Gavi

Application Form for Country Proposals

For Support to:

Routine New Vaccines Support
Preventive Campaign Support

Submitted by

The Government of

Ghana

Date of submission: **23 February 2015**

Deadline for submission: 23 February 2015

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

Start Year	2015	End Year	2019

Form revised in 2015

(To be used with Guidelines of October 2014)

Please submit the Proposal using the online platform
https://AppsPortal.gavialliance.org/PDExtranet

Enquiries to: proposals@gavi.org or representatives of a Gavi partner agency. Unless otherwise specified, the documents can be shared with Gavi partners, collaborators and the general public. The Proposal and attachments must be submitted in English, French, Spanish, or Russian.

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

Gavi is unable to return submitted documents and attachments to countries.

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 TRANSPARANCY 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. Application Specification

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]
Preventive Campaign Support	Yellow Fever, 10 dose(s) per vial, LYOPHILISED	2015	2015	
Routine New Vaccines Support	Meningococcal A, 10 dose(s) per vial, LYOPHILISED	2015	2019	

[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
- Relevant baseline data, including:
  - DTP3 and Measles coverage data (as reported on the WHO/UNICEF Joint Reporting Form)
  - Birth cohort, targets and immunisation coverage by vaccines
- Country preparedness
  - 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 Ghana has made major strides in the health of children in particular and the entire population as a whole. A number of interventions have been introduced to improve the health status of the population. Immunization has been at the forefront of interventions geared to improving child health. This was demonstrated in 2012 when the Government of Ghana with the support of GAVI and other partners jointly introduced pneumococcal and rotavirus vaccines into routine immunization. These vaccines have contributed to the decline of illnesses and deaths due to pneumonia and diarrhoea in the country.

To further improve the health status of children and adults in the country, the Government of Ghana is requesting for support from the Global Alliance for Vaccines and Immunization (GAVI) to introduce Meningococcal A (Men A) Vaccine into routine immunization in Northern, Upper East and Upper West regions and also conduct Sub-national Yellow Fever (YF) Preventive Campaign in high risk districts. The support for Yellow Fever Preventive Campaign is required in 2015. However, support for Meningococcal A Conjugate Vaccine introduction into routine immunization runs from 2015 to 2019.

The target population for the first year of Meningitis routine introduction is about 194,766 infants (birth cohort). The Yellow Fever Preventive Campaign will target 5,474,926 persons aged 10 years and above (excluding pregnant) in 72 districts.

There is the need to conduct yellow fever preventive campaign in these districts because, a risk assessment done in 2010 identified them as high risk for the disease. Vaccinating 70% of the target population will prevent yellow fever outbreaks. For meningitis, the Northern, Upper East and Upper West regions lie within the meningitis belt of Africa. These regions have recorded several episodes of meningitis outbreaks. The routine introduction of the vaccine will help prevent future outbreaks.

The 10-dose presentations of both Meningococcal A conjugate vaccine and yellow fever vaccine is preferred. This presentation is the same as the 10-dose presentations of the pentavalent, measles and yellow fever vaccines which are already being used in the country. Vaccinators are therefore already familiar with this presentation.

The Yellow Fever Campaign will be conducted from 23 - 28 July 2015. The Meningitis vaccine introduction into routine immunization is scheduled for January 2016.

The country has a good routine immunization programme. In 2013, the coverage for DTP-3 and Measles-1 were 90% and 89% respectively.

Effective Vaccine Management Assessment (EVMA) was conducted in the country in October 2014. The country achieved the EVM target of 80% and ablve for five (5) out of the nine (9) EVM criteria. An improvement plan was developed to ensure optimal vaccine management practices in the country. Steps have already been taken to implement the plan as a number of cold chain equipment and monitoring devices have been procured.

The World Health Organization and UNICEF provided both technical and financial support in the preparation of this proposal. The Ghana Coalition of NGOs in Health supported the Social Mobilization Sub-committee in the preparation of the advocacy and social mobilization plan for the Yellow Fever Campaign, as well as the routine introduction of meningitis vaccine. The Food and Drug Authority (FDA) were instrumental in the development of the Strategies for Monitoring and Management of Adverse Events Following Immunization (AEFI). Other partners,particularly, those on the ICC supported in discussions and finalization as well as the endorsement of the proposal for submission.

The total estimated cost of the yellow fever preventive campaign is $ 4,326,166. The GAVI support will cover $ 3,558,702 (82.3%). The government of Ghana with the support of local partners will provide additional funding to support the campaign.

The estimated cost of introducing meningococcal A conjugate vaccine into routine immunization is $ 188,496. The VIG provided by GAVI ($ 152,013) will cover 80.6% of the estimated cost. The remaining $ 36,483 will be provided by the Government of Ghana and partners.

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 Ghana 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:

Meningococcal A, 10 dose(s) per vial, LYOPHILISED routine introduction

Yellow Fever, 10 dose(s) per vial, LYOPHILISED preventive campaigns

The Government of Ghana 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 **February**.

The payment for the first year of co-financed support will be around **November 2015** for Meningococcal A, 10 dose(s) per vial, LYOPHILISED.

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 : 1 and 2 in Section 10. Attachments.

Minister of Health (or delegated authority)		Minister of Finance (or delegated authority)	
Name	Dr Kwaku AGYEMANG-MENSAH	**Name**	Major (RTD) M. S. TARA
Date		**Date**	
Signature		**Signature**	

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

Full name	Position	Telephone	Email
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Mr Fred Osei-Sarpong	EPI Programme Officer/Ghana Health Service	+233244716379	foseisarpong@gmail.com
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Mr Stanley DIAMENU	EPI Focal Point, WHO-Ghana	+233244312896	diamenus@who.int

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 GaviGavi 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	EPI Inter-Agency Coordinating Committee
Year of constitution of the current committee	2001
Organisational structure (e.g., sub-committee, stand-alone)	Stand-alone
Frequency of meetings	Quarterly and Emergencies

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:

There is a continued need by government and partners to co-ordinate technical and material inputs to the immunization program. In light of current and future support, increased technical co-ordination would ensure efficient use and greater impact of technical, material and financial resources. To this effect a National Inter-Agency Coordinating Committee (ICC) was established in order to serve as an advisory body to the Ministry of Health (MOH) through the Public Health Division of the Ghana Health Service with the following objectives:

- To foster solid partnership by collating all available inputs and resources from inside and outside the country in order to maximize resources for the good of the child
- Support national level to review and support work plans such as NIDs, EPI annual plans, EPI 5 year plans, surveillance plan etc
- Enhance transparency and accountability by reviewing use of funds and other resources together with the EPI Programme at regular intervals
- Support and encourage information sharing and feedback at national and or implementing levels within the country and interested partners outside the country
- Ensure that the Programme Manager receives both technical and political support that helps to validate his or her authority on issues pertaining to EPI
- Address technical issues as and when they arise such as introduction new antigens, strengthening immunization services etc

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

Partners provided support in the preparation of this proposal. The World Health Organization and UNICEF provided both technical and financial support in the preparation of this proposal. The Ghana Coalition of NGOs in Health supported the Social Mobilization Sub-committee in the preparation of the advocacy and social mobilization plan for the Yellow Fever Campaign, Meningitis Preventive Campaign as well as the routine introduction of meningitis vaccine. The Food and Drug Authority (FDA) were instrumental in the development of the Strategies for Monitoring and Management of Adverse Events Following Immunization (AEFI). Other partners, particularly, those on the ICC supported in discussions and finalization as well as the endorsement of the proposal for submission.

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 **13/01/2015** 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	Please sign below to indicate the

			attendance at the meeting where the proposal was endorsed	endorsement of the minutes where the proposal was discussed
Chair	Director General/Ghana Health Service	Dr Ebenezer APPIAH-DENKYIRA		
Secretary	National EPI Programme Manager/Ghana Health Service	Dr George BONSU		
Members	Deputy Director Policy Planning Monitoring and Evaluation/Ministry of Health	Dr Maureen MARTEY		
	Director Policy Planning Monitoring and Evaluation/Ghana Health Service	Dr Erasmus AGONGO		
	Deputy Director General/Ghana Health Service	Dr Gloria Quansah ASARE		
	Chairman/Ghana National Polio Plus Committee of Rotary International	Mr. Sam WORENTETU		
	Chairman/Coalition of NGOs in Health	Mr Gabriel Gbiel BENARKUU		
	Immediate Past EPI Manager	Dr K. O. ANTWI-AGYEI		
	Director for Public Health/Ghana Health Service	Dr Badu SARKODIE		
	WHO Representative/World Health Organization	Dr Magda ROBALO		
	UNICEF Rep/UNICEF	Ms. Susan Namondo NGONGI		
	Head, Public Health and Reference Laboratory/Ghana Health Service	Dr Joseph OPARE		
	Financial Controller/Ghana Health Service	Mrs Ramatu Ude UMANTA		
	Maternal and Child Health Specialist/USAID	Mrs Salamatu FUTA		
	Health Coordinator/Ghana Red Cross Society	Thomas AAPORE		
	Paediatrician/Paediatric Society of Ghana	Dr. Victoria M. ADABAYERI		

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 ? **No**

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: 10)**

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 11. Please attach the cMYP costing tool as DOCUMENT NUMBER 12.
- Please attach relevant Vaccine Introduction Plan(s) as DOCUMENT NUMBER : 14
- 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	27,220,298	2014	PPME-GHS
Birth cohort	1,088,812	2014	PPME-GHS
Infant mortality rate (per 1000)	53	2011	MICS Ghana
Surviving infants*[1]*	1,034,371	2014	PPME-GHS
GNI per capita (US$)	3,880 %	2010	World Bank
Total Health Expenditure (THE) as a percentage of GDP	3 %	2010	Ghana National Health Account
General government expenditure on health (GGHE) as % of General government expenditure	57 %	2010	World Bank

[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.

Lessons Learned	Action Points
Storage Capacity The storage capacity of the country was expanded to accommodate the introduction of vaccines for pneumonia, rotavirus diarrhoea as well as measles second dose. Walk-in cold rooms were installed for all regions. TCW 3000 were also procured and distributed to all districts. The expansion was completed well ahead of time before the vaccines were introduced. Though, efforts were made to repair all broken down refrigerators at the health facility level, there were still some malfunctioning refrigerators at the time of introduction. Baskets for storing vaccines in refrigerators were usually removed.	The country is constantly updating the cold chain inventory and have also established maintenance protocols to ensure non-functioning but serviceable refrigeration equipment are repaired on time. With the aid of the WHO Logistics Forecasting tool, it has been established that 81 districts in the country do not have adequate storage capacity in view of the introduction. Plans to procure additional TCW 3000 has been factored in the country's procurement plan for 2015. TCW 2000 will also be procured for facilities needing cold chain expansion.
Protection from freezing	A detailed training plan will be developed to ensure all health staff are

Prior to the introduction of the new vaccines, the comprehensive trainings which were conducted across the country had a dedicated section on vaccine management. Health staff were made to understand the heat/freeze sensitivity of vaccines and how they should be arranged in a vaccine refrigerator. Conditioning of icepacks was also stressed to ensure that freeze sensitive vaccines are not frozen.	trained before the meningitis vaccine is introduced into routine immunization. Just as was done for PCV and rotavirus vaccines, staff will be taken through heat/freeze sensitivity of vaccines. As part of the improvement plan for the 2014 EVMA, plans are advanced for comprehensive training in vaccine management. Conditioning of icepacks to prevent freezing will feature prominently at the lower levels.
Staff Training Among the sub-committees that were set up to plan the introduction of PCV and Rotavirus vaccines in the country was the Training and Material Development Sub-committee. This committee was tasked to develop a comprehensive training plan for all health workers. Standardized presentations were prepared for training at various levels. The cascaded nature of the training ensured that all staff were trained before the vaccines were introduced. A training manual was also developed to guide trainings at various levels	The Training and Material Development Sub-committee which was set up prior to the introduction of PCV and rotavirus vaccines will be re-activated. A similar training plan that ensure successful introduction of the two vaccines will be developed. Also training manual and fact sheet will also be developed. The training for meningitis vaccine introduction will be cascaded.
Cold chain The cold chain needs of the country were assessed and addressed prior to the introduction of the new vaccines. A functional system for reporting broken down cold chain equipment was also established. This ensured timely servicing of non-functional but serviceable equipment. Refrigerated trucks were also procured for each region to facilitate the transport and distribution of vaccines.	The systems that were put in place prior to the introduction of vaccines for pneumonia and rotavirus diarrhoea will strengthened to ensure optimal performance. Plans are underway for regional cold chain maintenance officers to be re-orientated. The country has also procure continuous temperature loggers for installation in walk-in cold rooms in the country.
Logistics Before the two new vaccines were introduction, all recording materials were reviewed and printed ahead of time with the exception of child health records book and tally sheet book. As a result, there were some challenges with the accurate tallying and recording of vaccine administration in the child health records. Samples of the vaccine also delayed and as a result they were not available for demonstration during training.	Review of all EPI recording materials have already started to ensure that these tools are printed before vaccine introduction. Efforts will be made to ensure that all logistics needed for the successful introduction of the vaccine are available at the point of use before introduction. Follow ups will be made at the UNICEF supply division to ensure the vaccines are delivered as planned.
Coverage and Drop-out rate Though the coverage for PCV and Rotavirus vaccines have been very good, there still remain a challenge with measles second dose. The gaps between the second doses of PCV/Rota and Penta is below 10%. The drop-out rates among these vaccines (PCV, Rota and Penta) are also low. However, there is a wide drop-out rate between the first dose of measles and the second dose.	The proposed routine introduction of meningitis vaccine will be administered at 18 months - the same time as measles second dose. Already, the coverage for measles second dose is low. However, advocacy and communication efforts are being made to ensure improved coverage. Moreover, the EPI Programme has partnered with the Red Cross Society of Ghana to sensitize and mobilize caregivers for second dose measles vaccination. HSS funding support for CSO will also help in this regard.

Preventive campaign support

If campaigns with Yellow Fever vaccines have already been conducted in your country, please give details of the lessons learned, specifically for: storage capacity, protection from additional freezing, staff training, cold chain, logistics, coverage, wastage rate, etc., and suggest action points to address them in future campaigns. If they are included in the Introduction Plan or Plan of Action, please cite the section only.

Lessons Learned	Action Points
storage capacity During the Yellow Fever Sub-national Campaign in 2011 most of the districts concerned had adequate storage capacity for their required vaccines and logistics. The few districts whose storage capacity were inadequate relied on neighbouring districts to store their logistics. This was complemented by the storage capacity at the regional level. The meningitis campaign was conducted in 2012 after the introduction of vaccines for pneumonia and rotavirus diarrhoea in routine immunization. Before these two vaccines were introduced into routine immunization, there was massive expansion of the storage capacity in the country. There was therefore no issue with storage at all level during the meningitis campaign.	The country is constantly updating the cold chain inventory and have also established maintenance protocols to ensure non-functioning but serviceable refrigeration equipment are repaired on time. With the aid of the WHO Logistics Forecasting tool, it has been established that 81 districts in the country do not have adequate storage capacity in view of the introduction. Plans to procure additional TCW 3000 has been factored in the country's procurement plan for 2015. TCW 2000 will also be procured for facilities needing cold chain expansion. When these refrigeration equipment are procured there will be adequate storage for both routine immunization and campaigns.

Staff training During the 2011 Yellow Fever and 2012 Meningitis campaigns, a cascaded training plan was developed and implemented. Trainers were identified at all levels and were equipped with the capacity to train health staff within their respective areas. Leaflets and fact sheets were developed and distributed to health staff to ensure they have these reference materials available before these campaigns were conducted.	A cascaded training plan will be developed and implemented. All health staff especially those directly involved in immunization will be trained. All training will be evaluated and where trainings are found to be inadequate, re-orientation will be organized. Fact sheet and leaflets will also be developed and distributed to serve as reference materials for staff.
Cold chain Periodic update of the cold chain inventory ensured that most cold chain gaps identified were addressed. Also prior to every campaign, all levels conduct an update of the cold chain and put in remedial action should there be a gap. During campaign implementation, cold chain was appropriately maintained at all storage levels. On the field, temporal stock refill depots were established to ensure cold chain is not compromised. Vaccination sessions were established under shade to prevent direct sunshine.	For this campaign, since a comprehensive cold chain inventory has been done, districts will be requested to provide and update for gaps to be addressed. These will include refrigeration equipment, cold boxes and vaccine carriers. Temporal vaccine deports will be established at vantage points for vaccination teams to replenish their stock as well as change their ice packs. Vaccination sessions will also be established under shade to prevent direct sunshine on the vaccines.
Logistics The Logistics and Waste Management Sub-committee estimated the logistics and devices need for previous campaign. Due to the huge nature of these logistics, they were transported to regions immediately they are delivered at the national level. Regions also transported all logistics to districts as soon as they were delivered. This ensured that all logistics were delivered at the point of use prior to the campaign. An inventory of all incinerators (functional and non-functional) was conducted. Non functional but serviceable incinerators were repaired whilst non functional and unserviceable ones were replaced. This ensured proper waste management for these campaigns. Medicines for managing adverse events were also procured and distributed.	For this campaign, the quantity of logistics will be estimated well ahead of time. All recording materials will be developed, printed and distributed immediately they are supplied to the national level. An assessment of incinerators in the country will be conducted to ensured that all are functional prior to campaign implementation. Medicines for managing adverse events following immunization will be procured and distributed.
Coverage During previous campaigns, there was daily reporting of campaign data. Daily performances were monitored and remedial actions were taken where necessary. The campaign strategy adopted ensured that nationally the country recorded more than 95% in the meningitis campaign as well as the yellow fever campaign.	There will be daily reporting and monitoring of campaign performance. All levels will be encouraged to achieve at least 95% coverage. Areas where the coverage will fall short of the national target will be asked to conduct mop-ups. In addition, the administrative coverage will be validated by conducting coverage survey by independent evaluators.
Wastage rate Vaccination teams were encourage to report on the quantity of vaccines received, the quantity used and the quantity returned unopened. Vaccine wastage rates were calculated daily using a formatted Ms Excel based template. The daily calculation of wastage rates guided vaccinators to estimate their daily vaccine needs. A national wastage rates of 2.4% and 2.5% were recorded for the yellow fever and meningitis campaigns respectively.	The daily reporting tool will be formatted to automatically calculate daily wastage rates. Vaccination teams and team supervisors will be encouraged to be guided by these rates in estimating daily vaccine needs.

5.1.2 Health planning and budgeting

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

Until January 2009 there was a five-year planning and budgeting cycle for the health sector which is led by the Minister of Health with the support of health partners. The first Programme of Work (POW) was from 1997-
2001. The second POW was from 2002-2006 and the third POW spanned from 2007-2011. However, from January 2009 the planning cycle was changed to 4 years. The first four-year plan was developed for the period 2010 - 2013. The current plan for the Ghana Health Service is from 2014 - 2017.

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

The planning document for health in Ghana is the Health Sector Medium Term Development Plan. The plan is for the period 2014 - 2017.

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

The EPI cMYP (2015 - 2019) is aligned with the Health Sector Medium Term Development Plan (2014 -- 2017), however, the cMYP covers a 5-year period whereas the health sector planning document is for 4

years. With regards to the content, the cMYP has been updated to incorporate the introduction of Yellow Fever Vaccine for Preventive Campaign in high risk areas as well as the catch-up and preventive campaign for meningitis and subsequent introduction in routine immunization. The introduction of inactivated polio vaccine (IPV) is also in the cMYP.

Please indicate the national planning budgeting cycle for health

The national planning and budgeting is prepared annually between May - October each year for the ensuing year

Please indicate the national planning cycle for immunisation

A 5-year comprehensive Multi-Year Plan (cMYP) is developed to guide the immunization programme. The current cMYP covers 2015 - 2019. Annual plans are also developed in the last quarter of each year for the ensuing year.

5.1.3 Preparatory activities

Please provide an outline of all **preparatory** activities for vaccine(s) introduction or campaigns. If they are included in detail the Introduction Plan and/or Plan of Action, please cite the sections only.

Ghana's outline for all preparatory activitiesare as follows:

- ICC Technical Sub-committee meeting

- Preparation of briefing notes for ICC and keystakeholders

- Preparation and completion of applicationdocuments

- Meeting with ICC and HSCC for endorsement

- Briefing and subsequent endorsement by MoH andMoFEP

- Submission of proposal to GAVI

- Formation of Yellow Fever Campaign Planning Committee and Sub-committees

- Sub-committees meetings

- Training/Orientation of health workers

- Advocacy, Communication and Socialmobilization

- Press briefing

- National Launching

- Campaign Implementation

- Coverage Survey by Independent monitors

- National Review of Vaccination Campaign

5.1.4 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).

The Ghana Demographic and Health Survey (2008)shows that there are no barriers to immunization with regards to socio-economicand gender barriers. This is evidenced by the measles coverage of 88.5% formales and 91.7% for females and Penta-1 coverage of 97.9% for males and 98.2%for females in the report. There is also no disparity in immunization rateswith regards to mother's education, wealth quintile, region or residence(rural/urban).

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).

Evidence from previous campaigns have shown that coverage levels among different geographical locations, socio-economic levels as well as gender is evenly distributed. It must however be pointed out that different strategies are used in different geographical location which have cost implication. Special budgetary allocations are made for communities on island and riverine areas. In such areas, camp-out teams are transported to these communities using boats. They stay in the communities and vaccinate all eligible populations before they are transported back. In slum, especially, urban slums, mobile vans are sent out to deliver key messages on the campaign. As the same time, volunteers and health workers also move from house to house to inform and educate caregivers on the campaign. Again, during campaign implementation, mobilizers move from house to house to mobilize people to the vaccination site. There is no disparity in immunization with regards to gender.

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

Data on immunization is not disaggregated by sex

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. The country is safe and poised to plan and successfully introduce these vaccines.

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.

The district level coverage as reported in the 2013 WHO-UNICEF Joint Report (JRF) shows that Asokore Mampong District recorded the lowest coverage of 21%. This is a peri-urban district. On the other hand, Bia District which is a rural district recorded the highest coverage of 290%. Though this may be as a result of the unrealistic denominator, rural-urban dichotomy does not significantly affect immunization coverage.

Please describe what national surveys take place routinely in country to assess gender and equity related barriers. Highlight whether this application includes any activities to assess gender and equity related barriers.

The Demographic and Health Survey is conducted every four (4) years to assess the quality and coverage of health interventions. With regards to immunization, the survey disaggregate data by gender and wealth quintiles. The Multiple Indicator Cluster Survey which is conducted every five (5) years also assesses these indicators. At the programme level, annual EPI Coverage surveys are conducted to validate the administrative vaccination data. The results are disaggregated by sex.

5.1.5 Data quality

Please attach a data quality assessment (DQA), report if one has been completed within the previous 48 months (DOCUMENT NUMBER: 13). If available, an improvement plan and progress report on the implementation of the improvement plan should also be submitted (DOCUMENT NUMBER: 16, DOCUMENT NUMBER: 17).

If DQA not available, please briefly describe plans to establish mechanisms for data quality assessment.

As part of the GAVI HSS support, the programme will conduct Service Availability and Readiness Assessment (SARA) in 2015. A major component of SARA is the assessment of the quality of immunization data and its consistency across levels. The programme has also instituted monthly data reconciliation at all levels. At the national level, the programme meets regularly with the Disease Surveillance Department, the laboratories, WHO and UNICEF to reconcile data before it is reported. Similar arrangements have been replicated at the regional and district levels. There are plan to institute annual data quality self-assessment to regularly assess the quality of immunization data.

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.

Data quality audit helps the programme to assess the quality of data. The last time data quality audit was conducted in the country was 2009. Since then, there has been several targeted data audits. However, there is currently no independent assessment of the quality of data. The programme will consult the World Health Organization on how the quality of data could be independently assessed.

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.

Three key household surveys are independently conducted in Ghana. These are the Demographic and Health Survey (DHS), the Multiple Indicator Cluster Survey (MICS) and the EPI Cluster Survey. The DHS started in 1984. This survey is conducted every four (4) years. The DHS cover maternal and child health, nutrition and mortality topics. Each survey may include additional modules or country-specific questions that can cover a wide array of topics including wealth, occupation, housing conditions, exposure to mass media, attitudes toward contraception and reproductive health-related issues, AIDS, and malaria.
MICS) are surveys run under the program developed by UNICEF to provide internationally comparable, statistically rigorous data on the situation of children and women. The survey started in 1995. It is conducted every five (5) years.
EPI Cluster Survey on the other hand is a survey commissioned by the Ghana Health Service. Independent assessors are contracted to undertake this survey, usually annually, to validate the administrative performance.

5.1.6 YF Immunisation coverage

Please provide information concerning immunisation coverage related to yellow fever vaccine (YF)

Table 5.1.6: YF Immunisation coverage

Coverage	2010		2011		2012	
	Administrative*(1)*	WUENIC*(2)*	Administrative*(1)*	WUENIC*(2)*	Administrative*(1)*	WUENIC*(2)*
Yellow Fever 1*st* dose (%)	88	93	92	91	92	88

Coverage	2013		2014	
	Administrative*(1)*	WUENIC*(2)*	Administrative*(1)*	WUENIC*(2)*
Yellow Fever 1*st* dose (%)	89	87	0	0

Coverage	2010		2011		2012	
	Administrative*(1)*	Coverage survey	Administrative*(1)*	Coverage survey	Administrative*(1)*	Coverage survey
Supplementary Immunisation Activities (SIA) (%)	0	0	101.7	73.5	88.2	83.7

Coverage	2013		2014	
	Administrative*(1)*	Coverage survey	Administrative*(1)*	Coverage survey
Supplementary Immunisation Activities (SIA) (%)	0	0	0	0

Note:

(1) National reported Administrative Coverage

(2) WHO/UNICEF estimates of national immunization coverage

Was the last Yellow Fever Supplementary Immunization Activities (SIA) administrative coverage or results of

a survey of acceptable methodology **Results of a survey**

Please describe survey methodology:

Cluster sampling method (WHO Cluster Coverage Guidelines) was used to select 30 clusters nationally. Simple random sampling was used to select ten (10) houses in each cluster. In each house, all eligible person physically seen were interviewed using structured interview guide. Their vaccination cards were also observed. Proportion of persons interviewed was then calculated using evidence from the vaccination cards observed.

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				
	2013	2015	2016	2017	2018	2019
Total births	181,162	190,016	194,766	199,635	204,626	209,742
Total infants' deaths	9,058	9,501	9,738	9,982	10,231	10,487
Total surviving infants	172,104	180,515	185,028	189,653	194,395	199,255
Total pregnant women	181,162	190,016	194,766	199,635	204,626	209,742
Target population vaccinated with OPV3*[1]*						
OPV3 coverage*[2]*	102 %	94 %	94 %	94 %	94 %	95 %
Target population vaccinated with DTP1*[1]*	185,646	171,489	175,776	180,171	184,675	191,284
Target population vaccinated with DTP3*[1]*	176,524	169,684	173,926	178,274	182,731	189,292
DTP3 coverage*[2]*	103 %	94 %	94 %	94 %	94 %	95 %
Wastage*[3]* rate in base-year and planned thereafter (%) for DTP	6	10	10	10	10	10
Wastage*[3]* factor in base-year and planned thereafter for DTP	1.06	1.11	1.11	1.11	1.11	1.11
Target population vaccinated with Meningococcal*[1]*	.0	.0	157274.0	164999.0	174955.0	189292.0
Meningococcal A coverage*[2]*	0 %	0 %	85 %	87 %	90 %	95 %
First Presentation: Meningococcal A, 10 dose(s) per vial, LYOPHILISED						
Wastage*[3]* rate in base-year and planned thereafter (%)	0	0	10	10	10	10
Wastage*[3]* factor in base-year and planned thereafter (%)	1.00	1.00	1.11	1.11	1.11	1.11
Maximum wastage rate value for Meningococcal A, 10 dose(s) per vial, LYOPHILISED	10 %	10 %	10 %	10 %	10 %	10 %
Target population vaccinated with 1st dose of Measles	171,408	169,684	173,926	178,274	182,731	189,292
Measles coverage*[2]*	100 %	94 %	94 %	94 %	94 %	95 %
Annual DTP Drop out rate [(DTP1 – DTP3) / DTP1] x 100	5 %	1 %	1 %	1 %	1 %	1 %

[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.

[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)

5.3.1 Targets (Yellow Fever campaign)

Cohort for Yellow Fever vaccine: from 9 months of age and the full population at risk.

Table 5.3.1 Baseline NVS campaign figures for Yellow Fever

Number	Targets: preventative mass campaigns
	2015
Total target population	5,474,926
Wastage rate (%) for Yellow Fever (campaign)	10

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
Epidemic Meningococcal Disease (EMD) due to Neisseria meningitides type A (NmA)	None	NA	Rationale for introduction is explained in the introduction plan

6.2. Requested vaccine (Meningococcal A, 10 dose(s) per vial, LYOPHILISED)

As reported in the cMYP, the country plans to introduce Meningococcal A, using Meningococcal A, 10 dose(s) per vial, LYOPHILISED.

When is the country planning to introduce this vaccine? **January 2016**

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.

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	Graduating

	Year 1	Year 2	Year 3	Year 4	Year 5
	2015	2016	2017	2018	2019
Minimum co-financing	0.14	0.29	0.43	0.57	0.71
Your co-financing (please change if higher)	0.14	0.29	0.43	0.57	0.71

6.2.2. Specifications of vaccinations with new vaccine

	Data from		Year 1	Year 2	Year 3	Year 4	Year 5
			2015	2016	2017	2018	2019
Number of children to be vaccinated with the first dose	Table 5.2	#	0	157,274	164,999	174,955	189,292
Immunisation coverage with the first dose	Table 5.2	#	0 %	85 %	87 %	90 %	95 %
Country co-financing per dose	Table 6.2.1	$	0.14	0.29	0.43	0.57	0.71

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

		2015	2016	2017	2018	2019
Number of vaccine doses	#	0	82,600	101,100	138,200	182,100
Number of AD syringes	#	0	84,300	101,100	138,400	182,100
Number of re-constitution syringes	#	0	9,200	11,300	15,400	20,300
Number of safety boxes	#	0	0	0	0	0
Total value to be co-financed by the Country ***[1]***	**$**	0	63,500	80,000	112,500	152,500

[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 the Gavi (and cost estimate, US$)

		2015	2016	2017	2018	2019
Number of vaccine doses	#	0	136,000	84,500	58,900	32,500
Number of AD syringes	#	0	138,800	84,500	58,900	32,500
Number of re-constitution syringes	#	0	15,100	9,400	6,600	3,600
Number of safety boxes	#	0	0	0	0	0
Total value to be co-financed by Gavi	**$**	0	104,500	67,000	48,000	27,500

6.2.5. New and Under-Used Vaccine Introduction Grant

Calculation of Vaccine Introduction Grant for the Meningococcal A, 10 dose(s) per vial, LYOPHILISED

Year of New Vaccine Introduction	Births (from Table 5.2)	Share per Birth in US$	Total in US$
2015	190,016	0.80	152,013

The Grant will be based on a maximum award of $0.80 per infant 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 vaccine introduction grant will be used to prepare the grounds before vaccine introduction, facilitate vaccine introduction and conduct some post introduction activities. The grant will be used to set up the Planning Committee and Sub-committee to plan the introduction. All recording and reporting tools used by the programme will be revised to include Men A. The grant will be used to print some of the revised version of the following; the tally books, immunization schedule and monthly reporting forms. The grant will also be used to conduct training of health staff especially those providing immunization services. Part of the grant will also be used to facilitate the movement of cold chain maintenance teams across the country. Regions and districts will be provided with funds to conduct advocacy meetings with opinion and religious leaders, organized groups and caregivers. They will also be provided with funds to conduct other social mobilization activities. Also, the grant will be used to organized a grand launch of the vaccine introduction. When introduced, funds will be released to districts to enable them conduct outreach sessions. Monitoring and supervision will also be intensified at all levels. Between six months and one (1) year after the vaccine introduction, a post introduction review will be conducted.

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. 28.

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 estimated cost of introducing meningococcal A conjugate vaccine into routine immunization is $ 188,496. The VIG provided by GAVI ($ 152,013) will cover 80.6% of the estimated cost. The remaining $ 36,483 will be provided by the Government of Ghana and partners.

6.2.6.Technical assistance

Please describe any particular area(s) the Ministry would require technical assistance to support the introduction of Meningococcal A.

The Ministry of Health will require technical assistance in the area of Adverse Events Following Immunization (AEFI) surveillance and Logistics Management.

7. NVS Preventive Campaigns

7.1. Assessment of burden of relevant diseases related to campaigns (if available)

Disease	Title of the assessment	Date	Results
Yellow Fever	National Consensus Meeting on Yellow Fever Risk Assessment Report	2010	In 2010, the country conducted YF Risk Assessment using a WHO mathematical modelling tool. A total of 122 districts out of the then 170 districts were considered to be at high risk. Preventive campaigns were conducted in 43 districts in 2011 and 15 districts in 2012. A reactive campaign was conducted in one district in 2012. In all, a total 59 districts have conducted YF Preventive Campaign out of the 122 high risk districts. Sixty-three (63) districts remained uncovered due to funding. With the creation of new districts in 2012, these uncovered districts have increased to 72. A total of 8,171,531 persons living in these districts are at risk. A total of 5,474,926 (67%) of this population will be targeted for the vaccination campaign.

Please attach the Plan of Action for each campaign as Document No. 30,29 in Section 10.

7.1.1 Epidemiology and disease burden for Meningococcal A

Please select at least one of the following information sources to justify Meningococcal A disease burden results:

Epidemiological information on burden of disease:

☐ 1 - Risk assessments

☐ 2 - Other

7.1.2 Epidemiology and disease burden for Yellow Fever

Please select at least one of the following information sources to justify Yellow Fever disease burden results:

Epidemiological information on burden of disease:

☑ 1 - Risk assessments

☐ 2 - Other

7.2.Request for Yellow Fever, 10 dose(s) per vial, LYOPHILISED campaign support

7.2.1. Summary for Yellow Fever campaign support

When is the country planning to conduct this campaign? **July 2015**

Please give a summary of the cMYP and/or the Yellow Fever, 10 dose(s) per vial, LYOPHILISED introduction plan sections that refer to the introduction of Yellow Fever, 10 dose(s) per vial, LYOPHILISED. Outline the key points that informed the decision-making process (data considered etc) and describe the plans for social mobilisation and microplanning, including strategies for insecure or hard-to-reach areas. If they are included in the introduction plan or plan of action, please cite the sections only.

In 2010, the country conducted YF Risk Assessment using a WHO mathematical modelling tool. A total of 122 districts out of the then 170 districts were considered to be at high risk. Preventive campaigns were conducted in 43 districts in 2011 and 15 districts in 2012. A reactive campaign was conducted in one district in 2012. In all, a total 59 districts have conducted YF Preventive Campaign out of the 122 high risk districts. Sixty-three (63) districts remained uncovered due to funding. With the creation of new districts in 2012, these uncovered districts have increased to 72. A total of 8,171,531 persons living in these districts are at high risk of the disease. About 5,474,926 (67%) of this population will be targeted for the vaccination campaign.

Please summarise the cold chain capacity (at central and other levels) and readiness to accommodate new vaccines, taking into consideration training, cold chain and other logistic requirements. If cold chain expansion is required, state how it will be financed, and when it will be in place. Please describe how the surge capacity for campaigns will be managed. Please indicate if the supplies for the campaign will have any impact in the shipment plans for your routine vaccines and how it will be handled. The Independent Review Committee requires a certain level of assurance that the cold chain is ready or will be ready for the campaign, and evidence/plans need to be provided (if they are included in detail in the plan of action, please cite the section here).
New Requirement: As approved by Gavi in June 2014 all future proposals (2015 and beyond) 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. Please note that all Gavi-financed cold chain equipment needs to be WHO pre-qualified. The purchase of non-PQS equipment will only be considered on exceptional basis, with justification and advance agreement from Gavi.

The net cold chain capacity for positive storage at the national level stands at 56,250 litres. Though, this storage capacity will be adequate for routine immunizations in 2015, it will not be adequate to accommodate all vaccines for the campaign. Fortunately, the Government of Ghana with the support of partners have already secured two (2) units of 40,000 litres (totaling 80,000 litres gross capacity) walk-in-cold rooms for installation at the national level in 2015. The two walk-in cold rooms are expected to be installed by May 2015. With regards to negative storage, there is adequate capacity for 2015 through to 2019. There is adequate storage capacity for dry storage at the national level.

At the regional level, walk-in cold rooms were installed for all regions before the dual introduction of pneumococcal and rotavirus vaccines into routine immunization. Ashanti, Brong-Ahafo and Central regions were provided with 40m3 walk-in cold room each. Greater Accra Region was provided with 80m3 walk-in cold rooms and the remaining six (6) region were provided with 30m3 walk-in cold room each. There are adequate storage capacity for freezing as well as dry storage in all regions.

As a policy, all districts in the country should have at least one TCW 3000 depending on the population. An extensive cold chain assessment in the country using the WHO Logistics Forecasting tool showed that there are currently 85 districts which do not have adequate cold storage capacity. Fortunately, provision was made in the GAVI HSS funding. Payment has already been made for about 50 TCW 3000 which are expected to be delivered latest by March 2015. Additional TCW 3000 will be procured from the VIG which will be made available for inactivated polio vaccine (IPV), yellow fever and meningitis vaccine introductions.

The country is also procuring 100 units of TCW 2000 for distribution to sub-districts and health facilities.

All cold chain equipment procured for use in the country comply with PQS specification.

Please describe any plans for expanding measles surveillance to include rubella and plans for the introduction of Congenital Rubella Syndrome (CRS) surveillance.

Largely, the campaign will go a long way to strengthen routine immunization in the country. Prior to the implementation of the campaign, the cold chain capacity in the country will be assessed and expanded to meet the needs of the campaign. The expansion of the cold chain space will to a large extent improve the storage capacity in the country which will boost routine immunization. The comprehensive trainings that will be carried out across the country will offer the opportunity for staff to be trained on all aspects of the programme including vaccine and cold chain management, logistics management, monitoring of adverse events, social mobilization strategies, recording and reporting as well as disease surveillance. Communication and social mobilization activities will focus not only on the campaign but emphasis will be placed on routine immunization as it is the bedrock of the immunization programme. The detailed microplanning process that staff will be taken through will enable them to better understand the concept and be able to develop good and usable microplans for routine immunization. Hard-to-reach and special populations which are seldom visited in routine immunization due to lack of funds will all be reached as special budgetary allocation will be made for such areas. The opportunity will be taken to provide routine immunization services in such areas.

Please submit relevant documentation to support the estimates of the size of the campaign target population (as DOCUMENT NUMBER : 23).

7.2.2. Grant Support for Operational Costs of the Yellow Fever Campaign

Table 7.2.2: calculation of grant to support the operational costs of the campaigns

Year of Yellow Fever support	Total target population (from Table 5.3)	Gavi contribution per target person in US$	Total in US$
2015	5,474,926	0.65	3,558,702

[1] The Grant will be based on a maximum award of $0.65 per target person

Please describe how the grant will be used to facilitate the preparation and timely and effective delivery of the campaigns to the target population (refer to the cMYP and the Vaccine Introduction Plan).

The grant support for the operational cost will be used to cover the following key activities to ensure timely and effective campaign;
1. Advocacy
2. Training and microplanning
3. Social mobilization
4. Cold chain equipment expansion and maintenance
5. Review and printing of recording tools including vaccination cards
6. Payment of allowance for human resource (Vaccinators & volunteers)
7. Transportation
8. Material development and printing

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 total estimated cost of the yellow fever preventive campaign is $ 4,326,166. The GAVI support will cover $ 3,558,702 (82.3%). The government of Ghana with the support of local partners will provide additional funding to support the campaign.

Please complete also 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. 28.

7.2.3 Evidence of introduction of YF in routine programme

Please provide evidence that the country plans to introduce Yellow Fever vaccine into the routine programme (if not yet introduced). Provide in the box below or cite the section in the Plan of Action or introduction plan.

Yellow Fever vaccine was introduced into routine immunization in 1992 and has been used till date. The vaccine is administered at 9 months together with measles. Refer to the Introduction Plan for trends in yellow fever vaccination coverage.

7.2.4 Yellow Fever Vaccine introduction Grant

Has a Yellow Fever vaccine already been introduced nationally on a routine basis? **Yes**

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 and other injection supplies are procured for the Government of Ghana through the UNICEF Supply Division. Just as all other vaccines in the country's immunization programme, MenAfriVac vaccines will be procured using the existing system. Ghana operates the bundling system.

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 should be transferred directly to Ghana via the accounts details provided.

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

The co-financing amounts will be paid through UNICEF's Procurement and Supply Division by the Ministry of Health. The Director, Policy, Planning, Monitoring and Evaluation (PPME) and the Financial Controller of the Ministry of Health are responsible.

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

There is a laid down financial management procedure for managing funds in the health sector including vaccine introduction and campaign grants. The financial management system is decentralized. Budget Management Centers manage funds for their activities. Funds for these campaign will be sent to the decentralized levels using existing structures (i.e. through region to districts). Transfers are made through the banks (bank to bank transfer). At the national level, the EPI Manager initiates the process for the release of funds by preparing a financial memo. The memo is then approved by the Division Head (the Director for Public Health). The memo is then sent to the Accounts Division for processing. As part of the processing, all documents are sent to the Audit Division for clearance after which a cheque is then written and endorsed by the Financial Controller (or Deputy) and the Director for Public Health. Similar arrangements are used at the regional and district levels. The Public Procurement Act (PPA) requires that each government entity submit its procurement plan to the Public Procurement Board. Each year, the procurement plan is prepared to cover all commodities to be procured from the sector programmes of work (including donor supported programmes and projects).

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

The existing reporting system for routine immunization will be used. Data will be generated at the service delivery level. Data will then be transferred to the District level where the data will be entered the District Health Information Management System (DHIMS) as well as the District Vaccination Data Management tool (DVD-MT). EPI Managers at higher levels will monitor the performance on the DHIMS which is a web-based platform. The DVDMT on the other hand is transmitted across level till it gets to the national level. Evaluation of performance will be done as part of the annual coverage surveys conducted by the country as well as other

surveys as the DHS and MICS.

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)

8.2.1 Procurement and Management for Yellow Fever, 10 dose(s) per vial, LYOPHILISED campaign

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

The Yellow Fever Vaccine will be procured through the UNICEF Procurement Department. All vaccines and devices in the National Immunization Programme are procured through UNICEF.

b) Please describe the financial management procedures that will be applied for the management of the preventive campaign cash support, including any procurement to be incurred.

The financial management system in the health sector in Ghana is decentralized. Budget Management Centers manage funds for their activities. Funds for campaign activities at the decentralized levels will be sent to them using existing structures (i.e. through region to districts). Transfers are made through the banks (bank to bank transfer).
At the National level, before any funds are used, memos are raised from the programme level for approval by the Director General. The memo is then sent to the Audit Department of the Ghana Health Service for further clearance before payments are made by the Accounts Division.
The Public Procurement Act (PPA) requires that each government entity submit its procurement plan to the Public Procurement Board. Each year, the procurement plan is prepared to cover all commodities to be procured from the sector programmes of work (including donor supported programmes and projects).

c) Please indicate if the campaign is going to be phased, and if so, how this will be done.

The campaign will not be phased. All districts concerned will conduct the campaign at the same time.

d) Please outline how coverage of the campaign will be monitored, reported and evaluated (refer to the cMYP and/or the Yellow Fever, 10 dose(s) per vial, LYOPHILISED campaign introduction plan)

Administratively, the coverage will be monitored by each level. The number of persons vaccinated will be compared with the number of persons targeted. Campaign data will be collected at the vaccination team level and reported to team supervisors at the end of each vaccination session/day. Team supervisors will then aggregate data from all vaccination teams under their supervision. This data is then submitted to the district. Districts will then aggregate all team supervisors report to get the district data and submit to the region. The region will then collate all district level data and transmit to the national level. This process will be undertaken on each day as every level is expected to report on daily basis. During campaign implementation, supervisors at all levels will conduct rapid convenient monitoring at areas already covered by vaccination teams to appraise the quality of coverage and advise accordingly.
At the end of the campaign, independent monitors will be contracted to conduct an independent assessment of the campaign (planning, implementation and coverage).

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.

Ghana requires that all vaccines used in the immunization programme including WHO pre-qualified vaccines are registered by the Food and Drugs Authority if they are not already registered in the country. There is expedited procedure for registration of WHO pre-qualified vaccines.

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

The 5-dose vial (Yellow Fever) from SANOFI PASTEUR is registered for use in Ghana. The preferred 10-dose vial for the campaign is not registered. Hence, there will be the need for Gavi/UNICEF to inform the manufacturer to initiate the registration process. MenAfriVac is registered in Ghana.

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 Procurement and Stores Division (PSD) of the Ministry of Health, which is responsible to clear the shipments using their appointed clearing agent. The shipping documents are sentby the UNICEF Global Freight Forwarders to the UNICEF country office as notified party. UNICEF then forwards the shipping documents to The Ministry of Health with a copy to the EPI Office. The Ministry of Health then submits the documents to the Customs Authority and the authorized clearing agent on behalf of the Government for clearance of the shipment at least 5 working days before the arrival of shipment.

The shipping documents are 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 ofthe 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 and concerned parties to take immediate action to ensure the safe storage of vaccines. There is cold storage capacity at the port of arrival to store vaccines should there be any unexpected delays.

Since vaccines are procured from WHO pre-qualified suppliers, a special requirement for pre-delivery inspection is not required.

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 Food and Drugs Authority (FDA) is the national regulatory authority mandated by the Public Health Act, 2012(Act 851) of the Republic of Ghana to regulate drugs and medical devices including vaccines. The FDA is an Agency under the Ministry of Health and a WHO-certified center.

Contact details;
Name: Mrs Delese Mimi Darko
Title: Ag. Deputy Chief Executive and Head of Clinical Trials & Pharmacovigilance
Contact No.: 0244337250
Email: mimidarko66@yahoo.co.uk

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 introduction of new vaccine. This EVM should have been conducted within the preceding 36 months.

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

Please attach the most recent EVM assessment report (DOCUMENT NUMBER : 25,26,27), the corresponding EVM improvement plan (DOCUMENT NUMBER : 26) and progress on the EVM improvement plan (DOCUMENT NUMBER : 27). 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.

If any of the above mandatory documents (EVM Assessment Report, EVM Improvement Plan, Progress on the EVM Improvement Plan) are not available, please provide justification and reference to additional documents such as PIE and External EPI Reviews.

When is the next Effective Vaccine Management (EVM) Assessment planned? **October 2017**

The above documents are available and attached.

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).

Auto Disable syringes and safety boxes are used for all vaccinations in Ghana. There are adequate quantities of these safe injection equipment at all vaccination sites. At facilities/district with an incinerator, injection waste are incinerated as per the national policy. Where there is no incinerator, filled safety boxes are transported to near-by districts for incineration. However, some health facilities burn injection waste in pits. During the yellow fever campaign, injection waste will be assembled and incinerated at the end of each day at designated incineration points under the supervision of trained waste management officers.
Training of vaccinators (health workers) and support staff (assistants of vaccinator) will include the use and safe disposal of injection materials.

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

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

The ICC commended the Yellow Fever Preventive Campaign, Meningococcal A Preventive Campaign and Meningococcal A routine introduction Application team for putting together Ghana's application documents. The ICC hoped that Ghana's application will received favourable results by the IRC.

10. List of documents attached to this proposal

10.1. List of documents attached to this proposal

Document Number	Document	Section	Mandatory	File
1	MoH Signature (or delegated authority) of Proposal	4.1.1	✓	Signature MOH.pdf **File desc:** Signature of the Minister of Health **Date/time :** 23/01/2015 05:01:55 **Size:** 437 KB
2	MoF Signature (or delegated authority) of Proposal	4.1.1	✓	Signature of MoF.pdf **File desc:** Signature of the Chief Director of the Ministry of Finance **Date/time :** 18/02/2015 11:52:46 **Size:** 847 KB
3	MoE signature (or delegated authority) of HPV Proposal	4.1.1	✗	Signature of Minister of Education.docx **File desc:** Signature of Minister of Education not required for this application **Date/time :** 23/01/2015 05:11:02 **Size:** 11 KB
4	Terms of Reference for the ICC	4.1.2	✓	Terms of Reference for ICC.docx **File desc:** Terms of reference of the Inter-agency coordinating committee of the immunization programme **Date/time :** 23/01/2015 05:15:27 **Size:** 15 KB
5	Minutes of ICC/HSCC meeting endorsing Proposal	4.1.3	✓	ICC Meeting minutes endorsing the application_13_01_2015.pdf **File desc:** Minutes of the ICC meeting where the applications were endorsed **Date/time :** 23/01/2015 09:17:22 **Size:** 300 KB Minutes of ICC meeting endorsing the application.pdf **File desc:** Minutes of the ICC meeting which endorsed the applications **Date/time :** 23/02/2015 08:16:18 **Size:** 297 KB
6	Signatures of ICC or HSCC or equivalent in Proposal	4.1.3	✓	Signature packet ICC members.pdf **File desc:** Signature of members of ICC endorsing the application **Date/time :** 18/02/2015 11:54:01 **Size:** 252 KB
7	Minutes of last three ICC/HSCC meetings	4.1.3	✓	Last three ICC Meeting Minutes.zip **File desc:** Minutes of last three ICC meetings held in May, September and October 2014

				Date/time : 23/01/2015 09:07:51 **Size:** 165 KB
8	A description of partner participation in preparing the application	4.1.3	✗	Already in cMYP.docx **File desc:** This is captured in this application (portal) **Date/time :** 25/01/2015 06:24:19 **Size:** 11 KB
9	Minutes of NITAG meeting with specific recommendations on the NVS introduction or campaign	4.2	✗	Not Applicable.docx **File desc:** Not applicable **Date/time :** 25/01/2015 06:26:28 **Size:** 11 KB
10	Role and functioning of the advisory group, description of plans to establish a NITAG	4.2.1	✓	Concept Paper for NITAG Establishment.docx **File desc:** Concept Paper for the Establishment of National Immunization Technical Advisory Group (NITAG) in Ghana **Date/time :** 23/01/2015 05:35:20 **Size:** 206 KB
11	comprehensive Multi Year Plan - cMYP	5.1	✓	Ghana cMYP 2015-2019_200215.doc **File desc:** This is the costing tool used for the costing analysis **Date/time :** 23/02/2015 07:53:49 **Size:** 1 MB
12	cMYP Costing tool for financial analysis	5.1	✓	cMYP_Costing_Tool_3 6_EPIedit_200215.xlsx **File desc:** The WHO Logistics Forecasting tool used for estimation of logistics needs **Date/time :** 23/02/2015 07:56:34 **Size:** 2 MB
13	Monitoring and evaluation and surveillance (M&E) plan for the support requested, within the context of the country's existing monitoring plan for the EPI programme	5.1.5	✓	Already in cMYP.docx **File desc:** This is captured as part of the monitoring and evaluation plan in the cMYP **Date/time :** 25/01/2015 06:27:34 **Size:** 11 KB
14	Vaccine introduction plan	5.1	✓	Men A Introduction Plan_200215.docx **File desc:** Introduction plan for Men A introduction into routine immunization **Date/time :** 20/02/2015 05:01:09 **Size:** 1 MB
15	Introduction Plan for the introduction of RCV / JE / Men A into the national programme	7.x.4	✗	Not Applicable.docx **File desc:** NA **Date/time :** 25/01/2015 10:16:48 **Size:** 11 KB

16	Data quality assessment (DQA) report	5.1.5	✓	DQA Report-2nd Draft.doc **File desc:** Report of Data Quality Self Assessment conducted in 2009 **Date/time :** 23/01/2015 09:23:57 **Size:** 1 MB
17	DQA improvement plan	5.1.5	✗	Not Applicable.docx **File desc:** NA **Date/time :** 25/01/2015 06:28:18 **Size:** 11 KB
19	HPV roadmap or strategy	6.1.1	✗	Not Applicable.docx **File desc:** NA **Date/time :** 25/01/2015 06:30:04 **Size:** 11 KB
20	Introduction Plan for the introduction of RCV into the national programme	7.x.4	✗	Not Applicable.docx **File desc:** NA **Date/time :** 25/01/2015 06:30:34 **Size:** 11 KB
21	HPV summary of the evaluation methodology	5.1.6	✗	Not Applicable.docx **File desc:** NA **Date/time :** 25/01/2015 06:31:04 **Size:** 11 KB
22	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	✓	RCV for measles first dose.docx **File desc:** RCV is already given at 9 months in Ghana **Date/time :** 25/01/2015 06:11:55 **Size:** 13 KB
23	Campaign target population documentation	7.x.1	✓	Campaign target population documentation.docx **File desc:** Description of the target population for all applications **Date/time :** 19/02/2015 11:41:03 **Size:** 12 KB
24	Roadmap or strategy for strengthening a comprehensive approach to pneumonia and/or diarrhoea prevention and treatment	6.x.6	✗	Not Applicable.docx **File desc:** NA **Date/time :** 25/01/2015 06:31:46 **Size:** 11 KB
25	EVM report	8.3	✓	Ghana EVM Report_Updated_261114.doc **File desc:** Report of 2014 EVMA **Date/time :** 25/01/2015 06:36:44 **Size:** 9 MB

26	Improvement plan based on EVM	8.3	✓	Ghana_EVM_improvement_plan_081214.xls **File desc:** Improvement plan for 2014 EVMA **Date/time :** 25/01/2015 07:06:11 **Size:** 224 KB
27	EVM improvement plan progress report	8.3	✓	Ghana_EVM_improvement_plan_081214.xls **File desc:** The status of the improvement plan is incorporated in the improvement **Date/time :** 25/01/2015 10:13:13 **Size:** 224 KB
28	Detailed budget template for VIG / Operational Costs	6.x,7.x.2	✓	Budget for Men A_VIG_NVS 2015.xlsx **File desc:** Budget for Men A introduction into routine immunization in the three northern regions **Date/time :** 19/02/2015 11:38:28 **Size:** 23 KB Men A_Catchup Operational Cost NVS 2015.xlsx **File desc:** Budget for Meningitis Mini Catch-up Campaign operational cost **Date/time :** 19/02/2015 11:39:58 **Size:** 24 KB Budget for YF PC Operational Cost NVS 2015.xlsx **File desc:** Budget for Yellow Fever Preventive Campaign operational cost **Date/time :** 19/02/2015 11:39:11 **Size:** 27 KB
29	Risk assessment and consensus meeting report for Meningitis / Yellow Fever: (for yellow fever please include information required in the NVS guidelines on YF Risk Assessment process)	7.1	✓	Report YF concensus meeting Ghana 17_11_10.doc **File desc:** Report of Yellow Risk Assessment **Date/time :** 25/01/2015 06:59:13 **Size:** 142 KB Yellow Fever Risk Assessment File_2010.xls **File desc:** Yellow Fever Risk Assessment file **Date/time :** 25/01/2015 06:55:34 **Size:** 84 KB
30	Plan of Action for campaigns	7.1, 7.x.4	✓	POA for Meningitis A Campaign_200215.docx **File desc:** Plan of action for Meningitis A mini catch-up campaign **Date/time :** 20/02/2015 10:15:17 **Size:** 2 MB POA for Yellow Fever Campaign_200215.docx **File desc:** This is the Plan of Action for the Yellow Fever Sub-national Preventive Campaign **Date/time :** 20/02/2015 10:12:58 **Size:** 233 KB

	Other		✕	Bank Details.pdf **File desc:** Endorsed banking form **Date/time :** 18/02/2015 11:55:48 **Size:** 983 KB
				Parameters for campaigns.docx **File desc:** Number of vaccinators, volunteers, supervisors etc for each campaign **Date/time :** 23/02/2015 10:02:04 **Size:** 13 KB
				Vehicle Procurement.docx **File desc:** Number of vaccinators, volunteers, supervisors etc for each campaign **Date/time :** 23/02/2015 09:41:51 **Size:** 12 KB
				EPI_Log_Forecasting_Tool_2014_latest version_200215.xlsx **File desc:** The WHO Logistics Forecasting tool used for estimation of logistics needs **Date/time :** 23/02/2015 07:59:17 **Size:** 4 MB
				PROPOSAL_2015_MenA_Campaign_GHA.2015.02.19.doc **File desc:** This is Ghana's application form for Meningitis Mini Catch-up Campaign. It was not possible to apply for meningitis campaign support together with routine introduction on the Gavi online portal. **Date/time :** 19/02/2015 11:17:55 **Size:** 753 KB

11. Annexes

Annex 1 - NVS Routine Support

Annex 1.1 - NVS Routine Support (Meningococcal A, 10 dose(s) per vial, LYOPHILISED)

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

		2015	2016	2017	2018	2019
Number of vaccine doses	#	0	82,600	101,100	138,200	182,100
Number of AD syringes	#	0	84,300	101,100	138,400	182,100
Number of re-constitution syringes	#	0	9,200	11,300	15,400	20,300
Number of safety boxes	#	0	0	0	0	0
Total value to be co-financed by the Country ***[1]***	$	0	63,500	80,000	112,500	152,500

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

		2015	2016	2017	2018	2019
Number of vaccine doses	#	0	136,000	84,500	58,900	32,500
Number of AD syringes	#	0	138,800	84,500	58,900	32,500
Number of re-constitution syringes	#	0	15,100	9,400	6,600	3,600
Number of safety boxes	#	0	0	0	0	0
Total value to be co-financed by Gavi	$	0	104,500	67,000	48,000	27,500

Table Annex 1.1 C: Summary table for vaccine Meningococcal A, 10 dose(s) per vial, LYOPHILISED

ID		Data from		2015	2016	2017	2018	2019
	Number of surviving infants	Table 5.2	#	180,515	185,028	189,653	194,395	199,255
	Number of children to be vaccinated with the first dose	Table 5.2	#	0	157,274	164,999	174,955	189,292
	Immunization coverage	Table 5.2	%	0	85 %	87 %	90 %	95 %
	Number of doses per child	Parameter	#	1	1	1	1	1
	Estimated vaccine wastage factor	Table 5.2	#	1	1.11	1.11	1.11	1.11
	Number of doses per vial	Parameter	#	10	10	10	10	10
	AD syringes required	Parameter	#	Yes	Yes	Yes	Yes	Yes
	Reconstitution syringes required	Parameter	#	Yes	Yes	Yes	Yes	Yes
	Safety boxes required	Parameter	#	No	No	No	No	No
cc	**Country co-financing per dose**	Table 6.4.1	$	0.14	0.29	0.43	0.57	0.71
ca	**AD syringe price per unit**	Table Annexes 4A	$	0.0448	0.0448	0.0448	0.0448	0.0448
cr	**Reconstitution syringe price per unit**	Table Annexes 4A	$	0.035	0.035	0.035	0.035	0.035
cs	**Safety box price per unit**	Table Annexes 4A	$	0.0054	0.0054	0.0054	0.0054	0.0054
fv	**Freight cost as % of vaccines value**	Table Annexes 4B	%	12.00 %	12.00 %	11.00 %	11.00 %	10.00 %
fd	**Freight cost as % of devices value**	Parameter	%	0	0	0	0	0

Table Annex 1.1 D: Estimated numbers for Meningococcal A, 10 dose(s) per vial, LYOPHILISED, associated injection safety material and related co-financing budget (page 1)

		Formula	2015		
			Total	Government	Gavi
A	**Country co-finance**	*V*	0.00 %		
B	**Number of children to be vaccinated with the first dose**	*Table 5.2*	0	0	0
C	**Number of doses per child**	*Vaccine parameter (schedule)*	1		
D	**Number of doses needed**	*B x C*	0	0	0
E	**Estimated vaccine wastage factor**	*Table 5.2*	1		
F	**Number of doses needed including wastage**	*D x E*	0	0	0
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]*	0	0	0
I	**Total vaccine doses needed**	*Round up((F + G) / Vaccine package size) * Vaccine package size*	0	0	0
J	**Number of doses per vial**	*Vaccine parameter*	10		
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**	*(K + L) / 100 x 1.11*	0	0	0
N	**Cost of vaccines needed**	*I x vaccine price per dose (g)*	0	0	0
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)*	0	0	0
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)*	0	0	0
U	**Total country co-financing**	*I x country co-financing per dose (cc)*	0		
V	**Country co-financing % of Gavi supported proportion**	*U / T*	0.00 %		

Table Annex 1.1 D: Estimated numbers for Meningococcal A, 10 dose(s) per vial, LYOPHILISED, associated injection safety material and related co-financing budget (page 2)

		Formula	2016		
			Total	Government	Gavi
A	Country co-finance	*V*	37.77 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	157,274	59,399	97,875
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B x C*	157,274	59,399	97,875
E	Estimated vaccine wastage factor	*Table 5.2*	1.11		
F	Number of doses needed including wastage	*D x E*	174,575	65,933	108,642
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]*	43,644	16,484	27,160
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	218,500	82,523	135,977
J	Number of doses per vial	*Vaccine parameter*	10		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.11*	223,019	84,229	138,790
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.11*	24,254	9,161	15,093
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.11*	0	0	0
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	140,496	53,062	87,434
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	9,992	3,774	6,218
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	849	321	528
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)*	16,439	6,209	10,230
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)*	167,776	63,365	104,411
U	Total country co-financing	*I x country co-financing per dose (cc)*	63,365		
V	Country co-financing % of Gavi supported proportion	*U / T*	37.77 %		

Table Annex 1.1 D: Estimated numbers for Meningococcal A, 10 dose(s) per vial, LYOPHILISED, associated injection safety material and related co-financing budget (page 3)

		Formula	2017		
			Total	Government	Gavi
A	Country co-finance	*V*	54.47 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	164,999	89,878	75,121
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B x C*	164,999	89,878	75,121
E	Estimated vaccine wastage factor	*Table 5.2*	1.11		
F	Number of doses needed including wastage	*D x E*	183,149	99,765	83,384
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]*	2,144	1,168	976
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	185,500	101,045	84,455
J	Number of doses per vial	*Vaccine parameter*	10		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.11*	185,529	101,061	84,468
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.11*	20,591	11,217	9,374
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.11*	0	0	0
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	123,451	67,246	56,205
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	8,312	4,528	3,784
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	721	393	328
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)*	13,950	7,599	6,351
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)*	146,434	79,765	66,669
U	Total country co-financing	*I x country co-financing per dose (cc)*	79,765		
V	Country co-financing % of Gavi supported proportion	*U / T*	54.47 %		

Table Annex 1.1 D: Estimated numbers for Meningococcal A, 10 dose(s) per vial, LYOPHILISED, associated injection safety material and related co-financing budget (page 4)

		Formula	2018		
			Total	Government	Gavi
A	Country co-finance	*V*	70.14 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	174,955	122,718	52,237
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B x C*	174,955	122,718	52,237
E	Estimated vaccine wastage factor	*Table 5.2*	1.11		
F	Number of doses needed including wastage	*D x E*	194,201	136,217	57,984
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]*	2,763	1,939	824
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	197,000	138,181	58,819
J	Number of doses per vial	*Vaccine parameter*	10		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.11*	197,267	138,368	58,899
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.11*	21,868	15,339	6,529
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.11*	0	0	0
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	135,694	95,179	40,515
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	8,838	6,200	2,638
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	766	538	228
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)*	14,791	10,375	4,416
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)*	160,089	112,290	47,799
U	Total country co-financing	*I x country co-financing per dose (cc)*	112,290		
V	Country co-financing % of Gavi supported proportion	*U / T*	70.14 %		

Table Annex 1.1 D: Estimated numbers for Meningococcal A, 10 dose(s) per vial, LYOPHILISED, associated injection safety material and related co-financing budget (page 5)

		Formula	2019		
			Total	Government	Gavi
A	Country co-finance	*V*	84.88 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	189,292	160,675	28,617
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B x C*	189,292	160,675	28,617
E	Estimated vaccine wastage factor	*Table 5.2*	1.11		
F	Number of doses needed including wastage	*D x E*	210,115	178,350	31,765
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]*	3,979	3,378	601
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	214,500	182,072	32,428
J	Number of doses per vial	*Vaccine parameter*	10		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.11*	214,531	182,098	32,433
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.11*	23,810	20,211	3,599
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.11*	0	0	0
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	152,918	129,800	23,118
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	9,611	8,158	1,453
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	834	708	126
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)*	16,057	13,630	2,427
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)*	179,420	152,295	27,125
U	Total country co-financing	*I x country co-financing per dose (cc)*	152,295		
V	Country co-financing % of Gavi supported proportion	*U / T*	84.88 %		

Annex 2 - NVS Routine – Preferred Second Presentation

No NVS Routine – Preferred Second Presentation requested this year

Annex 3 - NVS Preventive campaign(s)

Annex 3.1 - NVS Preventive campaign(s) (Yellow Fever, 10 dose(s) per vial, LYOPHILISED)

Table Annex 3.1 C: Summary table for CAMPAIGN Yellow Fever, 10 dose(s) per vial, LYOPHILISED

	Data from		2015
Total target population	Table 5.3.1	#	5,474,926
Number of doses per persons	Parameter	#	1
Wastage Rate	Table 5.3.1	#	10
Estimated vaccine wastage factor		#	1.11
Number of doses per vial	Parameter	#	10
AD syringes required	Parameter	#	Yes
Reconstitution syringes required	Parameter	#	Yes
Safety boxes required	Parameter	#	Yes

AD syringe price per unit	Table Annexes 4A	$	0.0448
Reconstitution syringe price per unit	Table Annexes 4A	$	0.035
Safety box price per unit	Table Annexes 4A	$	0.0054
Freight cost as % of vaccines value	Table Annexes 4B	%	7.00 %
Freight cost as % of devices value	Parameter	%	0

Table Annex 3.1 D: Estimated number of Yellow Fever, 10 dose(s) per vial, LYOPHILISED associated injection safety material and related co-financing budget (page 1)

		Formula	Gavi
			2015
B	Total target population	*Table 5.3.1*	5,474,926
C	Number of doses per persons	*Vaccine parameter (schedule)*	1
D	Number of doses needed	*B x C*	5,474,926
E	Estimated vaccine wastage factor	*100 / (100 - Vaccine wastage rate)*	1.11
F	Number of doses needed including wastage	*D x E*	6,077,168
G	Vaccines buffer stock	*0*	0
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	6,077,200
J	Number of doses per vial	*Vaccine parameter*	10
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.11*	6,077,168
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.11*	674,570
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.11*	74,945
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	6,924,362
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	272,258
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	23,610
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	408
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	470,857
S	Freight cost for devices needed	*(O+P+Q) x freight cost as % of devices value (fd)*	0
T	Total fund needed	*(N+O+P+Q+R+S)*	7,691,495

Note: There is no co-financing for NVS preventive campaigns

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	2015	2016	2017	2018	2019
Meningococcal A, 10 dose(s) per vial, LYOPHILISED	MENINACONJUGATE	12.10 %	11.70 %	11.30 %	10.90 %	10.50 %
Yellow Fever, 10 dose(s) per vial, LYOPHILISED	YF	6.80 %				

Table Annex 4C: Graduating - Minimum country's co-payment per dose of co-financed vaccine.

Vaccine	2015	2016	2017	2018	2019
Meningococcal A, 10 dose(s) per vial, LYOPHILISED	0.14	0.29	0.43	0.57	0.71

Table Annex 4D: Wastage rates and factors

The following table shows the wastage rates for routine and campaign vaccines, set for 2015.

Vaccine	dose(s) per vial	Maximum Vaccine wastage rate*	Benchmark Wastage Rate**
DTP-HepB-Hib, 1 dose(s) per vial, LIQUID	1	5 %	
DTP-HepB-Hib, 10 dose(s) per vial, LIQUID	10	25 %	15 %
DTP-HepB-Hib, 2 dose(s) per vial, LYOPHILISED	2	10 %	
HPV bivalent, 2 dose(s) per vial, LIQUID	2	10 %	
HPV quadrivalent, 1 dose(s) per vial, LIQUID	1	5 %	
JE, 5 dose(s) per vial, LYOPHILISED	5	10 %	
Measles second dose, 10 dose(s) per vial, LYOPHILISED	10	40 %	
Meningococcal A, 10 dose(s) per vial, LYOPHILISED	10	10 %	
MR, 10 dose(s) per vial, LYOPHILISED	10	15 %	
Pneumococcal (PCV10), 2 dose(s) per vial, LIQUID	2	10 %	
Pneumococcal (PCV13), 1 dose(s) per vial, LIQUID	1	5 %	
Rotavirus, 2-dose schedule	1	5 %	
Rotavirus, 3-dose schedule	1	5 %	
Yellow Fever, 10 dose(s) per vial, LYOPHILISED	10	40 %	
Yellow Fever, 5 dose(s) per vial, LYOPHILISED	5	10 %	

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-Pertussis	DTP	liquid	IM	3	20	2.5	
Diphtheria-Tetanus-Pertussis	DTP	liquid	IM	3	10	3	
Diphtheria-Tetanus	DT	liquid	IM	3	10	3	
Tetanus-Diphtheria	Td	liquid	IM	2	10	3	
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	
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-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
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
Polio	OPV	liquid	Oral	4	10	2	
Polio	OPV	liquid	Oral	4	20	1	
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
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	
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 liquid	Hib_liq	liquid	IM	3	1	15	
Hib liquid	Hib_liq	liquid	IM	3	10	2.5	
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
DTP liquid + Hib freeze-dried	DTP+Hib	liquid+lyop.	IM	3	1	45	
DTP-Hib combined liquid	DTP+Hib	liquid+lyop.	IM	3	10	12	
DTP-Hib combined liquid	DTP-Hib	liquid	IM	3	1	32.3	
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	

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
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
Meningitis W135	MV_W135	lyophilized	SC	1	10	2.5	4
Meningitis A conjugate	Men_A	lyophilized	IM	1	10	2.6	4
Japanese Encephalitis	JE_lyo	lyophilized	SC	1	5	2.5	2.9
Rota vaccine	Rota_liq	liquid	Oral	2	1	17.1	
Rota vaccine	Rota_liq	liquid	Oral	3	1	45.9	
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 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	
Human Papilomavirus vaccine	HPV	liquid	IM	3	1	15	
Human Papilomavirus vaccine	HPV	liquid	IM	3	2	5.7	
Monovalent OPV-1	mOPV1	liquid	Oral		20	1.5	
Monovalent OPV-3	mOPV3	liquid	Oral		20	1.5	

12. Banking Form

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

Name of Institution (Account Holder):	GHANA HEALTH SERVICE		
Address:	P. O. BOX KB 493, KORLE-BU, ACCRA		
City Country:	GHANA		
Telephone no.:	+233272602300	**Fax no.:**	+233302687701
		Currency of the bank account:	US DOLLAR
For credit to:			
Bank account's title:	PUBLIC HEALTH PROGRAMME ACCOUNT		
Bank account no.:	0330207615714		
Bank's name:	UNIBANK GHANA LIMITED		

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

By who is the account audited? GHANA AUDIT SERVICE AND ERNST & YOUNG

Signature of Government's authorizing official

		Seal
Name:		
Title:		
Signature:		
Date:		

FINANCIAL INSTITUTION		CORRESPONDENT BANK (In the United States)	
Bank Name:			
Branch Name:			
Address:			
City Country:			
Swift Code:			
Sort Code:			
ABA No.:			
Telephone No.:			
FAX No.:			

I certify that the account No is held by at this banking institution

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

1		
	Name:	
	Title:	
2		
	Name:	
	Title:	
3		
	Name:	
	Title:	

Name of bank's authorizing official
Signature:
Date:
Seal: