPNSP. EPI is a strong performing program. Most of the activities planned for the past year has been successfully implemented. Please see Section 5 for detailed information about the performance of the immunization system.

***Engagement of different stakeholders (including WHO, UNICEF, CSOs, DPs) in the immunisation system.***

A Programme Implementation Committee (PIC) oversees implementation of the annual operational plan, as well as Gavi grants. PIC is chaired by the Joint Chief, Planning Wing, MOHFW and includes as key/core members: Line Director, MNCAH Operational Plan, EPI Program Manager, EPI Deputy Program Manager, WHO representatives, and UNICEF representatives. PIC meetings are held regularly to discuss progress, and subject matter experts are invited to the meeting as needed.

## 7.2 Past Grant Performance

***Performance of Gavi grants***

Bangladesh has been eligible for Gavi funding since 2001. Currently Bangladesh receives Gavi support for IPV (2015-19), Pentavalent (2009-19), and PCV (2014-19). In 2017, Gavi approved additional support for the introduction of the Rotavirus vaccine, which was planned to be implemented in 2019 but has been postponed due to the global supply constraints. In addition, the country's MR follow-up campaign proposal has been recommended recently for approval by IRC and will be implemented in 2019. Bangladesh has also prepared an application for the Cold-Chain Optimization Platform (CCEOP), which will be submitted with the PSR.

At present Bangladesh is implementing **HSS2 (2016-2019, US$33.9m).** Funding is channelled through Gavi partners, WHO and UNICEF. The focus is EVM and VPD surveillance, thus ensuring a strong basis for HSS3. HSS2 has three major objectives: 1) strengthen VPD surveillance and its integration into HMIS (US$13.1m, implemented by WHO); 2) improve cold chain and supply chain management system performance (US$20.3m, implemented by UNICEF); and 3) program management (US$0.3 million, led by MOHFW). A summary is provided in Figure 18 below of current progress with implementation of HSS2 against the targets for each objective.

*Figure 17: Current Implementation against HSS2 Targets*

*Objective 1:*

| SN | Indicator | Target 2018 | Status 2016 | Status 2017 | Status 2018 |
|---|---|---|---|---|---|
| 1 | % of city corporations providing surveillance reports on time | 91 | 96 | 99 | 100 |
| 2 | % of districts providing surveillance reports on time | 85 | 97 | 99 | 100 |
| 3 | % of districts using agreed denominator | 45 | 0 | 0 | Using projected and micro plan denominator |
| 4 | % of health facilities submitting EPI coverage on time | 90 | 73 | 90 | 100 |
| 5 | % of health facilities submitting VPD surveillance data on time | 91 | 97 | 99 | 100 |

*Objective 2:*

| | | | | | |
|---|---|---|---|---|---|
| 1 | Increase in total volume of central storage capacity | 246 | NA | NA | NA |
| 2 | Number of district level cold rooms functioning | 29 | 9 | 9 | 15 |
| 3 | Proportion of districts utilizing web-based system for reporting timely complete vaccine stock management (DHIS2) | 90 | 54 | 80 | 80 |
| 4 | Proportion of health facilities (both urban and rural) with no stock out of vaccines for the past 6 months | 90 | 80 | 85 | 90 |
| 5 | Proportion of outreach sites using freeze-tag during vaccine | 75 | 0 | 10 | 80 |

| | | | | | |
|---|---|---|---|---|---|
| | transportation for vaccination session | | | | |
| 6 | Proportion of service providers trained on revised SOP on vaccine and cold chain management | 85 | 0 | 0 | 24 |

***Overall Implementation Progress, Lessons Learnt, and Best Practices.***

*Objective 1: Develop and introduce VPD surveillance web-based information system*

1.1. A national consultant was recruited to develop and pilot a web-based VPD surveillance system. Representatives from the National EPI and WHO teams (data management and surveillance) were involved in designing and developing the software to ensure all needs of the National EPI are met. Following several consultations, the initial software was developed and is being piloted. Five active and passive surveillance sites in two districts (Sylhet and Naogaon) have been selected for field testing. By middle of September 2018, the results of this field test will be available. Following this testing, health staff at all surveillance sites throughout the country will be trained in October 2018 to March 2019. The process of developing an indicator-based surveillance dashboard is currently on-going. WHO is in the process of procuring equipment for installation and use of software in health facilities. Procurement should be completed by December 2018. The web-based VPD surveillance system with the indicator-based dash board is expected to be functional by June 2019.

1.2. *Laboratory performance improvement*. WHO has issued a contract to UNOPS to carry out renovation after reaching consensus among NPML, WHO and UNOPS. There was a slight change in the initial plan of renovation; MOH had requested a more expansive renovation than initially proposed. Following approval from Gavi, the originally allocated budget was revised and UNOPS is carrying out the work which is scheduled to be complete by the end of 2019. WHO has been providing funds to support collection and transportation of specimens from field to NPML lab in Dhaka and shipment to the international reference lab for quality control. WHO is organizing regular training for NPML staff with support from SEARO. The lab is going through the stringent accreditation process by WHO every year. The environmental surveillance of poliovirus is also being supported from four sentinel sites. More than 7,000 suspected serum samples were tested for measles and rubella and >1,300 stool samples from AFP cases in 2017.

NPML is also providing support for testing of suspected measles and AFP samples from FDMN, Cox Bazar. Four sites have been identified for environmental surveillance among FDMN camps. Around 200 samples from health children were collected and in process of testing for poliovirus.

*1.3. Improve management and operation of VPD surveillance system*

Management and operation of the VPD surveillance system is being supported through regular performance review field visits, meetings, and discussions on key achievements and challenges in the performance of the VPD surveillance system. Central, urban, zones will institutionalize evidence-based management practices.

*1.3.1. Conduct regular monitoring of VPD surveillance system's performance and dissemination of monitoring' results.* The Surveillance Immunization Medical officers (SIMO), Divisional Coordinators, and National Professional Officers (NPO) and other staff have been carrying out regular monitoring of VPD and immunization activities in the field. SIMO share monitoring findings regularly during monthly meeting at upazila level. The monitoring mechanism will be intensified in close collaboration with EPI once the web-based VPD surveillance system is in place to ensure quality and sustainability.

*1.3.2. Discuss and review the performance of routine surveillance in urban areas (city cooperation, zones).* The City Corporation EPI focal person, medical officers with the technical assistance of SIMOs, DCs and WHO are carrying out quarterly meetings to review the performance of routine immunization coverage and surveillance in urban

areas, particularly city corporations and zones. The findings are shared, and actions are taken for improvement of performance. An urban immunization strengthening draft strategy has been developed and is in the process of endorsement followed by implementation. Dedicated SIMOs have been assigned in big city corporations to support immunization and surveillance activities. Rangpur and Rajshahi City Corporation have taken initiatives to implement innovative strategies to strengthen immunization on pilot basis.

1.3.3. *Support the operation of VPD surveillance system at central, district and Upazila levels (e.g. national consultant, divisional coordinators and district SMO.* With the support of HSS2 grant, additional SIMOs were recruited; currently there are 57 SIMOs, 7 DCs and other support staff in the field who are providing support to government in the area of polio eradication, VPD surveillance, strengthening routine EPI, measles elimination, maternal and neonatal tetanus elimination, introduction of new vaccines, management of AEFI and vaccine safety and quality, supplementary immunization activities and other emergency works.

1.3.4. *Purchase vehicles for surveillance and supervision visits conducted by DMCHIOs / SMOs and relevant officers.* In line with the HSS2, 40 new vehicles were purchased in October 2017. The remaining 32 vehicles will be procured in 2018; however, the remaining funds are inadequate for procurement of 32 vehicles; fewer vehicles will be procured. Currently waiting for government concurrence.

1.3.5. *Support SIMOs to carry out regular routine surveillance activities (through hiring drivers).* SIMOs supported by dedicated vehicles and drivers carry out routine surveillance and immunization activities in the field. Currently there are 40 drivers in place and additional drivers in roster will be recruited once government concurrence for use of new vehicles is received.

1.3.6. *Support the operational costs of SIMOs/DCS (internet, mobiles, office equipment etc.).* Gavi funds have been used to support the cost of internet, mobile, office operation, vehicle repair and maintenance, travels, per-diems, furniture, vaccination cards, injection safety devices, IT equipment, tires and stationary etc.).

1.3.7. *Technical assistance to conduct epidemiological studies/analysis based on surveillance data and linking with HSS area.* National Professional Officers have been contributing to strengthening the capacity within the government system, strengthening of routine and supplementary immunization, data analysis, routinely collected surveillance and HMIS data with a view of enhancing their skills in interpreting trends and evidence and using information in planning and implementation.

1.3.8. *Conduct IBDS (Invasive Bacterial Disease Surveillance) and Rotavirus surveillance.* Sentinel surveillance of IBD is ongoing with Dhaka Sishu Hospital, and Rotavirus surveillance has been conducted by IEDCR since October 2017. Technical report and updates are available on regular basis.

*Objective 2: Ensure EVM in terms of the cold-chain and supply chain management system.*

2.1. *Improve vaccine supply management by the introduction of ISQL management information system.* Bangladesh is one of the few countries with one data system, integrated within the DHIS2. DHIS2 is upgraded with real-time Immunization Supply Chain and Logistics (ISCL) information, which includes data for vaccine, cold-chain equipment, storage, temperature, distribution, vaccination coverage, and other logistics. The cold chain and logistics MIS were implemented across the country in 2016, and all the cold-chain equipment is part of this database and monitored. All CCs are equipped with IT logistics and trained on reporting through DHIS2. Online immunization data management system initially up to district level and later, up to Upazila level and linked or integrated this with DHIS2 established.

Completed activities include: built capacity of 64 District Supervisors and cold-chain personnel; recruited national MIS consultant to oversee the process of transition to DHIS2 data management and timely entry of EPI data at all levels; established a functional dashboard on EPI reporting, cold-chain, vaccine and LIMIS within the portal of DGHS, MOHFW; organized an orientation on stock management and online reporting for EPI supervisors and store keepers in 64 districts; oriented divisional, district and sub-districts level health managers and statistician on data management, analysis and use of information of routine EPI reports, cold chain, vaccine and logistics management.

2.2. *Upgrade cold-chain/logistics infrastructure in accordance with EVM-IP. A* technical committee has been formed to oversee the construction work planned within the Gavi HSS2 framework. The construction strategy has been finalized in consultation with MOHFW and LD MNCAH. UNICEF LTA engineering services provider: "Environment and infrastructure Management Solution" (EUMS) has conducted an assessment of the 32 districts in coordination with the Districts Civil Surgeons and UNICEF field officers, which included: initial structural integrity assessment; architectural plan verification; non-destructive test and preparation of renovation plans and reporting.

Two construction companies have been awarded for Phase-1 and Phase-2 construction and one company in Phase-3 construction. An engineer company has been assigned for site supervision and quality control of the work. The first phase Construction of 11 district EPI stores has been completed and handed over—the second and third phase construction of 19 districts EPI store is on-going and will be completed by October 30, 2018. The technical committee reviewed the progress of fund utilization of construction activities and recommended inclusion of an additional 12 districts for physical assessment for future expansion of cold room; the district site assessments have been completed and architectural/structural designs are being prepared.

The current capacity of the central cold room is 173m3, which is inadequate for the current program and the current warehouse lacks space for installation of the new cold rooms. The construction of the new warehouse at the central level for accommodating needs, in addition to new cold rooms (WIC, 40m3) is under the progress. The physical site assessment and architectural design for expansion of central store has been completed and submitted to Dept. of Architect for approval.

All existing cold and freezer rooms were equipped with remote continuous temperature monitoring systems and are functioning well. For increasing district level cold-chain capacity, 15 cold rooms have already been installed at 9 large districts, with installation of 24 additional cold rooms in 20 other districts planned in 2019. At the district level, the installation of the continuous temperature monitoring systems is under process. In addition, continuous temperature monitoring devices (30DTR) have been installed on all refrigerators across the country, including SP level in 2016.

2.3. *Support supply and logistics system operation.* Twelve Cold Rooms for six new districts have been installed and commissioned. RTM installation is in process, and will be fully functioning in November 2018. Twenty-three SOPs for vaccine and logistics management were revised, designed, and printed. Three batches of national TOTs and five batches of sub-national training of CCT and MT-EPI on revised SOPs of vaccine and logistics management have been conducted. Vaccine container and irreversible freeze indicator are now being used in all outreach sessions to reduce vaccine wastage.

Other completed activities include the following: four trucks and 1,300 bicycles were delivered to implementing partners—the procurement process is ongoing for 402 ILR, 74 freezers and 512 fridge-tag for continuous temperature monitoring; procured spare parts for walk-in coolers (WICs) and center temperature monitoring (CTM) systems; initiated procurement of 24 cold rooms for 14 new districts and planned phase-wise delivery according to site readiness plan; initiated procurement process of 15 KVA Automatic Voltage Regulators, one 30 KVA Generator and two split air conditioners; updated the cold chain inventory for the CCEOP proposal; conducted an EVM assessment in Dhaka North and South CCs and Chittagong CC—the draft

report is ready for sharing—a feasibility assessment of the national training center is on-going; finalized the concept note and selected two upazilas in two districts to study the use of a long range vaccine carrier, and procured 200 sets of long range vaccine carrier for the study; supported a GOB participant to attend the Regional Immunization Supply Chain Review Meeting; and provided 25 engineers and technicians with a two-week residential training course on cold-chain repair, maintenance, and management.

*Objective 3: "Programme Management" evaluation of immunization coverage is planned in year 1 and 3 along with mid-term and final evaluation of the implementation of the Gavi HSS-II grant*

3.1. *Conduct evaluation of immunization coverage including dissemination*. WHO is in the process of recruiting a consultant company to carry out a coverage evaluation survey. Terms of Reference have been developed. WHO is discussing the timing of implementation with GOB and agreed to implement the CES in the first quarter of 2019.

3.2. *Coordination and technical oversight of the implementation of Objective #1.* WHO has assigned a Medical Officer-ISS, Operational Manager, and national staff to provide TA to the National EPI team to implement activities under Objective 1.

Gavi support is crucial for health system strengthening activities with immunization outcomes. The SIMO surveillance network has been instrumental in strengthening routine immunization, introducing new and underutilized vaccines, PIEs, SIAs, capacity building of government health personnel in various areas, support to function of different immunization committees (ICC, NCIP, NVC), VPD surveillance, AEFI surveillance, achieving and maintaining the goal of polio, measles, rubella and CRS elimination, maintaining MNT elimination and control of other VPDs. In addition to VPD surveillance, the WHO network has a critical role in supporting vaccination activities for FDMN in Cox's Bazar. Also, additional vaccine introductions (HPV and Rota) are planned in the coming years in Bangladesh where the role of this network will be essential.

The component "implement and monitor the EVM improvement plan" will address of the gaps of the infrastructure operating at its life cycle end and capacity limits and to prepare for the introduction of new vaccines.

The component supporting VPD surveillance and HMIS will contribute to improvements of coverage and equity of immunization and strengthen data quality and its utilization for decision making of the EPI programme.

MOHFW has a budget to monitor and manage programme implementation. The larger portion of HSS funding to government is earmarked for the support of the SWAp 2017-2021.

**Grant Performance and Challenges**

Integration of VPD surveillance system into DHIS2 is under the progress. One of the key components of integration is capacity building of health staff in facilities for proper and accurate management of data as well as usage of data for decision making and action.

The denominator issues have not yet been resolved. The denominators at district and Upazila levels based on population projection from 2011 census are mostly underestimations and reaching a realistic denominator was not possible even after seeking assistance from nationally and internationally reputed demographists in the recent past. *The report is included as attachment*. The alternative suggestion is to use the available micro-plan data till the next census which is due in 2021. The unresolved denominator issue remains a challenging problem for EPI.

The Ministry of Health and Family Welfare (MOHFW)/EPI with the support provided by UNICEF and based on the EVM assessment, report, EVM Improvement plan, cMYP, DHIS2 and cold-chain inventory report has developed the Cold Chain Rehabilitation and Expansion Plan for the period 2018-2020. The purpose of the cold-chain rehabilitation plan is to ensure adequate and quality storage capacity at Upazila/Municipality and Zone levels for effective implementation of EPI program and ensuring reliability of cold chain at all levels.

EPI Bangladesh, with financial support provided by UNICEF and based on the EVM Assessment Results, developed the Effective Vaccine Management Improvement Plan. The

implementation of the EVM IP, including systemic improvements and program efficacy will be completed by 2019.

**MR/MCV**

Under the new measles strategy of the Gavi Alliance, which is effective from 2017, the country applied for support for a MR catch-up campaign in May 2018. The country proposal has been recommended by IRC for approval (July 2018). The MR follow up campaign will be conducted in September 2019.

In 2017 EPI developed the Strategic Plan for Measles, Rubella and CRS elimination. The main goal of the Strategic Plan is "Elimination of measles, rubella and CRS by 2020". GOB in coordination with Bangladesh Pediatric Association has conducted high level advocacy meeting reiterating its commitment toward Measles-Rubella free Bangladesh by 2020.

Since its introduction in 2012, MCV2 coverage has steadily increased, with crude coverage of 86% nationally according to the 2016 coverage evaluation survey. However, coverage is not uniform in all areas, with some city corporations reporting crude MR2 coverage as low as 70% (Dhaka City Corporation-South) and districts as low as 62% (Shariatpur). (See Figure 2, page-9)

Innovative methods for improving MR1 coverage will be applied to improving coverage with MR2. All efforts will be made to increase MCV1 and MCV2 coverage to achieve elimination target. MR follow up campaign will be used as an opportunity to strengthen routine immunization. Several innovative strategies are descried in MR campaign plan of action. Providing routine MCV2 during the 2nd year of life reduces the rate of accumulation of susceptible children and the risk of measles outbreaks. It also provides a platform for administration of other vaccines, vitamin A administration, de-worming medicines, child health monitoring, and other health interventions.

**PCV/IPV**

PCV and IPV were jointly introduced in April 2015. The PCV and IPV PIE was conducted in December 2015 and concluded that Bangladesh has a well-performing immunization programme and the introduction of PCV and IPV vaccines in Bangladesh has been overall smooth. However, for improvement of quality of immunization services, the PIE provided key recommendations:

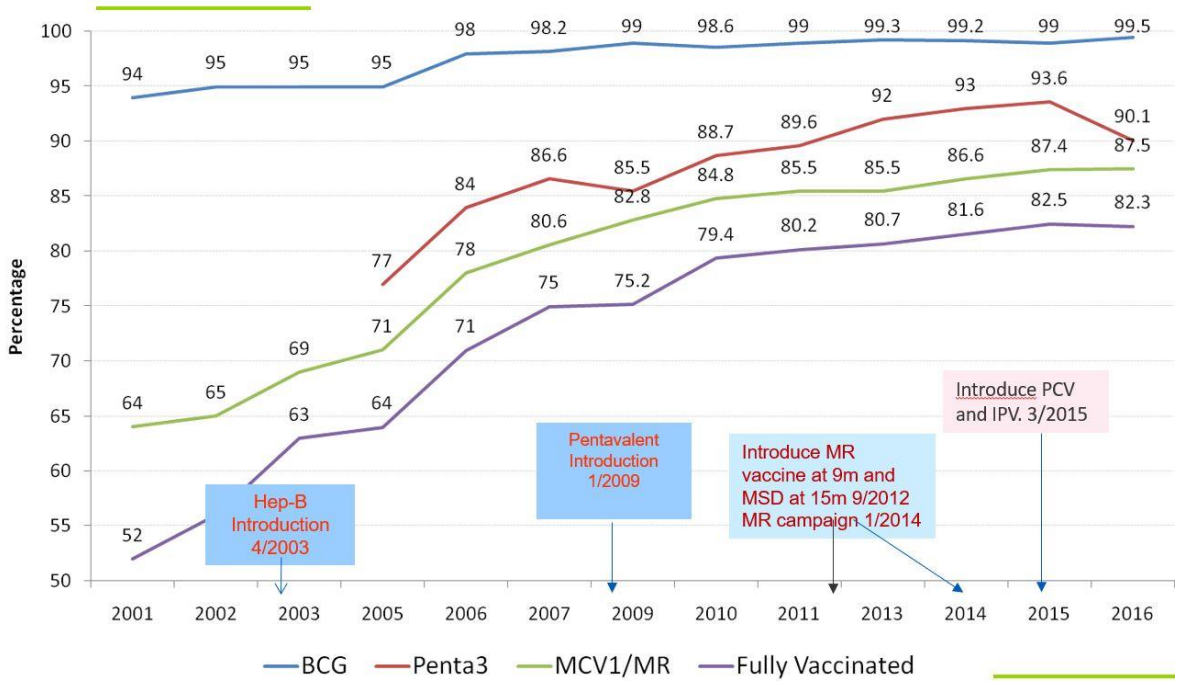
- Monitor the immunization coverage of PCV3 and IPV. The Immunization coverage of PCV3 or IPV at the time of the evaluation was rather low as not a full birth cohort was covered (WUENIC 2015 PCV coverage was at 48%). The causes for the low coverage were investigated and the immunization schedule was revised, which significantly improved the coverage rates. The coverage has further increased in 2016, which was re-evaluated and validated through the CES and Administrative coverage data.

Bangladesh introduced fIPV into RI from November 2017 onwards. IPV coverage still remains low due to irregular IPV vaccine supply caused by the global shortage.

***Achievements Specifically Obtained with Gavi's HSS support.***

Figure 18 below provides a high-level summary of the impact of funding from Gavi on FVC coverage in Bangladesh.

*Figure18: Gavi Support to Bangladesh: Trends in National Coverage of FVC*




Additional notable achievements over the past one year include the following:

- In August 2018, the WHO South-East Asian Regional Office declared Bangladesh one of the first six countries in the region to control rubella and CRS.
- From September 2017 to May 2018, the SIMO network provided support to plan, implement, and evaluate nine mass vaccinations campaigns. These campaigns provided four million vaccines against cholera, polio, measles, rubella, diphtheria and tetanus to children, adolescents, and adults preventing major disease outbreaks and saving thousands of lives among the Forcefully Displaced Myanmar National (FDMN) camps in Cox's Bazar. The network also provided support for vaccination of health workers, PW, vaccination at border entry point, and contacts of diphtheria cases. See Figure 19 for more detail of the achievements.

*Figure 19: Update on Vaccination Campaign for FDMN, Cox Bazar*

| Vaccination Campaigns | Date of Campaign 2017-18 | Target Age Group | Children Reached | Achievements |
|---|---|---|---|---|
| **Two rounds of measles and rubella campaigns conducted** | October | **R1*** 6 Month to <15 years | **135,519** | At least **4,000 deaths** and several thousand measles cases averted among refugees. |
| | December | **R2***: 6 Month to <15 years | **354,982** | |
| **Three rounds of Cholera vaccination conducted** | October | **R1:** All population above 1 year age | **700,487** | Second largest OCV campaign conducted in the world. Averted an imminent cholera outbreak. |
| | November | **R2:** 1 to <5 years | **199,472** | |
| | May | **R3:** all FDMN population above 5 years | **775,668** | Included children U5 who came after Nov 2017 OCV round |
| | | **R3:** all host community population above 1 years | **103,605** | |

| | | | | | |
|---|---|---|---|---|---|
| **Four rounds of oral polio vaccination conducted** | October | **R1:** 0 to <5 years | **72,334** | Polio campaigns integrated with other vaccination campaigns. Adequate protection against polio ensured. | |
| | November | **R2:** 0 to <5 years | **236,696** | | |
| | December | **R3*:** 6 weeks to <5 years | **149,962** | | |
| | January | **R4*:** 6 weeks to <7 years | **171,382** | | |
| **Three rounds of Pentavalent (Diphtheria, Pertussis, Tetanus, Hib and Hepatitis B) campaigns conducted** | December | **R1:** 6 weeks to <7years | **149,962** | Thousands of lives saved. Massive spread of diphtheria outbreak averted | |
| | January | **R2:** 6 weeks to <7years | **171,382** | | |
| | March | **R3:** 6 weeks to <7years | **88,659**** | | |
| **Three rounds of Td (Tetanus and diphtheria) vaccination conducted** | December | **R1:** 7 years to <15 years | **165,927** | Booster dose provided for higher age groups. | |
| | January | **R2:** 7 years to <15 years | **225,993** | | |
| | March | **R3:** 7 years to <15 years | **128,526**** | | |

**R1=Round one; R2*=Round two *R3=Round three; R4*=Round four*

***Coverage as of 18 March 2018 (campaign in progress)*

- Around 355,000 children are protected from measles and rubella
- >775,000 people received cholera vaccines
- Around 200,000 children received bi-valent oral polio vaccines
- >170,000 children 6 weeks to <7 years are protected from diphtheria, pertussis, tetanus, haemophilus influenza type-b and hepatitis B.
- >225,000 children 7 to 15years are protected from diphtheria and tetanus

MoHFW will submit to Gavi for additional support required for provision of immunization service delivery for the FDMN population to through a separate proposal.

## 7.3 Financial Management Performance

***Financial absorption and monitoring rates***

Gavi's Program Capacity Assessment of 2017 determined that a significant proportion of Gavi funds remained underspent—see Figure 20. This suggests that planning, budgeting and forecasting functionality will need to be strengthened to ensure the appropriate spend.

Figure 20: Summary of Cash Grant Status.

| Grant Name | Disbursed | Expenditure | Balance | Comments/Actions |
|---|---|---|---|---|
| **HSS2** | 10,978,148 (WHO)<br>11,793,376 (UNICEF) | 6,683,449 (WHO)<br>8,508,730 (UNICEF) | 4,294,699 (WHO)<br>3,284,646 (UNICEF) | As of July 30, 2018 |
| **HSS1** | 13,671,500 | 13,630,501 | 40,999 | By July 31, 2017, HSS1 closure report is due |
| **VIG IPV** | 2,498,000 | 230,480 | 2,267,512 | As of June 30, 2017. Re-programmed for fIPV introduction |
| **OPC Measles-Rubella** | 33,586,500 | 17,901,865 | 15,684,635 | As of June 30, 2017 |
| **VIG PCV** | 3,233,500 | 1,418,897 | 1,814,603 | As of June 30, 2017 |
| **ISS** | 23,340,200 | 23,128,886 | 211,314 | As of June 30, 2017 |
| **VIG Measles** | 1,195,500 | 1,195,500 | 0 | As of June 30, 2017 |
| **HPV Demo** | 333,500 | 147,214 | 186,286 | As of June 30, 2017 |

*WHO:* The total approved funding under HSS2 for WHO Bangladesh country office for the period July 2017-June 2018 was US$ 6,100,316 (without PSC), mainly to support strengthening of VPD surveillance and its integration into HMIS. WHO Bangladesh spent US$ 6,683,449 (60.6%) by end of June 2018. The remaining balance will be spent by the end of year 2019. There were some delays in implementation, and the slow absorption of funds was mainly caused by competing priorities for the staff of EPI and WHO, who were responding to the influx of the FDMN refugee in Cox's Bazar. This included mass vaccination campaigns from September 2017 to May 2018 providing four million doses of vaccines against cholera, polio, measles, rubella, diphtheria and tetanus to children, adolescents, and adults. Staff were also busy with development of the MR campaign and PSR application. Absorption will pick up in 2018/2019.

*UNICEF:* The total available funding for the period July 2017-December 2018 was US $11,793,376 for improvement of the EVM in Bangladesh. This includes equipment, infrastructure support, outsourced services, TA, management actions, capacity building, workshops and international and project management cost. UNICEF Bangladesh total expenditures amounted to US$ 8,508,730 (or 72% of total disbursed funds). The remaining balance for this period will be spent by end of year 2019 with some potential reallocation. Delayed implementation was caused by competing priorities, especially the emergency response for FDMN population, which resulted in slow absorption of funds. Also, a procedural barrier for approval of Central EPI store design delayed the start of construction. In addition, due to competitive bidding, there have been some savings in the line items of construction and cold chain equipment, which has also led to the low utilization of total fund.

***Major issues arising from cash programme audits or monitoring reviews***

Financial reporting for EPI follows standard GOB and MOHFW procedures. Gavi's Program Capacity Assessment of 2017 found that reporting from MOHFW was variable, there were examples of reports being delayed, and errors within the reports that were prepared. In addition, accounting processes were considered very manual with minimal use of technology.

PCA reports that the current accounting system (IBAS) does have the capacity to generate periodic reports. However, the use of these was only seen at the Chief Accounting Officer (CAO) office and not in the FMAU or at the EPI Program level teams.

Overdue audit reports for MROPC, VIG Pneumo and HSS1 have been completed and are under review by Gavi.

Gavi's Program Capacity Assessment of 2017 finds that the audit departments i.e. FAPAD and FMAU, are stretched and do not have the capacity to deal with the volumes.

Based on the PCA assessment, the financial management capacity of MOHFW is not adequate to properly manage Gavi funds through either the pool or through cash support. The PCA assessed this area as "*Moderate* Risk" and provided recommendations for improvement.

### 7.4 Sustainability

GOB recognizes EPI as a priority national public health program, as demonstrated by its commitment to finance all routine immunization vaccines and support the introduction of new vaccines. This is demonstrated by the GOB's consistency in meeting its co-financing commitments for Gavi-supported new and underused vaccines.

As described in the financial management section, GOB contributions towards EPI and HSS financing over the years has increased considerably. GOB sources currently account for 85% of the total cost of EPI financing when both revenue and development budgets are considered. GOB is committed and capable of financial sustainability once partner support is withdrawn.

However, there is a challenge to sustaining the activities performed by the WHO SIMO network in the field of VPD surveillance and routine immunization when support to the network is withdrawn. Nevertheless, GOB is committed to transitioning the functions and assets of the

network to the national health system, and EPI prepared a National Polio Transition Plan in April 2018 that has been ratified by ICC and MOHFW. Under this plan, the new government positions of epidemiologists will be created at the district levels. These will take over the functions of the SIMOs. In addition, at the upazila level, a medical officer will be trained in disease surveillance and epidemiology to support the district epidemiologists in sustaining the VPD and polio surveillance at its present highest level.

## Part D: Objectives of requested Gavi support

Building on the country immunisation system analysis and context (**Part B**) and performance to date (**Part C**), this **Part D** presents a request for future Gavi support.

### 8. Planning for future support: coordination, transparency and coherence

**8.1** What steps were taken to achieve complementarity and coherence of Gavi's support across government and stakeholders? How were various forums (ICCs, HSCCs, NITAGs) involved in the development of the PSR?

Significant discussions informed the development of this HSS3 PSR to ensure complementarity and coherence across support from GOB, development partners, CSOs (including the immunization platform for CSOs), and other stakeholders in the context of the 4th HPNSP. The sessions were led by the Planning Wing, MOHFW, and EPI, with important technical support from WHO and UNICEF.

The following targeted workshops were held with multiple stakeholders:

- The first consultative meeting was held on 20th to 24th August 2017 with participation from civil society (BRAC), USAID, researchers (ICCDRB), members of ICC and NCIP committees, EPI, and MOHFW. The workshop participants actively discussed the new PSR format as the new mechanism for accessing Gavi support. The discussion also covered the content of the PSR document, its relevance to the Bangladesh context, key objectives of Gavi support to address existing challenges in relation to the overall performance of the immunization program with special emphasis on never- and under-reached children, strengthening health and immunization systems, HR issues, and existing possibilities and opportunities.
- A second consultation workshop was held on 30th October to 2nd November 2017 with participation of all key decision-makers and stakeholders, including the Gavi country support team, to contribute to development of the HSS3 proposal.
- On 2nd -4th June 2018 Gavi Secretariat staff joined workshop participants in Savar from EPI, Planning Wing, WHO, UNICEF, and the CSO platform. World Bank staff also presented the SWAp for the 4th HPNSP, including verification and payment processes based on DLIs.
- On 24th-25th July 2018, also in Savar, the Gavi Secretariat joined workshop participants from EPI, Planning Wing, WHO, UNICEF, CSOs (immunization platform for CSOs) and others.
- Additional workshops involved PIC members and experts in Dhaka over August-September, 2018.

The participants of these workshops provided valuable feedback on the EPI strategies for reaching every child with vaccination, sustainability of the programme, HR management, and introduction of new vaccines. Their comments were incorporated into the PSR document. A draft copy of the document was shared with each participant before and after the workshop for their further contribution.

In addition, separate meetings were held with the immunization platform for CSOs, to go over details of proposed objectives, activities, approaches, and the budget.

The Planning Wing of Health Services Division, MOHFW, organized multiple Program Implementation Committee (PIC) meetings to discuss the PSR document preparation. They facilitated active involvement of GOB and partners in development of the PSR document to ensure its transparency and coordination across government, CSOs, and development partners

The Planning Wing of MOHFW, DGHS (EPI), WHO, and UNICEF also held several meetings to discuss steps for development of the HSS3 and PSR documents.

| |
|---|
| **8.2** To be eligible for new Gavi vaccine or financial support, countries need to demonstrate a basic functionality of **their coordination forum (ICC, HSCC or equivalent body**). Requirements are described at http://www.gavi.org/support/coordination/<br>To what extent does the **coordination forums meet the** Gavi requirements? What steps have been taken to address any gaps? |
| ICC is actively involved in policy dialogue, discussion, and decision-making on EPI and immunization program related issues. ICC meetings are held at least twice a year with the purpose of discussing EPI related issues, to provide an update on implementation progress, and to endorse key decisions related to immunization.<br>A high level Local Consultative Group (LCG) on health is involved in sector development program implementation, including the HSS program, through participation in and discussion of various aspects of program implementation. |
| **8.3** How does **Gavi** support fit within the context of national health and immunisation strategies? |
| *Summarize how Gavi's support fits within and complements the overall context of the national health and immunization strategies, and efforts to achieve Universal Health Coverage priorities. Explicitly address how Gavi support will complement, both financially and programmatically, the achievement of these objectives. Discuss the extent to which the health financing strategy and policy incorporates vaccine and immunisation recurrent delivery costs and needs.* |
| Gavi support is a part of the current Program Implementation Plan and MNCAH Operational Plan of the 4th HNPSP. The expected DPA support from Gavi was factored in when these plans were prepared, and also during EPI budget preparation. Gavi support has been instrumental in helping Bangladesh reduce child morbidity and mortality caused by VPDs. Bangladesh made significant progress in achieving high routine immunization coverage and VPD targets – the last case of Polio was in 2006, MNT was eliminated in 2010, and measles is now controlled. In the last decade, Bangladesh has introduced several new vaccines into routine immunization, including HepB, Hib, rubella, PCV and IPV. The introduction of AD syringes, safety boxes, and improved injection safety have been made possible with support from Gavi. VPD surveillance has helped the country make informed decisions about the introduction of new vaccines, develop outbreak response strategies, build capacity, provide updates on disease burden, and eradicate/eliminate or control the status of VPDs. |

## 9. Planned vaccine introductions over the duration of the national immunisation strategy (e.g. cMYP)

This section presents information on future vaccine routine introductions and/or campaigns under consideration for Gavi support (including support for which the country may not be eligible yet). This does not represent a commitment from the country to introduce the vaccines listed below. High level information critical to advance planning and preparation should be outlined here.

**Approximately 18 months ahead of the actual introduction in the routine programme or the campaign**, additional vaccine-specific information will be required to obtain Gavi approval. This **Vaccine Support Request** will include: evidence to confirm eligibility, operational plan, budget, and essential information to support grant implementation (e.g. procurement and co-financing terms, target population data).

**Strategic considerations supporting the requests for new vaccines** (routine or campaigns)

| | |
|---|---|
| **9.1** | Describe the rationale for requesting these new programme(s), including the burden of disease. If already included in detail in the Introduction Plan or Plan of Action, please cite the section only. |

**HPV Nationwide Roll-out**

Cervical cancer is the second most common cancer among women in Bangladesh. Every year 11,956 new cases are detected, and 6,582 women die of the disease.[8] Incidence of cervical cancer is approximately 29.8 per 100,000 women per year, which is much higher than South East Asia as a whole (25) and world-wide (15.3). Bangladesh's cervical cancer mortality rate is 17.9 per 100,000 women per year, which is also higher than the region as a whole (14.4) and the world (7.8).

In 2016, EPI Bangladesh with financial support from Gavi, launched a two-year HPV demonstration program. This was limited to one district and aimed to demonstrate the ability and readiness of the country to scale up HPV vaccine introduction nationwide. The program targeted school girls in Grade V and "out-of-school" girls aged 10 years, using bivalent vaccine with a two-dose schedule at six months interval.

A joint national/international post-introduction evaluation was implemented in October 2016 with WHO support. This used a standard protocol and tools, which were reviewed and adapted to the Bangladesh context. Observation and interviews were undertaken by teams at all levels of the health service, including EPI offices, vaccine stores, and vaccination sessions. The evaluation consolidated all findings and elaborated recommendations. According to these: *"Bangladesh successfully demonstrated that HPV could be scaled-up for the entire country… Most of the components required for HPV introduction were in place and all stakeholders prepared for an HPV vaccine nationwide introduction."*

GOB has been reviewing the findings and recommendations, as well as other study reports, to ensure evidence-based decision-making about nationwide HPV rollout. *The decision is pending.*

**MR Follow-up Campaign 2019**

GOB set the goal to eliminate measles, rubella, and CRS by 2020 and has developed a "Strategic Plan for Elimination of Measles, Rubella and CRS". Elimination of measles will be achieved when the country interrupts transmission of indigenous virus for over three years. Rubella control is achieved when a country reduces the number of rubella cases by 95% compared to 2008.

Bangladesh provides MR first dose at 9 months and MR second dose at 15 months of age. EPI coverage evaluation surveys from 2014 to 2016 found national MCV1 coverage has remained at 86.6%-87.5% for the past three surveys, while MCV2 was 70% in the 2014 survey, 80.5% in 2015, and 83% in 2016. Wide variation in MCV1 and MCV2 coverage exists among districts and city corporations. Bangladesh introduced case-based measles surveillance from 2008, and CRS surveillance from 2012. A series of measles vaccination campaigns have been implemented – in 2005/06, the measles catch-up campaign targeted 9 months to <10 years; in February 2010, 9 months to <5 years were targeted; and in January 2014, 9 months to <15 years were targeted, achieving overall >95% coverage.

The WHO South-East Asia Regional Verification Commission on Measles elimination and Rubella and CRS control met in Delhi from 31st July to 2nd August 2018. Based on an in-depth review of data and reports provided by national verification committees, the commission concluded that four countries had already eliminated measles, while Bangladesh was *one of six countries that had achieved control of rubella and CRS.* This is a commendable achievement as the rubella control goal had been achieved two years ahead of schedule.

However, relative low coverage of measles vaccination (MCV1 and MCV2), presence of pockets of low coverage at sub-district and city ward levels, and a gradual increase in measles cases since the last MR campaign (2014), indicate the need for an additional MR campaign. This will increase population immunity and help achieve the measles elimination goal by 2020. Based on

[8] BGD HPV PIE Final Report, 2016

epidemiological findings, MOHFW is planning a nationwide MR follow-up campaign in October 2019 targeting children aged 9 months to 9 years. MOHFW has submitted an application to Gavi for vaccine and operation support. *GOB received communication from Gavi on 27th July 2018 indicating that IRC has recommended approval for support to the MR campaign. Gavi has asked GOB to revise the target population to 09-59 months and to consider older children through school-based strategies. GOB has agreed to implement MR campaign with Gavi support for children 09-59 months; however, it is still considering the age group 5-9 years to be included into the campaign through alternate sources including GOB's own funding. The campaign is now planned for October 2019.*

**9.2** **Please discuss the financing-related implications of the new vaccine programs requested,** particularly how the government intends to fund the additional co-financing obligations. Please mention if any defaults occurred in the last three years and, if so, describe any mitigation measures that have been implemented to avoid future defaults.

The details of financial implications of the introduction of new vaccines are given in the BGD cMYP 2018-2022, Section 3, Immunization Program Costs and Financing.

**9.3** Please give details of the **lessons learned** from previous campaigns and routine introductions, specifically for: storage capacity, protection from additional freezing, staff training, cold chain, logistics, coverage, wastage rate, coverage and drop-out rates, and suggest action points to address them in future introductions or campaigns

- The following are key lessons learned from previous Measles/MR campaigns:
- Political and financial commitment from government towards immunization, and effective coordination among partner agencies, are key for successful implementation of campaigns.
- A multi-sectoral approach towards implementation ensures active participation by key actors from different sectors, such as education, local government, professional bodies, the media, and civil society.
- Effective planning, coordination, and collaboration with local government authorities is critical to ensure efficient maintenance of cold chain and implementation of EVM practices, as well as to leverage available resources for high-quality immunization services.
- Advanced and high-quality trainings at all levels contributes to the effective performance of EPI in implementation of SIAs.
- Implementation of advocacy, social mobilization, and effective communication activities through interpersonal communication and planning meetings between different stakeholders at all levels helps raise awareness among communities.
- High-quality and comprehensive micro-plans are a crucial factor for successful implementation of campaigns.
- Pre- and post-campaign supportive supervision is critical for ensuring success in implementation of SIAs and monitoring implementation progress.
- Effective AEFI monitoring and management system, and daily data monitoring from vaccination sites, are crucial for ensuring high performance in implementation of SIAs.
- Active involvement of experienced and qualified cold-chain and logistics experts is essential during implementation of campaigns.
- Effective coordination between front-line service providers and their supervisors is a key factor in ensuring efficient implementation of campaign activities.
- Adequate and timely supply of vaccines and injection equipment, and effective supervision and monitoring of the implementation process, are keys to the success of nationwide campaigns.

- Uninterrupted monitoring of achievements against campaign targets is essential for implementation of corrective interventions.

**9.4** Explain how the proposed NVS support will be used to **improve coverage and equity** of routine immunisation, by detailing how the proposed activities and budget will also contribute to overcoming the key barriers cited in your coverage and equity analysis.

The MR follow-up campaign is an opportunity to strengthen routine immunization. The proposed NVS support will be used to improve coverage and equity through the following activities:

- Continue RI services during SIA;
- Update RI micro-plan based on SIA micro-plan and identify hard-to-reach areas, and drop-out and left-out children;
- Include routine immunization message during SIA training;
- Build capacity of health workers on injection safety, AEFI management, cold chain and vaccine management, and use supportive supervision technique and tools;
- Include routine immunization messages in SIA posters;
- Introduce a routine immunization invitation card;
- Use RCM to identify drop-outs/left-outs.

During awareness building prior to the campaign, the audience will be provided with full information on the routine immunization schedule, specific place, and the timing of sessions. Also during the campaign, high-level advocacy meetings with various stakeholders and partners will be used as a forum to promote routine immunization. Routine immunization will also be promoted through training volunteers, and social mobilization activities with various groups (e.g., parents, school teachers and pupils, and religious and local leaders). These will be used to share information on the dose schedule, place of immunization services provision, timing, and on the needs for specific vaccines. (*Please refer to Annex-02, Final Plan of Action Measles Follow-up Campaign).*

**9.5** Summarise **programmatic challenges** that need to be addressed to successfully implement the requested vaccines support and describe plans for addressing those. Examples of key barriers to consider include:

- **Health work force**: availability and distribution;
- **Supply chain** readiness;
- **Demand generation** / demand for immunisation services, immunisation schedules, etc.;
- **Leadership, management and coordination**: Leveraging the outcomes of the Programme Capacity Assessment and/or other assessments, please describe the key bottlenecks associated with management of the immunisation programme. This includes the performance of the national/ regional EPI teams (e.g. challenges related to structure, staffing and capabilities), management and supervision of immunisation services, or broader sectoral governance issues.
- **Other critical aspects** based on country plans or reports (e.g., the cMYP, EPI review, PIE, EVM) or key findings from available independent evaluations reports.

***Health Workforce***

According to the findings of the HPV Programme Impact Evaluation (PIE), one of the key challenges to introducing a new vaccine introduction is lack of HR, especially in the large EPI stores at the national and district levels. Although this component was not assessed in all districts, Gazipur district, for example lacked a cold-chain technician and storekeeper. It is critical to ensure that all

district EPI stores are well-resourced before a new vaccine (in this case HPV) is introduced, as well as before introduction of rotavirus vaccine over the next five years. Special attention will be required for training new recruits who have not received basic EPI training, especially in HPV and rotavirus vaccine introduction.

In 2015, GOB developed the "Bangladesh Health Workforce Strategy". This is designed to support the health sector in achieving its goals and objectives, as well as implementation of the strategic plans that contribute towards achieving UHC. The Administration Wing of MOHFW is primarily responsible for personnel management functions. This includes post creation, recruitment, selection, deployment (e.g., transfer, posting, and deputation), leave, and promotions. The *Human Resource Management Unit* is a project based within MOHFW and attached to the Administration Wing. The Unit provides support for health workforce policy, planning, and strategy formulation, including data and information generation.

As described under Section 5, unfilled sanctioned positions, deputation and deployment practices, and high rates of staff turnover are key reasons for a shortage of skilled vaccinators and health staff for immunization. Actions have been taken to recruit 4,700 new vaccinators (as MOHFW health assistant (HA) position) following a recent High Court ruling lifting of a legal bar, which had stopped the process for several years.

NGOs provide substantial support for immunization services in urban areas. However, the current NGO group under the Urban Primary Health Care Project will cease to function from July 2019. The USAID-supported NGO group, "Smiling Sun", is also undergoing transition. Therefore, local government institutes and MOHFW should take appropriate steps to create and recruit staff to support PHC services and avoid any HR gap. During the interim period, support is proposed here.

***Supply Chain Readiness***

EPI Bangladesh, with financial support, developed the comprehensive EVM Improvement Plan. Implementation was scheduled during the period 2014–18. The budget for implementation was estimated at $21.9 million will be completed by 2018. The readiness of the cold chain for new vaccine introduction, and progress of the EVM Improvement Plan implementation, are described in the Part B (Vaccine Stock Management) and Part C (Past Grant Performance) of this document. Detailed information about cold chain related aspects is provided in the sub-section 1.3.3(6) "Cold chain and vaccine management" of the cMYP 2018-22.

***Demand Generation***

The causes of the low demand include fear of side effects, lack of time, inappropriate timing of immunization sessions for working mothers/caregivers, and lack of trust. These and others are discussed in more detail in the cMYP, and are yet to be addressed suitably. There is need for demand generation activities when non-traditional age groups are targeted for immunization. This is evidenced by low TT5 coverage among women of child-bearing age in comparison to TT2+ coverage among pregnant women. This will could prove a significant barrier when and if Bangladesh decides to implement nationwide rollout of HPV.

Findings of the PCV/IPV PIE and CES also indicates that the EPI requires development of specific, evidence-based communication strategies to engage with slum communities and migrant populations in CCs, and underserved population groups in rural areas. This should take place prior to future new vaccine introductions, as well as to improve equitable coverage of all routine immunization vaccines.

***Leadership, Management, and Coordination***

There is inadequate coordination between MOHFW and the MOLGRDC. This is a major obstacle for immunization services in urban areas as the municipal area and CC are the major authorities responsible for provision of all health services. This may also hinder the introduction of new vaccines. As a part of its continued effort to address the issue, GOB reconstituted the Urban Health Coordination Committee (UHCC) in June 2018, with a view to strengthening coordination of urban health services being provided by MOHFW MOLGRDC. New terms of reference have been prepared.

| | |
|---|---|
| **9.6** | Describe **potential synergies** across planned introductions or campaigns (e.g. if two introductions are planned in the same year, there should be synergies at least in training and social mobilisation events). If relevant, comment on capacity and appropriate systems to introduce multiple vaccines in a year. Also describe how the country will mitigate any programmatic and financial risks associated with multiple introductions. |

Over the course of the next cMYP period (2018-2022), EPI is introducing Rota vaccine and HPV nationwide scale-up. The phased introduction of Rotavirus vaccine starting 2018 has been delayed due to vaccine shortages at the global level. The final decision on HPV introduction is pending. The MR follow-up campaign is planned for October 2019. If Rotavirus vaccines are available by August 2019, there is a possibility that its introduction may be combined with MR campaign activities, especially advocacy, vaccine transport, fixed site management, and supervision. However, at this point it seems very unlikely.

## 10. Description of requested support for each new vaccine programme

More specific planning needs particular to each vaccine programme listed in Table 1.2 are described here. Greater details on activities needed to prepare for the vaccine introduction and/or campaign (addressing the programmatic challenges and bottlenecks outlined above) should be reflected in the country's annual work plan. In describing the Technical Assistance (TA) needs, no need to mention provider or budget needs as this will be discussed and agreed upon at a subsequent stage.

**Additionally, a vaccine-specific request will be required 12-18 months before the actual introduction in the programme or the start of the campaign.**

**Exclude here vaccines that have already been approved by Gavi, even if they have not yet been introduced.**

| | |
|---|---|
| **HPV Routine/Nationwide rollout** | Describe the **broad strategy for introduction** (including target population, potential multi-age cohort vaccination in year 1, potential regional roll-out etc.). |
| | *Decision regarding HPV introduction has not yet been taken.* |
| | Describe the steps to finalise the introduction strategy and to engage key stakeholders |
| | *Not relevant* |
| | What **Technical Assistance will be needed to support** this introduction and when? |
| | |
| **Measles / Measles Rubella** *(routine and campaign/s with introduction date, e.g. **Dec 2020**)* | To encourage a comprehensive and longer-term approach to MR control/elimination, the multi-year national plan attached to this PSR should include an analysis and description of the activities outlined below:[9]<br>• **Immunisation coverage trends and drop-out rates for MCV1 and MCV2** in routine (national and sub-national); coverage results from M or MR campaigns, including post campaign coverage surveys; **lessons learned** from implementation of routine and campaigns, and efforts to cover hard-to-reach areas and other populations (e.g., women of child bearing age, and health workers)<br>• **Surveillance** (case-based and sentinel) performance for at least 5 years, at national and subnational levels, and any plans for improving it through the use of HSIS funds (if not covered in above sections already) |

[9] If the multi-year national immunisation plan (cMYP) does not include this information, it may be submitted as an addendum to the plan.

| | |
|---|---|
| | • **Epidemiological trends** and patterns (e.g., distribution by age, geography) for measles, rubella and CRS including outbreaks; population susceptibility and measles outbreak risk profile<br>• **Priority activities** for 1) routine (MCV1 and MCV2) immunisation strengthening, including efforts to improve coverage in hard-to-reach and/or MR in routine immunisation and any campaigns in the next 5 years (catch-up or follow-up); 3) strengthening of measles, rubella and CRS surveillance and lab confirmation (including through the use of HSIS funds): 4) outbreak preparedness plans |
| | Provide a **technical justification** for each type of support requested for Measles / Measles Rubella in the next 5 years |
| | Technical justification of the requested support for the MR follow-up campaign is provided in Section 3 ("Justification for MR Follow-up Campaign") and Section 4 ("Measles, Rubella and CRS Disease Burden") of the "Plan of Action of Measles-Rubella Follow-up Campaign 2018". This was developed by EPI, DGHS, and MOHFW. Additional information can be found in the Bangladesh cMYP 2018-2022 developed by EPI in 2017. |
| | Describe the **target population** for each type of support in the next 5 years |
| | The MR follow-up campaign will target children between 9 months and 5 years of age. The target coverage for the campaign is more than 95%. |
| | With reference to any particular bottlenecks/challenges noted above, what **TA will be needed** to support this introduction or campaign, and when? |
| | The following TA will be required for implementation of the MR follow-up campaign:<br>• **Monitoring**<br>Independent monitors for the SIA (Total 15 persons and 15 days /person) will be deployed during campaign. |

**GAVI support for immunization service delivery for Forcefully Displaced Myanmar Nationals, Cox's Bazar – See separate attachment for this request.**

## 11. Programmatic: description of priority HSS investments from Gavi

### 11.1 Gavi grant-related information

| | |
|---|---|
| Based on the above, **target date for submission of annual operational workplan and budget** for Gavi's contribution | October 2018<br>*(EPI Operational Workplan 2018-19 included as attachment)* |
| **Target date** for first year funds arriving in country | March 2019 |
| **Next PSR portfolio review** (final year of immunisation strategy) | 2022 |
| | |

### 11.2 Objectives and priority activities for Gavi financial support

This section describes the 3 to 5 objectives and priority activities that have been identified for Gavi financial support. The description indicates how each objective intends to address the issues and bottlenecks identified in Part C and contribute to sustainable improvements in coverage and equity. It is recommended to consider specific objectives related to the under-immunised populations identified in Part B, and to explore investments in critical areas such as vaccine supply chain, demand promotion and community engagement, leadership management and coordination and data quality/availability/use).

This Gavi HSS3 PSR proposes five objectives to address the bottlenecks described above and to improve immunization coverage and equity in Bangladesh.

1. *Support 4th HPNSP sector wide approach (SWAp) through multi-donor trust fund (pooled fund) to strengthen health system.*
2. *Strengthen service delivery system for improving coverage and equity of immunization services in 16 target districts and 4 target city corporations.*
3. *Ensure effective vaccine and cold-chain management and uninterrupted supply of quality vaccines and injection supplies*
4. *Strengthen leadership and management capacity of EPI and Planning Wing of MOHFW*
5. *Strengthen capacity of Health system of the country for implementation of VPD surveillance and real-time health management information system.*

A brief overview of each objective is provided here below for context. Please see summary tables below for each objective and the budget template for further details on activities.

The objectives were developed by GOB and stakeholders considering the important bottlenecks and root causes that are hindering further strengthening health system in the context of immunization. A special consideration was given to the prospect of strengthening the health system and capacity building of EPI management including financial management.

For objective 1, it was agreed to allocate USD 50 million from Gavi into the MDTF (4th HPNSP) for the above purpose supporting the mainstream health system strengthening without creating parallel donor-dependent system specific for the program. This is in line with recommendations of Gavi's PCA.

Objectives 2-5 are proposed as direct project aide (DPA) to be implemented through MOHFW, WHO, UNICEF and CSOs. These are planned for resolving some critical bottlenecks that need more rapid attention and can be fixed within a relative short period of time.

Objective- 2 proposes direct service delivery in target 16 districts and 4 CCs as discussed earlier, to address stagnancy of immunization coverage and rising inequities in immunization. The proposed set of activities under this objective includes innovative approaches like an e-Tracker, customized SBCC, etc. to enhance service delivery. System strengthening will be ensured by

working with GOB at multiple levels to ensure additional vaccination services in these under-served areas.

Objective-3 complements ongoing HSS2 support to address inadequate cold-chain and replacement of non-PQS equipment with PQS equipment. CCEOP proposal including co-investment is included here. In addition, capacity building of National Regulatory Authority (NRA) for ensuring uninterrupted supply of quality vaccines from local vaccine manufacturers through attainment of WHO prequalification.

Objective-4 supports capacity of MOHFW management at the Planning Wing and EPI office, DGHS including programme monitoring, procurement and financial management. This objective also includes operations research to guide successful implementation of the Gavi HSS grant.

Objective-5 is a continuation of Gavi support under HSS2 for supporting SIMO network and related surveillance activities during the interim period prior to planned transition of the network to mainstream health system of the country by 2022 as per Polio Transition Plan (2018) in the critical period disease eradication (polio) and elimination (measles, rubella and CRS). The objective also addresses the need to complete EPI related HMIS to DHIS2.

The activities planned for attainment of the 5 objectives will be monitored by Gavi performance framework (GPF) and as well as by DLIs. (See below)

Following recommendations in Gavi's Program Capacity Assessment, a hybrid funding modality is proposed for the present HSS3 grant. Specifically, US $50 million is proposed to be placed under RPA in the 4th HPNSP, and another $41 million provided as DPA through:

- MOHFW (DPA): US $2.02 million;
- CSO: US $4.98 million (likely through MOHFW or WHO/UNICEF);
- WHO: US $16.5 million; and
- UNICEF: US $18.3 million.

*The fund to MOHFW will be managed in line with the existing GOB financial management system. The conditionality of having an external fiduciary agent is not acceptable by GOB.*

Faster implementation to achieve targets, simultaneous strengthening of health system and government technical and financial management capacity, have been considered for keeping the provision of large part of the grant through Gavi partners (WHO and UNICEF). Decision of sharing of the activities among WHO and UNICEF is based on the area of expertise of the partner. For example, the surveillance activities will be implemented mostly through WHO while Cold chain activities through UNICEF.

The comparative advantage of CSO platforms and NGOs will be used for service delivery in urban areas, particularly urban slums, areas with low immunization coverage, and also for strengthening their own capacity for future involvement in immunization programme. Options for fund channeling through CSOs have been discussed at length in-country at multi-stakeholder workshops with participation of high level MOHFW officials, UNICEF, WHO, Gavi Supply Chain Management and Health Systems Strengthening Specialist, and CSO representatives. As a result, two options have been proposed – either channeling funds through MOHFW, and/or through in-country Gavi partners (WHO or UNICEF).

**Modality of Activity Implementation by CSOs:**

NGOs will be selected for service delivery in accordance with existing GOB rules and regulations. Physical capacity, technical expertise, comparative advantage in implementation of the specific activity, and past experience in the geographic area, will be factored into the selection criteria. Selected NGOs will work with guidance and in close collaboration with the planning wing (PW), DGHS (EPI), CCs, and partners. They will be responsible for completion of work within the stipulated time based on contracted deliverables.

Immunization Platform of Civil Society in Bangladesh (IPSCB) was formed initially through Catholic Relief Services with Gavi funding. IPSCB presently comprises of 12 different NGOs. IPCSB will coordinate and monitor support to NGOs. In addition, other organizations such as the Bangladesh Pediatrics Association (BPA) and Bangladesh Medical Association (BMA) may be used for advocacy, awareness building, and promoting service delivery. The expertise of some other organizations may also be used as appropriate; for example, the National Institute of Population Research and Training (NIPORT) may be engaged for specialist training.

The next section describes 4th HPNSP and MDTF in further detail since objective 1 support will be through MDTF and objectives 2-5 through DPA will also complement and support 4th HPNSP.

## Sector Wide Approach and 4th HPNSP

Bangladesh has one of the largest Sector Wide Approaches (SWAp), Globally, for the health sector, now in its fourth iteration of five-year programmes. MOHFW's budget for the third SWAp increased at an average rate of 15% per annum. The same rate has been sustained during the first two fiscal years of implementation of the fourth SWAp (4th HPNSP). As shown in Figure 9 below, GOB's contribution to the SWAp has been rising steadily, while the share from development partners is declining.

Figure 21: SWAps in Bangladesh, 1998–2022 (*Source: PIP Volume I, 4thHPNSP, Bangladesh, 2017)*

| Name | Duration | Fund (Billion US$) | GOB Contribution | Development Partner Contribution |
|---|---|---|---|---|
| Health and Population Sector Program (HPSP) | 1998-2003 | 2.2 | 62% | 38% |
| Health, Nutrition, and Population Sector Program (HNPSP) | 2003-2011 | 5.4 | 73% | 27% |
| Health, Population, and Nutrition Sector Development Program (HPNSDP) | 2011-2016 | 6.6 | 78% | 22% |
| 4th HNPSP | 2017-2022 | 14.7 | 84% | 16% |

The total estimated cost of the 4th HPNSP is US$14.7 billion. This covers the entire GOB health, nutrition, and population budget over the 5.5-year period, as well as contributions from development partners. The budget comes through two channels: 1) the revenue (non-development) budget, which covers all MOHFW staff salaries and some infrastructure support; and 2) the development budget, which largely covers capital costs and some recurrent costs for new programs. The budget is allocated to Operational Plans, each implemented by a line director in MOHFW. Similar to previous iterations, it is expected that a significant proportion of development partner support will be channeled through on-budget financing, including through co-financing of this proposed operation (4th HNPSP).

*Figure 22: Cost of the 4thHPNSP (Source: PIP Volume I, 4thHPNSP. Planning Wing of the MOHFW Bangladesh, 2017)*

| Financing Pattern | Total Jan 2017 – Jun 2018 (million USD*) | % of total | Source of PA |
|---|---|---|---|
| **2 GOB -Non-development (Revenue)** | 9,172 | 62.3% | RPA: Credits from IDA and JICA<br>DPA: Grants from development partners (DFID, GAC, USAID, SIDA, EKN, WHO, UNICEF, GFATM, Gavi-HSS, WB (GFF), UNFPA |
| **3 GOB- Development** | 3,139 | 21.3% | |
| **Sub-total of GOB (1+2)** | 12,311 | 83.7% | |
| **4 Reimbursable Project Aid (RPA)** | 1,487 | 10.1% | |
| **5 Direct Project Aid (DPA)** | 914 | 6.2% | |
| **Sub-total of PA (3+4)** | 2,401 | 16.3% | |
| **Sub-total of Development (2+3+4)** | 5,540 | 37.7% | |
| **Grant Total** | **14,712** | | |

** US$ 1 = BDT 78.50 (as per the Programme Implementation Plan [PIP] of 4th HPNSP)*

The World Bank manages the multi-donor trust fund (pooled fund). World Bank financing consists of an IDA credit equivalent to US$500 million and a grant of US$15 million from the Global Financing Facility (GFF). In addition, an estimated US$200 million in co-financing is expected from other development partners. The World Bank's Project Appraisal Document provides details of the financing structure, program overview, results framework and monitoring, disbursement-linked indicator verification protocols, and financial risk management, including co-financing by GOB and development partners. While this substantial donor support remains important for the country, it is expected to decrease gradually due to economic growth in Bangladesh—the country is expected to transition to lower middle-income status in 2021, and graduate from donor funding.

In addition to a decline in donor funds, the health sector faces increasing pressure due to a rise in population numbers, the ageing population, and a rapid increase in non-communicable diseases. While economic growth continues, per capita investment in health remains low and the prospect of a proportionate rise in resources from the GOB is uncertain. Growth and sustainability in finances for health will require a combination of managing service demand, efficient use of available resources, and establishing a convincing investment case for GOB, development partners, and the private sector. However, challenges persist in the effective use of available resources. For example: the GOB budget to public hospitals is not linked to performance or results; health spending disparities persist across wealth quintiles and geographic regions; and there are capacity limitations in budget planning as well as procurement, resulting in under-spending of resources.

During the 4th HNPSP implementation period, efforts are being made to realize the objectives of: 1) increasing resources in the health sector; 2) achieving equitable access to services and financial protection; 3) enhancing efficiency in resource allocation and use; and 4) improving financial management and governance. Various innovative approaches will be explored for improving service delivery and ensuring UHC as the long-term goal. These include:

- *Increased community participation and ownership*: There already exist many good examples of community participation in Bangladesh (e.g., the 'Chowgacha model'). The establishment and functioning of about 13,906 Community Clinics also demonstrates robust community engagement. These and other initiatives will be continued and expanded, and new initiatives explored. Communities will also be motivated to mobilize local resources for repair, maintenance, and cleaning of community-based infrastructure (including Community Clincs); monitoring the performance of service providers; and meeting operational expenses of the community level health facilities.
- *Increased partnerships with the private sector:* Over 80% of people in Bangladesh seek care from non-public service providers. Public-private partnership (PPP) models can help reduce expenses and improve the quality of services. MOHFW has therefore started exploring the possibilities of contracting out non-functional health facilities to private (for-profit and not-for profit) providers where the GOB will have a clearly defined monitoring and supervisory role. Opportunities are being explored to mobilize private sector investment in areas such as infrastructure development, service center establishment with high-tech equipment, and innovative medical and pharmacological research.

Three interconnected plans (SIP, PIP, and MNCAH OP) together with the Results Framework constitute a policy implementation framework of the 4th HPNSP (covering period from January 2017 to June 2022):

**1: 4th HPNSP Strategic Investment Plan (SIP)**

- 4th HPNSP Strategic Investment Plan (SIP) defines 7 strategic objectives (SO) for achieving the 4th HPNSP goal: "To ensure that all citizens of Bangladesh enjoy health and well-being by expanding access to quality and equitable health care in a healthy environment".
- Strategic objective 7 "To improve equitable access to and utilization of quality health, nutrition and family planning services" includes addressing health system bottleneck to immunization for under-served population and in hard-to-reach areas that determines

equity in immunization coverage between urban and rural population, across administrative divisions (with focus in under-performing areas such as Chittagong and Sylhet)

- SIP defines indicators and end targets for 8 indicators at the goal level that include the reduction of Under 5 Mortality Rate.

**2: 4th HPNSP Programme Implementation Plan (PIP)**

- The PIP defines programs that are required to implement each strategic objective. It sets 11 priority programs for the implementation of SO 7 (of the 4thHPNSP SIP).
- Child health is covered under Reproductive, Maternal, New-born, Child, and Adolescent Health (RMNCAH) program (#1), and includes "Financial Sustainability of EPI Program" as one out of four priority interventions
- The PIP defines the content of Essential Services Package under #8 "Revitalizing Community Based Primary Health Care towards UHC in Bangladesh (PHC-UHC)" that includes Expanded Program of Immunization (EPI) under sub-category of Child Health and Immunization services, category "Maternal, Neonatal, Child and Adolescent Health Care".
- SWAp Programme Management and Monitoring (SWPMM) Operational Plan is defined for the implementation of Component 1 "Strengthening governance and stewardship" of 4thHPNSP.

**3: Maternal, Neonatal, Child & Adolescent Health (MNC&AH) Operational Pan (OP)**

- Director of PHC, DGHS is designated as a lead and coordinates implementation with Directorate General of Family Planning (DGFP), Directorate General of Health Services (DGHS), and Directorate General of Nursing and Midwifery (DGNM)
- The MNC&AH OP was approved in May 2017 by the Hon'ble Minister of MOHFW upon recommendation by the HNP Steering Committee chaired by the Secretary, HSD and includes a detailed list of strategies for 7 EPI objectives:
  - 1: At least 95% full vaccination coverage among under one-year children at national level and 90% full vaccination coverage at each district level
  - 2: TTS coverage among women of childbearing age reached at least 80% at national level and 75 % at each district level
  - 3: Maintain polio free status
  - 4: Achieve national level 95% measles and rubella coverage and reaching measles and rubella elimination status and control of CRS by 2020
  - 5: Prevention of diseases protected by new and underused vaccines
  - 6: Maintain maternal and neonatal tetanus elimination validation status
  - 7: Ensure safe injection practices and waste disposal

**4: 4th HPNSP M&E Framework and Disbursement Linked Indicators (DLIs)**

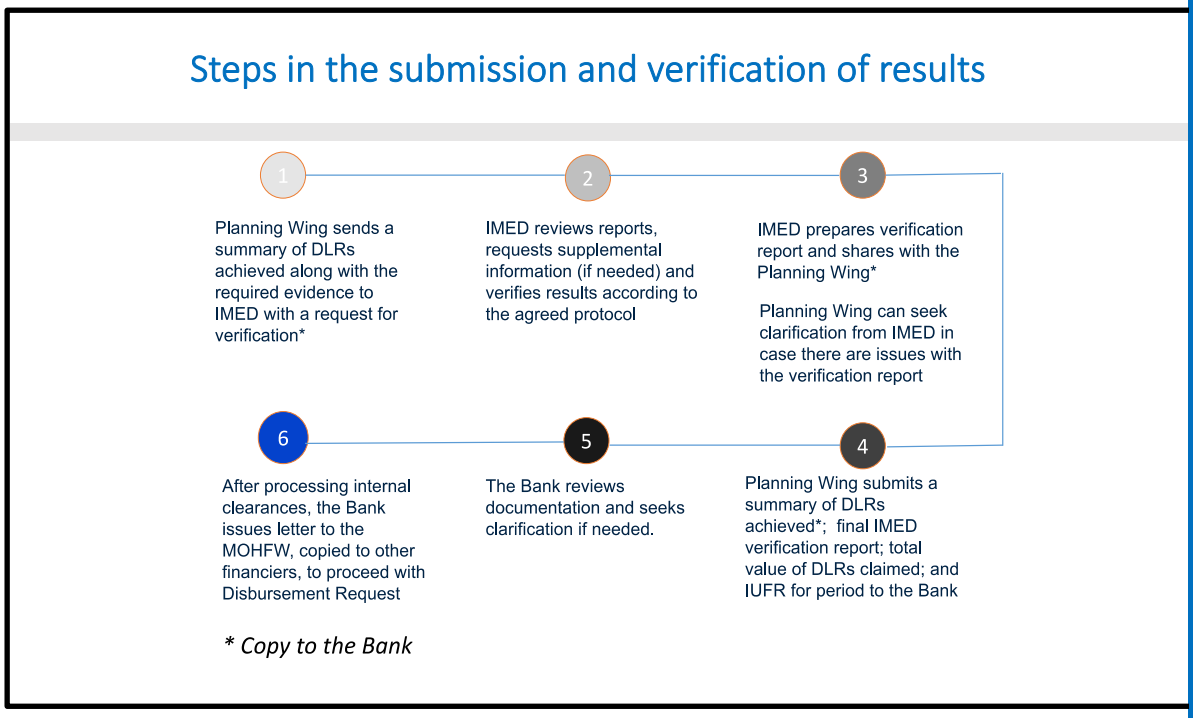
- The framework consists of a set of indicators spread across three documents:
  - Goal level indicators (8) defined in the 4th HNPSIP
  - 25 indicators to measure results at outcome, output and process levels for all three priority program areas (components) in addition to the abovementioned 8 indicators:
    - 4 indicators were set for Component 1 Governance and Stewardship,
    - 6 indicators for – Component 2 Stronger Health Systems, and
    - 15 indicators for Component 3: Provision of quality health services.

- The Log frame of the Operational Plan of Maternal Neonatal Child and Adolescent Health (MNC&AH) 2017-22 defines 6 immunization related indicators under objective "increase coverage and utilization of quality MNCAH service" (4 indicators) and under objective "Improve awareness, knowledge and practice about essential MNC&AH"

- "measles-rubella coverage among children under 12 months (indicator 3.2.9)" is one of 9 indicators for "result 3.2 "Equitable coverage of ESP ensured" (under component 3 "Quality basic services reach the disadvantaged population to progress towards UHC") with baseline of 86.6% in 2014 and end target of 90% in 2022.
- The progress of 4th HPNSP implementation is monitored against results and data are used from various sources. The PMMU continues to assist the Planning Wing in overall program management and monitoring of activities and prepares six-monthly & annual implementation progress reports.
- The Local Consultative Group (LCG) – Health Working Group combining GOB-DP representatives works for improving aid coordination and increasing aid utilization. Implementation monitoring will be strengthened further through the thematic task groups being formed by MOHFW.

The World Bank disburses the multi-donor trust fund against verified results using a set of 16 Disbursement-Linked Indicators (DLIs) which have yearly Disbursement Linked Results (DLRs). MOHFW reports on the achievement of DLIs; IMED verifies results and submits reports to the MOHFW; and MOHFW requests the World Bank for confirmation and disbursement. See figure below.

*Figure 23: Steps in the submission and verification of results for DLIs. (Source World Bank Presentation at Gavi HSS3 PSR Workshop, Savar, June 2018)*




## 4th HPNSP Implementation Arrangements

The Ministry of Health and Family Welfare (MOHFW) of Bangladesh takes the lead in implementation of the 4th Health, Nutrition and Population Sector Program (4thHPNSP). The MOHFW is responsible for implementation, management, coordination and regulation of national health, family planning and nutrition related policies, programs and activities:

- Implementation and overall management responsibilities of the 4th HPNSP are shared by the two Divisions of the Ministry of Health and Family Welfare (MOHFW), viz., Health Services Division (HSD) and Medical Education & Family Welfare Division (ME&FWD). Of the 29 Operational Plans (OPs) under 4th HPNSP, 19 will be implemented under the HSD and 10 under the ME&FWD.
- Various implementing agencies under the two Divisions are: Directorate General of Health Services (DGHS); Directorate General of Family Planning (DGFP); Directorate General of Nursing & Midwifery (DGNM); Directorate General of Drug Administration (DGDA); Health Engineering Department (HED); National Institute of Population Research and Training (NIPORT) and other relevant institutes/organizations.
- The Local Government Division (LGD) of the Ministry of Local Government, Rural Development and Cooperatives (MOLGRDC) manages primary health care and family planning service delivery in the urban areas of the country through their own staff partly and through NGOs, mostly. The technical support, including training, supplies including vaccines, logistics and cold-chain equipment, contraceptives etc. required for urban primary health care service delivery are provided by MOHFW.
- The Line Directors are responsible for the implementation of Operational Plans in accordance with the Program Implementation Plan (where lead and implementation agencies are assigned to each of 29 Operational Plans). The Line Directors prepare annual work plans and detailed budgets for implementation of the list of activities identified in the respective OP. Each OP is approved by a Steering Committee in respective Division, headed by the Minister of MOHFW.
- The Ministry of Finance allocate budgetary funds to the HNP sector in accordance with the approved annual national budget.

The abovementioned administrative arrangements are illustrated in Figure 15 (page 30) and discussed in detail in respective sections of the cMYP (1.2.2(4) “Leadership and Management”, and 1.2.5(2) “SWAp Financing and management”).

### SWAp arrangements

The country gained experience in implementing three consecutive HPN sector programs through SWAp arrangements. Results of the assessment[10] indicate that the MOHFW made substantial progress in health outcomes and health systems strengthening. SWAp facilitated the alignment of funding and technical support around national priorities and improved the government’s role in program design as well as in implementation and development partner coordination. Notable systemic improvements have taken place in the country systems with regards to monitoring and evaluation, procurement and service provision, which have improved functionality of health facilities to provide essential care. Implementation of the SWAp has, therefore, contributed to an accelerated improvement in key health outcomes in Bangladesh over the last 15 years.

The MOHFW took steps to improve and strengthen the capacity of Financial Management and Audit Unit (FMAU) under all the three SWAp programs covering the periods between 1998 and 2016. The World Bank’s conditionality for additional financing of 150 million US$ led to the introduction of DLI based financing and an Integrated Fiduciary Assessment (IFA) Action Plan of the 3rdsector program in 2015, with a view to strengthen fiduciary oversight and systems, through the end of 2016. All the 15 DLIs including six from the IFA Action Plan were successfully met by GOB by the end of 3rd sector program and therefore the entire sum of 150 million US$ was disbursed by the World Bank.

Current SWAp coordination arrangements between the GOB and the DPs include:

[10]Fifteen years of sector-wide approach (SWAp) in Bangladesh health sector: an assessment of progress

- A local consultative subgroup for health chaired jointly by the MOHFW leadership and the chair of the HNP Development Partner Consortium[11]
- Thematic task groups with mixed membership from the MOHFW and DPs reviewing the progress of the implementation in specific technical areas.
- A DLI Monitoring Committee consisting of GOB and DP representatives responsible for monitoring and reporting on progress toward the achievement of DLIs and for claiming reimbursement.
- Urban Health Coordination Committee will guide, review, follow up and coordinate various activities related to HNP services in the urban areas.

The MOHFW will review the progress in program implementation together with development partners in the 3rdQ of every calendar year. Annual program review (APR) practices are informed by lessons learned from regular joint annual reviews of the implementation of the previous 3 sector programs. Prior to the independent APR every year, annual implementation progress report (APIR) is prepared by PMMU of the Planning Wing, MOHFW.

The approved budget estimate for the 4thHPNSP is US$ 14.71 billion. GOB bears the responsibility of funding the lion share (84%) of total budget (US$ 12.31 billion). The rest amount US$ 2.40 billion is expected to be DP contribution (16%). As of now, the World Bank approved US$ 500 million IDA credit and US$ 15 million grant from the Global Fund Facility (GFF). Financing from IDA and GFF is conditional upon achieving the results of 16 DLIs.

JICA credit of about US$ 59.2 million has been approved and MOU signed. DFID, GAC, SIDA and EKN have contributed approximately US$ 116 million. Other potential bilateral DPs like USAID; the UN agencies like WHO, UNICEF, UNFPA and the Global Funds- both GFATM and the two funding streams of Gavi are also expected to finance implementation of the 4thHPNSP.

### Synergies between HSS support via SWAp and Direct Project Aid (DPA)

EPI had been receiving various windows of Gavi support till now through the mechanism of direct project aid (DPA) either directly to the program or through development partners (WHO and UNICEF) or through CSO. However, considering the need for supporting financial sustainability of the program, MoHFW has in consultation with Gavi decided to request HSS support for pooled fund of the SWAp. This approach also is in line with Gavi's promotion of performance based funding.

As discussed in earlier section, although, both the approaches are intended to support the immunization program, there is some difference between them. It is understood that when a DP provides fund in the common pooled fund to be used in accordance with the SWAp framework, it agrees with the activity plan and can monitor the impact/outcome of the grant through measuring results against agreed upon indicators. The flip side is, there is no way to monitor the process or input indicators.

DPA on the other side, can be provided to the programme directly or through the development partners of the programme present in the country (e.g. WHO, UNICEF) and therefore, the interventions can be made in more timely manner, as it does not involve the usual lengthy bureaucratic process associated with RPA. In this case, there is also an opportunity for the development partners to track the progress through intermediate process or input indicators.

Therefore, it is expected that HSS3 cash support will be provided through both RPA and DPA. RPA component will be placed directly into pooled fund managed by World Bank while DPA will be disbursed to MOHFW, LD-MNCAH (EPI), WHO, UNICEF and CSO for implementation of some of the activities agreed upon with all concerned parties.

As the immunization system is a part of the broader health system, EPI benefits from strengthening of HS through the sector programme. The concept of "one stop shopping' supported by provision of essential services package and creation of community clinics are good examples from which

[11]The HNP Development Partner Consortium is a forum established to coordinate development partner efforts in the sector; Its leadership is elected by members every two years.

EPI has benefitted in the past and will continue to benefit in terms of improved access and decreased drop out of immunization services. On the other hand, quality, targeted and timely provision of immunization services has a direct impact on improved health of children and women.

MNCAH OP within which EPI operational activities are included, has the provision of review to revise the plan and budget, usually on midterm basis. However, provision is included for need-based review at any time.

Please see the **Programming Guidance** for targeting interventions in each of Gavi's strategic focus areas (i) leadership, management and coordination, (ii) supply chain, (iii) data and (iv) demand promotion: **Programming Guidance Documents** ***NHP***

**For each objective:**

- Provide an **estimated timeframe** for completing the objective
- Describe how the objective(s)target specific **populations/ geographies** as identified in Part B. If applicable, briefly outline which populations and/or geographies have been prioritised for support, how they have been selected, what has been done so far for those populations/geographies and what is being proposed for future Gavi support.
- Describe how the proposed objectives and activities tackle the **immunisation challenges and bottlenecks** identified in Part C (including on topics such as supply chain, demand generation/ community mobilisation, leadership management and coordination, and data quality/ availability/ use) and further the achievement of the goals and objectives of the multiyear national strategic plans.
  ***To apply for CCEOP support, please include CCEOP as one of the activities under a supply chain objective.***
- For each objective, indicate approximately **5 activities** which will contribute to achieving the objective; Explain how those activities will address specific coverage and equity challenges, and how implementation of the activities will be prioritised (e.g. over time, any geographic or population focus/targeting, etc.).
- **Sustainability considerations:**
  - **Financing**: Justify requests for Gavi to support major recurrent costs (e.g. human resources) regardless of transition stage. Countries in the preparatory and accelerated transition phase are restricted from using Gavi funds for recurrent costs. In addition, describe the steps being taken to ensure the necessary financial resources are available domestically to fully fund the recurrent and non-recurrent investments needed to sustain the results achieved once Gavi supports is phased out.
  - **Integration**: Describe the extent to which the activities envisaged will be implemented through routine systems and processes. If outside, please justify and describe steps being taken to integrate them into routine systems and processes.
  - **Institutional capacities:** This refers to whether the country has the staff, structures, capabilities and systems to sustain its immunisation programme without relying significantly on external partners and service providers. To what extent are Gavi investments contributing to strengthening these national institutional capacities? In addition to the four strategic focus areas covered in the Programming Guidance Documents, attention should be paid as well, particularly in countries in or about to enter the accelerated transition phase, to non-service delivery dimensions of institutional capacity in areas such as: procurement, technical capacity to advise the government on new vaccine introductions, and vaccine regulation and safety.

  ***For countries in the accelerated transition stage, please dedicate one objective to those activities specific to appropriate transition planning.***
- **Provide tailored indicators** that will be included in your grant performance framework **to monitor** each objective. These tailored indicators should provide an assessment of achievement of intermediate results and activity implementation. Further information on supply chain indicators is included in programming guidance documents and/or below.

- List **up to 3 priority technical assistance needs** anticipated per objective for the upcoming year. Please indicate if this TA will be funded through the HSIS support or whether this will require investment from Gavi through the Partners Engagement Framework (PEF).
- For each objective, provide an **indicative total budget in US$** for the duration of Gavi's support.

| *Objective 1:* | ***Support 4th HPNSP sector wide approach (SWAp) through multi-donor trust fund (pooled fund) to strengthen health system*** |
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| **Timeframe:** | 2019-2022 (4th HPNSP SWAp period: 2017-2022) |
| **Priority population/ geography or constraint(s) to coverage and/or equity to be addressed by the objective:** | 4th HPNSP SWAp covers entire Bangladesh.<br>4th HPNSP gives priority to Chittagong and Sylhet divisions, with the objective of health system strengthening. This will also improve immunization coverage and performance in these two divisions. Support will be provided to other parts of the country as well, including urban areas. |
| **Immunisation system bottleneck(s) to be targeted:** | • Front-line health workforce shortages.<br>• Gaps in routine health data management.<br>• Weak governance and management practices.<br>• Low utilization of essential health services for infants. |
| **Prioritised activities** (approximately 5): | The 4th HPNSP has three components (each with multiple activities), which the Gavi allocation of $50 million will directly support through the following prioritized activities.<br>**Component 1: Strengthen Governance and Stewardship**<br>• Improve budget planning and contracting through training mid- and senior-level managers on health service management, including planning, budgeting, and financial management.<br>• Develop the MOHFW's system for citizen feedback (i.e., to manage complaints and grievances from patients and their family members).<br>• Support increased budget allocation for repair and maintenance for basic services (through working level and advocacy meetings).<br>**Component 2: Strengthen Health, Nutrition, and Population Systems**<br>• Build the capacity of the Financial Management and Audit Unit of MOHFW to enable it to perform internal audit functions.<br>• Expand the asset management system at the district hospital level and support the rollout of Bangladesh's government-wide electronic procurement system in the health sector.<br>• Restructure the Central Medical Stores Depot (CMSD) for procurement capacity strengthening.<br>• Support to the availability of qualified midwives to improve maternal health at PHC level<br>• Support operations of health information management system<br>**Component 3: Provide quality health, nutrition, and population services.**<br>• Support the use of public health facilities for normal deliveries.<br>• Support the readiness of health facilities to deliver family-friendly services. |

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| | • Help scale-up nutrition services focusing on maternal nutrition through antenatal care, and infant and child nutrition integrated in PHC services. |
| **Rationale:** | Based on recommendations of Gavi's PCA, and taking into account country context and capacity, this HSS3 proposes a hybrid funding modality. Objective 1 includes funding to the 4th HPNSP through the World Bank managed multi-donor trust fund – the pooled fund for the SWAp. This will allow **health system strengthening across multiple dimensions** (see components above and DLIs below) including: governance and stewardship, financial management, and HR, in addition to EPI.<br><br>Objective 1 complements Objectives 2-5 below, which include **funding directly for immunization** to MOHFW, WHO, UNICEF and CSOs that will be channelled through these partners.<br><br>World Bank's Bangladesh Health System Support Project, funded and implemented through SWAp, aims to *strengthen core management systems in health and delivery of essential HNP services with a focus on selected geographical areas* that demonstrate sub-optimal immunization coverage. (See further details in section above).<br><br>The project supports GOB policies and programs that address HR, financial management, and service delivery related system barriers, which are important for immunization system performance. |
| **Sustainability considerations:** | As mentioned under health system financing, the GOB has been increasing its contribution to health gradually over the years. Its contribution is now more than 84% of the overall health budget, and about 60% of the developmental budget. GOB has therefore shown its commitment towards building a sustainable health system.<br><br>Furthermore, HSS enhances the sustainability of the whole MNCAH programme, of which EPI is a component. |
| **Indicators to monitor progress toward objective included in the Grant Performance Framework:** | As explained above, the World Bank disburses the multi-donor trust fund against verified results using a set of 16 Disbursement-Linked Indicators (DLIs) which have yearly Disbursement Linked Results (DLRs). MOHFW reports on the achievement of DLIs; IMED verifies results and submits reports to the MOHFW; and MOHFW requests the World Bank for confirmation and disbursement.<br><br>Gavi support under Objective 1 will be through the 4th HPNSP multi-donor trust fund. This will support HSS across the health sector and will support achievement of results across all indicators of the 4th HPNSP. However, there are six specific indicators relevant to Gavi support:<br><br>DLI 1: Annual grievance redress system report is available [Citizen feedback system is strengthened]. [Objective 4 will also contribute to the achievement this indicator].<br><br>DLI 2: Increase in percentage from FY16 baseline in repair and maintenance expenditure at the levels of Upazila and below. [Budget planning and allocation are improved]. [Objective 4 will also contribute to the achievement this indicator].<br><br>DLI 3: MOHFW FMAU completes internal audit for the previous fiscal year. [Financial management system is strengthened.] [Objective 4 will also contribute to the achievement this indicator.] |

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| | DLI 4: Increase in the number of district-level referral facilities in which asset management system is implemented. [Asset management is improved.] [Objective 5 will also contribute to the achievement this indicator.]<br><br>DLI 12: Increase in the number of districts reaching at least 85% coverage of MR vaccination among children ages 0-12 months in Sylhet and Chittagong divisions. [Immunization coverage and equity are enhanced.] [Objective 2 will also contribute to the achievement this indicator.]<br><br>DLI 15: Orientation of teachers and peer girl students is completed in at least 30% of public secondary schools in each targeted district in Sylhet and Chittagong divisions. [School-based adolescent HNP program is developed and implemented.] [Objective 2 will also contribute to the achievement this indicator.] | |
| **TA needs for the coming year, and a description of how this is complementary to planned TA through PEF** | No TA budgeted for Objective 1.<br><br>PEF TCA support does not include any TA towards Objective 1, as this support will go the 4th HPNSP SWAp multi-donor trust fund, managed by the World Bank. | |
| **Indicative HSS budget:** | **Years 1-2** | *US$ 21,429,000.00* |
| | **Years 3-4** | *US$ 28,571,000.00* |
| | **Total** | ***US$ 50,000,000.00*** |
| | *Note: PSC - not added, World Bank charges 5% PSC* | |

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| ***Objective 2:*** | ***Strengthen service delivery system for improving coverage and equity of immunization services in 16 target districts and 4 target city corporations*** |
| **Timeframe:** | 2019-2022 |
| **Priority population/ geography or constraint(s) to coverage and/or equity to be addressed by the objective:** | **Rural:** Population living in 16 low performing districts (FVC <85%, hard-to-reach areas, ethnic minorities, and large number of under-immunized children). Total under 1-year children in targeted districts is estimated to be 837,326 of which 22% are not fully vaccinated. Please see the list of the 16 target districts in Part B, Section 5.<br><br>At strategic level, support will be provided to all 16 districts and 138 upazilas (sub-districts), whereas equity-focused implementation areas (around 360 wards in 120 unions) will be identified through Equity Analysis in these upazilas. Local level planning will be employed to suit the specific needs of the community included for support.<br><br>**Urban:** Out of 11 CCs, four (Dhaka North, Dhaka South, Gazipur, and Chittagong) are low performing. At the same time, these CCs have large number of children (16 million). The estimated number of not fully vaccinated children in these cities is 79,252. |
| **Immunisation system bottleneck(s) to be targeted:** | • Inadequate HR, especially vaccinators both in urban and rural areas due to attrition, high turnover, and legal problems with new vaccinator recruitment. On average 40-50% of the positions of vaccinators are vacant. There was an embargo on new recruitment, which has been resolved and fresh recruitment process has been initiated. However, it may take 2-3 years before most of the vacant positions are filled. Number of sanctioned posts of vaccinators in many areas is not proportionate to the population size.<br>• Difficulties in the distribution of vaccines and other logistics.<br>• Inadequate accessibility to EPI/Outreach sessions caused by:<br>  ○ Remoteness (hills, riverine areas-Char, islands, costal belt);<br>  ○ Seasonal factors (rain, flood);<br>  ○ High-rise buildings in urban areas;<br>  ○ Slums;<br>  ○ Inappropriate/disadvantageous timing (e.g., for working mothers); and<br>  ○ High population movement and internal migration.<br>• Out-of-pocket expenditure caused by transport costs and impacted by seasonality (rain, flood, harvesting), which can result in loss of daily wages; Socio-cultural barriers, including tribal taboos, and language;<br>• Inadequate information on the benefits of immunization, schedule, and timing;<br>• Missed opportunity to integrate with other services e.g. IMCI; and<br>• Insufficient skill and competency of vaccinators on immunization and interpersonal communication. |
| **Prioritised activities** (approximately 5): | **1. Develop of equity-focused strategy and local level planning**:<br><br>• Undertake EQUIST analysis to improve immunization coverage in low performing and hard-to-reach areas of the 16 target districts.<br><br>• Use District Evidence Based Planning and Budgeting (DEPB) tool to develop local level detailed action plans for all 16 target districts and 138 upazilas to further identify target rural wards for improving |

immunization coverage and equity. Programme data from DHIS 2 and findings from EQUIST Analysis will be used for local level planning and action plan development. This activity will be done two times (Year 1 and Year 3) over the project period. The plan will be tailored as per local needs, geographical, and seasonal barriers. Local government authority will also participate in planning process. This will help address the bottleneck on accessibility.

**2. Expand service delivery in the 16 target districts with low immunization coverage through additional vaccinators and logistics support**:

- Organize special sessions such as mobile sites in 360 hard-to-reach rural wards (as identified by activity 1 above).
- Conduct monitoring visits for supportive supervision to local EPI staff (district EPI superintendent and Medical Technologist at upazila level) and vaccinators in 16 low performing District.
- Roll out e-tracking for defaulters developed and piloted under HSS2. Complete vaccination of the children tracked with this tool in these 16 districts (one piloted under HSS2 and 15 under HSS3). This e-tracker system will be integrated with the currently used DHIS-2. In addition, the M&E data through the system would be much easier because of the entire national, sub-national, district and sub-district level health managers and data management personal are well trained in DHIS2. The e-tracker is essentially one e-Registry that automates the vaccinator's manual registry and prepares a list by date according to the vaccinator's immunization session schedule, so vaccinators work more efficiently. In addition, it will send an SMS to the beneficiary when an immunization is due or has been missed to help children get the vaccinations they need. A unique identifier will be used to track the unvaccinated or drop-out child. e-Tracker system is currently being piloted in one district and in one CC. National rollout is planned for 2019 and by Q2 of 2020, the system is expected to be functional in the 16 target districts and 4 CCs.

**3. Strengthen communication and collaboration between MOHFW and MLGRDC** for improvement of immunization service delivery to the urban population through reactivation of inter-ministerial collaboration committee on immunization.

**4. Review and finalization the urban immunization strategy and development of implementation plan**:

- Conduct situation analysis including mapping of high-risk areas, service delivery points, and modalities, partners and logistic supply.
- Develop micro-plan for immunization service delivery in four CCs with a major focus on unvaccinated children and CBAW.

**5. Provide expanded service delivery in the four target city corporations** to increase immunization coverage, with large number of unimmunized and under-immunized children as described above.

- Ensure adequate number of vaccinators are available during the transitioning phase of UPHCP and Smiling Sun projects and before the regular health staff/vaccinators are available in urban immunization clinics either from MOHFW (urban dispensaries) or from CCs own set up.

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| | • Support special immunization clinics for working mothers (e.g., evening and Friday sessions, mobile sessions for migrating and floating population).<br>• Build capacity of health department of targeted CCs (assist CCs to recruit and train their own health staff including vaccinators, provide assistance in developing micro-plans, monitor their implementation, and train supervisors).<br>• Improve immunization services for high risk populations in selected CCs through engagement of CSOs including Immunization Platform of Civil Society in Bangladesh, NGOs currently providing immunization services like UPHCP, Smiling Sun and others. Will include running special immunization sites in areas presently under-served, and demand generation through creating awareness, social mobilization, and advocacy.<br>• Roll out e-tracking for defaulters developed and piloted under HSS2. Complete vaccination of the children tracked with this tool in these CCs (one piloted under HSS2 and three under HSS3). |
| **Rationale:** | As has been described, inequity in coverage of immunization exists in Bangladesh between urban and rural areas, and between geographically hard-to-reach and easily accessible areas. There are known underserved communities in both remote areas and in the heart of big cities (i.e., slums and high-rise buildings). There are documented social barriers, such as disadvantageous timing for working mothers to attend immunization sessions, and customs and beliefs in some tribes/communities that negatively effects acceptance of the vaccines.<br>Objective 2 proposes specific actions, many of which are new, unconventional, and/or one-off that will help remove existing barriers to immunization. In addition, these activities will address issues around equity and coverage in targeted low performing areas. |
| **Sustainability considerations:** | The innovative measures requested for Gavi support in HSS3 are expected to be catalytic, and GOB will be in a position to sustain the activities from the next sector programme. Some steps, such as recruitment and placement of vaccinators in remote areas, setting up additional sites (mobile sites, evening and Friday sessions) are supplementary to GOB efforts. Support is required in the short-term while GOB procedures for staff recruitment to support these activities in both rural and especially in urban settings are completed; this takes time due to the long process involving multiple ministries and departments. It is expected that GOB mechanisms will be in place to take over the activities by the time the Gavi support expires. |
| **Indicators to monitor progress toward objective included in the Grant Performance Framework:** | Core indicators are included in the GPF as per Gavi guidance.<br>Tailored indicators selected for HSS3 are listed below (data source, baseline and targets are listed in the GPF).<br>The following are outcome level tailored indicators for Objective 2:<br>1. Proportion of fully immunized children (% of children aged 12-23 months who receive all basic vaccinations in the routine immunization schedule) for 16 target districts, and 4 target CCs. [This is taken from OI-T 4 of HSS2.]<br>2. Measles-Rubella second dose (MR2) immunization coverage among children under 23 months. |

<table>
<tr><td></td><td>3. Drop-out rates between Penta1 and Penta 3 – for 16 target districts and four target CCs (national rate under core indicators).<br>4. Percentage of districts with Penta3 coverage more than 90%.<br><br>The following are intermediate results level tailored indicators for Objective 2:<br>5. Number of defaulter children tracked and immunized in 16 target districts and 4 target CCs (e-Tracker after 2020).<br><br>The following are process level tailored indicators for Objective 2:<br>6. Percentage of outreach sessions conducted against planned in 16 target districts and four target CCs.</td></tr>
<tr><td>TA needs for the coming year, and a description of how this is complementary to planned TA through PEF</td><td>• WHO and UNICEF staff (2 FTE) for implementation and monitoring of activities under this objective.<br>• One national consultant to develop equity strategy based on findings of equity analysis for four months.<br>• One national consultant for finalization of urban immunization strategy and preparation of urban immunization improvement plan for three months.<br><br>There is complementary TA support through PEF TCA, which includes a portion of WHO and UNICEF staff salaries and support for workshops – these staff provide guidance and supervision, which will contribute to achievement of this objective.</td></tr>
<tr><td>Indicative HSS budget:</td><td><table>
<tr><td>Years 1-2</td><td>US$ 10,653,766.69</td></tr>
<tr><td>Years 3-4</td><td>US$ 9,395,971.92</td></tr>
<tr><td>Total</td><td>US$ 20,049,738.61</td></tr>
<tr><td colspan="2">Note: PSC - not included</td></tr>
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| ***Objective 3:*** | ***Ensure effective vaccine and cold-chain management and uninterrupted supply of quality vaccines and injection supplies*** |
| **Timeframe:** | 2019-2022 |
| **Priority population/ geography or constraint(s) to coverage and/or equity to be addressed by the objective:** | Nationwide with special focus on urban areas. |
| **Immunisation system bottleneck(s) to be targeted:** | • No functional National Logistic Working Group (NLWG) and non-availability of Immunization Supply Chain Action plan.<br>• Insufficient infrastructure for cold/dry storage and vehicles in urban areas.<br>• High wastage rate of open vial and inadequate reporting and monitoring of closed vial wastage rate.<br>• Current version of DHIS2 is not fully equipped with logistic management information system.<br>• Insufficient capacity of analysis and inadequate use of data for program improvement at national and subnational level.<br>• Non-availability of standard preventive cold chain maintenance plans in EPI annual micro-plans district and upazila store.<br>• Inadequate monitoring of forecast accuracy and stock balance according to annual plan.<br>• Risks to sustainability (reliability) and performance of supply chain considering aging equipment and increasing commodity flow.<br>• Inadequate implementation of effective policy for disposal of non-repairable CCE.<br>• Functionally weak National Regulatory Authority (NRA) is an impediment in attaining capacity to manufacture and market WHO prequalified vaccine and for assuring uninterrupted supply of WHO prequalified vaccines. This is also a bottleneck for attaining long-term financial sustainability for vaccine procurement by the country. |
| **Prioritised activities** (approximately 5): | 1. **Establish a functioning NLWG and develop an Immunization Supply Chain Action plan**. Build the capacity of the NLWG to analyse and use supply chain data for forecasting and monitoring the performance of the supply chain at all levels using the DISC indicators.<br>2. **Develop and introduce an electronic LMIS** to track stock availability and status updates on immunization supply chain management. This will be integrated with the current e-LMIS dashboard of DGHS: http://scmpbd.org/dghs-elmis/<br>The first step is integration of Vaccine and Logistic Management information system (VLMIS) dashboard in the national e-LMIS dashboard of DGHS to monitor from a central system IMCI drugs supply and consumption information entered into DHIS2 from the facility. This is to monitor vaccine and logistic supply and consumption by month, by district, and sub-district. This e-LMIS system will enable national EPI and other health managers to monitor vaccine and logistics supply and consumption information through the e-LMIS dashboard from the national level.<br>3. **CCEOP: Implement cold-chain and logistic rehabilitation and expansion plan in urban areas** building on HSS2; old, CFC, and non-PQS equipment to |

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| | be replaced with newer equipment consisting of freeze protection technology.<br>4. **Conduct refresher trainings on ISCL and cold chain management** for district, upazila, CC, and municipality EPI store staff, and develop capacity for analysing data for program improvement at national and subnational levels.<br>5. **Help functionalize the National Training and Repair Maintenance Centre** through strengthening technical support at national, divisional and district level for preventive maintenance and repair of Cold chain equipment.<br>6. **Support Strengthening of NRA** through activities aimed at improving AEFI surveillance, system of pharmacovigilance, establishment of norms of GMP and quality assurance in vaccine manufacture, establishing mechanisms of surrogate NRA, etc. |
| **Rationale:** | This objective will address bottlenecks in the field of cold chain, vaccine and logistics management from national to sub-national level, as documented in cMYP and EVM. To achieve this, support is required in the areas of immunization supply chain and logistics management, EVM improvement through the implementation of EVM Improvement Plan, strengthening supply chain management, upgrading cold chain equipment (co-financing Gavi support under CCEOP, supporting transportation and deployment), and building capacity to maintain the supply and cold chain management.<br>Through Bangladesh has capacity to produce vaccines, the manufacturers are not able to produce WHO prequalified vaccines due to absence of strong NRA. Building strong NRA will enhance the possibility of Bangladesh producing vaccines of required standard of prequalification and thus reduce the cost of vaccines in future and also will ensure uninterrupted supply of WHO prequalified vaccines. |
| **Sustainability considerations:** | Forty percent of requested funds are for capital investment, and the remaining 60% are for recurrent programmatic cost. The latter will be incorporated gradually under GOB budget in the HPNSP after transition of Gavi support. Strong NRA will contribute to long term program sustainability by reducing the vaccine cost. |
| **Indicators to monitor progress toward objective included in the Grant Performance Framework:** | Core indicators are included in the GPF as per Gavi guidance.<br>Tailored indicators selected for HSS3 are listed here (data source, baseline and targets are listed in the GPF).<br>Objective 3 contributes to all outcome level indicators in the GPF – additional tailored indicators at the outcome level are thus not identified here. The Following are intermediate results level tailored indicators for objective 3:<br>1. Proportion of health facilities (both urban and rural) with no stock out of pentavalent vaccine for the past 6 months. [This is taken from IR-T 11 of HSS2.]<br>2. Percent of health facilities with CCE having more than two temperature alarms during last month in 16 target districts and national cold room.<br>3. Percentage of closed vial wastage rate of PCV at national and district level –16 target districts and four target CCs.<br>4. Percentage of old, CFC, and non-PQS equipment reduced from 58% to 15% with newer equipment consisting of freeze protection technology – national.<br>Following is a process level tailored indicator for objective 3: |

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| | 5. Number of district level cold rooms functioning, where functioning is defined as cold room installed and in use. |
| **TA needs for the coming year, and a description of how this is complementary to planned TA through PEF** | • UNICEF staff (1 FTE) for implementation and monitoring of activities under this objective 3.<br><br>PEF TCA support does not include any TA towards objective 3. |
| **Indicative HSS budget:** | Years 1-2: *US$ 4,016,391.00*<br>Years 3-4: *US$ 1,568,390.00*<br>**Total**: ***US$ 5,584,781.00***<br>*Note: PSC - not included* |

| ***Objective 4:*** | ***Strengthen leadership and management capacity of EPI and Planning Wing of MOHFW*** |
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| **Timeframe:** | 2019-2022 |
| **Priority population/ geography or constraint(s) to coverage and/or equity to be addressed by the objective:** | • Nationwide |
| **Immunisation system bottleneck(s) to be targeted:** | • Inadequate supporting HR under Planning Wing (HSD) of MOHFW.<br>• Shortage of skilled HR for financial management and electronical recording.<br>• Inadequate logistic support management, monitoring, supervision, and coordination. |
| **Prioritised activities** (approximately 5): | 1. **Strengthen leadership and management capacity of Planning Wing** of MOHFW through TA for development of improved system for programme coordination, planning, supervision, monitoring, and improved financial management.<br>2. **Strengthen leadership and management capacity of DGHS**, particularly its EPI programme through TA to institutionalize digital procurement, logistics management, and improved financial management.<br>3. **Support programme supervision and monitoring** by EPI-DGHS, Planning Wing, and by district level staff.<br>4. **Support coordination of DGHS with other departments and ministries**, including DGFP, DGDA, and MOLGRDC at all levels. |
| **Rationale:** | This objective will address identified gaps in financial and programme management, and will result in improved capacity of Planning Wing, Health service Division, MOHFW and of the national EPI. |
| **Sustainability considerations:** | Forty percent of the requested funds are estimated for capital investment, and the remaining 60% are for recurrent programmatic cost, which will be incorporated gradually into the GOB budget after transition of Gavi support. |

<table>
<tr><td></td><td>The support is principally for strengthening management capacity of DGHS (particularly its EPI programme) and Planning Wing. The adequate financial and programmatic management capacity developed through Gavi support will be sustained, and further follow-up will be planned in the next HNPSP cycle.</td></tr>
<tr><td>Indicators to monitor progress toward objective included in the Grant Performance Framework:</td><td>Core indicators are included in the GPF as per Gavi guidance.<br>Tailored indicators selected for HSS3 are listed here below (data source, baseline and targets are listed in the GPF).<br>Objective 4 contributes to all outcome level indicators in the GPF – additional tailored indicators at outcome level are thus not identified.<br><br>Following is an intermediate result level tailored indicator for Objective 4:<br>1. Number of performance monitoring reports prepared and disseminated annually – target (APIR, SmPR, APR).<br><br>Following is a process level tailored indicator for Objective 4:<br>2. Number of LCG/ICC/NITAG meetings where Gavi-HSS grant implementation is reviewed. [This is taken from PR-T 17 of HSS2.]</td></tr>
<tr><td>TA needs for the coming year, and a description of how this is complementary to planned TA through PEF</td><td>• One program coordinator responsible for coordinating immunization activities between different departments of MOHFW (Planning Wing, EPI, LCC and ICC) and between MOHFW, MOLGRD and NGO Bureau; and to oversee planning process during mid-term review of the current Operational Plans and during development of the next cycle of Operational Plans, and to support the recruitment and training process of immunization staff. TA to be supported through the grant until the position is budgeted under the next cycle of HPNSP from 2022.<br>• One Financial Management Specialist to build financial management capacity of the PMMU and national EPI staff on operational planning, accounting, and electronic record keeping at all levels for first two years.<br>• One procurement specialist to institutionalize e-procurement for the first four months of each financial year for years 1, 2 and 3 after which the function will be taken over by the DGHS (EPI) and Planning Wing staff trained during this period.<br><br>There is complementary TA support through PEF TCA for WHO – this consultancy firm will contribute to capacity building for EPI leadership and management, and thus achievement of this objective.</td></tr>
<tr><td>Indicative HSS budget</td><td><table><tr><td>Years 1-2</td><td>US$ 905,517.76</td></tr><tr><td>Years 3-4</td><td>US$ 1,011,152.67</td></tr><tr><td>Total</td><td>US$ 1,916,670.43</td></tr></table>Note: The fund to MOHFW will be managed in line with existing financial management system of GOB. The conditionality of having an external fiduciary agent is not acceptable.</td></tr>
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| ***Objective 5:*** | ***Strengthen capacity of Health system of the country for implementation of VPD surveillance and real-time health management information system*** |
| **Timeframe:** | 2019-2022 |
| **Priority population/ geography or constraint(s) to coverage and/or equity to be addressed by the objective:** | • Nationwide |
| **Immunisation system bottleneck(s) to be targeted:** | • A sustainable VPD Surveillance system is not yet fully in place; the present system is supported by GPEI, WHO, and Gavi and transitioning is on-going.<br>• Surveillance, vaccine, and logistic supply aspects of HMIS under DHIS2 are still not optimally functional to address the needs of the programme. |
| **Prioritised activities** (approximately 5): | 1. **Support functioning of SIMO network** until the VPD surveillance is transitioned to GOB surveillance system as per the National Transition Plan. In addition to VPD surveillance, this activity will also include supporting routine immunization through supportive supervision, capacity building, SIA implementation, and new vaccine introduction.<br>2. **Generate evidence** through surveillance of JE, Rota and IBD for disease burden analysis, to be conducted jointly with IEDCR and Dhaka Shishu Hospital.<br>3. **Support integration** of EPI HMIS, LMIS, and VPD surveillance into DHIS2, including monitoring.<br>4. **Support strengthening of National Regulatory Authority (NRA)** for enabling the country capacity for manufacturing vaccines with WHO prequalification. This would result in decrease in vaccine cost and also strengthen system for vaccine quality and safety.<br>5. **Implement data quality improvement plan** including DQA.<br>6. **Conduct Coverage Evaluation Survey** every alternate year (two surveys during this period). |
| **Rationale:** | • VPD Surveillance system faces challenges in terms of sustaining high level surveillance indicators required for Global Polio Eradication before full transition of VPD surveillance system occurs by 2022 as per national polio transition plan, especially after waning GPEI support by 2019.<br>• There is increased risk of cVDPV in relation to influx of more than 1 million Myanmar nationals into Cox's Bazar area, as there is high proportion of unvaccinated or under-vaccinated children among FDMNs.<br>• Surveillance network is responsible for strengthening routine immunization and plays an important role in SIAs (MR follow-up is planned for 2019), and new vaccine introduction. This has been documented in different reviews including National EPI Review, AFP Surveillance review, and in "The evaluation of the contributions of World Health Organizations South- East Asian Regional Office to the National Immunization Program in Bangladesh with special emphasis on Surveillance Medical Officers Program" (2016)<br>• Support is needed to meet the measles, rubella and CRS elimination targets. Transitional support is also required for IBD and Rota virus surveillance. Data is needed for possible new vaccine introduction including JE.<br>• Establishment of strong NRA and NCL is the prerequisite for building country capacity for manufacturing of vaccines which will be able to meet WHO prequalification; once achieved, this will enhance programme sustainability. |

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| | • Innovative approaches for addressing coverage, equity, and monitoring of vaccine and logistic supply chain through HMIS needs to be incorporated into the DHIS2. |
| **Sustainability considerations:** | National polio transition plan has been developed and endorsed by the government for smooth transition of SIMO network and its function to government. The polio transition plan will be implemented in three phases:<br><br>*Transition Phase 1 (2016-19):* Integration of polio infrastructure, human resources, functions and assets with EPI with the objectives to complete stock taking of the polio programme assets and lessons learnt, merging of SMO and DIMCHO be merged into SIMO network managed by WHO. Financial support for phase 1 was secured from GPEI and GAVI HSS2.<br><br>*Transition Phase 2 (2019-2022):* Integration of EPI functions with other priority public health programmes like Malaria surveillance, Kala azar elimination programme, Emerging and re-emerging infectious disease surveillance, and Public health emergency and response. Surveillance post creation within government structure, assigning of relevant personnel against these posts, their training and gradual handover of the surveillance functions, while SIMO network continues function with gradual downsizing. Transition phase 2 financing is planned to be obtained from GAVI HSS3 and Pooled fund (HNPSP 2017-2022)<br><br>*Transition Phase 3 (2022-2026):* Mainstreaming of functions and assets to government public health/IEDCR and EPI permanently with full financing from pooled fund by incorporating it into next cycle of HPNSP and from GoB regular budget.<br><br>• It is expected that donor support even in the transition period from 2018-2021 will reduce gradually. The percentage of the cost to support the VPD surveillance system shared by GOB is estimated to increase from 15% in 2020 to 30% in 2021-22.<br>• Initiative has been taken to include support for transition plan during the mid-term review of the current HPNSP and during development of the next cycle so that VPD surveillance will be fully transitioned to the national health system from 2022 and no external support will be required.<br>• A new post creation process to replace the SIMOs is currently underway. However, it may take a few years more before the new epidemiologists take over the functions of the current network. This is because the process itself is quite long and involves multiple ministries and departments. MOHFW has taken this into consideration and proposes to assign a consultant to follow up the process of post creation, recruitment, training, and final handover of the functions.<br>• Training of the newly appointed government surveillance officers will take place from 2020 for enhancing transition.<br>• Incorporation of VPDs into DHIS2 is in the final stage; sustainability is thus ensured. |
| **Indicators to monitor progress toward objective included in the Grant Performance Framework:** | Core indicators are included in the GPF as per Gavi guidance.<br>Tailored indicators selected for HSS3 are listed here below (data source, baseline and targets are listed in the GPF).<br>Objective 5 contributes to all outcome level indicators in the GPF; additional tailored indicators at outcome level are identified as follows:<br>1. Measles incidence rate (per 1,000,000 population) for national, 16 target districts, and four target CCs. [This is taken from OI-T 3 of HSS2.] (target <5 per 1 million population) |

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| | 2. Transition of Polio and VPD surveillance to government health system completed by 2022.<br>3. Reporting rate of non-measles - non-rubella cases. (target >2/100,000 population)<br>Following are intermediate level tailored indicators for Objective 5:<br>4. % of health facilities submitting VPD surveillance data on time nationwide. [This is taken from IR-T 6 of HSS2.]<br>5. Proportion of districts utilizing web-based system for timely routine reporting, vaccine stock management and VPD surveillance (DHIS2). [This is taken from IR-T 10 of HSS2.]<br>6. Non-polio AFP rate of > 2 per 100,000 population under 15 years is sustained at national level, and at all 16 target districts and four target CCs.<br>7. Proportion of districts and CCs using web-based DHIS2 for reporting of vaccine management, e-tracker and surveillance.<br>Following are process level tailored indicators for Objective 5:<br>8. Proportion of measles outbreaks reported that are investigated.<br>9. Proportion of adequate samples collected from reported AFP cases (within 14 days of onset).<br>10. Number of health professionals (managers and EPI staff) trained M&E system by using DHIS2 data and dashboard.<br>11. Number of districts using Data Quality Assessment (DQA) tool. |
| **TA needs for the coming year, and a description of how this is complementary to planned TA through PEF** | • TA (1 consultant) to support revision of MNCAH OP during MTR of 4th HPNSP in 2019, to support EPI component planning within MNCAH for the 5th sector program, and to operationalize and monitor the process of VPD surveillance/polio transition from 2019-22.<br>• TA (4 consultants) to support integration of EPI HMIS. LMIS, and VPD surveillance into DHIS2, including monitoring at national and sub-national level (nationwide).<br>• TA (national and international short-term consultants) for implementation of data quality improvement plan and data triangulation.<br>There is complementary TA support through PEF TCA:<br>- UNICEF consultant to oversee implementation, including roll-out of e-tracker and EPI e-LMIS.<br>- WHO support for strengthening data quality through capacity building of MOHFW staff to conduct local level DQSA and to take corrective actions. |
| **Indicative HSS budget:** | Years 1-2 — *US$ 4,468,545.93*<br>Years 3-4 — *US$ 8,809,114.55*<br>**Total** — ***US$ 13,277,660.48***<br>*PSC not included*<br>*Note:* Most of the VPD surveillance cost in year 1 has been secured from GPEI and partly from HSS2, and thus not included in the present proposal. Actual external support for surveillance will decrease over the years. |

| ***Template for Supply Chain****(Applicable even if countries are not applying for CCEOP)*<br>***Objective :*** | |
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| **Timeframe:** | 2019-2022 |
| **Priority population/ geography or constraint(s) to coverage and/or equity to be addressed by the objective:** | • Nationwide |
| **Immunisation system bottleneck(s) to be targeted:** | Risks to sustainability (reliability) and performance of supply chain considering aging equipment and increasing commodity flow. |
| **Prioritised activities on each of the five supply chain fundamentals:**<br>*Describe planned or ongoing activities related to supply chain fundamentals. Responses in this section should be linked to the latest EVM Improvement Plan.* | |
| **1. Continuous Improvement** | • Conduct situational analysis, assess supply chain, and update cold chain equipment inventory through DHIS2.<br>• Develop a comprehensive improvement plan beyond addressing the nine vaccine management criteria.<br>• Develop a multi-year supply chain improvement plan.<br>• Build capacity of cold chain technicians on temperature mapping of cold rooms.<br>• Establish cold chain and vaccine management committee with clear TOR to follow the recommendation of the EVM IP. |
| **2. Management/Leadership** | • Continuously build capacity of Cold Chain Engineer, Sub-assistant engineers, CCT and MTEPI by UNICEF.<br>• Recruit CCT and MT-EPI in particular by providing focused technical assistance.<br>• Finalize maintenance plan, vaccine cold chain management training manual, maintenance for CCTs on repair and maintenance of CCE, and user's manual on cold chain equipment.<br>• Monitor and report implementation progress of CCE and routine EPI data, (DHIS2 Dashboard). |
| **3. Data for Management** | VLMIS is already fully operational through DHIS2 at the national, all 64 districts, and 482 upazila stores and 65 large municipalities and 11 city corporations.<br>The process is on-going to enable SMS alarm on temperature monitoring in DHIS2.<br>• Link the computerized stock management system with the DHIS2 platform to get aggregated data and EPI indicators.<br>• Build district and sub-district capacity to monitor dashboard in DHIS2. |
| **4. Cold Chain Equipment**<br>*(including CCEOP and Maintenance- see below for additional questions)*<br>• How will the country ensure that aspects of maintaining the cold chain are addressed | Bangladesh EPI has updated the Cold Chain Equipment Repair and Maintenance plan 2017-21. Historically, Bangladesh has a fairly good maintenance system comprising Engineers and |

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| (e.g. preventive and corrective maintenance, monitoring functionality, technicians, financing for maintenance, spare part procurement etc.)?<br>• What is the frequency of preventative and corrective maintenance that the country commits to (supported by partners)?<br>• How will the country monitor the completion of preventive and corrective maintenance?<br>• Indicate the sources of funding for planned maintenance activities<br>• How will the country dispose of obsolete and irreparable equipment replaced by new equipment? | Technicians in national and all district levels who are full time MOH employees. At sub-district levels, dedicated vaccine and cold chain handlers are available. The spare parts required for maintenance is also funded by the MOH as part of the annual budget. The district CCT are equipped with toolkits and full-time transport (motor bike) to conduct onsite CCE maintenance in all stores in the respective districts.<br><br>Cold chain maintenance at central level is outsourced, funded by UNICEF and performing well since 2016 (implemented as a recommendation in EVM IP). The outsourced maintenance staff are generally well trained, motivated, and reliable. The cold chain engineers located in central stores liaise and monitor the maintenance activities done by the outsourced agency. The preventive maintenance schedule (weekly, fortnightly, monthly, and yearly (as appropriate) has been followed well by the agency.<br><br>At district levels, out of the 64 districts, 62 have dedicated cold chain technicians (CCT) who are trained and equipped with appropriate toolkits and responsible for preventive maintenance of CCE at district stores and corrective maintenance of the sub-district store CCE. Budget for spare parts and transportation are catered from the national EPI program. The medical technologist EPI (MT EPI) is the in-charge of the CCE at the sub-district levels and are responsible for preventive maintenance under the supervision of the district CCT. The corrective maintenance is conducted onsite for minor issues and offsite (at district level) for major repairs. Preventive maintenance like defrosting is conducted on a monthly basis at district and sub-district levels stores. SOPs on preventive maintenance are available at all levels of the supply chain. Maintenance reporting is incorporated in DHIS2 which is real time and being monitored from higher levels including the national levels which enabled the national EPI to provide triggers for corrective maintenance to lower level stores.<br><br>The current CCE maintenance system is generally performing well except for a few HR shortages at district and sub-district levels. The maintenance system (staff salary, transportation, toolkits, spare parts) is funded by the MOH which is incorporated in yearly operation budget, although the process of fund allocation for spare parts and off-site maintenance cost is somewhat lengthy. Gavi HSS2 and UNICEF also provide support for the spare parts and training.<br>The current maintenance system is being continuously upgraded e.g. temperature data to be incorporated in the DHIS2 to trigger corrective |

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| | maintenance in support with UNICEF and be able to take care of the preventive and corrective maintenance of the newly procured CCE supported by the platform (Bangladesh CCE repair and maintenance plan, page-13). Also, the CCEOP supported equipment will reduce incidence of corrective maintenance significantly. Moreover, the user training bundled in the installation package of the platform supported CCE will enable the remaining gap in preventive maintenance training of the MT EPI at sub-district levels. In addition to that, the already functioning DHIS2 is capable of monitoring the performance of the existing as well as the newly supplied CCE effectively<br>The country is already following a system of disposing of the obsolete and irreparable CCE after recovering functional spares that could be used to maintain existing CCE. The country has a condemnation board at national and sub-national level which follow the environment friendly procedure to ensure the best practices at the time of disposing the equipment. For equipment, whose parts could not be used as spares, the government policies for such procedures (auctioning) would be followed. A three members committee established within MOH&FW reconfirms the equipment functionality. Once the committee verifies that the equipment is irreparable, it is then disposed of by the condemnation board. |
| **5. System design (all countries should answer)**<br>*If the country is applying for CCEOP, also indicate how system design considerations impacted the choice of CCE for which the CCEOP support is requested.* | • The on-going comprehensive distribution plan will be enhanced with monitoring system for national, district and sub-district level.<br>• The district vaccine hub will be completed by 2018 by equipping the remaining 20 districts with 29 more cold rooms funded by Gavi HSS2 and vaccine distribution re-design will be fully functional. |
| **Rationale** (e.g. per EVM and other supporting documents, Audit, PCA findings, EPI review etc.) | • EVM Assessment and EVM Assessment Improvement Plan |
| **Indicators to monitor progress toward objective included in the Grant Performance Framework:** | 1. Percentage of existing sites with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)<br>2. Percentage of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population<br>3. Percentage of previously unequipped sites (providing immunization services or not, including existing sites without active devices) and new service sites being equipped with Platform eligible equipment |

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| | 4. Percentage of functional CCE in the system<br>5. Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country | |
| | If requesting CCEOP support, include mandatory indicators: *(see programming guide)* | |
| **TA needs for the coming year, and a description of how this is complementary to planned TA through PEF** | • One immunization and supply chain consultant for national level<br>• Three supply chain consultants for national and sub-national levels | |
| **Indicative budget with HSS and CCEOP support (see table 2.2):** | **Years 1-2** | *US$ 1,342,402* |
| | **Years 3-4** | *US$ 699,539* |
| | **Total** | *US$ 2,041,941* |