Application Form for Gavi NVS support

Submitted by

The Government of

Bangladesh

Date of submission: **17 October 2016**

Deadline for submission:

i. **9 September 2016**
ii. 1st May 2015
iii. 9 September 2015

Select Start and End Year of your Comprehensive Multi-Year Plan (cMYP)

Start Year	2014	End Year	2018

Form revised in 2016

(To be used with Guidelines of November 2015)

Note: Please ensure that the application has been received by Gavi on or before the day of the deadline.

Gavi
GRANT TERMS AND CONDITIONS

FUNDING USED SOLELY FOR APPROVED PROGRAMMES

The applicant country ("Country") confirms that all funding provided by the Gavi will be used and applied for the sole purpose of fulfilling the programme(s) described in the Country's application. Any significant change from the approved programme(s) must be reviewed and approved in advance by the Gavi. All funding decisions for the application are made at the discretion of the Gavi Board and are subject to IRC processes and the availability of funds.

AMENDMENT TO THE APPLICATION

The Country will notify the Gavi in its Annual Progress Report if it wishes to propose any change to the programme(s) description in its application.The Gavi will document any change approved by the Gavi, and the Country's application will be amended.

RETURN OF FUNDS

The Country agrees to reimburse to the Gavi all funding amounts that are not used for the programme(s) described in its application. The country's reimbursement must be in US dollars and be provided, unless otherwise decided by the Gavi, within sixty (60) days after the Country receives the Gavi's request for a reimbursement and be paid to the account or accounts as directed by the Gavi.

SUSPENSION/ TERMINATION

The Gavi may suspend all or part of its funding to the Country if it has reason to suspect that funds have been used for purpose other than for the programmes described in the Country's application, or any Gavi-approved amendment to the application.The Gavi retains the right to terminate its support to the Country for the programmes described in its application if a misuse of Gavi funds is confirmed.

ANTICORRUPTION

The Country confirms that funds provided by the Gavi shall not be offered by the Country to any third person, nor will the Country seek in connection with its application any gift, payment or benefit directly or indirectly that could be construed as an illegal or corrupt practice.

AUDITS AND RECORDS

The Country will conduct annual financial audits, and share these with the Gavi, as requested. The Gavi reserves the right, on its own or through an agent, to perform audits or other financial management assessment to ensure the accountability of funds disbursed to the Country.

The Country will maintain accurate accounting records documenting how Gavi funds are used. The Country will maintain its accounting records in accordance with its government-approved accounting standards for at least three years after the date of last disbursement of Gavi funds. If there is any claims of misuse of funds, Country will maintain such records until the audit findings are final. The Country agrees not to assert any documentary privilege against the Gavi in connection with any audit.

CONFIRMATION OF LEGAL VALIDITY

The Country and the signatories for the Country confirm that its application, and Annual Progress Report, are accurate and correct and form legally binding obligations on the Country, under the Country's law, to perform the programmes described in its application, as amended, if applicable, in the APR.

CONFIRMATION OF COMPLIANCE WITH THE Gavi TRANSPARENCY AND ACCOUNTABILITY POLICY

The Country confirms that it is familiar with the Gavi Transparency and Accountability Policy (TAP) and complies with the requirements therein.

USE OF COMMERCIAL BANK ACCOUNTS

The Country is responsible for undertaking the necessary due diligence on all commercial banks used to manage Gavi cash-based support. The Country confirms that it will take all responsibility for replenishing Gavi cash support lost due to bank insolvency, fraud or any other unforeseen event.

ARBITRATION

Any dispute between the Country and the Gavi arising out of or relating to its application that is not settled amicably within a reasonable period of time, will be submitted to arbitration at the request of either the Gavi or the Country. The arbitration will be conducted in accordance with the then-current UNCITRAL Arbitration Rules. The parties agree to be bound by the arbitration award, as the final adjudication of any such dispute. The place of arbitration will be Geneva, Switzerland

. The languages of the arbitration will be English or French.

For any dispute for which the amount at issue is US$ 100,000 or less, there will be one arbitrator appointed by the Gavi. For any dispute for which the amount at issue is greater than US $100,000 there will be three arbitrators appointed as follows: The Gavi and the Country will each appoint one arbitrator, and the two arbitrators so appointed will jointly appoint a third arbitrator who shall be the chairperson.

The Gavi will not be liable to the country for any claim or loss relating to the programmes described in the application, including without limitation, any financial loss, reliance claims, any harm to property, or personal injury or death. Country is solely responsible for all aspects of managing and implementing the programmes described in its application.

1. Type of Support requested

Please specify for which type of Gavi support you would like to apply to.

Type of Support	Vaccine	Start Year	End Year	Preferred second presentation[1]
Routine New Vaccines Support	Rotavirus, 2-dose schedule	2018	2018	

[1] Gavi may not be in a position to accommodate all countries first product preferences, and in such cases, Gavi will contact the country and partners to explore alternative options. A country will not be obliged to accept its second or third preference, however Gavi will engage with the country to fully explore a variety of factors (such as implications on introduction timing, cold chain capacity, disease burden, etc.) which may have an implication for the most suitable selection of vaccine. If a country does not indicate a second or third preference, it will be assumed that the country prefers to postpone introduction until the first preference is available. It should be noted that this may delay the introduction in the country.

2. Table of Contents

3. Executive Summary

Please provide a summary of your country's proposal, including the following the information:

- For each specific request, NVS routine support or NVS campaign :
  - The duration of support
  - The total amount of funds requested
  - Details of the vaccine(s), if applicable, including the reason for the choice of presentation
  - Projected month and year of introduction of the vaccine (including for campaigns and routine)

- Relevant baseline data, including:
  - DTP3 and Measles coverage data (as reported on the WHO/UNICEF Joint Reporting Form)
  - Target population from Risk Assessments from Yellow Fever and Meningitis A
  - Birth cohort, targets and immunisation coverage by vaccines

- Country preparedness
  - Summary of planned activities to prepare for vaccine launch, including EVM assessments, progress on EVM improvement plans, communication plans, etc.
  - Summary of EVM assessment and progress on EVM improvement plan

- The nature of stakeholders' participation in developing this proposal
  - Inter-Agency Coordinating Committee
  - Partners, including CSO involvement

The Government of Bangladesh is requesting support from Gavi to introduce rotavirus vaccine – the introduction will start in October 2018, and the support will continue until 2022 in line with the planned update of the cMYP life span.

The total amount of funds requested will be US$ 17,091,267 for Rota vaccine for the first year and US$ 2,696,350 for the vaccine introduction grant (VIG). The GoB is committed to provide co-financing cost of US$ 1,947,526 for the first year. Bangladesh is requesting Rotarix single dose presentation. The reasons for selecting Rotarix are less cold chain volume, low cost, presence of VVM and 2-dose schedule.

Bangladesh NIP achieved significant successes in terms of reaching high vaccination coverage in traditional vaccines. As per the coverage evaluation survey (CES) 2015, valid coverage by 23 months old children for Pentavalent 3 was 94.1%, while measles first dose coverage was 91.7%%. Bangladesh reported in the WHO/UNICEF Joint Reporting Form (JRF) 2015 Pentavalent 3 coverage of 93.2% and measles first dose coverage of 90.1% (considered as official estimate from the CES 2014 as the CES 2015 was not completed during the submission of the JRF 2015).

Bangladesh 2016 birth cohort estimated to be 3,279,741 and infants targeted for vaccination were 3,138,712. The infants target for vaccination in 2018 will be 3,225,508 and the expected coverage to achieve for Rota vaccine is 100%. The country is proposed for rota introduction from Q4 2018 and the estimated target will be 806,377.

Based on previous new vaccines introduction experiences and the positive observations made by the Post Introduction Evaluation (PIE) of pentavalent vaccine conducted in 2012 and the PIE of PCV and IPV conducted in 2015, that all steps including advocacy, development of guidelines and reporting forms, training, injection safety and expanding the current AEFI monitoring system to include Rota Vaccine, can be accomplished by October 2018.

The EVM Assessment was conducted in 2014 (attachment 19). The key recommendations drawn from the results of the assessment were to expand the physical infrastructure and Increase storage capacity for vaccines and dry goods at the central store before the introduction of Rota Vaccine in October 2018, equip selected district stores having high target populations with cold rooms and temperature monitoring systems

for real time communication of alarms to the central store management and increasing the storage capacity for vaccines at district stores. Based on this, the GoB developed a comprehensive Improvement Plan (CIP) for Immunisation Supply Chain and logistics (ISCL) (attachment 20). This includes among others installation of 8 cold rooms at national level and 48 cold rooms in 29 districts. Additional 400 ILRs will be required for remaining 35 districts. The Gavi HSS1 grant supported the infrastructure expansion in 15 districts and the Gavi HSS2 has a major component of improving EVM to meet the demands of Rota Vaccine.

The current proposal has been developed through an intensive consultative process between the National EPI programme and development partners. It was underpinned by substantial update of strategies, key activities and financial projections that was reflected in the current version of the cMYP with all details related to the introduction of new vaccines. Technical issues were discussed and recommendations were made by the National Consultation held in August 5th, 2015. Subsequently recommendations were endorsed by the Scientific & Technical Sub-committee (STSC) of the National Committee for Immunisation Practices (NCIP) on August 21st, 2016.

Rotavirus infects nearly every child by the age of 3-5 years. It is a leading cause of severe dehydrating diarrhea in children under 5 years of age. Sentinel hospitals-based rotavirus surveillance from 35 nations representing 6 WHO Regions and different economic levels showed that an average of 40% (range 34% - 45%) of hospitalisation for diarrhea among children aged < 5 years were attributed to rotavirus infection

In a study conducted by icddr,b in Dhaka hospital during the period 2010-2013, 44% of the children aged less than 5 years hospitalised with diarrhea had rotavirus infection. In another study in Matlab hospital, during the period 2010-2012, it was found that, 37% of the children aged less than 2 years had rotavirus infection.

The IEDCR established sentinel surveillance sites in 7 hospitals all over the country. Sixty four percentages (64%) of children hospitalised during the period July 2012 to June 2015 with acute gastro-enteritis tested positive for rotavirus. According to Vesikari Severity Scale 78% of the cases had severe illness; 48% were under 1 year and 96% of the cases were under 2 years. It was estimated that 8% of the admissions in under 5 children in these hospitals were due to rotavirus infections.

Phase I-IV studies have been conducted in Bangladesh by icddr,b, to assess safety, immunogenicity, efficacy and effectiveness of Rotavirus vaccines in Bangladesh. Accordingly Rotarix has overall effectiveness of 39%. The efficacy of Rotateq vaccine was 42.7%. In another study in urban setting the efficacy of the rotarix vaccine is 51% for Rotavirus diarrhea and 73.5% in severe Rotavirus diarrhea. Rota vaccine when co-administered with polio vaccine, measles and rubella vaccine demonstrated no interference in immunogenicity.

Bangladesh has made significant progress in reducing diarrhea-related deaths among children, and much of it is due to efforts to increase access to treatments, such as ORS and Zinc. However as per BDHS 2014, 5.7% of under 5 children had an episode of diarrhoea within two weeks prior to the survey. Thorough national wide implementation of Integrated management of childhood illness since 2003 and recent implementation of global action plan for diarrhea and pneumonia prevention Bangladesh has taken integrated approach for diarrhea control. Introduction of Rota vaccine will further prevent mortality and morbidity due to diarrheal diseases.

The 51st Interagency Coordination Committee (ICC) meeting held on August 31st, 2016, endorsed the proposal for getting Gavi support for introducing the Monovalent Rota Vaccine into the Routine Immunisation Program in Bangladesh

4. Signatures

4.1. Signatures of the Government and National Coordinating Bodies

4.1.1. Government and the Inter-Agency Coordinating Committee for Immunisation

The Government of Bangladesh would like to expand the existing partnership with the Gavi for the improvement of the infants routine immunisation programme of the country, and specifically hereby requests Gavi support for:

Rotavirus, 2-dose schedule routine introduction

The Government of Bangladesh commits itself to developing national immunisation services on a sustainable basis in accordance with the Comprehensive Multi-Year Plan presented with this document. The Government requests that the Gavi and its partners contribute financial and technical assistance to support immunisation of children as outlined in this application.

Table(s) 6.2.4 in the NVS Routine section of this application shows the amount of support in either supply or cash that is required from the Gavi. Table(s) 6.2.3 of this application shows the Government financial commitment for the procurement of this new vaccine (NVS support only).

Following the regulations of the internal budgeting and financing cycles the Government will annually release its portion of the co-financing funds in the month of **August**.

The payment for the first year of co-financed support will be around **December 2018** for Rotavirus, 2-dose schedule.

Please note that this application will not be reviewed or recommended for approval by the Independent Review Committee (IRC) without the signatures of both the Minister of Health and Minister of Finance or their delegated authority. These signatures are attached as DOCUMENT NUMBER : 2 and 1 in Section 10. Attachments.

Minister of Health (or delegated authority)		Minister of Finance (or delegated authority)	
Name	Syed Monjurul Islam, Secretary, MoH&FW	**Name**	Mohammad Muslim Chowdhury, Additional Secretary, Budget-1, Ministry of Finance
Date		**Date**	
Signature		**Signature**	

This report has been compiled by (these persons may be contacted in case the Gavi Secretariat has queries on this document):

Full name	Position	Telephone	Email
Dr. Jayantha Liyanage	Medical Officer-EPI, IVD, WHO, Bangladesh	+880-2-9899540 Ext. 27309	liyanagej@searo.who.int
Dr. Jucy Merina Adhikari	Immunization Specialist, Health Section, UNICEF, Bangladesh	+880-2-8852266 Ext. 7144	jmadhikari@unicef.org
Dr. Md. Shamsuzzaman	Programme Manager-EPI & Surveillance, DGHS, MOH&FW	+8801819425068	zaman1712@yahoo.com
Ms. Kohinoor Begum	Training Officer, EPI, DGHS, MOHFW	+88017127716958	galib_kohinoor@yahoo.com

4.1.2. National Coordinating Body - Inter-Agency Coordinating Committee for Immunisation

Agencies and partners (including development partners and NGOs) supporting immunisation services are co-ordinated and organised through an inter-agency coordinating mechanism (ICC, Health Sector Coordinating Committee (HSCC), or equivalent committee). The ICC, HSCC, or equivalent committee is responsible for coordinating and guiding the use of the Gavi NVS routine support and/or campaign support. Please provide information about the ICC, HSCC, or equivalent committee in your country in the table below.

Profile of the ICC, HSCC, or equivalent committee

Name of the committee	Interagency Coordination Committee
Year of constitution of the current committee	2001
Organisational structure (e.g., sub-committee, stand-alone)	One Technical Sub-Committee under ICC
Frequency of meetings	3-4 meetings per year

The Terms of Reference or Standard Operating Principles for the ICC, including details on the ICC membership, quorum, dispute resolution process and meeting schedules is attached as DOCUMENT NUMBER : 4.

Major functions and responsibilities of the ICC/HSCC:

Major responsibilities are:

1. To review national policy and perform necessary modification if required

2. To identify program needs and provide support

3. To identify national and international program resources in respect of technical and financial

4. To assist in developing linkage among the different Government sectors for their support.

- Will support National EPI in strengthening routine EPI

- Will identify effective tool for periodic in-depth assessments of EPI program

- Will ensure that the national program measures of EPI is up to international standards

5. Will be responsible to communicate the members with information received from abroad and vice versa

Please describe how partners have provided support in preparation of the proposal:

The current proposal has been developed through an intensive consultative process between the National EPI programme and development partners. It was underpinned by substantial update of strategies, key activities and financial projections that was reflected in the current version of the cMYP with all details related to the introduction of new vaccines. Technical issues were discussed and recommendations were made by National Consultation in August 2015. Subsequently recommendations were endorsed by Scientific & Technical Sub-committee (STSC) of the National Committee for Immunization Practices (NCIP), August, 2016. and the contents of the application was endorsed by the ICC on August 31st, 2016.

4.1.3. Signature Table for the Coordinating Committee for Immunisation

We the members of the ICC, HSCC, or equivalent committee *[1]* met on the **31/08/2016** to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation which is attached. The minutes of the meeting endorsing this proposal are attached as Document number 5. The signatures endorsing the proposal are attached as Document number 6 (please use the list for signatures in the section below).

Please refer to Annex C of the 'Gavi HSS and NVS General Guidelines' for more information on ICCs.

Function	Title / Organisation	Name	Please sign below to indicate the attendance at the meeting where the proposal was	Please sign below to indicate the endorsement of the minutes where the

			endorsed	proposal was discussed
Chair	Secretary, Ministry of Health and Family Welfare	Syed Monjurul Islam		
Secretary	Director PHC and Line Director, MNC& AH	Dr. AKM Saiedur Rahman		
Members	Director General of Health Services	Prof. Dr. Deen Mohd. Noorul Huq		
	Director General of Family Planning	Mohammad Wahid Hossain		
	Additional Secretary (PH & WHO), MOHFW	Ms. Rokshanan Quader		
	Program Manager, EPI & Surveillance	Dr. Md. Shamsuzzaman		
	Ministry of LGRD & C.Joint Secretary, Local Government Division	ABM Arshad Hossain		
	Ministry of Finance.Joint Secretary, Finance Division	Mohammad Muslim Chowdhury		
	Co-Chairman, Rotary International	Prof. Jalal U Ahmad		
	Representative, WHO Bangladesh	Dr N Paranietharan		
	Chief, Health Section, UNICEF	Dr. Lianne Kuppens		
	Project Management Specialist,USAID	Samina Chowdhury		
	Senior Health Specialist, Health Sector Development Programme, World Bank	Dr. Bushra Binte Alam		
	Health Advisor, DFID	Dr. Shehlina Ahmed		
	Senior Development Advisor, Government of Canada	Ms. Sylvia Islam		
	Director SNL, Save the Children	Dr. Sayed Rubayet		

By submitting the proposal we confirm that the quorum has been met. **Yes**

The minutes from the three most recent ICC meetings are attached as DOCUMENT NUMBER : 7.

4.2. National Immunization Technical Advisory Group (NITAG)

Has a NITAG been established in the country ? **Yes**

We the members of the NITAG met on the **21/08/2016** to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation describing the decision-making process through which the recommendations were reached, attached as Document number 26.

4.2.1. The NITAG

Profile of the NITAG

Name of the NITAG	National Committee for Immunisation Practices (NCIP)
Year of constitution of the current NITAG	2008
Organisational structure (e.g., sub-committee, stand-alone)	One Scientific & Technical Sub-committee (STSC)
Frequency of meetings	Twice a year

Function	Title / Organisation	Name
Chair	Secretary, Ministry of Health & Family Welfare	Syed Monjurul Islam
Secretary	Director (PHC) & Line Director, ESD, DGHS	Dr. AKM Saiedur Rahman

Members	Director General, DGHS, Mohakhali, Dhaka	Prof.Dr. Deen Mohd Noorul Huq
	Director General, Department of Family Planning, Dhaka	Mr. Md. Wahid Hossain
	Director General, Department of Drug Administration, Dhaka	Major General Md. Mustafizur Rahman
	Joint Secretary (PH & WHO), Ministry of Health & Family Welfare	Ms. Roxana Quader
	Joint Chief (Planning), Ministry of Health & Family Welfare	Dr. A.E Md. Muhiuddin Osmani
	Representative, Department of Local Government, Ministry of Local Government Rural Development and Cooperative	Rowshan Ara Begum
	Director (Planning), DGHS, Mohakhali, Dhaka	Dr. Rashidunnesa
	Director, Disease Control, DGHS, Mohakhali, Dhaka	Professor A K M Shamsuzzaman
	Director, IPH, Mohakhali, Dhaka	Dr. A K M Jafar Ullah
	Director, IEDC&R, Mohakhali, Dhaka	Prof. Dr. Meerjady Sabrina Flora
	Director, NIPSOM, Mohakhali, Dhaka	Prof. Dr. Bayezid Khurshid Riaz
	Executive Director, ICMH, Matuail, Dhaka	Prof. Dr. Begum Hosne Ara
	Principal, Dhaka Medical College, Dhaka	Prof. Dr. Md. Ismail Khan
	Principal, Sir Salimullah Medical College, Dhaka	Prof. Dr. Md. Billal Alam
	Principal, Shahid Sohrawardi Medical College, Dhaka	Prof. Dr. Abul Basher Md. Maksudul Alam
	Chairman, Paediatric Department, BSMMU, Dhaka	Prof. Dr. Sahana Akhter Rahman
	Head of the Department, Paediatric Division, Dhaka Medical College, Dhaka	Prof. Sayeeda Anwar
	Public Health Specialist	Dr Zakir Hossain
	Representative, World Health Organization (WHO), Bangladesh	Dr N. Paranietharan
	Representative, UNICEF, Bangladesh	Dr. Lianne Kuppens, Chief Health Section
	President, Bangladesh Paediatric Society, Dhaka	Prof. Dr. Mohammed Shahidullah
	Unit Head, Child Health Unit, icddr,b, Dhaka	Dr. Shams El Arifeen
	President, Bangladesh Medical Association, Dhaka	Prof. Dr. Mahmud Hasan
	Secretary General, Bangladesh Medical Association, Dhaka	Prof. Dr. M Iqbal Arsalan
	President, Bangladesh Owshodh Shilpo Samitti, Dhaka	Mr. Nazmul Hasan Papon
	Director (BHP), Brac, Bangladesh	Dr. Kaosar Afsana
	Program Manager, EPI and Surveillance, DGHS, Mohakhali, Dhaka	Dr Md. Shamsuzzaman

Major functions and responsibilities of the NITAG

Terms of References of NCIP Committee:

- To take decision on National Policy for Immunization.
- Approval of different sub-committees and will finalize the responsibilities of these subcommittees.
- To review the proposal and recommendation(s) of different sub committees of Bangladesh in this connection
- The committee will meet periodically at least twice in a year for evaluation of immunization services.
- The committee will take decision regarding new vaccines for the programme and also take decision about the vaccine production of Bangladesh.
- Can co-opt any person to this committee

Terms of References of Scientific & Technical Sub-committee

- The committee will work/advice to prepare a “Draft Immunization Policy’’
- The committee will present the “Draft Immunization Policy’’ to national committee
- The committee will elected the members for the data collection of “Draft Immunization Policy’’.
- Committee will review the regular activities related to immunization.
- Can co-opt any expert Key person to this committee (subject to the approval of National Committee)
- After performing their duties the committee will prepare a report regarding the possibility of vaccine production in Bangladesh.

In the absence of a NITAG, countries should clarify the role and functioning of the advisory group and describe plans to establish a NITAG. This document is attached as **(Document Number: 8)**

5. Immunisation Programme Data

5.1 Background information

Please complete the table below, using data from available sources. Please identify the source of the data, and the date. Where possible use the most recent data and attach the source document.

- Please refer to the Comprehensive Multi-Year Plan for Immunisation (cMYP) (or equivalent plan) and attach a complete copy (with an Executive Summary) as DOCUMENT NUMBER 9. Please attach the cMYP costing tool as DOCUMENT NUMBER 10.
- Please attach relevant Vaccine Introduction Plan(s) as DOCUMENT NUMBER : 12
- Please refer to the two most recent annual WHO/UNICEF Joint Reporting Forms (JRF) on Vaccine Preventable Diseases
- Please refer to Health Sector Strategy documents, budgetary documents, and other reports, surveys etc, as appropriate.
- Please refer to the attached risk assessments in the case of yellow fever and meningitis A mass preventive campaigns.

Please use the most recent data available and specify the source and date.

	Figure	Year	Source
Total population	160,707,634	2016	National Census
Birth cohort	3,279,741	2016	National Census
Infant mortality rate (per 1000)	38	2014	BDHS 2014
Surviving infants*[1]*	3,138,712	2016	National Census
GNI per capita (US$)	1,190	2014	World bank
Total Health Expenditure (THE) as a percentage of GDP	4	2015	National Health Accounts
General government expenditure on health (GGHE) as % of General government expenditure	6	2015	National Health Accounts

[3] Surviving infants = Infants surviving the first 12 months of life

5.1.1 Lessons learned

Routine New Vaccines Support

If new or under-used vaccines have already been introduced in your country, please give details of the lessons learned from previous introduction(s) specifically for: storage capacity, protection from accidental freezing, staff training, cold chain, logistics, coverage and drop-out rates, wastage rate, etc., and suggest action points or actions taken to address them. Please refer to previous Post Introduction Evaluations (PIE), if applicable. If they are included in the Introduction Plan, please cite the section only. If this information is already included in NVIP/POA, please reference the document and in which section/page this information can be found.

Lessons Learned	Action Points
Decision making process guided by the NCIP and ICC: Strength of the national EPI was its utilisation of the NCIP for independent guidance in the decision making process of introducing PCV and IPV. The independent guidance of the NCIP is of paramount importance for the MoH&FW for priority setting and decision making on introduction of new vaccines	The NCIP is involved in the decision making process of introducing Rota Vaccine application
Use of multiple information and communication channels: Bangladesh used multiple channels [mass media supported by the interpersonal communication-(IPC)] effectively to communicate the benefits of the PCV and IPV vaccines.	Multiple channels of communication (i.e. mass media supported by interpersonal communication (IPC) will be used to communicate the benefit of Rota Vaccine.
Effective use of health workers for communication: Health workers, health volunteers and vaccine porters were effectively	Health workers and health volunteers will be trained on IPC to disseminate information on Rota Vaccine

used for IPC to disseminate information on two new vaccines despite time limitations in performing IPC associated with their multi-tasks.	
High staff turnover left some staff inadequately trained. Cascade training for vaccinators inadequate in some areas (e.g. Dhaka City Corporation) and considered too short in others	Conduct regular refresher training at all levels Dedicated training teams will be assigned for each District
No formal supervision plan or documentation of supervisory visits or written feedback for follow-up. Supervisors not always available to visit all sites due to staff shortages and limited mobility	Increase of number of staff in charge of supervision in some specific areas . Necessity of developing formal supervision plan with documentation of supervisory visits, written feedback and appropriate follow-up. Improve transport facilities for supervisory visit
Unsafe waste disposal practices (i.e. pits shallow, not covered, not fenced). Some NGOs don't use safety box and don't monitor or document disposal practices, (Dhaka City Corporation)	Short term measures: improve the existing practice Longer term: consider shifting to incinerators
High wastage with IPV (but available vials did now allow MDVP application	Ensure that MDVP is promptly and uniformly applied to reduce wastage to acceptable levels - Already implemented
Comprehensive national Vaccine Introduction Plan was developed for PCV & IPV introduction and Sub-national Planning was done according to the national plan	Timely development of national & sub-national plans for Rota Vaccine Introduction and monitor the implementation of these plans
PCV/IPV PIE identified in some areas denominators for the target populations were not done as per the national guidelines. Supply of monitoring charts of immunisation coverage was not optimal	National level to monitor the ascertaining of denominator through registration of eligible children especially in urban areas. Adaptation of monitoring charts for coverage to include Rota Vaccine and supply them in time
Some vaccinators were not clear what to do when in a situation that one of the vaccine (PCV, IPV, Pentavalent, OPV) is not available	Clear information during training - should be provided to health workers that whatever available vaccines in the immunisation session - to be given when a child comes and advice to come after one month

5.1.2 Health planning and budgeting

Please provide information on the planning and budgeting cycle in your country

There are two major policy planning documents that outline sector priorities, strategies, interventions and resources:

1. Strategic Plan for Health Population and Nutrition Sector Development Programme (HPNSDP) 2011-2016
2. Programme Implementation Plan (PIP) of HPNSDP 2011-2016

Please indicate the name and date of the relevant planning document for health

1. Strategic Plan for Health Population and Nutrition Sector Development Programme (HPNSDP) 2011-2016

2. Programme Implementation Plan (PIP) of HPNSDP 2011-2016

Is the cMYP (or updated Multi-Year Plan) aligned with the proposal document (timing, content, etc.)

Yes, the current cMYP 2014-2018 covers the first year, it will be updated in 2017 to cover the period of the new Sector Programme and be aligned with the proposal document

Please indicate the national planning budgeting cycle for health

National budgeting cycle for health covers 1 year and start from July 1st of each year and ends on June 30 of the next year

Please indicate the national planning cycle for immunisation

National planning cycle for immunisation is harmonised with the national budgeting cycle for health

5.1.3 Gender and equity

Please describe any barriers to access, utilisation and delivery of immunisation services at district level (or equivalent) that are related to geographic, socio-economic and/or gender equity. Please describe actions taken to mitigate these barriers and highlight where these issues are addressed in the vaccine introduction plan(s).

There are no gender barriers to access and utilize immunisation services in the country. According to the CES 2015, there was no significant difference between wealth quintiles. However differences are observed in urban slum areas and in between geographical areas. Fully vaccinated coverage in Dhaka city corporation slums was 68.5% and in Chittagong city corporation slums was 71.8%.

There was difference between coverage among districts, out of 64 districts, 15 districts had fully vaccinated coverage less than 80%. The barriers are geographical access due to seasonal water logged and hilly areas.

These issues are addressed in the Rota Vaccine Introduction Plan section 2.

Discuss how equity issues (geographic, socio-economic and/or gender) are being taken into account in the design of social mobilisation and other strategies to increase immunisation coverage. Highlight where these issues are addressed in the vaccine introduction plan(s).

EPI communication strategy was revised in 2015 following a consultative process with stakeholders, focused group discussion with community of low coverage districts and un-reached population especially urban areas. Communication plan was developed as per revised strategy and intensive activities were undertaken in 2015 to address the issues related to both routine and new vaccines. Different communication materials, TV drama serials, radio & TV sports were developed, disseminated and implemented through different channels.

Please indicate if sex disaggregated data is collected and used in immunisation routine reporting systems.

Since 2015 from routine reporting system, sex disaggregated data was obtained for Penta3, IPV, and MR doses. And from 2016, PCV3 dose has been included. Sex disaggregated data is been reported from immunisation centers to the districts and national level. In addition sex disaggregated is obtained in the Coverage Evaluation Survey (CES) reports.

Is the country currently in a situation of fragility (e.g. insecurity, conflict, post-conflict, refugees/and or displaced persons and recent, current or potential environmental disaster, such as flooding, earthquake or drought or others)? If Yes, please describe how these issues may impact your immunisation programme, planning for introduction of routine vaccines or campaigns and financing of these activities.

No.

If available, please provide additional information and documents on subnational coverage data, e.g. comparing urban/rural districts or districts with highest/lowest coverage, etc.

According to the CES 2015 valid fully vaccinated coverage by 12 months among 12- 23 months old children in rural areas was 83.5% and in urban areas was 78.4%. Pentavalent 3 coverage was 94% and 91.8% in urban and rural areas respectively. Dhaka city corporation slum areas had Penta-3 coverage of 80.9% and fully vaccinated coverage of 68.5%.

Rural Coverage by Division: The Coverage Evaluation Survey (CES) 2015 report is showing that national fully vaccinated coverage in all rural areas is 83.5%, however the coverage among 7 divisions varied from 76.9% to 86.1%. Nationally, 94% children in rural areas received Penta-3 by 23 months. All divisions had more than 90% coverage.

Coverage by City Corporation and Municipality: For CES 2015, each of the 11 city corporations in Bangladesh were surveyed as separate survey strata. Valid Full Vaccination Coverage by Age of 23 Months in all urban areas 83.9%. However, coverage varied from 72.5% to 95.1% showing huge variation. Valid penta3 coverage for all urban areas was 92.5%. Coverage among city corporations varied from 88% to 100%.

5.1.4 Data quality

Please attach a data quality assessment (DQA), report that has been completed within the previous 48 months with the most recently conducted national survey containing immunisation coverage indicators (DOCUMENT NUMBER: 27) and an immunisation data quality improvement plan (DOCUMENT NUMBER 28). If available, a progress report on the implementation of the improvement plan should also be submitted (DOCUMENT NUMBER: 11, DOCUMENT NUMBER: 28).

Please indicate what routine mechanisms to independently assess the quality of administrative data are in place, and if so what these mechanisms are and how they enable the country to track changes in data quality over time.

The Coverage Evaluation Survey (CES) to validate the quality of administrative data annually and the last one was conducted in 2015. The Bangladesh Demographic Health Survey (BDHS) is another periodic survey use to validate immunisation data.

Data Quality Self-Assessment (DQS) is being practiced by Mid-level Managers and Supervisors of GoB and WHO SMO network using WHO DQS tool to monitor the immunisation activities and data accuracy and to identify strengths and weaknesses and solutions to improve routine EPI coverage and strengthening the immunisation system. The findings of DQS are being shared with the relevant staff during the monthly meetings at districts and sub-districts levels.

National EPI has been training Mid-level managers and supervisors on Data Quality Self-Assessment (DQS) as a regular activity with support from WHO Bangladesh. Following the training the managers and supervisors will conduct the DQS in their respective districts and sub district level to assess and monitor the data quality as an ongoing process.

From 2014 to 2016 (as of July), 218 managers and supervisors received the DQS training and 565 DQS was conducted by GoB staff and SMO network.

Please detail what household surveys have been conducted in recent years to independently assess immunisation coverage and equity, and describe any survey plans for the coming five year period.

Bangladesh is conducting coverage evaluation surveys by district in each year. The last CES was conducted in 2015; the 2016 CES will be conducted with the support of UNICEF; and the 2017 and 2019 CESs will be conducted by WHO utilising Gavi HSS2 budget.

5.2. Baseline and Annual Targets (NVS Routine Support)

Please refer to cMYP pages to assist in filling-in this section.

Number	Base Year	Baseline and Targets
	2016	2018
Total births	3,279,741	3,370,437
Total infants' deaths	141,029	144,929
Total surviving infants	3,138,712	3,225,508
Total pregnant women	3,607,715	3,707,481
Target population vaccinated with OPV3*[1]*	3,138,712	3,225,508
OPV3 coverage*[2]*	100 %	100 %
Target population vaccinated with DTP1*[1]*	3,138,712	3,225,508
Target population vaccinated with DTP3*[1]*	3,138,712	3,225,508
DTP3 coverage*[2]*	100 %	100 %
Wastage*[3]* rate in base-year and planned thereafter (%) for DTP	5	5
Wastage*[3]* factor in base-year and planned thereafter for DTP	1.05	1.05
Target population vaccinated with 1st dose of Rotavirus	3,138,712	3,225,508
Target population vaccinated with 2nd dose of Rotavirus	3,138,712	3,225,508
Rotavirus coverage*[2]*	100 %	100 %
First Presentation: Rotavirus, 2-dose schedule		
Wastage*[3]* rate in base-year and planned thereafter (%)	5	5
Wastage*[3]* factor in base-year and planned thereafter (%)	1.05	1.05
Maximum wastage rate value for Rotavirus, 2-dose schedule	5 %	5 %
Target population vaccinated with 1st dose of MCV	3,138,712	3,225,508
MCV coverage*[2]*	100 %	100 %
Annual DTP Drop out rate [(DTP1 – DTP3) / DTP1] x 100	0 %	0 %

[1] Indicate total number of children vaccinated with either DTP alone or combined

[2] Number of infants vaccinated out of total surviving infants

[3] The formula to calculate a vaccine wastage rate (in percentage): [(A - B) / A] x 100. Whereby: A = the number of doses distributed for use according to the supply records with correction for stock balance at the end of the supply period; B = the number of vaccinations with the same

vaccine in the same period.

5.3. Targets for Preventive Campaign(s)

No NVS Prevention Campaign Support this year

5.4. Targets for One time mini-catchup campaign(s)

No One time mini-catchup campaign this year

6. New and Under-Used Vaccines (NVS Routine)

6.1. Assessment of burden of relevant diseases (if available)

If already included in detail in the Introduction Plan or Plan of Action, please cite the section only.

Disease	Title of the assessment	Date	Results
Rotavirus	Anticipating rotavirus vaccines: Hospital-based surveillance for rotavirus diarrhea and estimates burden in Bangladesh, Unicomb LE1, Kilgore PE, Faruque SG, Hamadani JD, Fuchs GJ, Albert MJ, Glass RI., Pediatr Infect Dis J. 1997 Oct;16(10):947-51.	1990 to 1993	http://www.ncbi.nlm.nih.gov/pubmed/9380469 From 1990 through 1993, hospital surveillance was conducted of a systematic, random 4% sample of >80,000 patients with diarrhea who sought care each year at the icddr,b. Rotavirus was detected in 20% (1561 of 7709) of fecal specimens from children with diarrhea <5 years of age; 92% of all cases (1436) occurred in children <2 years of age, but only 3% (50) of cases occurred in infants <3 months of age. It was estimated that Bangladeshi children born in 1994 will die of rotavirus by the age of 5 years, equivalent to 1 rotavirus death per 111 to 203 children. The estimated burden of rotavirus diarrhea in Bangladesh is sufficiently great to warrant field testing of rotavirus vaccines for possible inclusion in the current immunization program.
Rotavirus	Surveillance of rotavirus in a rural diarrhea treatment centre in Bangladesh, Zaman K1, Yunus M, Faruque AS, El Arifeen S, Hossain I, Azim T, Rahman M, Podder G, Roy E, Luby S, Sack DA., Vaccine. 2009 Nov 20;27 Suppl 5:F31-4. doi: 10.1016/j.vaccine.2009.08.063.	01 January 2000 to 31 December 2006,	http://www.ncbi.nlm.nih.gov/pubmed/19931715 A total of 4519 children aged less than 5 years admitted to Matlab hospital and Nayergaon treatment center had stool specimens tested for rotavirus. Rotavirus was identified in 1479 (33%) diarrhoeal patients. 39% of the children were under 2 years of age. The highest proportion of cases were found in the 6-11 months age-group and the lowest in the 24-59 months age-group
Rotavirus	National Consultation on Introduction of RV Vaccine in RI Program, Dhaka, Bangladesh,	5th August 2015	icddr,b, 1993-2013, 44% of children <5 years admitted to Dhaka hospital with diarrhoea had evidence of rotavirus infection icddr,b, 2010-2012, out of 1825 diarrhoea cases for children 0-23 months, admitted in Matlab hospital. 37% had rotavirus infection Sentinel Surveillance by IEDCR in 7 hospitals From July 2012 to June 2015, 64% of hospitalised children with acute gastroenteritis tested positive for Rotavirus. According to vesikari severity scale, 78% of the cases had severe illness, 48% cases were under 1 year and 96% of the cases were under 2 years. Estimated that 8% of the admission in under 5 children are due to Rota virus infections. 31% of the isolates were genotype G1P8
Rotavirus	Prevalence of G2P[4] and G12P[6] Rotavirus, Bangladesh,Mustafizur Rahman*†Comments to Author , Rasheda Sultana*, Giasuddin Ahmed*, Sharifun Nahar*, Zahid M. Hassan*, Farjana Saiada*, Goutam Podder*, Abu S. G. Faruque*, A. K. Siddique*, David A. Sack*, Jelle Matthijnssens†, Marc Van Ranst†, and Tasnim Azim* Author affiliations: *ICDDRB, Dhaka, Bangladesh; †University of Leuven, Leuven, Belgium; EID Journal	January 2001 through May 2006	http://wwwnc.cdc.gov/eid/article/13/1/06-0910_article The icddr,b. Centre for Health and Population Research runs an urban hospital situated in Dhaka, and a rural hospital at Matlab From January 2001 through May 2006, 19,039 stool specimens were tested for group A rotavirus VP6 antigen; 4,644 (24.4%) samples had positive results. The average detection rate of rotavirus was 25.2% in Dhaka and 23.3% in Matlab. Most of the rotavirus-positive patients (91%) were <2 years of age. Infection rates were lowest in patients <3 months and >5 years of age. the rotavirus season in Bangladesh usually starts in June and ends in May (year-round)
Rotavirus	Changing profile of rotavirus genotypes in Bangladesh, June 2006 to May 2012, Mokibul Hassan Afrad 1 Zahid Hassan 1	June 2006 to May 2012	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3723515/pdf/1471-2334-13-320.pdf This study was conducted from June 2006 to May 2012 in Matlab

	Saiada Farjana,1 Sayra Moni, BMC Infect Dis. 2013; 13: 320.		Bangladesh. Group A rotaviruses were detected in stools collected from diarrhea patients Of the 9678 stool samples, 20.3% were positive for rotavirus. The most predominant genotype was G1P[8](22.4%), followed by G9P[8] (20.8%), G2P[4] (16.9%) and G12P[8] (10.4%). Mixed infections were detected in 14.2% of the samples.
Rotavirus	Total Effectiveness Against all Rotavirus Diarrhoea, Zaman et al 2012		Rotarix has overall effectiveness of 39%. The efficacy is 42.3% for children under 12 months.
Rotavirus	Successful co-administration of a human rotavirus and oral poliovirus vaccines in Bangladeshi infants a 2-dose schedule at 12 & 16 weeks of age, K. Zamana, D.A. Sacka, M. Yunusa, S.E. Arifeena, the Bangladeshi Rotavirus Vaccine study group1, ICDDRB,PATH Rotavirus Vaccine Program, GSK Biologicals, Rixensart, Belgium، Vaccine Volume 27, Issue 9, 25 February 2009	June 2005 to January 2006	http://www.sciencedirect.com/science/article/pii/S0264410X09000024 Co-administration of oral live-attenuated human rotavirus vaccine RIX4414 (Rotarix™) and oral polio vaccine (OPV) was assessed. Healthy infants were randomised to receive 2-doses of either: RIX4414 or placebo co-administered with OPV (12 and 16 weeks of age); or RIX4414 or placebo given 15 days after OPV. In this study, a total of 294 subjects were enrolled and vaccinated. In the immunogenicity analysis for sero-conversion and vaccine take, placebo groups were pooled. After vaccination, 56.5-66.7% of RIX4414 and 18.6 of placebo recipients had seroconverted for rotavirus IgA. No significant differences between RIX4414 groups with or without OPV co-administration were observed. No statistically significant differences were observed between groups for polio sero-protection rates. RIX4414 vaccine was immunogenic when co-administered with OPV and did not interfere with OPV sero-protection rates. Rotarix vaccine efficacy, PROVIDE STUDY: In urban setting the efficacy of the Rotarix vaccine is 51% for Rotavirus diarrhea and 73.5% in severe Rotavirus diarrhea.
Rotavirus	Immunogenicity of the pentavalent rotavirus vaccine among infants in two developing countries in Asia, Bangladesh & Vietnam, Sunheang Shina, Dang Duc Anhb, K. Zamanc, Int Vaccine Institute, S. Korea b Nat Institute of Hygiene & Epidemiology, Hanoi, Viet Nam ICDDR, B, PATH RV Program - Merck Research Lab,US	2007 through 2009	http://www.sciencedirect.com/science/article/pii/S0264410X11018871 The immunogenicity of the pentavalent rotavirus vaccine (PRV) was evaluated in two GAVI-eligible Asian countries, Bangladesh and Vietnam. The efficacy trial was conducted over a two-year period 2036 infants were randomly assigned to receive three oral doses of PRV or placebo approximately at 6, 10, and 14 weeks of age . A total of 303 infants were evaluated for immunogenicity and blood samples were collected before the first dose and approximately 14 days following the third dose Nearly 88% of the subjects showed a ≥ 3-fold increase in serum anti-rotavirus IgA response in the analysis of the two countries combined. When analysed separately, the IgA response was lower in Bangladeshi children (78.1% [95% CI: 66.0, 87,5]) than in Vietnamese children (97.0% [95% CI:89.6, 99.6]). The SNA responses varied by individual serotypes and were lower than the results from developed countries.
Rotavirus	Methodology and lessons-learned from the efficacy clinical trial of the pentavalent rotavirus vaccine in Bangladesh, K. Zamana, , , M. Yunusa, Shams El Arifeena, Tasnim Azima, A.S.G. Faruquea, Ehsanul Huqa, Ilias Hossaina, ICDDRB, Mohakhali, Dhaka, Bangladesh b PATH Rotavirus Vaccine Program, Merck Research Laboratories, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, United States	March 2007 to March 2009	http://www.sciencedirect.com/science/article/pii/S0264410X11011674 An efficacy clinical trial with pentavalent rotavirus vaccine (PRV), RotaTeq®, was conducted at Matlab field site of icddr,b. Bangladesh from March 2007 to March 2009 The efficacy of PRV against severe rotavirus gastroenteritis was 42% through the entire follow up period; serum anti-rotavirus IgA response was 78.1%. RotaTeq vaccine can prevent 2.5 cases of severe Rotavirus diarrhea per 100 vaccinated children

6.2. Requested vaccine (Rotavirus, 2-dose schedule)

As reported in the cMYP, the country plans to introduce Rotavirus, using Rotavirus, 2-dose schedule.

When is the country planning to introduce this vaccine? **October 2018**

Please note that, due to a variety of factors, the launch date may vary compared to the date stipulated in the application. Gavi will work closely with countries and their partners to address these issues.

Please summarise the cold chain capacity (at central and other levels) and readiness to accommodate new vaccines, taking into consideration training, cold chain equipment and other logistical requirements. If cold chain expansion is required, state how it will be financed, and when it will be in place. The Independent Review Committee requires assurance that the cold chain is ready or will be ready for the routine introduction of the new vaccine, and evidence/plans need to be provided. All proposals that include Gavi- financing for cold chain equipment intended for vaccine storage shall need to procure equipment pre-qualified by WHO under their Performance Quality and Safety (PQS) program. The purchase of non-PQS equipment will only be considered on an exceptional basis, with justification and advance agreement from Gavi.

The EVM assessment rated Bangladesh an average of 82%, which is a success story about how the cold chain and supply chain systems have been functioning quite well. However, the cold chain is inadequate to meet the growing demands of the immunisation program and to meet the immunisation targets.

According to the attached 2014 Bangladesh Effective Vaccine Management (EVM) Assessment (Annex 12a), out of the nine criteria assessed, seven meet or exceed the WHO minimum levels of performance and the other two criteria has to be improved. The attached 2014-2018 Comprehensive Multi-Year Plan (cMYP) for the immunisation program (Annex 11b) cited problems with the human resource shortages, insufficient capacity at the district levels to store vaccines (especially the envisioned new vaccines to be introduced), and outdated or old equipment. The Comprehensive EVM Improvement Plan provides details of the recommendations to address the above problems.

GoB developed comprehensive Improvement Plan (CIP) for Immunisation Supply Chain and logistics (ISCL) from the findings and recommendations of the Effective Vaccine Management Assessment (EVM) conducted in July 2014, and a subsequent in depth analysis of the equipment, distribution and transport components of the ISCL. The vaccine storage capacity was assessed considering the future introduction of Rota and HPV by 2018, which are summarised below:

Central Stores:

Current capacity is 173 m3 (net) which is adequate for all routine vaccine including PCV & IPV. Additional vaccine storage capacity of 73m3 (net) is required at the Central store by 2018 to accommodate Rota & HPV. This can be accomplished by installing 8 cold rooms of 40m3 each or 6 cold rooms of 50m3 each. A building with a floor area of 840m2 is required to accommodate the above new cold rooms and associated packing and maintenance zones (420m2).

District and Upazila Stores:

Infrastructure improvement needs to expand to accommodate new cold rooms required for introduction of new vaccines in 2018. According to the EVM assessment, out of 64 districts 47 districts will need physical Infrastructure either renovation or expansion by 2018. Out of 47 districts, 29 districts will need cold room installation.

For remaining districts, 325 vaccine refrigerators will be required for district stores, which can be addressed through re-arrangement of existing refrigerators from 29 districts. At upazila level, additional 400 refrigerators will be required to accommodate the storage capacity deficit

Current HSS1 grant supported the infrastructure expansion in 15 districts, rest 32 districts will be addressed through HSS2 support. Initial assessment of 32 districts has been completed. Seven districts needs new construction, twenty districts needs expansion of physical structure and five districts needs renovation of existing building. The cold room installation plan are as; 9 districts in 2016, 12 districts in 2017, 8 distrcis in 2018. By 2018, the country will have full capacity to accommodate Rota and HPV vaccines.

All cold chain equipment currently used in EPI programme are WHO Performance Quality and Safety (PQS) qualified. Future procurement will follow the same standard.

UNICEF will receive Gavi HSS 2 for the improvement of effective vaccine management.

6.2.1. Co-financing information

If you would like to co-finance an amount higher than the minimum, please provide information in Your co-financing row.

Country group	Preparing transition phase

	2018
Minimum co-financing	0.18
Your co-financing (please change if higher)	0.23

6.2.2. Specifications of vaccinations with new vaccine

	Data from		2018
Number of children to be vaccinated with the first dose	Table 5.2	#	3,225,508
Number of children to be vaccinated with the second dose	Table 5.2	#	3,225,508
Immunisation coverage with the second dose	Table 5.2	%	100%
Country co-financing per dose	Table 6.4.1	$	0.23

6.2.3. Portion of supply to be procured by the country (and cost estimate, US$)

		2018
Number of vaccine doses	**#**	866,162
Number of AD syringes	**#**	0
Number of re-constitution syringes	**#**	0
Number of safety boxes	**#**	0
Total value to be co-financed by the Country *[1]*	**$**	1,947,526

[1] The co-financing amount for intermediate and graduating countries indicates costs for the vaccines, related injection safety devices and any freight charges. The total co-financing amount does not contain the costs and fees of the relevant Procurement Agency, such as contingency buffer and handling fees. Information on these extra costs and fees will be provided by the relevant Procurement Agency as part of the cost estimate to be requested by the Country.

6.2.4. Portion of supply to be procured by Gavi (and cost estimate, US$)

		2018
Number of vaccine doses	**#**	7,601,338
Number of AD syringes	**#**	0
Number of re-constitution syringes	**#**	0
Number of safety boxes	**#**	0
Total value to be co-financed by Gavi	**$**	17,091,267

6.2.5. New and Under-Used Vaccine Introduction Grant

Calculation of Vaccine Introduction Grant for the Rotavirus, 2-dose schedule

Year of New Vaccine Introduction	Births (from Table 5.2)	Share per Birth in US$	Total in US$
2018	3,370,437	0.80	2,696,350

The Grant will be based on a maximum award of $0.80 per girl in the birth cohort with a minimum starting grant award of $100,000

Please describe how the Gavi Vaccine Introduction Grant will be used to facilitate the timely and effective implementation of critical activities in advance of and during the introduction of the new vaccine (refer to the cMYP and the Vaccine Introduction Plan).

The Gavi vaccine introduction grant will be utilized to facilitate the effective implementation of the following activities:

1) Programme Management and Coordination:

- High level Coordination Meetings;

- (ICC/NCIP) National Press Conference:100 participant;

- Consultative Workshop with Pediatric Assosciation, OGSB, BMA etc;

- Consultative Workshop for Programatic Coordination Working Committee;

- IEC/Technical Working Group Consultation workshop (3 Workshop);

- Briefing and debriefing of the External observers/monitors on Rota Vaccine Introduction 40 persons;

2) Social Mobilisation, IEC and Advocacy (EPI HQ, Div. District, Upazila, Municipality and City Corporation):

- National Launching Workshop on introduction of Rota Vaccine National Advocacy Workshop on introduction of Rota Vaccine;

- Divisional Advocacy Workshop on introduction of Rota Vaccine;

- District Advocacy Workshop on Rota Vaccine Introduction at District Level;

- Advocacy & Launching Workshop on Rota Vaccine Introduction at Upazila;

- Advocacy/Launching Workshop for Rota Vaccine at City Corporation level;

- Municipality Advocacy and Launching Workshop on Rota Vaccine Introduction at Municipality Level;

3) Other training and meetings:

- National Training for Rota Vaccine Introduction (TOT);

- Regional raining on introduction of Rota Vaccine;

- District Training for Rota Vaccine Introduction (TOT);

- Upazila Supervisors and Field Workers Training for Rota Vaccine Introduction;

- City Corporation Training for Rota Vaccine Introduction (For trainer) (DSCC, DNCC, CCC, RCC, KCC);

- City Corporation Supervisors and Vaccinators/Field Workers Training for Rota Vaccine Introduction;

- Municipality Supervisors and Vaccinators/Field Workers Training for Rota Vaccine Introduction;

- Training Monitoring for EPI HQ;

4) Document production:

- Training Guide (30 page) and Facilitaor Lesson plan (25 Page);

- Communication Materials (Leaflet, Fact Sheet);

- Communication Materials (Vaccine Sticker, Poster, Folder);

- Forms and others;

5) Transport for implementation and supervision:

(a) For EPI HQ (During Vaccination);

(b) For Division (During Vaccination);

(c) For District (During Vaccination);

(d) For Upazila (During Vaccination);

(e) For CC and Zone (During Vaccination);

(f) For Municipality (During Vaccination);

6) Waste Management

- Safe Disposal of Bio-hazard Waste (Bag);

- AEFI Cases Management;

Please complete the 'Detailed budget for VIG / Operational costs' template provided by Gavi and attach as a mandatory document in the Attachment section.

Detailed budget attached as Document No. 22.

Where Gavi support is not enough to cover the full needs, please describe other sources of funding and the expected amounts to be contributed, if available, to cover your full needs.

The national immunisation programme is financed by the Government revenue budget together with the Pooled Funding from HPNSDP. Resource requirements for vaccines and injection supplies are secured in the current sector programme of HPNSDP. Funding gaps exist mostly for the programme components such as purchase of vehicles, cold chain and other equipment, supplementary immunisation campaigns and other recurrent costs. The Government is addressing the funding gap by extending cooperation to development partners and continuously monitoring the financial situation in collaboration with DPs.

6.2.6.Integrated disease control

a) Please describe **any** existing interventions for **the** prevention and treatment of pneumonia and diarrhoea and the status of implementation.

Bangladesh has been implementing integrated management of Childhood illness strategy since 2015. Prevention and treatment of Pneumonia and Diarrhea are two components of that. The case management is done by health assistants working in field level, community health care providers working in community clinics, and medical officers working in district and sub district level hospitals. Other public health interventions for prevention and control of pneumonia are breast feeding, complementary feeding, vitamin A supplementation, and measles immunisation

Based on studies done in Bangladesh and results of multi-centre pneumococcal surveillance data, it has been highlighted that the invasive pneumococcal disease (IPD) burden was significant in Bangladesh. The National Committee on Immunisation and Practices (NCIP) in 2010 recommended that PCV be introduced into the national EPI in Bangladesh. Gavi, accepted the proposal and provided support. Bangladesh introduced 10 valent PCV vaccine in 2015. With the introduction of PCV in line with Global Action plan for Pneumonia and diarrhea control global action integrated pneumonia and diarrhea control was started in Moulavi Bazar district. This is expected to expand to other districts. The Institute of Epidemiology , Disease Control and Research (IEDCR) in collaboration with the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) has started hospital based Rotavirus and intussusception surveillance in seven selected hospitals across the country from July 2012.

Usability of HMIS for impact assessment: The national HMIS collects data on cases of pneumonia treated based on the Integrated Management of Childhood Infections (IMCI) and on pneumonia specific hospitalisations, primarily from the public sector. These data generated through the HMIS are complete and therefore it may be a source to monitor the impact of the PCV on the pneumococcal disease and rota vaccine on diarroheal diseases.

b) Please provide any considerations for how vaccination could strengthen delivery and communication of additional health interventions. Please highlight any barriers that you may foresee with integrating vaccination with other health interventions.

The PIE for PCV and IPV revealed that for the greater majority of mothers/caregivers (91%), the major source of information was the health worker. Nearly one fourth (23%) cited “television” as the source of information. In line with the integrated management of childhood illnesses, the majority of caregivers had been provided with information on breastfeeding (88%) and measures to be adopted in cough and difficulty in breathing (88%).

Knowledge of mothers/caregiver and access to services as enabling factors of high acceptance of the two new vaccines: PIE observed that given the high incidence of pneumonia in Bangladesh and caregiver’s familiarity with it and the knowledge of preventability of pneumonia by the PCV, this new vaccine pulled caregivers to the health facility with the communication of the availability of it in the national immunisation programme. In terms of access to these vaccines, only a very small proportion of care givers (4%) reported any incidence of being turned away without providing vaccination to the child. The perceived satisfaction of the immunisation services provided was also overwhelmingly high (99%) indicating these as enabling factors of the high acceptance of the new vaccines in Bangladesh.

The majority of the district managers (82%) reported integrated planning with other health programmes. The opportunity of rolling out the new vaccine was used as a platform to plan for promoting additional interventions to control pneumonia and meningitis. Commonly cited interventions were breast-feeding (100%), vitamin A supplementation (92%) and hand washing (92%).

This positive experiences obtained through introduction of PCV can be done in Rota introduction for overall control of diarrheal disease and improving sanitation.

6.2.7.Technical assistance

Please describe any particular area(s) the Ministry would require technical assistance to support the introduction of Rotavirus. Please consider the support in the context of developing and implementing an integrated approach to disease prevention and control.

No additional Technical Assistance is required for Rota introduction. The national immunisation programme (EPI) is implemented by the Line Director MNC&AH under the Directorate General of Health Services (DGHS), MOH&FW. Under the guidance of Line Director MNC&AH, Programme manager EPI and Surveillance will oversee Rota introduction. There are several national level technical and advisory bodies to provide technical guidance to the national EPI. In addition technical support from WHO and UNICEF existing staff and system will be used.

7. NVS Preventive Campaigns

No NVS Prevention Campaign Support this year

8. Procurement and Management

8.1 Procurement and Management of New and Under-Used Vaccines Routine

Note: The PCV vaccine must be procured through UNICEF to be able to access the price awarded by the Advance Market Commitment (AMC).

a) Please show how the support will operate and be managed including procurement of vaccines (Gavi expects that most countries will procure vaccine and injection supplies through UNICEF or PAHO's Revolving Fund):

All vaccines used in the national immunisation programme (EPI) are WHO prequalified and procured through UNICEF. There is a waiver letter (memo no. Public Health-2/12-3/94 (part-1)/228 dated 13/05/1996) from the Ministry of Health and Family Welfare by which vaccines imported through UNICEF are used in the EPI programme without licensing by the NRA.

All EPI vaccine shipments are consigned directly to the Central Medical Stores Depot (CMSD) DGHS, which is responsible to clear the shipments using their appointed clearing agent. The shipping documents are sent by the UNICEF Global Freight Forwarders to the UNICEF country office as notified party. UNICEF then forwards the shipping documents to the Customs Authority with copies to CMSD. UNICEF processes shipping documents to the authorizing clearing agent of CMSD on behalf of the Government for clearance of the shipment at least 5 working days before the arrival of shipment. The letter is directly addressed to customs to expedite the processing time as the vaccines must be cleared within a few hours of arrival. The Local Customs Authority assesses the duties and taxes (CD/VAT) based on the value of the vaccine shipment. The consignee arranges payment on a provisional basis of duties and taxes to the Customs Authority. If there are any delays, UNICEF immediately takes action and asks all concerned authorities & concerned parties to take immediate action to ensure the safe storage of vaccines.

b) If an alternative mechanism for procurement and delivery of vaccine supply (financed by the country or the Gavi) is requested, please document

- A description of the mechanism and the vaccines or commodities to be procured by the country
- Assurance that vaccines will be procured from the WHO list of pre-qualified vaccines, indicating the specific vaccine from the list of pre-qualification. For the procurement of locally-produced vaccines directly from a manufacturer which may not have been prequalified by WHO, assurance should also be provided that the vaccines purchased comply with WHO's definition of quality vaccines, for which there are no unresolved quality problems reported to WHO, and for which compliance is assured by a fully functional National Regulatory Authority (NRA), as assessed by WHO in the countries where they are manufactured and where they are purchased.

Not applicable

c) If receiving direct financial support from Gavi (such as operational support for campaigns or VIG activities), please indicate how the funds should be transferred by Gavi.

The VIG funds to be transferred to GoB account as it was done in previous support.

d) Please indicate how the co-financing amounts will be paid (and who is responsible for this)

GoB will transfer the fund ofco-financing amount of vaccine to UNICEF's SD through annual signed agreement.

e) Please describe the financial management procedures that will be applied for the management of the NVS direct financial support, including procurement.

Upon received the fund from GAVI alliance, the received fund is deposited in a foreign currency account with the Sonali bank, Local Branch. The required amount of fund was then transferred from foreign currency account to a local currency account of GAVI-NVS. Fund transferred from local currency account of Line Director MNC&AH. The Line Director (LD) disburse fund to civil surgeons at district level and civil surgeons

disburse fund to UHFPO at sub district level according to the approved budget and work plan.

Civil Surgeons send the Statement of Expenditure (SOE) to the Line Director. All the financial transaction was made following an implementation guideline which covers procedure for disbursement of fund, budget break-up, implementation schedule, financial accountability, end-use monitoring and deadline for submission of expenditure statement.

Supervisors, senior level HQ officials and officials of concerned organization/agencies (GAVI, WHO, UNICEF) can have access to these documents whenever needed. The Controller and Auditor General (CAG) conduct regular financial and compliance audits. The Foreign Aided Projects Audit Directorate (FAPAD) conducts audits of programs and projects with DP contributions

f) Please outline how coverage of the introduced vaccine will be monitored, reported and evaluated (refer to cMYP and Introduction Plan)

All EPI guidelines, record keeping and reporting formats will be revised and produced incorporating Rota vaccine. The current record keeping and reporting forms will be revised to incorporate vaccine recording disaggregated by sex. EPI will reprint routine EPI monitoring charts/wall charts incorporating Rota for the monitoring of coverage, dropout and left out rates.

All districts and city corporations of Bangladesh are using routine EPI software for reporting routine coverage on a monthly basis.The software of reporting is now being transition to DHIS2. Rota vaccine will be also included in DHIS2.

The National EPI will ensure continued gender equity through social mobilisation and communication activities. Annual EPI CES by districts will enable to obtain evaluated coverage. Post Introduction Evaluation (PIE) will be done 6 months after introduction.

g) If applying for measles second dose, does the country wish to have the support in cash or in-kind? **N/A**

8.2 Procurement and Management for NVS Preventive Campaign(s)

No NVS Prevention Campaign Support this year

8.3 Product Licensure

For each of the vaccine(s) requested, please state whether manufacturer registration and/or national vaccine licensure will be needed in addition to WHO prequalification and, if so, describe the procedure and its duration. In addition, state whether the country accepts the Expedited Procedure for national registration of WHO-prequalified vaccines.

Note that the necessary time for licensure should be factored into the introduction timeline and reflected in the Vaccine Introduction Plan or Plan of Action.

WHO pre-qualified vaccines and procured through UNICEF Supply Division does not require additional approval from the NRA. There is a waiver letter (memo no. Public Health-2/12-3/94 (part-1)/228 dated 13/05/1996) from the Ministry of Health and Family Welfare by which vaccines imported through UNICEF are used in the EPI programme without licensing by the NRA

For each of the vaccine(s) requested, please provide the actual licensure status of the preferred presentation and of any alternative presentations, if required.

WHO pre-qualified vaccines and procured through UNICEF Supply Division does not require additional approval from the NRA. There is a waiver letter (memo no. Public Health-2/12-3/94 (part-1)/228 dated 13/05/1996) from the Ministry of Health and Family Welfare by which vaccines imported through UNICEF are used in the EPI programme without licensing by the NRA

Please describe local customs regulations, requirements for pre-delivery inspection, special documentation requirements that may potentially cause delays in receiving the vaccine. If such delays are anticipated, explain what steps are planned to handle these.

All EPI vaccine shipments are consigned directly to the Central Medical Stores Depot (CMSD) DGHS, which

is responsible to clear the shipments using their appointed clearing agent. The shipping documents are sent by the UNICEF Global Freight Forwarders to the UNICEF country office as notified party. UNICEF then forwards the shipping documents to the Customs Authority with copies to CMSD. UNICEF processes shipping documents to the authorizing clearing agent of CMSD on behalf of the Government for clearance of the shipment at least 5 working days before the arrival of shipment. The letter is directly addressed to customs to expedite the processing time as the vaccines must be cleared within a few hours of arrival. The Local Customs Authority assesses the duties and taxes (CD/VAT) based on the value of the vaccine shipment. The consignee arranges payment on a provisional basis of duties and taxes to the Customs Authority. If there are any delays, UNICEF immediately takes action and asks all concerned authorities & concerned parties to take immediate action to ensure the safe storage of vaccines.

Please provide information on NRA in the country, including status (e.g. whether it is WHO-certified). Please include points of contact with phone numbers and e-mail addresses. UNICEF will support the process by communicating licensing requirements to the vaccine manufacturers where relevant.

The Directorate General of Drug Administration (DGDA) is the national regulatory authority (NRA) responsible for licensure of biological and pharmaceutical products in Bangladesh. The Bangladesh NRA is not yet WHO certified.

The contact details of focal person is as follows:

Major General Md. Mustafizur Rahman

Directorate General (DG), Directorate General of Drug Administration (DGDA), Ministry of Health and Family Welfare

Aushad Bhavan, Mohakhali, Dhaka-1212, Bangladesh

Tel : 8802 9880803, 9880864, 9880897, 9880924; **Fax :** 8802 9880854; **Mobile :** +88-01706684077

E-mail : dgda.gov@gmail.com; **Website :** http://www.dgda.gov.bd

8.4 Vaccine Management (EVSM/EVM/VMA)

It is mandatory for countries to conduct an Effective Vaccine Management (EVM) assessment prior to an application for the introduction of a new vaccine. This EVM should have been conducted within the preceding **5 years**.

When was the EVM conducted? **August 2014**

Please attach the EVM improvement plan progress report (DOCUMENT NUMBER:21); and if not previously provided, please attach the most recent EVM assessment report (DOCUMENT NUMBER : 20,19,21) and the corresponding EVM improvement plan (DOCUMENT NUMBER : 19). The improvement plan should include a timeline, budget of committed resources for these activities and funding gaps, if any, as well as M&E indicators to monitor progress of implementation.

When is the next Effective Vaccine Management (EVM) Assessment planned? **September 2018**

8.5 Waste management

Countries must have a detailed waste management and monitoring plan as appropriate for their immunisation activities. This should include details on sufficient availability of waste management supplies (including safety boxes), the safe handling, storage, transportation and disposal of immunisation waste, as part of a healthcare waste management strategy. Please describe the country's waste management plan for immunisation activities (including campaigns).

Waste management is included in the country National Immunisation Policy. Immunisation Safety as one of the Policy Guiding Principles where it was stated that the safety of immunisation services should be maintained through consistent implementation, monitoring and evaluation of the highest safety standards for immunisation services in public, private and NGOs. Waste Management: Every health facility manager in public, private and NGO sector is responsible for ensuring safe and appropriate disposal of syringes, sharps and all injection related waste; public, private and NGO health care services that provide injections have a

responsibility to manage sharps waste in a way that is safe and environmentally friendly, using final disposal options that comply with environmental regulations; determination of the most appropriate method for the final disposal of syringes and sharps waste in a given health care facility or area will aligned the National Injection Safety Policy; the MoHFW, and the Ministry of Local Government and Rural Development and Cooperatives in their respective areas, will ensure quality safety injection and waste management practices, and implementing communication strategies for service providers and recipients in order to promote safe injection practices.

9. Additional Comments and Recommendations from the National Coordinating Body (ICC/HSCC)

Comments and Recommendations from the National Coordinating Body (ICC/HSCC)

All the participants of the 51st ICC meeting agreed to endorse the proposal for the introduction of rota vaccine. Some of the ICC members were enquiring about the rotavirus and intussusception surveillance, and the EPI Program responded that the existing sentinel surveillance will be continued.

10. List of documents attached to this proposal

10.1. List of documents attached to this proposal

Table 1: Checklist of mandatory attachments

Document Number	Document	Section	File
Endorsements			
1	MoH Signature (or delegated authority) of Proposal	4.1.1	MOH signature of proposal.pdf **File desc:** **Date/time :** 08/09/2016 10:25:50 **Size:** 60 KB
2	MoF Signature (or delegated authority) of Proposal	4.1.1	MOF signature of proposal.pdf **File desc:** **Date/time :** 08/09/2016 10:26:42 **Size:** 60 KB
4	Terms of Reference for the ICC	4.1.2	3 TOR Inter-agency Coordination Committee.docx **File desc:** **Date/time :** 08/09/2016 06:30:56 **Size:** 18 KB
5	Minutes of ICC/HSCC meeting endorsing Proposal	4.1.3	BGD ICC meeting minutes endorsed proposal.pdf **File desc:** **Date/time :** 08/09/2016 07:16:16 **Size:** 519 KB
6	Signatures of ICC or HSCC or equivalent in Proposal	4.1.3	Signature of ICC in proposal.pdf **File desc:** **Date/time :** 08/09/2016 10:29:37 **Size:** 130 KB
7	Minutes of last three ICC/HSCC meetings	4.1.3	48,49 and 50th three ICC meeting minutes.pdf **File desc:** **Date/time :** 06/09/2016 07:53:01 **Size:** 1 MB
8	Role and functioning of the advisory group, description of plans to establish a NITAG	4.2.1	Notification and Formation of NCIP with the Scientific & Technical Sub Committee- English Translation 2016.docx **File desc:** **Date/time :** 06/09/2016 06:54:13 **Size:** 21 KB
Planning, financing and vaccine management			
9	comprehensive Multi Year Plan - cMYP	5.1	cMYP Bangladesh 2014-2018_FINAL.pdf **File desc:** **Date/time :** 30/08/2016 04:18:16 **Size:** 4 MB
10	cMYP Costing tool for financial analysis	5.1	cMYP_Bangladesh_2014_2018_FINAL.xlsx **File desc:** **Date/time :** 30/08/2016 04:18:46 **Size:** 2 MB

11	M&E and surveillance plan within the country's existing monitoring plan	5.1.4	BGD M&E and Surv plan.docx **File desc:** **Date/time :** 08/09/2016 06:51:42 **Size:** 153 KB
12	Vaccine introduction plan	5.1	BGD Rota Vaccine Introduction Plan 17,Oct,16.doc **File desc:** **Date/time :** 17/10/2016 04:03:31 **Size:** 648 KB
19	EVM report	8.3	EVM_report_BangladeshV820Aug14.pdf **File desc:** EVM Report **Date/time :** 30/08/2016 04:15:25 **Size:** 5 MB
20	Improvement plan based on EVM	8.3	Bangladesh cEVM Improvement PlanV5.pdf **File desc:** EVM Improvement Plan **Date/time :** 30/08/2016 04:16:05 **Size:** 3 MB
21	EVM improvement plan progress report	8.3	Progress Report on EVM Improvement Plan.docx **File desc:** **Date/time :** 30/08/2016 04:16:47 **Size:** 16 KB
22	Detailed budget template for VIG / Operational Costs	6.x,7.x.2, 6.x.2	Final- VIG and Op Cost Detail Rota_04.9.2016 (1) (1).xlsx **File desc:** **Date/time :** 08/09/2016 04:56:09 **Size:** 238 KB
27	Data quality assessment (DQA) report	5.1.4	BGD DQS Report.pdf **File desc:** **Date/time :** 08/09/2016 07:07:29 **Size:** 2 MB

Table 2: Checklist of optional attachments

Document Number	Document	Section	File
3	MoE signature (or delegated authority) of HPV Proposal	4.1.1	No file loaded
13	Introduction Plan for the introduction of RCV / JE / Men A / YF into the national programme	7.x.4	No file loaded
14	Annual EPI Plan with 4 year forward view for measles and rubella		No file loaded

15	HPV roadmap or strategy	6.1.1	No file loaded
16	HPV summary of the evaluation methodology	5.1.6	No file loaded
17	Evidence of commitment to fund purchase of RCV for use in the routine system in place of the first dose of MCV	7.x.3	No file loaded
18	Campaign target population documentation	7.x.1, 6.x.1	No file loaded
23	Risk assessment and consensus meeting report for MenA. If the DPT was used instead, please include this.	7.1	No file loaded
24	National Measles (& Rubella) elimination plan if available		No file loaded
25	A description of partner participation in preparing the application	4.1.3	A description of partners participation in preparing the application.docx **File desc:** **Date/time :** 08/09/2016 07:55:14 **Size:** 20 KB
26	Minutes of NITAG meeting with specific recommendations on the NVS introduction or campaign	4.2	BGD Minutes of STSC of the NCIP (1).pdf **File desc:** **Date/time :** 08/09/2016 05:23:50 **Size:** 271 KB
28	DQA improvement plan	5.1.4	No file loaded
29	Plan of Action for campaigns	7.1, 7.x.4	No file loaded
30	Other		BGD Banking Form.pdf **File desc:** This attachment is the scan copy of fill up page (section L; 12: Banking Form) of the proposal **Date/time :** 08/09/2016 05:28:31 **Size:** 76 KB

			DSA Rate by MOF.pdf **File desc:** **Date/time :** 17/10/2016 04:04:37 **Size:** 623 KB
31	Evidence of self-financing MCV1	5.1.5	No file loaded

11. Annexes

Annex 1 - NVS Routine Support

Annex 1.1 - NVS Routine Support (Rotavirus, 2-dose schedule)

Table Annex 1.1 A: Rounded up portion of supply that is procured by the country and estimate of relative costs in US$

		2018
Number of vaccine doses	**#**	866,200
Number of AD syringes	**#**	0
Number of re-constitution syringes	**#**	0
Number of safety boxes	**#**	0
Total value to be co-financed by the Country *[1]*	**$**	1,948,000

Table Annex 1.1 B: Rounded up portion of supply that is procured by Gavi and estimate of relative costs in US$

		2018
Number of vaccine doses	**#**	7,601,400
Number of AD syringes	**#**	0
Number of re-constitution syringes	**#**	0
Number of safety boxes	**#**	0
Total value to be co-financed by Gavi	**$**	17,091,500

Table Annex 1.1 C: Summary table for vaccine Rotavirus, 2-dose schedule

ID		Data from		2018
	Number of surviving infants	Table 5.2	#	3,225,508
	Number of children to be vaccinated with the first dose	Table 5.2	#	3,225,508
	Number of children to be vaccinated with the second dose	Table 5.2	#	3,225,508
	Immunisation coverage with the second dose	Table 5.2	%	100%
	Number of doses per child	Parameter	#	2
	Estimated vaccine wastage factor	Table 5.2	#	1.05
	Number of doses per vial	Parameter	#	1
	AD syringes required	Parameter	#	No
	Reconstitution syringes required	Parameter	#	No
	Safety boxes required	Parameter	#	No
cc	**Country co-financing per dose**	Table 6.4.1	$	0.23
ca	**AD syringe price per unit**	Table Annexes 4A	$	0.041
cr	**Reconstitution syringe price per unit**	Table Annexes 4A	$	0
cs	**Safety box price per unit**	Table Annexes 4A	$	0.005
fv	**Freight cost as % of vaccines value**	Table Annexes 4B	%	2.66%

Table Annex 1.1 D: Estimated numbers for Rotavirus, 2-dose schedule, associated injection safety material and related co-financing budget (page 1)

		Formula	2018		
			Total	Government	Gavi
A	Country co-finance	*V*	10.23 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	3,225,508	329,946	2,895,562
C	Number of doses per child	*Vaccine parameter (schedule)*	2		
D	Number of doses needed	*B x C*	6,451,016	659,891	5,791,125
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	6,773,567	692,885	6,080,682
G	Vaccines buffer stock	*Buffer on doses needed = (D - D of previous year) x 25% Buffer on wastages = ((F - D) - (F of previous year - D of previous year)) x 25%, = 0 if negative result G = [buffer on doses needed] + [buffer on wastages]*	1,693,392	173,222	1,520,170
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	8,467,500	866,162	7,601,338
J	Number of doses per vial	*Vaccine parameter*	1		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.11*	0	0	0
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.11*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(I / 100) x 1.11*	0	0	0
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	18,545,519	1,897,067	16,648,452
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	0	0	0
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	0	0	0
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	493,274	50,459	442,815
S	Freight cost for devices needed	*(O+P+Q) x freight cost as % of devices value (fd)*	0	0	0
T	Total fund needed	*(N+O+P+Q+R+S)*	19,038,793	1,947,526	17,091,267
U	Total country co-financing	*I x country co-financing per dose (cc)*	1,947,525		
V	Country co-financing % of Gavi supported proportion	*U / T*	10.23 %		

Annex 2 - NVS Routine – Preferred Second Presentation

No NVS Routine – Preferred Second Presentation requested this year

Annex 3 - NVS Preventive campaign(s)

No NVS Prevention Campaign Support this year

Annex 4

Table Annex 4A: Commodities Cost

Estimated prices of supply are not disclosed

Table Annex 4B: Freight cost as percentage of value

Vaccine Antigen	Vaccine Type	2018
Rotavirus, 2-dose schedule	ROTA	2.66 %

Table Annex 4C: Preparing transition phase - Minimum country co-payment per dose of co-financed vaccine

Vaccine	2018
Rotavirus, 2-dose schedule	0.18

Table Annex 4D: Wastage rates and factors

The following table shows the wastage rates for routine and campaign vaccines, set for 2018.

Vaccine	dose(s) per vial	Maximum Vaccine wastage rate*		Benchmark Wastage Rate**
HPV bivalent, 2 dose(s) per vial, LIQUID	2	10 %	0 %	
HPV quadrivalent, 1 dose(s) per vial, LIQUID	1	5 %	0 %	
JE, 5 dose(s) per vial, LYOPHILISED	5	10 %	10 %	
Measles, 10 dose(s) per vial, LYOPHILISED in second dose	10	40 %	0 %	
Meningococcal A, 10 dose(s) per vial, LYOPHILISED	10	50 %	10 %	
MR, 10 dose(s) per vial, LYOPHILISED in second dose	10	40 %	15 %	
Pneumococcal (PCV10), 2 dose(s) per vial, LIQUID	2	10 %	0 %	
Pneumococcal (PCV13), 1 dose(s) per vial, LIQUID	1	5 %	0 %	
Rotavirus, 2-dose schedule	1	5 %	0 %	
Rotavirus, 3-dose schedule	1	5 %	0 %	
Yellow Fever, 10 dose(s) per vial, LYOPHILISED	10	40 %	0 %	
Yellow Fever, 5 dose(s) per vial, LYOPHILISED	5	10 %	0 %	

Comments:

* Source - WHO indicative wastage rates

** Source - Country APRs and studies, approved by WHO, UNICEF, and the Gavi Secretariat

Note: HPV demonstration project wastage rates are the same as for the national introduction of the vaccine

Table Annex 4E: Vaccine maximum packed volumes

Kindly note that this table is for reference purposes only and includes Gavi- and non Gavi-supported vaccines.

Vaccine product	Designation	Vaccine formulation	Admin route	No. Of doses in the schedule	Presentation (doses/vial, prefilled)	Packed volume vaccine (cm3/dose)	Packed volume diluents (cm3/dose)
BCG	BCG	lyophilized	ID	1	20	1.2	0.7
Diphtheria-Tetanus	DT	liquid	IM	3	10	3	
Diphtheria-Tetanus-Pertussis	DTP	liquid	IM	3	20	2.5	
Diphtheria-Tetanus-Pertussis	DTP	liquid	IM	3	10	3	
DTP liquid + Hib freeze-dried	DTP+Hib	liquid+lyop.	IM	3	1	45	
DTP-HepB combined	DTP-HepB	liquid	IM	3	1	9.7	
DTP-HepB combined	DTP-HepB	liquid	IM	3	2	6	
DTP-HepB combined	DTP-HepB	liquid	IM	3	10	3	
DTP-HepB liquid + Hib freeze-dried	DTP-Hib	liquid	IM	3	10	2.5	
DTP-HepB liquid + Hib freeze-dried	DTP-HepB+Hib	liquid+lyop.	IM	3	1	22	

DTP-HepB-Hib liquid	DTP-HepB+Hib	liquid+lyop.	IM	3	2	11	
DTP-HepB-Hib liquid	DTP-HepB-Hib	liquid	IM	3	10	4.4	
DTP-HepB-Hib liquid	DTP-HepB-Hib	liquid	IM	3	2	13.1	
DTP-HepB-Hib liquid	DTP-HepB-Hib	liquid	IM	3	1	19.2	
DTP-Hib combined liquid	DTP+Hib	liquid+lyop.	IM	3	10	12	
DTP-Hib combined liquid	DTP-Hib	liquid	IM	3	1	32.3	
Hepatitis B	HepB	liquid	IM	3	1	18	
Hepatitis B	HepB	liquid	IM	3	2	13	
Hepatitis B	HepB	liquid	IM	3	6	4.5	
Hepatitis B	HepB	liquid	IM	3	10	4	
Hepatitis B UniJect	HepB	liquid	IM	3	Uniject	12	
Hib freeze-dried	Hib_lyo	lyophilized	IM	3	1	13	35
Hib freeze-dried	Hib_lyo	lyophilized	IM	3	2	6	
Hib freeze-dried	Hib_lyo	lyophilized	IM	3	10	2.5	3
Hib liquid	Hib_liq	liquid	IM	3	1	15	
Hib liquid	Hib_liq	liquid	IM	3	10	2.5	
Human Papilomavirus vaccine	HPV	liquid	IM	3	1	15	
Human Papilomavirus vaccine	HPV	liquid	IM	3	2	5.7	
Japanese Encephalitis	JE_lyo	lyophilized	SC	1	5	2.5	2.9
Measles	Measles	lyophilized	SC	1	1	26.1	20
Measles	Measles	lyophilized	SC	1	2	13.1	13.1
Measles	Measles	lyophilized	SC	1	5	5.2	7
Measles	Measles	lyophilized	SC	1	10	3.5	4
Measles-Mumps-Rubella freeze dried	MMR	lyophilized	SC	1	1	26.1	26.1
Measles-Mumps-Rubella freeze dried	MMR	lyophilized	SC	1	2	13.1	13.1
Measles-Mumps-Rubella freeze dried	MMR	lyophilized	SC	1	5	5.2	7
Measles-Mumps-Rubella freeze dried	MMR	lyophilized	SC	1	10	3	4
Measles-Rubella freeze dried	MR	lyophilized	SC	1	1	26.1	26.1
Measles-Rubella freeze dried	MR	lyophilized	SC	1	2	13.1	13.1
Measles-Rubella freeze dried	MR	lyophilized	SC	1	5	5.2	7
Measles-Rubella freeze dried	MR	lyophilized	SC	1	10	2.5	4
Meningitis A conjugate	Men_A	lyophilized	IM	1	10	2.6	4
Meningitis A/C	MV_A/C	lyophilized	SC	1	10	2.5	4
Meningitis A/C	MV_A/C	lyophilized	SC	1	50	1.5	3
Meningitis W135	MV_W135	lyophilized	SC	1	10	2.5	4
Meningococcal A/C/W/	MV_A/C/W	lyophilized	SC	1	50	1.5	3

Meningococcal A/C/W/Y	MV_A/C/W/Y	lyophilized	SC	1	10	2.5	4
Monovalent OPV-1	mOPV1	liquid	Oral		20	1.5	
Monovalent OPV-3	mOPV3	liquid	Oral		20	1.5	
Pneumo. conjugate vaccine 10-valent	PCV-10	liquid	IM	3	1	11.5	
Pneumo. conjugate vaccine 10-valent	PCV-10	liquid	IM	3	2	4.8	
Pneumo. conjugate vaccine 13-valent	PCV-13	liquid	IM	3	1	12	
Polio	OPV	liquid	Oral	4	10	2	
Polio	OPV	liquid	Oral	4	20	1	
Polio inactivated	IPV	liquid	IM	3	PFS	107.4	
Polio inactivated	IPV	liquid	IM	3	10	2.5	
Polio inactivated	IPV	liquid	IM	3	1	15.7	
Rota vaccine	Rota_liq	liquid	Oral	2	1	17.1	
Rota vaccine	Rota_liq	liquid	Oral	3	1	45.9	
Tetanus Toxoid	TT	liquid	IM	2	10	3	
Tetanus Toxoid	TT	liquid	IM	2	20	2.5	
Tetanus Toxoid UniJect	TT	liquid	IM	2	Uniject	12	
Tetanus-Diphtheria	Td	liquid	IM	2	10	3	
Yellow fever	YF	lyophilized	SC	1	5	6.5	7
Yellow fever	YF	lyophilized	SC	1	10	2.5	3
Yellow fever	YF	lyophilized	SC	1	20	1.5	2
Yellow fever	YF	lyophilized	SC	1	50	0.7	1

12. Banking Form

In accordance with the decision on financial support made by the Gavi, the Government of Bangladesh hereby requests that a payment be made via electronic bank transfer as detailed below:

Name of Institution (Account Holder):	Ministry of Health and Family Welfare		
Address:	Bangladesh Secretariat, Dhaka		
City Country:	Dhaka, Bangladesh		
Telephone no.:	88-027169637, 9880530	**Fax no.:**	8821914
	Currency of the bank account:		US Dollar Account
For credit to:			
Bank account's title:	Global Alliance for Vaccines and Immunization (GAVI)		
Bank account no.:	FCAD 00011		
Bank's name:	Sonali Bank Local Office, 35-44 Motijheel C/A, Dhaka, Bangladesh		

Is the bank account exclusively to be used by this program?

By who is the account audited? Foreign Aided Project Account Department

Signature of Government's authorizing official

		Seal
Name:	Roxana Quader	
Title:	Additional Secretary, PH and WHO, MOHFW, Government of Bangladesh	
Signature:		
Date:	08/09/2016	

FINANCIAL INSTITUTION		CORRESPONDENT BANK (In the United States)	
Bank Name:	Sonali Bank		
Branch Name:	Local Office, Dhaka		
Address:	33-44, Motigheel C/A, Dhaka		
City Country:	Dhaka, Bangladesh		
Swift Code:	BSONBDDH		
Sort Code:			
ABA No.:			
Telephone No.:	88-02-9550426-36, 9560962		
FAX No.:	88-02-9568002, 9561410		

I certify that the account No FCAD 00011 is held by Roxana Guader & Dr. Md. Shamsuzzaman at this

banking institution

The account is to be signed jointly by at least 2 (number of signatories) of the following authorized signatories:

1		
	Name:	Roxana Quader
	Title:	Additional Secretary, PH and WHO, MOHFW, Government of Bangladesh
2		
	Name:	Dr. Md. Shamsuzzaman
	Title:	Program Manager, EPI and Surveillance
3		
	Name:	
	Title:	

Name of bank's authorizing official	
Debabrata Misra	
Signature:	
Date:	9/8/2016 12:00:00 AM
Seal:	