*Gavi*

# Application Form for Country Proposals

*For Support to:*

*Routine New Vaccines Support*

Submitted by

## The Government of

## *Sudan*

Date of submission: **11 October 2015**

**Deadline for submission: 8 September 2015**

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

| Start Year | 2012 | End Year | 2016 |
|---|---|---|---|

**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] |
|---|---|---|---|---|
| Routine New Vaccines Support | Meningococcal A, 10 dose(s) per vial, LYOPHILISED | 2016 | 2016 | |
| | If the selected vaccine is not your 1st preference, please state your preferred vaccine and presentation | | | If the selected vaccine is not your 1st preference, please state your preferred vaccine and presentation |
| | | | | No preferred second presentation |

***[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

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The Government of Sudan has made major strides in the health of children in particularly in the immunization services which is enhanced with the support of GAVI. Improving immunization coverage, and decreasing disabilities and deaths from vaccine preventable diseases are one of the main strategic objectives of the Ministry of Health. A number of interventions have been introduced to improve the health status of the children. Immunization has been at the forefront of interventions geared to improving child health. This was demonstrated in the last five years when the Government of Sudan with the support of the Global Alliance for Vaccines and Immunization (GAVI) and other partners simultaneously introduced pneumococcal and rotavirus vaccines into routine immunization. These vaccines have contributed to the decline of illnesses and deaths due to pneumonia and diarrhea in the country.
The cMYP (2012 - 2016) was updated according to a new situation analysis of the national immunization programme in the new political and economic context and to go in line with the 5-year strategic plan of the

National Ministry of Health, the national immunization policy, and the Global Vaccine Action Plan (GVAP). The cMYP aim at improving the quality of the routine immunization coverage, sustaining the polio-free status of the country, controlling measles outbreaks and achieving the MNT elimination, introduction of new vaccines namely Rota, PCV, Meningitis A conjugate and YF vaccines.
The decision to introduce these vaccines was supported by Sudan NITAG after reviewing the local surveillance data and WHO position papers. Sudan had achieved and sustained 94% Penta3/OPV3, 97% PCV3, 95%BCG, 86%MCV1, 61%MCV2and 86% Rota2 and 53% TT2+coverage. Gavi support was utilized to implement outreach, mobile and acceleration of EPI activities to reach hard to reach population and improve immunization coverage.
The global disease burden data showed that Sudan is among the big four countries contributing to 72% of meningitis cases among the 22 belt countries, Sudan has joined the Regional Surveillance Network for BMS in 2007, data available by end of 2010 had shown that 71 % of the total reported bacterial meningitis cases were due to Neisseria meningitis cases, 18 % is the proportion of pneumococcal meningitis cases. Sudan had a large meningitis epidemic occurs every 10-12 yrs and had reported several episodes of meningitis outbreaks before.
To further improve the health status of the population and children in the country, in 2012-2013 the Government of Sudan had conducted vaccination campaigns against meningococcal A for the age group (1-29 years) with the support from GAVI and partners. The follow -up campaign and subsequent routine introduction of the vaccine will help prevent future outbreaks.
In this proposal the government of Sudan is requesting for support from GAVI Alliance to introduce Meningococcal A (Men A) vaccine into the routine immunization services for under one children, and for conduction of Mini catch-up Campaign in 2016 for the children one to five years of age who were not vaccinated in the previous preventive campaigns.
The vaccine will be introduced into the routine services in all 18 states, followed by implementation of the mini catch-up campaign in all the states.
**The 10-dose presentation of Meningococcal A conjugate vaccine** is the preferred presentation for the routine introduction and for the mini catch-up campaign.
**The routine vaccination will be introduced for under one** surviving infants at age of 9 month along with the first dose of measles vaccination. The vaccine is planned to be introduced in the 2nd half of the year in July 2016 and the target of children to be vaccinated is estimated to be 718,735 children (50% of the total surviving infants in 2016).
**The mini catch-up campaign will target** children one to five years of age; this will cover the new birth cohort borne since the mass preventive vaccination campaign in all Sudan localities. Children who are more than five years of age were part of the cohort that was vaccinated during the 2012 - 2013 National Meningitis Preventive Campaign. A total of 5,226,139 children will therefore be targeted for the mini catch-up campaign.

**With regards to vaccine management, Effective Vaccine Management Assessment (EVMA)** was conducted in the country in December 2013, 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 NITAG was a part of the decision making process** for the routine introduction and catch up campaign of Men A vaccine. The World Health Organization provided both technical and financial support in the preparation of this proposal. The National Regulatory Authority are instrumental in the vaccine registration and vaccine safety monitoring, other partners, particularly, those on the NHCC supported in discussions and finalization as well as the endorsement of the proposal for submission.

**The total operational cost for the routine introduction of the Men A vaccine is estimated as** US$ 2,280,014. The vaccine introduction grant that will be supported by Gavi estimated at $ 0.80 per birth will be US$1,256,014. The remaining requirement will be covered by Government of Sudan and partners particularly WHO and UNICEF.
**The total estimated operational cost for the catch-up campaign** is US$ 4,408,910 The GAVI Alliance will provide US$ 3,396,990 (78%) at 0.65 cent /child as well as vaccines and associated logistics. The remaining will be provided by the Government of Sudan. The support of health partners (WHO & UNICEF) for routine introduction and for the mini catch-up campaign is shown jointly in the budget table of VIG. Most of the activities are planned to be conducted synergistically (e.g. Social mobilization activities, cold chain preparations, training etc) and the preparations for the routine introduction will be implemented before the campaign activities. Synergetic activities for the routine introduction and the campaigns will be implemented where ever feasible activities.
**Lessons learned from the previous introductions** will be used for the introduction of Men A vaccine into the routine services.The country has rich experience in new vaccines introduction successfully into the routine immunization services, the last vaccine introduced was the IPV in June 2015, as well the 2012 -2013

Meningitis Campaign reached 95% of the target population, the experiences gained over the years will be applied to ensure a successful Men A catch up campaign.

# 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 Sudan 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

The Government of Sudan 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 **September**.

The payment for the first year of co-financed support will be around **December 2016** 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** | Mr. Bahar Idriss Abugarda | **Name** | Mr. Badereldin Abbas |
| **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):*

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### 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** | NHSCC/ |
| **Year of constitution of the current committee** | 2009 |
| **Organisational structure (e.g., sub-committee, stand-alone)** | sub-committees |
| **Frequency of meetings** | every 3 month |

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:

1. Oversee implementation of all initiatives supporting the health sector.
2. Oversee and steer the process for the development of GAVI and GF HSS proposals.
3. Endorse annual work plans and procurement plans related to HSS.
4. Ensure that HSS support is managed according to the best practices for the management of global health partnerships at the country level.
5. Review/authenticate the annual budget and other details on the financial implications proposals.
6. Monitor and guide progress of activities and address any hurdles during implementation.
7. Review progress reports and endorse them before submission to donors/partners.
8. Co-ordinate with allied programs and activities in health sector, ensuring best practices for managing global health partnership at country level.

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 NITAG were fundamental in decision making process, The National Regulatory Authority (NRA) were instrumental for the monitoring and management of Adverse Events Following Immunization (AEFI). Other partners, particularly, those on the HSCC 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 **07/09/2015** 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 attendance at the meeting where the proposal was endorsed | Please sign below to indicate the endorsement of the minutes where the proposal was discussed |
|---|---|---|---|---|
| **Chair** | Undersecretary FMOH<br>Undersecretary FMOH | Dr. Isameldin Moh. Abdallah | | |
| **Secretary** | Director of Planning and international health, FMOH<br>Director of Planning and international health, FMOH | Dr. Elfatih Moh. Malik | | |

| | | | | |
|---|---|---|---|---|
| **Members** | Director of MCH Program FMOH | Nada Jafar | | |
| | EPI Program Manager FMOH | Hisham Abdallatif | | |
| | Sudanese Red Crescent | Osama Mustafa Suliman | | |
| | UNICEF Representative | Dorothy Ochola Odongo | | |
| | PHI | Dr. Abdalla Sid Ahmed | | |
| | Rotary Representative | Dr. Sohaib M. Elbadawi | | |
| | GAVI/GF focal person | Dr. Imad Eldin Ahmed Mohmamed Ismail | | |
| | DG of Planning & Policy | Dr. Ali Al Sayed | | |
| | DG Gezera State (Representative of states) | Dr. Ahmed El bashir | | |
| | Humanitarian Aid Commission Representative | repersentitive | | |
| | UNFPA | repersentitive | | |
| | Director of Primary Health Care, FMOH | Dr. Mohammed Yahia Elabassi | | |
| | Ministry of Defense | repersentitive | | |
| | WHO Representative | WR | | |
| | UNDP Representative | repersentitive | | |
| | Ministry of the Interior Representative | repersentitive | | |
| | Central Medical Supply Corporation manager | repersentitive | | |
| | Ministry of Finance Representative | repersentitive | | |
| | Director of National Tuberculosis Program | Dr. Tarig Abdalla | | |
| | Director of National Malaria Control Program | repersentitive | | |
| | Director of National HIV/AIDs Control Program | repersentitive | | |
| | EPI national lab | Hatim Osman | | |
| | | | | |

By submitting the proposal we confirm that the quorum has been met. **No**

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

## 4.2. National Immunization Technical Advisory Group (NITAG)

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

We the members of the NITAG met on the **19/08/2015** to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation describing the decision-making process through which the recommendations were reached, attached as Document number 9.

### 4.2.1. The NITAG

### Profile of the NITAG

| | |
|---|---|
| **Name of the NITAG** | NITAG |
| **Year of constitution of the current NITAG** | 2009 |
| **Organisational structure (e.g., sub-committee, stand-alone)** | stand alone |
| **Frequency of meetings** | every 3 month |

| Function | Title / Organisation | Name |
|---|---|---|

| | | |
|---|---|---|
| **Chair** | Prof. of Pediatric (U of Kht.), Head of Sudan medical counsel , NITAG deputy chair | Prof.Zein A. Karrar |
| **Secretary** | Prof. of Pediatric (U. of AlGazira, Madani Pediatric Hospital) | Prof.Ali B. Habour |
| **Members** | U. of K FMOH | Prof.Salah A. Ibrahim |
| | Surveillance National coordinator | Dr.El Sadig M. ElTayeb |
| | National Lab | Dr.Alnageeb Suliman |
| | FPPb | Dr.MohamedAli Elhassan |
| | Pediatrician | Dr.Fawzi Ibrahim |
| | National Collage | Dr.Alamin Osman |
| | MOH/ Research director | Dr Eman Abdullah |
| | President of association of public Health /Health physician | Dr.Abdel ghaffar Ali Adam |
| | U. of K FMOH | Dr. Ali Alarabi |
| | Medical Officer WHO/EPI | Dr.Ahmmed Hardan |
| | Project officer / EPI UNICEF | Dr.Shaza Mohei eldein |
| | G.D. of pharmacy | Dr. Husham Mohamed alhaj |
| | MCH Director / FMOH | Dr.Nada Gaafer |
| | EPI Director / FMOH | Dr Hisham Abdallatif |

Major functions and responsibilities of the NITAG

Functions and responsibility

- **Advise and Guide the ministry of health and the national immunization program on :**
- **Policy analysis and strategy formulation for control of VPDs.**
- **Monitoring of EPI , collection and identification of data for policy decision making.**
- **Optimal scientific recommendations for the use vaccines and control of VPDs**

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 | 41,149,153 | 2015 | Population data sheet |
| Birth cohort | 1,570,017 | 2015 | Population data sheet |
| Infant mortality rate (per 1000) | 167,506 | 2015 | Population data sheet |
| Surviving infants*[1]* | 1,402,511 | 2015 | Population data sheet |
| GNI per capita (US$) | 1,740 % | 2014 | World Development Bank |
| Total Health Expenditure (THE) as a percentage of GDP | 6 % | 2011 | National Health Account |
| General government expenditure on health (GGHE) as % of General government expenditure | 8 % | 2011 | National Health Account |

*[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 |
|---|---|
| Early advocacy with Government authorities | Early advocacy with Government and MOFhelped to promote timely recepient of the country co-financing budget for new vaccines |
| Early planning and preparations | Early planning and preparations for the introduction of the new vaccine will be implemented, which is crucial for successful introduction |
| Cascade Training | Cascade training will be implemented to ensure that all levels and types of health workers had the chance for a proper training. |
| Social mobbilization activities | Early socialmobilization activities implementation will improve the utilization of services<br><br>Preparation, printing and distribution of the social mobilization |

| | |
|---|---|
| | materials timely<br>- Preparation of the suitable Mass media messages<br>- Press release about the disease and availability of the vaccine<br>- Clear information about the required dose/person, age of the targeted population<br>Social mobilization activities for routine introduction and campaign activities will be combined together |
| Monitoring and evaluation | Close supervision and monitoring will help to improve the quality of the service and improve performance.<br>Post evaluation for the introduction will be assessed |
| Cold chain | Cold chain capacity assessment is conduct, the needs for the extra equipments is detected and planned for |

### 5.1.2 Health planning and budgeting

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

Usually it is 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 current National Health Sector Strategic plan is addressing the period from 2012 to 2016

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

The planning document for health in Sudan is the National Health Sector Strategic Plan. The plan is for the period –2012-2016.

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

The EPI cMYP (2012 - 2016) is aligned with the National Health Sector Strategic Plan. ,
With regards to the content, the cMYP, has been updated to incorporate the introduction of the mini catch-up campaign for meningitis and subsequent introduction in routine immunization.

Please indicate the national planning budgeting cycle for health

The national planning and budgeting is prepared annually between September - December 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 2012 - 2016. 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.

Sudan's outline for all preparatory activities are as follows:
- EPITechnical Sub-committee meetings
- Preparation of information for NITAG and key stakeholders
- NITAG decision making meeting
- Preparation and completion of application documents
- Meeting with N HSCC for endorsement
- Briefing and subsequent endorsement by MoH and FMOH
- Submission of proposal to GAVI
- Sub-committees technical meetings
- Implementation of the pre introduction preparatory activities (cold chain, training, social mobilization,

logistics and supply distribution) (Men( A) Routine introduction plan attached)
- National Launching of the routine introduction of the vaccine into the routine immunization services
- Monitoring the performance and utilization
Implementation of the pre campaign preparatory activities (Men( A ) catch up implementation plan attached)
- Cold chain preparations
Training/Orientation of health workers
- Advocacy, Communication and Social mobilization
Logistics and supply distribution
- National Launching
- Campaign Implementation
- Post campaign Coverage Survey - National Review and evaluation 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).

Promotions of gender equality are key to achieving sustainable development, The immunization services are provided to the respective target population irrespective of gender. Nevertheless EPI Sudan has amended its recording and reporting instruments to include the gender sex disaggregated data (SDD) in routine immunization,

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).

In general lack of uniform geographical coverage by health services, financial and socioeconomic barriers hinder the access to the health services, however no differences were observed in the utilization of the preventive services (because most of them are free of charge) and in fact poor households tends to use these services better than rich.
The micro-planning process usually identifies all the hard to reach population in term of accessibility geographical or for any other causes. Evidence from previous routine immunization coverage and campaigns coverage 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 in hard to reach areas for routine services (out reach, mobile and accelerated activities) as well as during campaigns.
In such areas, mobile vaccination unites are transported to these communities using the most suitable means of transportation according to the area. In urban slums, microphones are sent out to deliver key messages about the campaign and sites of vaccinations. At the same time, in some areas volunteers and health workers also move from house to house to inform and educate caregivers on the campaign.
There is no disparity in immunization with regards to gender. This is well addressed in the micro-planning and social mobilization sections of the routine introduction and campaign plans

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

Sex disaggregated data is collected and used in immunization reporting system. In the routine immunization coverage by third dose, 49% were males and 51% females.
From the preventive meningitis campaign the reported coverage 48% of vaccinated children were males and 52% were females.

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.

Some parts of the country are fragile or in post conflict situation (Darfur, Blue Nile, and south Kordofan (in accessible Nuba Mountain) states). These special areas will have special plans and interventions according to their status. Usually these areas are mapped, separately planned for with separate interventions and budgeting

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.

Geographic equity of immunization coverage indicator has been improved from 82% of localities reaching 80% in 2012 to 90% of localities reached the targeted equity coverage indicator by the end of 2014. The total number of localities that below 80% were 12 localities, 10 out of these 12 poor covered localities is war affected localities

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 Sudan House Hold and Health Survey is conducted every five years to assess the quality and coverage of health interventions. The latest data on socioeconomic equity were published in the SHHS where the coverage gap between lowest and highest wealth quintiles in penta3 coverage was -44%.The EPI target is distributed into 33% urban and 67% rural with population hard to reach either due to geographical or security reason.

### 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.

EPI information system was evaluated by WHO/EMRO in December 2013 and high level of data accuracy at all levels was found. A regular national EPI review meeting were organized bi-annually by the federal level for the states to review the EPI programme components and the data quality is one of these components

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 before twice. Since then, there has been internal self data audits or assessments being conducted. However, there is currently no independent assessment of the quality of data.. The routine supervision tool, that used at all levels as part of the routine activities, has a component which verify the data accuracy and quality at the lower levels (health facility and locality)

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.

The last House Hold survey was conducted in 2010 (SHHS). This survey is conducted every five years. The SHHS cover maternal and child health, nutrition and mortality topics.
The MICS – 2014 has been completed and results are under discussion to be finalized. In addition, an EPI coverage survey has been conducted in 80 localities where measles campaign was held in April - June 2015. It is planned to conduct national EPI coverage survey during the coming 2-3 years

## 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 |
|---|---|---|
| | 2015 | 2016 |
| **Total births** | 1,570,017 | 1,612,699 |
| **Total infants' deaths** | 167,506 | 175,230 |
| **Total surviving infants** | 1,402,511 | 1,437,469 |
| **Total pregnant women** | 1,570,017 | 1,612,699 |
| | | |
| **Target population vaccinated with OPV3*[1]*** | | |
| **OPV3 coverage*[2]*** | 95 % | 95 % |
| | | |
| **Target population vaccinated with DTP1*[1]*** | 1,402,511 | 1,440,697 |
| **Target population vaccinated with DTP3*[1]*** | 1,332,385 | 1,368,663 |
| **DTP3 coverage*[2]*** | 95 % | 95 % |
| **Wastage*[3]* rate in base-year and planned thereafter (%) for DTP** | 3 | 3 |
| **Wastage*[3]* factor in base-year and planned thereafter for DTP** | 1.03 | 1.03 |
| | | |
| **Target population vaccinated with Meningococcal*[1]*** | .0 | 718735.0 |
| **Meningococcal A coverage*[2]*** | 0 % | 50 % |
| **First Presentation: Meningococcal A, 10 dose(s) per vial, LYOPHILISED** | | |
| **Wastage*[3]* rate in base-year and planned thereafter (%)** | 0 | 50 |
| **Wastage*[3]* factor in base-year and planned thereafter (%)** | 1.00 | 2.00 |
| **Maximum wastage rate value for Meningococcal A, 10 dose(s) per vial, LYOPHILISED** | 50 % | 50 % |
| | | |
| **Target population vaccinated with 1st dose of Measles** | 1,304,335 | 1,368,663 |
| **Measles coverage*[2]*** | 93 % | 95 % |
| | | |
| **Annual DTP Drop out rate [ ( DTP1 – DTP3 ) / DTP1 ] x 100** | 5 % | 5 % |

***[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)

No NVS Prevention Campaign Support this year

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

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

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

| Disease | Title of the assessment | Date | Results |
|---|---|---|---|
| Bacterial Meningities Disease | Northern Sudan Bacterial Meningitis surveillance (EPI findings) | 2007-2010 | Although there was no assessment done, Sudan had joined the WHO bacterial Meningitis Surveillance (BMS) network in 2007. Data collected showed that 71% is due to Niesseria meningitides<br>18% of the reported meningitis cases is due to Pneumococcal bacteria . |
| Bacterial Meningities Disease | CSM lab-based surveillance (Epidemiology dept) | 2004-2006 | • Total number of cases admitted in all participating hospitals till March, 2006, 1763 cases<br>• Median age 4.2 (range 1 mon-70 yrs), 63% males<br>• 141 (7%) of cases were culture confirmed<br>• Additional 42 cases were positive by PCR<br>• Overall CFR 4%<br>• Causitive organisms,80% NM , 10% sp, 4%Hib, 6%SA (n183)<br>• Etiology by age group<br>Age < 5 (n 103), 75% NM , 6% sp, 12%Hib, 7%SA<br>Age> 5 (n 80), 83% NM , 9% sp, 3%Hib, 5%SA |
| Bacterial Meningities Disease | CSM surveillance (Epidemiology dept) | 2007-2010 | Reported cases of CSM 7665<br>CFR ranges between 3% - 4.1% |

## 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? **July 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** | Intermediate |

| | Year 1 |
|---|---|
| | 2016 |
| **Minimum co-financing** | 0.20 |
| **Your co-financing (please change if higher)** | 0.23 |

### 6.2.2. Specifications of vaccinations with new vaccine

| | Data from | | Year 1 |
|---|---|---|---|
| | | | 2016 |
| **Number of children to be vaccinated with the first dose** | Table 5.2 | # | 718,735 |
| **Immunisation coverage with the first dose** | Table 5.2 | # | 50 % |
| **Country co-financing per dose** | Table 6.2.1 | $ | 0.23 |

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

| | | 2016 |
|---|---|---|
| **Number of vaccine doses** | # | 424,300 |
| **Number of AD syringes** | # | 282,600 |
| **Number of re-constitution syringes** | # | 47,100 |
| **Number of safety boxes** | # | 0 |
| **Total value to be co-financed by the Country *[1]*** | **$** | 413,500 |

*[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$)

| | | 2016 |
|---|---|---|
| **Number of vaccine doses** | # | 1,372,800 |
| **Number of AD syringes** | # | 914,200 |
| **Number of re-constitution syringes** | # | 152,400 |
| **Number of safety boxes** | # | 0 |
| **Total value to be co-financed by Gavi** | $ | 1,337,500 |

### 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$ |
|---|---|---|---|
| 2016 | 1,612,699 | 0.80 | 1,290,159 |

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 GAVI vaccine introduction grant , when transfered timely to the country, it will enable the Ministry of Health to implement the preparatory activities starting with the comprehensive bottom-up microplanning at all levels of service provision. The grant will be used to procure all logistics and supplies that will be required for the successful introduction of the vaccine into the routine immunization services, this will include printing of tools, printing of vaccination cards,etc. The grant will also be used to conduct an extensive training of all staff to build their capacity and prepare them for the introduction. Cold chain rehabilitation and renewal will be carried out using this grant. Implementation of the social mobilization activities are corner stone to raise the awarness and creat deman of the community before the introduction. After introduction of the vaccine into the services , continous monitoring and supervision are important activities to be implemented extensively especially at the begining of the introduction.
Timely receiving of the financial support will enable the country to complete its preparatory phase timely and introduce the vaccine sucessfuly.

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 remaining funding for the introduction operational needs above the GAVI support will mainly be covered from Governmental resources and other partners (WHO&UNICEF) will be mobilized to cover some

operational needs in regard to cold chain, surveillance, capacity bulding and social mobilization. They are committed to cover certain budget items that will be agreed upon at the time of implementation.

### 6.2.6.Technical assistance

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

No external technical assisstance is neede, the country will work in coordination and support of WHO and UNICEF country offices.

## 7. NVS Mini catch up campaign

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

| Disease | Title of the assessment | Date | Results |
|---|---|---|---|

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

Disease Burden
Sudan as one of the African meningitis belt countries suffered from meningitis (A) and contributes to 15% of reported cases in meningitis belt. The early reported large outbreak in Sudan was reported 1950 – 1951 with total of 72,162 cases and the next one took place in 1988-1989 with 38,805 cases and 2,770 deaths. The highest case fatality rate reported during 1999 outbreak with reported 33,313 cases and 2,386 deaths.
In 2010, total number of reported cases was 2011 resulted in 84 deaths with Case Fatality Rate (CFR) of 4.2%. The season started from January up to July 2010 and reached the peak in week 17 by 259 cases. Four Northern States had reached epidemic threshold status in some localities namely Kassala, West Darfur, South Darfur and South Kurduofan States.
In 2011 total number of reported cases was 754 resulted in 21 deaths with Attack Rate (AR) of 2.7/100,000 and Case Fatality Rate (CFR) of 2.8%. Al Radoom locality within South Darfur State was the only locality that reported epidemic threshold. Case reporting started in week 1 up to week 26 and reached the peak in week 18 by 100 cases.
Although there was no assessment done, Sudan had joined the WHO bacterial Meningitis Surveillance (BMS) network in 2007. Data collected showed that 71% is due to Niesseria meningitides
18% of the reported meningitis cases is due to Pneumococcal bacteria . MenA preventive campaign conducted in 2012-2013, had a huge impact on reducing the Niseria Meningitis as reflected by the surveillance reports.

## 7.2.Request for Meningococcal A, 10 dose(s) per vial, LYOPHILISED campaign support

### 7.2.1. Summary for Meningococcal A campaign support

When is the country planning to conduct the MENINACONJUGATE catchup campaign? **October 2016**

When is the country planning to conduct this campaign? **October 2016**

Please give a summary of the cMYP and/or the Meningococcal A, 10 dose(s) per vial, LYOPHILISED introduction plan sections that refer to the introduction of Meningococcal A, 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.

MOH Sudan considered Meningococcal-A vaccine introduction is one of the priority vaccines to be introduced to the country, it is complied with global strategy for the prevention of meningitis by delivering the new meningococcal A Conjugate vaccine in two strategies; The first strategy adopted was through conduction of the mass preventive vaccination campaign cover the targeted population (1-29 yrs.) in two phases during 2012-2013 and reaed a high coverage; the second strategy will be through the introduction of the MenAfriVac® vaccine into the routine immunization services for infants in July 2016; followed by Mini catch up campaign in the same year 2016 targeting birth cohort that born between the last campaign and the date of the introduction on the vaccine into the routine schedule which will be children's under five years of age.

**Decision-making process:**

Evidence based decision making process for introduction of new vaccines involves many steps and parties in Sudan. The National Immunization Technical Advisory Group (NITAG) was established in 2009 by a Ministerial decree to facilitate and provides technical advice on policy analysis and strategy formulation for all vaccine-preventable diseases, and guides the national authorities on identifying and monitoring important data on the latest scientific recommendations and development. Meetings were held for decision making regarding the introduction meningococcal A Conjugate vaccine as follows
The Ministry of Health, with the support of NITAG and the NHHSC recommended that the mini follow-up campaign is to be conducted in order to protect the children who are borne after the mass preventive campaign in 2012-2013 in Sudan.
A bottom-up microplanning process will be done to ensure the peripheral level is adequately prepared for the campaign.conductd. The microplanning process will be done at the district level and will involve all community health nurses and other staff who will be involved in the campaign.
They will all be taken through the campaign strategies, vaccines and logistics estimation for vaccination session, how to set up the vaccination post, the role of each member of the vaccination team as well as recording and reporting.
With regards to social mobilization, at the national level, there will be a briefing session for the media. This will be followed up by a national launch. There will also be a series of discussion programme on most television stations as well as key radio therestations. There will be advocacy meetings with opinion leaders, religious leaders and caregivers. Health workers and volunteers for educating people about the dangers of the disease and the essence of getting the population vaccinated.. District and sub-districts will be provided with funds to implement local level social mobilization activities according to their microplans.

For hard to reach population / conflict areas an innovative solution and achievement in the conflict-affected areas was used to reach children in the middle of the conflict zones to ensure the equity. Access allowed to health staff from rebel-controlled areas to come into the government controlled areas to be trained, collected the necessary supplies and budget before they return to their areas and provide immunization services. In addition to these during the days of the campaign when access allowed to vaccinators to EPI teams, routine immunization services also delivered to the children through dedicated teams.

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.

**Estimation of the Cold chain capacity and requirements**

Sudan central vaccine store was certified by WHO and UNICEF in 2008. It achieved the certification standard with overall score of 94% for the 10 vaccine management global criteria's as the forth country in EMRO to get this certificate. Also it has been awarded in 2009 for the excellence in vaccine stock management from GAVI.
A computerized software system VSSM version 4.6 (Vaccine Stock Supply Management) for vaccine stock management and temperature monitoring system is used.
Available total capacity at the EPI national cold store in 2015 = 158,673 liter.

**National Level**

Central cold store storage capacity at (2 - 8 C) = 143.921 Lit.
Central cold store storage capacity at (-15- -25 C) = 14.752 Lit.
The capacity (2-8 C) needed for 6 months routine immunization vaccines including the routine Men A vaccine is = 108,952 Lit.
There is about 34,969 Lit (2-8 c) that can be used for the campaign vaccines as required.
With support from WHO National EPI program planned to install 3 cold rooms with a capacity of 100,000 liter, the new cold rooms will be installed by the end of 2015. So by end of 2015 the central store capacity will reach 243,921 Liter for (+2 to +8 Celsius). Accordingly the National level cold storage capacity will be sufficient for the routine vaccines as well as the campaign vaccines. There would be no change in the shipment plans for routine vaccines.
Based on the past experience of new vaccine introductions a detailed analysis of the cold chain requirement and cold chain capacity was done for the national and sub national levels using the EPI logistic forecasting tool.

**Sub National level**

The estimation at the sub-national level, show that cold chain capacity at sub national level is adequate to accommodate the routine as well as the planned campaigns in all Sudan except in Gazera state.
To introduce the new Meningococcal vaccine successfully, cold chain equipments needs needed are as follow:

- To install 2 cold rooms (one in Gazera State and one in South Darfur State).
- 25 Ice liner refrigerators and 25 solar refrigerators need to be provided to for some localities to increase their storage capacity store to receive acomdate the new vaccine.
- To increase the capacity of dry stores in at federal and at some of States.
- Three Refrigerated vehicles are needed planned to improve the quality of vaccines distribution to states.
- Need of 500 cold boxes and 1500 vaccine carriers.

The cold chain needs, in addition to GAVI support will be supported by UNICEF and WHO
All cold chain equipment procured for use in the country complies with PQS specification.
Cold chain and vaccine management training are considered along with the capacity building activities for both of the routine introduction and catch up campaign.

**Dry storage capacity**

The dry storage capacity is estimated to be insufficient at all levels as showed from the EVM assessment, EPI planned to rent temporal warehouse to accommodate the required supplies for the campaign.

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

Along with the camaign activities many interventions can be considered to improve and strengthen the routine immunization services.The microplanning process for the campaignes usually is more detailed mapping the target population, this can be used to identify these communities or the hard to reach population with low routine coverage and plan accordingly to deliver immunization services for them. Social mobilization activitiesduring the campaign days can be used to raise the awarness for routine services as well and creat demand. Social mobilizers that are uaually recruted during campaigns can help with identifying the un immunized or defaulters children and send them for routine vaccination.

Training activities of the health workers for the campaigns in the differrent EPI components e.g AEFI, waste managemet, etc willhelp to improve the routine immunization services in general.

The post campaign coverage survay/ assessment can help to look into the immunization coverage at least in some selected 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 Meningococcal A Campaign

**Table 7.2.2:** calculation of grant to support the operational costs of the campaigns (mini catch up campaigns and mass campaigns)

| Year of Meningococcal A support | Total target population (from Table 5.3) | Gavi contribution per target person in US$ | Total in US$ |
|---|---|---|---|
| 2016 | 5,226,139 | 0.65 | 3,396,990 |

*[1]* The Grant will be based on a maximum award of $0.65$ per target person- (synergies between mass campaigns, mini catch up campaigns and routine immunisation need to be highlighted. There will be common activities such as training across the new introductions).

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 will enable the Ministry of Health contact a comprehensive bottom-up microplanning at all levels of service provision. The grant will be used to procure all logistics and supplies that will be required for the successful implementation of the campaign. This includes printing of tools, printing of vaccination cards, procurement of emergency drugs, procurement of cotton wool and sanitizers. The grant will also be used to conduct an extensive training of all staff to build their capacity and prepare them for the introduction. Cold chain repairs will be carried out using this grant. All allowances will be paid from the grant. As well as the social mobilization activities and monitoring and evaluation of the campaigns.
Timely receiving of the financial support will enable the country to complete its preparatory activities timely.

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 remaining funding for the campaign operational needs above the GAVI support will mainly be covered from Governmental resources, this is already advocated for with Ministry of finance, who is supporting this proposal and gave their preliminary agreement & commitment to cover the remaining cost.
Other partners (WHO&UNICEF) will be mobilized to cover some operational needs in regard to cold chain, surveillance, capacity bulding and social mobilization. They are committed to cover certain budget items that will be agreed upon at the time of implementation.
EPI has a reasonable number of civil society's partners who will be mobilized to support the campaign as per their area of work (vaccination, social mobilization, volunteers, printing etc)

Please complete the 'Detailed budget for VIG / Operational costs' template provided by Gavi and attach as a mandatory document in the Attachment section. VIG/operational costs template should detail or highlight activities for mini catch and comment on synergies across the VIGs).

Detailed budget attached as Document No. 28.

### 7.2.3 Meningococcal A Vaccine introduction Grant

Has a Meningococcal A vaccine already been introduced nationally on a routine basis? **No**

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

Please indicate in the tables below how the one-time Introduction Grant***[1]*** will be used to support the costs of vaccine introduction and critical pre-introduction activities (refer to the cMYP). Gavi's support may not be enough to cover the full needs so please indicate in the table below how much and who will be complementing the funds needed.

| Year of New Vaccine Introduction | Birth cohort (from Table 5.1) | Gavi contribution per target person in US$ | Total in US$ |
|---|---|---|---|
| | | | |

***[1]*** The Grant will be based on a maximum award of $ per person in the birth cohort with a minimum starting grant award of $100,000

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

The GAVI vaccine introduction grant , when transfered timely to the country, it will enable the Ministry of Health to implement the preparatory activities starting with the comprehensive bottom-up microplanning at all levels of service provision. The grant will be used to procure all logistics and supplies that will be required for the successful introduction of the vaccine into the routine immunization services, this will include printing of tools, printing of vaccination cards,etc. The grant will also be used to conduct an extensive training of all staff to build their capacity and prepare them for the introduction. Cold chain rehabilitation and renewal will be carried out using this grant. Implementation of the social mobilization activities are corner stone to raise the awarness and creat deman of the community before the introduction. After introduction of the vaccine into the services , continous monitoring and supervision are important activities to be implemented extensively especially at the begining of the introduction.
Timely receiving of the financial support will enable the country to complete its preparatory and introduce the vaccine sucessfuly.

## 7. NVS Mini catch up campaign

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

| Disease | Title of the assessment | Date | Results |
|---|---|---|---|

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

Disease Burden
Sudan as one of the African meningitis belt countries suffered from meningitis (A) and contributes to 15% of reported cases in meningitis belt. The early reported large outbreak in Sudan was reported 1950 – 1951 with total of 72,162 cases and the next one took place in 1988-1989 with 38,805 cases and 2,770 deaths. The highest case fatality rate reported during 1999 outbreak with reported 33,313 cases and 2,386 deaths.
In 2010, total number of reported cases was 2011 resulted in 84 deaths with Case Fatality Rate (CFR) of 4.2%. The season started from January up to July 2010 and reached the peak in week 17 by 259 cases. Four Northern States had reached epidemic threshold status in some localities namely Kassala, West

Darfur, South Darfur and South Kurduofan States.
In 2011 total number of reported cases was 754 resulted in 21 deaths with Attack Rate (AR) of 2.7/100,000 and Case Fatality Rate (CFR) of 2.8%. Al Radoom locality within South Darfur State was the only locality that reported epidemic threshold. Case reporting started in week 1 up to week 26 and reached the peak in week 18 by 100 cases.
Although there was no assessment done, Sudan had joined the WHO bacterial Meningitis Surveillance (BMS) network in 2007. Data collected showed that 71% is due to Niesseria meningitides
18% of the reported meningitis cases is due to Pneumococcal bacteria . MenA preventive campaign conducted in 2012-2013, had a huge impact on reducing the Niseria Meningitis as reflected by the surveillance reports.

# 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 delivered to Sudan through the UNICEF Supply Division. Just as all other vaccines in the country's immunization programme, vaccines for the routine that is supported by GAVI (co-financed vaccines) as well as preventive campaigns vaccines will be procured and delivered using the existing system through UNICEF. Sudan operates the bundling distribution system to the lower levels.

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.

No alternative mechanism for procurement and delivery of vaccine supply (financed by GAVI or the country) is adopted nor requested

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 vaccine introduction grant and the operational support for the campaign will be transfrred to the country through WHO and UNICEF system , same as the previous supports.

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

As FOR the other co- financed vaccines supported by GAVI (Penta, Rota, PCV) , after release of funds from the MOF, funds are transfered to UNICEF to process the procurement of the co financed vaccines. Similar mechanism will applied for Men A vaccine co-financing.

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 cash support for the operational cost for the MenA Vaccination campaign or for the routine introduction will be managed through the same mechanism and regulations as the previous windows of GAVI support for new vaccines introduction. That is through the Federal Ministry of Health which will take complete responsibility of managing the in country transfer of funds through its existing health sector account. Funding for the lower levels will be sent to the decentralized levels using existing structures i.e. through states MOH bank accounts to districts in which similar arrangements as Federal level are in place.

The local procurements of supplies if required, it will follow the National Ministry of Finance system in place for procurement

- Federal Ministry of Health will be responsible for managing and reporting to GAVI the required reports on the use of funds.
The ministry of health has its strong system and well trained staff for managing and monitoring this process

- The NHSCC monitor and follow up the end use of supplies and support.

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

**Coverage Monitoring and Evaluation**
The coverage of the new vaccines will be reported through the existing EPI information system along with the other routine vaccines starting from the service delivery site, districts, states to the National level, using the updated monthly reporting formats.
Continuous monitoring for timely, complete reporting and regular feedback is routinely implemented in the EPI (identified deadlines date for reporting and feedback)
Regular supervision visits will be implemented for all levels as planned using the updated Data Quality Self assessment Tool ( DQS) to monitor the quality index of the services and to verify the accuracy of the reported data at each level.
Monitoring charts will be updated to include the new vaccines through which coverage is monitored against the planned coverage and drop-out rates are calculated.
Supportive supervision visits using special check list will be performed regularly and according to a plan. The DQS tool will be updated to include the new vaccine.
The new vaccine introduction monitoring will be through:
- Monitoring the immunization coverage
- Drop-out rates between doses
- AEFI
- Disease impact overtime using surveillance data.
- Post introduction evaluation (PIE)
- Regular evaluation meetings with states to evaluate the plan implementation, coverage, revision and update of the plan.

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

## 8.2 Procurement and Management for NVS Preventive Campaign(s)

No NVS Prevention Campaign Support this year

## 8.3 Product Licensure

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

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

Sudan requires that all vaccines used in the immunization programme including WHO pre-qualified vaccines are registered by the National Regulatory 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.

MenAfriVac is registered in Sudan.

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 International Health Department of the FMOH, which is responsible to clear the shipments using their vaccines & other supplies clearance exemptions from the Ministry of Finance, through an appointed clearing agent. The shipping documents are sent by the UNICEF Global Freight Forwarders to UNICEF country office as notified party. UNICEF then forwards the shipping documents to the International Health Dept, 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 72 hours 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 customs authority had been oriented about the vaccines and the need to fasten the process of its release, and they do act accordingly. No major problems were faced before.
Immediately from the airport vaccines are transported to the national cold store which is not very far from the airport site.
Since vaccines are procured from WHO pre-qualified suppliers, a few requirement for pre-delivery inspection is 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 National Regulatory Authority in Sudan is the National Medicines and Poisons Board (NMPB) . The NRA is an Agency under the National Ministers Council and it is a WHO-certified center.

Contact details;
Name: Dr. Mohammed Elhassan Imam
Title: General Executive Director
Contact No.: +249900914242
Email: imam@nmpb.gov.sd, moh_akad@hotmail.com

## 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? **December 2013**

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? **December 2016**

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).

Immunization safety is of paramount importance in any mass vaccination campaign since big numbers of injections are given in a short time. Asmany injections expected to be administered during the campaign, the program will give the immunization safety a considerable attention The campaign should be implemented with a high levels of quality of immunization safety that reflect positively on all the beneficiaries (Health care facilities, Injection providers and communities).
Sharp waste management plan is an important component of the immunization safety strategy within the main Men A vaccine introduction plan. The waste management plan will be implemented in collaboration with the environmental health department.
The immunization safety & waste management strategy will contain the following core elements:

Safe practice: all immunization posts will be well prepared to handle immunization procedures properly (fix, outreach and Mobile services). All personnel will be well trained on immunization safety with inclusion of waste management in the curricula of the national training package for the campaign. In addition, that the training will include education on health risks and on safe practice for waste management. Special attention will be made for those who are not regular vaccinators to ensure uniformity in the method of injection and waste disposal.

Locally adapted technical guidelines on how to deal with the sharp waste will be prepared based on the local context of the area, by reviewing the available options for waste management (Waste burial pit or encapsulation, Burning <400oC, including brick oven burners, drum burners, pit burning, or Incineration> 800oC )

Equipment and supplies: All vaccinations will be conducted using AD syringes and safety boxes. The logistic plan will be elaborated for distribution of bundled supplies
Sharps waste management: Safe collection and management of sharp waste.

A National regulatory framework and guidelines will be prepared along with the Men A campaign guidelines for safe sharp waste management during the campaign, taking into consideration the experience in previous campaigns.
The guidelines will include the designation of focal persons at all levels with clear responsibilities to follow on the plan implementation, training and monitoring during the campaign for safe collection, handling, storage, safe treatment and disposal.

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

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

The proposal is being sent to the members of the NHSCC for review, comments, recommendations and endorsement. The official meeting is planned to be conducted within a week time. All comments and recommendations will be sent together with the meeting minutes very soon.

# 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 | ☑ | Ministers signature_for Sudan_Men A proposal sep.2015.zip<br>**File desc:**<br>**Date/time :** 08/10/2015 11:56:38<br>**Size:** 831 KB |
| 2 | MoF Signature (or delegated authority) of Proposal | 4.1.1 | ☑ | Ministers signature_for Sudan_Men A proposal sep.2015.zip<br>**File desc:**<br>**Date/time :** 08/10/2015 11:57:12<br>**Size:** 831 KB |
| 3 | MoE signature (or delegated authority) of HPV Proposal | 4.1.1 | ☒ | No file loaded |
| 4 | Terms of Reference for the ICC | 4.1.2 | ☑ | TOrs_National_Health_Sector_coordination_committee[1](2).doc<br>**File desc:**<br>**Date/time :** 08/09/2015 01:04:08<br>**Size:** 58 KB |
| 5 | Minutes of ICC/HSCC meeting endorsing Proposal | 4.1.3 | ☑ | NHSCC Sub - CCM Minutes 2.pdf<br>**File desc:**<br>**Date/time :** 08/09/2015 02:06:38<br>**Size:** 361 KB |
| 6 | Signatures of ICC or HSCC or equivalent in Proposal | 4.1.3 | ☑ | ICC signature0001.pdf<br>**File desc:**<br>**Date/time :** 09/09/2015 10:43:15<br>**Size:** 511 KB |
| 7 | Minutes of last three ICC/HSCC meetings | 4.1.3 | ☑ | HSCC Meeting's Minutes.zip<br>**File desc:**<br>**Date/time :** 09/09/2015 10:44:57<br>**Size:** 13 KB |
| 8 | A description of partner participation in preparing the application | 4.1.3 | ☒ | No file loaded |
| 9 | Minutes of NITAG meeting with specific | 4.2 | ☒ | NITAG.rar<br>**File desc:**<br>**Date/time :** 08/09/2015 12:30:44 |

| | | | | |
|---|---|---|---|---|
| | recommendations on the NVS introduction or campaign | | | **Size:** 748 KB |
| 10 | Role and functioning of the advisory group, description of plans to establish a NITAG | 4.2.1 | ☑ | NITAG SOPS.pdf<br>**File desc:**<br>**Date/time :** 08/09/2015 02:07:06<br>**Size:** 88 KB |
| 11 | comprehensive Multi Year Plan - cMYP | 5.1 | ☑ | The Sudan cMYP 2012-2016 final 21 Jan 2014.pdf<br>**File desc:**<br>**Date/time :** 08/09/2015 12:49:50<br>**Size:** 1 MB |
| 12 | cMYP Costing tool for financial analysis | 5.1 | ☑ | The Sudan Costing and financing 2012-2016.xls<br>**File desc:**<br>**Date/time :** 08/09/2015 12:53:01<br>**Size:** 3 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 | ☑ | Monitoring and Evaluation survillance plan.docx<br>**File desc:**<br>**Date/time :** 09/09/2015 10:46:54<br>**Size:** 20 KB |
| 14 | Vaccine introduction plan | 5.1 | ☑ | Sudan Men A Rotine Introduction Plan 2016.pdf<br>**File desc:**<br>**Date/time :** 09/09/2015 11:25:38<br>**Size:** 435 KB |
| 15 | Introduction Plan for the introduction of RCV / JE / Men A into the national programme | 7.x.4 | ☒ | No file loaded |
| 16 | Data quality assessment (DQA) report | 5.1.5 | ☒ | No file loaded |
| 17 | DQA improvement plan | 5.1.5 | ☒ | No file loaded |

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|---|---|---|---|---|
| 19 | HPV roadmap or strategy | 6.1.1 | ☒ | No file loaded |
| 20 | Introduction Plan for the introduction of RCV into the national programme | 7.x.4 | ☒ | No file loaded |
| 21 | HPV summary of the evaluation methodology | 5.1.6 | ☒ | No file loaded |
| 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 | ☒ | No file loaded |
| 23 | Campaign target population documentation | 7.x.1 | ☑ | Monitoring and Evaluation.docx<br>**File desc:**<br>**Date/time :** 09/09/2015 08:37:12<br>**Size:** 14 KB |
| 24 | Roadmap or strategy for strengthening a comprehensive approach to pneumonia and/or diarrhoea prevention and treatment | 6.x.6 | ☒ | No file loaded |
| 25 | EVM report | 8.3 | ☑ | Sudan_EVM_report_Dec_2014Final_(2).pdf<br>**File desc:**<br>**Date/time :** 08/09/2015 12:39:39<br>**Size:** 1 MB |
| 26 | Improvement plan based on EVM | 8.3 | ☑ | EVM_improvment plan.xls<br>**File desc:**<br>**Date/time :** 08/09/2015 12:40:28<br>**Size:** 51 KB |
| 27 | EVM improvement plan progress report | 8.3 | ☑ | EVM PLAN implementation status Sep 2015..pdf<br>**File desc:**<br>**Date/time :** 08/09/2015 12:41:27<br>**Size:** 254 KB |

| | | | | |
|---|---|---|---|---|
| 28 | Detailed budget template for VIG / Operational Costs | 6.x,7.x.2 | ☑ | Sudan_VIG Men RI_Operational Cost NVS 2015RI.xls<br>**File desc:**<br>**Date/time :** 08/10/2015 12:00:41<br>**Size:** 54 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 | ☑ | Risk assment.docx<br>**File desc:**<br>**Date/time :** 08/09/2015 02:51:20<br>**Size:** 10 KB |
| 30 | Plan of Action for campaigns | 7.1, 7.x.4 | ☑ | Sudan MenA_mini-Catch up Campaign Introduction plan 2016.pdf<br>**File desc:**<br>**Date/time :** 09/09/2015 11:29:04<br>**Size:** 546 KB |
| | Other | | ☒ | Annex 1 Mini catch up_Operational_Cost Detail.xlsx<br>**File desc:**<br>**Date/time :** 08/10/2015 11:58:18<br>**Size:** 35 KB<br><br>Men A clarifications Response.docx<br>**File desc:**<br>**Date/time :** 11/10/2015 04:04:36<br>**Size:** 24 KB<br><br>Mini catch up campaign section 7.docx<br>**File desc:**<br>**Date/time :** 08/10/2015 11:59:31<br>**Size:** 24 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$

| | | 2016 |
|---|---|---|
| **Number of vaccine doses** | # | 424,300 |
| **Number of AD syringes** | # | 282,600 |
| **Number of re-constitution syringes** | # | 47,100 |
| **Number of safety boxes** | # | 0 |
| **Total value to be co-financed by the Country** ***[1]*** | **$** | 413,500 |

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

| | | 2016 |
|---|---|---|
| **Number of vaccine doses** | # | 1,372,800 |
| **Number of AD syringes** | # | 914,200 |
| **Number of re-constitution syringes** | # | 152,400 |
| **Number of safety boxes** | # | 0 |
| **Total value to be co-financed by Gavi** | **$** | 1,337,500 |

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

| ID | | Data from | | 2016 |
|---|---|---|---|---|
| | **Number of surviving infants** | Table 5.2 | # | 1,437,469 |
| | **Immunization coverage** | Table 5.2 | % | 50 % |
| | **Number of children to be vaccinated with the first dose** | Table 5.2 | # | 718,735 |
| | **Number of doses per child** | Parameter | # | 1 |
| | **Estimated vaccine wastage factor** | Table 5.2 | # | 2 |
| | **Number of doses per vial** | Parameter | # | 10 |
| | **AD syringes required** | Parameter | # | Yes |
| | **Reconstitution syringes required** | Parameter | # | Yes |
| | **Safety boxes required** | Parameter | # | No |
| **cc** | **Country co-financing per dose** | Table 6.4.1 | $ | 0.23 |
| **ca** | **AD syringe price per unit** | Table Annexes 4A | $ | 0.448 |
| **cr** | **Reconstitution syringe price per unit** | Table Annexes 4A | $ | 0.035 |
| **cs** | **Safety box price per unit** | Table Annexes 4A | $ | 0.0054 |
| **fv** | **Freight cost as % of vaccines value** | Table Annexes 4B | % | 5.00 % |
| **fd** | **Freight cost as % of devices value** | Parameter | % | 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 | 2016 | | |
|---|---|---|---|---|---|
| | | | Total | Government | Gavi |
| A | Country co-finance | *V* | 23.61 % | | |
| B | Number of children to be vaccinated with the first dose | *Table 5.2* | 718,735 | 169,701 | 549,034 |
| C | Number of doses per child | *Vaccine parameter (schedule)* | 1 | | |
| D | Number of doses needed | *B x C* | 718,735 | 169,701 | 549,034 |
| E | Estimated vaccine wastage factor | *Table 5.2* | 2 | | |
| F | Number of doses needed including wastage | *D x E* | 1,437,470 | 339,401 | 1,098,069 |
| 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]* | 359,368 | 84,851 | 274,517 |
| I | Total vaccine doses needed | *Round up((F + G) / Vaccine package size) * Vaccine package size* | 1,797,000 | 424,290 | 1,372,710 |
| J | Number of doses per vial | *Vaccine parameter* | 10 | | |
| K | Number of AD syringes (+ 10% wastage) needed | *(D + G) x 1.11* | 1,196,695 | 282,552 | 914,143 |
| L | Reconstitution syringes (+ 10% wastage) needed | *(I / J) x 1.11* | 199,468 | 47,097 | 152,371 |
| 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)* | 1,144,500 | 270,228 | 874,272 |
| O | Cost of AD syringes needed | *K x AD syringe price per unit (ca)* | 536,120 | 126,584 | 409,536 |
| P | Cost of reconstitution syringes needed | *L x reconstitution price per unit (cr)* | 6,982 | 1,649 | 5,333 |
| 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)* | 62,896 | 14,851 | 48,045 |
| 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)* | 1,750,498 | 413,310 | 1,337,188 |
| U | Total country co-financing | *I x country co-financing per dose (cc)* | 413,310 | | |
| V | Country co-financing % of Gavi supported proportion | *U / T* | 23.61 % | | |

## Annex 2 - NVS Routine – Preferred Second Presentation

No NVS Routine – Preferred Second Presentation requested this year

## Annex 3 - NVS Preventive campaign(s)

No NVS Prevention Campaign Support this year

## Annex 4

### Table Annex 4A: Commodities Cost

Estimated prices of supply are not disclosed

### Table Annex 4B: Freight cost as percentage of value

| Vaccine Antigen | Vaccine Type | 2016 |
|---|---|---|
| Meningococcal A, 10 dose(s) per vial, LYOPHILISED | MENINACONJUGATE | 5.50 % |

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

| Vaccine | 2016 |
|---|---|
| **Meningococcal A, 10 dose(s) per vial, LYOPHILISED** | 0.2 |

## Table Annex 4D: Wastage rates and factors

The following table shows the wastage rates for routine and campaign vaccines, set for 2016.

| Vaccine | dose(s) per vial | Maximum Vaccine wastage rate* | | Benchmark Wastage Rate** |
|---|---|---|---|---|
| | | Routine | Campaign | |
| HPV bivalent, 2 dose(s) per vial, LIQUID | 2 | 10 % | 10 % | |
| HPV quadrivalent, 1 dose(s) per vial, LIQUID | 1 | 5 % | 5 % | |
| JE, 5 dose(s) per vial, LYOPHILISED | 5 | 10 % | 10 % | |
| Measles second dose, 10 dose(s) per vial, LYOPHILISED | 10 | 40 % | 40 % | |
| Meningococcal A, 10 dose(s) per vial, LYOPHILISED | 10 | 50 % | 10 % | |
| MR, 10 dose(s) per vial, LYOPHILISED | 10 | 15 % | 15 % | |
| Pneumococcal (PCV10), 2 dose(s) per vial, LIQUID | 2 | 10 % | 10 % | |
| Pneumococcal (PCV13), 1 dose(s) per vial, LIQUID | 1 | 5 % | 5 % | |
| Rotavirus, 2-dose schedule | 1 | 5 % | 5 % | |
| Rotavirus, 3-dose schedule | 1 | 5 % | 5 % | |
| Yellow Fever, 10 dose(s) per vial, LYOPHILISED | 10 | 40 % | 40 % | |
| Yellow Fever, 5 dose(s) per vial, LYOPHILISED | 5 | 10 % | 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 | DT | liquid | IM | 3 | 10 | 3 | |
| Diphtheria-Tetanus-Pertussis | DTP | liquid | IM | 3 | 20 | 2.5 | |
| Diphtheria-Tetanus-Pertussis | DTP | liquid | IM | 3 | 10 | 3 | |
| DTP liquid + Hib freeze-dried | DTP+Hib | liquid+lyop. | IM | 3 | 1 | 45 | |
| DTP-HepB combined | DTP-HepB | liquid | IM | 3 | 1 | 9.7 | |
| DTP-HepB combined | DTP-HepB | liquid | IM | 3 | 2 | 6 | |
| DTP-HepB combined | DTP-HepB | liquid | IM | 3 | 10 | 3 | |
| DTP-HepB liquid + Hib freeze-dried | DTP-Hib | liquid | IM | 3 | 10 | 2.5 | |
| DTP-HepB liquid + Hib freeze-dried | DTP-HepB+Hib | liquid+lyop. | IM | 3 | 1 | 22 | |

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

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

## 12. Banking Form

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

| | | | |
|---|---|---|---|
| **Name of Institution (Account Holder):** | | | |
| **Address:** | | | |
| **City Country:** | | | |
| **Telephone no.:** | | **Fax no.:** | |
| | **Currency of the bank account:** | | |
| **For credit to:** | | | |
| **Bank account's title:** | | | |
| **Bank account no.:** | | | |
| **Bank's name:** | | | |

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

By who is the account audited? National auditting system

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:** |
| |