Application Form for Gavi NVS support

Submitted by

The Government of

Ethiopia

Date of submission: **31 January 2017**

Deadline for submission:

i. **11 January 2017**
ii. 3 May 2017
iii. 1 September 2017

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

Start Year	2016	End Year	2021

Form revised in 2016

(To be used with Guidelines of December 2016)

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

Gavi
GRANT TERMS AND CONDITIONS

FUNDING USED SOLELY FOR APPROVED PROGRAMMES

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

AMENDMENT TO THE APPLICATION

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

RETURN OF FUNDS

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

SUSPENSION/ TERMINATION

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

ANTICORRUPTION

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

AUDITS AND RECORDS

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

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

CONFIRMATION OF LEGAL VALIDITY

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

CONFIRMATION OF COMPLIANCE WITH THE Gavi TRANSPARENCY AND ACCOUNTABILITY POLICY

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

USE OF COMMERCIAL BANK ACCOUNTS

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

ARBITRATION

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

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

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

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

1. Type of Support requested

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

Type of Support	Vaccine	Start Year	End Year	Preferred second presentation[1]
Routine New Vaccines Support	HPV quadrivalent, 1 dose(s) per vial, LIQUID	2017	2021	HPV bivalent, 2 dose(s) per vial, LIQUID

[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.

2. Table of Contents

3. Executive Summary

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

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

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

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

- The role of the Coordination Forum (ICC/HSCC or equivalent) and stakeholders' participation (e.g. government, key donors, partners, key implementers, CSOs) in developing this proposal

In response to the growing concern on cervical cancer disease burden, Ethiopia has decided to strengthen its preventative programs. Since the completion of successful two-year demonstration program, the country intends to apply for support for the national rollout with administration beginning October 2017. This timeline will allow for synchronizing the HPV vaccine program with the academic calendar, which will be crucial for leveraging administration through school outreach. Through coordination with the in-country Ministry of Education(MoE) two doses of HPV will be administered in October and April/early may, respectively.

Ethiopia requests support for the five years during the period of 2017 to 2021. The routine HPV program will be held in outreaches to schools and community sites, as well as available at health facilities. The program will be introduced nationally. It will include advocacy at all levels of the health system. Moreover, given the complex nature of the HPV vaccine introduction there will be specific strategies for reaching the new target group, including a well-established communication plan and crisis management response system in place.

The EPI team has established connections to facilitate integrated planning of the HPV program through engaging new stakeholders to the vaccines arena, such as inviting the various departments at MoH, MoE, and CSOs to join the drafting of the HPV vaccine introduction plan and this application. This Inter-Agency Coordinating Committee has also deliberated on critical sections of the application following recommendations made by the National Immunization Technical Advisory Group (NITAG) and ICC.

The preferred vaccine for introduction is the quadrivalent 1 dose presentation vaccine due to its added advantage in preventing other anogenital diseases and its lower wastage rate than the 2-dose bivalent presentation.

A total of USD 14,841,671.98 is requested to vaccinated a total of 12,968,245 girls, including the first-year additional multi-year cohort of age 10-14 girls (6,454,175) beside the routine cohort of girls aged 9 years old (6,514,700) both in school and out of school over the five years.

A total of 3,118,951 surviving infants are targeted for the routine immunization nationally with 11 antigens. The most recent WHO and UNICEF estimates of national immunization coverage (WUENIC) for 2015 shows; BCG 75%, DTP3 86%, Polio3 85%, MCV178%, Rota 83% and PCV3 85%.

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 Ethiopia 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:

HPV quadrivalent, 1 dose(s) per vial, LIQUID routine introduction

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

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

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

The payment for the first year of co-financed support will be around **October 2017** for HPV quadrivalent, 1 dose(s) per vial, LIQUID.

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	Yifru Brhan (Prof)	**Name**	Admasu Nebebe
Date		**Date**	
Signature		**Signature**	

Proof of involvement of the Ministry of Education will also be required for HPV Routine Support. The Ministry of Education will either have to be involved in the ICC process (preferred option) and, for countries choosing schools as a location for vaccinations, or choosing a school link strategy, the Minister of Education (or delegated authority) must provide its signature. The signature is attached as DOCUMENT NUMBER : 3 in Section 10. Attachments.

Minister of Education (or delegated authority)	
Name	Niguse Beyene Belew
Date	
Signature	

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

Full name	Position	Telephone	Email
Ephrem Tekle Lemango	MCH Director	+251 944703766	mchdirector.fmoh@gmail.com

4.1.2. National Coordination Forum (Interagency Coordinating Committees (ICCs), Health Sector Coordinating Committees (HSCCs), and other equivalent bodies)

To be eligible for support, Gavi asks countries to ensure a *basic* functionality of their Coordination Forum (ICC/HSCC or equivalent body). Countries can demonstrate this by adhering to the requirements listed in section 5.2 of the General Guidelines. The information in this section and a set of documents submitted along with this application will help the Independent Review Committee (IRC) to assess adherence.

Profile of the Coordination Forum

Name of the Forum	
Organisational structure (e.g., sub-committee, stand-alone)	

The Terms of Reference for the Coordination Forum is attached as DOCUMENT NUMBER : 4. The Terms of Reference should include all sections outlined in Section 5.2 of the General Guidelines..

Please describe the role of the Coordination Forum and stakeholders' participation (e.g. government, key donors, partners, key implementers, CSOs) in developing this proposal:

The main goal of the ICC is to support and capacitate the MOH to coordinate the immunization program of the country effectively and efficiently. Hence, key elements of collaboration for the functionality of the ICC include:

• Broad-based organization representation, support and commitment (financial and technical) that enables harmonization of priorities and alignment of key activities

• Leadership and active participation from the MOH including technically qualified and well defined EPI unit. This facilitates country owned and led programming, encourages partnership, provides institutional memory and enables consistency. The MOH has demonstrated a strong leadership by establishing EPI case team staffed with sizable number of staff and keeping immunization among its prioritized high impact interventions.

• Clearly defined and jointly agreed terms of reference for providing support to immunization activities. Partner's input in strategic directions ensures greater acquiescence and allows them an in-depth understanding of the technical choices and existing capacity that influences important decisions. However, member organization should stay away from agency specific agenda that could cause complexity in the coordination of activities and compete with technical and epidemiological priorities.

• Mutual respect and acknowledgment of each organization and individual's roles and commitment. As long as partners harmonized their priorities and aligned their major activities with the immunization program of the country, it is assumed that all partners are contributing to the success and failure of the program. Trying to link specific contribution to a picky result in an effort to gauge the greatest share of credit can create considerable tension between partner organizations. For this reason, all stakeholders should be sensitive to such demands so that the spirit of collaboration and active participation will not be endangered.

• Collective monitoring and evaluation of activities: It is believed that a multi-organization input and analysis of problems provides a better perspectives and insights beyond those of any single organization. Hence, collective monitoring and evaluation of performances strengthen future planning, implementation, monitoring and evaluation efforts.

• Collective ownership of the immunization program: full engagement and ownership will allow having a shared understanding and creating individual accountability to the program.

4.1.3. Signature Table for the Coordination Forum (ICC/HSCC or equivalent body)

We the members of the ICC, HSCC, or equivalent committee *[1]* met on the **26/01/2017** to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation which is attached. The minutes from the meeting endorsing the proposal and of the meetings of the past 12 months are attached as Document number 5. The signatures endorsing the proposal are attached as Document number 7 (please use the list for signatures in the section below).

Function	Title / Organisation	Name	Please sign below to indicate the attendance at the	Please sign below to indicate the endorsement of

			meeting where the proposal was endorsed	the minutes where the proposal was discussed
Chair	Dr/ FMOH	Kebede Worku		
Secretary	Dr/ FMOH	Ephrem Tekele		
Members				

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

The minutes from the meeting endorsing the proposal and of the meetings of the past 12 months are attached are attached as DOCUMENT NUMBER : 6.

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 **05/01/2017** 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 31.

4.2.1. The NITAG

Profile of the NITAG

Name of the NITAG	Ethiopian National Immunization Technical Advisory Group (E-NITAG)
Year of constitution of the current NITAG	2016
Organisational structure (e.g., sub-committee, stand-alone)	Stand-alone
Frequency of meetings	At least two times a year

Function	Title / Organisation	Name
Chair	Professor, Epidemiologist and Public Health expert, Addis Continental School of Public health	Prof. Yemane Berhane Tsehay
Secretary	National EPI Coordinator; Ministry of Health	Mrs Liya Wondwossen
Members	1. Immunologist and Researcher at Armaur Hansen's research institute	Dr. Liya Wassie
	2. Paediatrician and Infectious Disease, Nutrition & Vaccine specialist; Addis Ababa University	Prof. Telahun Teka Wolde
	New born and Child health specialist; Addis Ababa University	Prof. Bogale Worku Feye
	4. Infectious disease and Vaccinology specialist; Addis Ababa University	Prof Amha Mekasha Wondimagegnehu
	Gynecologist and Obstetrician; Addis Ababa University	Dr. Yirgu Gebrehiwot

Major functions and responsibilities of the NITAG

1. Conduct policy analysis and determine the optimal national immunization policies
2. Guide the national government and the national immunization programme (NIP) on the formulation of short and long-term strategies for the control of vaccine preventable diseases through immunization
3. Advise the national authorities in the monitoring and evaluation of the national immunization programme and provide recommendations on the continuation or modification of existing programmatic activities.
4. Identify the need for further data for policy-making and advise the government in the collection of these data.

Help to keep the national authorities and the immunization programme updated on the latest scientific developments in the area of vaccines and vaccine-preventable diseases.

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

5. Immunisation Programme Data

5.1 Background information

Please complete the table below, using the most recent data from available sources. Please identify the source of the data, and the date and attach the source document, where possible. The following documents should be referred to and/or attached:

- Comprehensive Multi-Year Plan for Immunisation (cMYP) (or equivalent plan). Please attach as DOCUMENT NUMBER 9.
- New Vaccine Introduction Plan(s) / Plan of Action. Please attach as DOCUMENT NUMBER 12.
- New Vaccine Introduction Checklist, Activity List and Timeline. Please attach as DOCUMENT NUMBER 12.
- Effective Vaccine Management (EVM) assessment. Please attach as DOCUMENT NUMBER 20.
- Two most recent annual WHO/UNICEF Joint Reporting Forms (JRF) on Vaccine Preventable Diseases.
- Health Sector Strategy documents, budgetary documents, and other reports, surveys etc, as appropriate.
- In the case of Yellow Fever and Meningitis A mass preventive campaigns, the relevant risk assessments. Please attach as DOCUMENT NUMBER 24 and DOCUMENT NUMBER 25.

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

	Figure	Year	Source
Total population	94,440,104.00	2016	Projected from 2007 census (CSA)
Birth cohort	3,173,187.00	2016	Projected from 2007 census (CSA)
Infant mortality rate (per 1000)	48.00	2016	EDHS
Surviving infants*[1]*	2,984,307.00	2016	Projected from 2007 census (CSA)
GNI per capita (US$)	762.00	2016	National Health Account (NHA)
Total Health Expenditure (THE) as a percentage of GDP	4.56	2016	HSTP -2015-2020 Ethiopia
General government expenditure on health (GGHE) as % of General government expenditure	9.60	2016	HSTP -2015-2020 Ethiopia

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

5.1.1 Lessons learned

Routine New Vaccines Support

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

Lessons Learned	Action Points
The engagement of political and community leaders at all levels during the Rota and PCV introductions gained support for activities surrounding social mobilization, logistics, and monitoring and evaluation. These actions critically ensured an increased demand to both antigens as well as community ownership of the program. Clear evidence of the disease burden on pneumonia caused by pneumococcal and diarrheal disease caused by Rota virus	Engage political and community leaders early on during the planning process. In particular, to ensure the buy in for strong: Social mobilization, with specific focus on increasing demand and building leaders to buy in to fight rumor and for crisis mitigation plan. Microplanning to ensure that timed outreaches are appropriate according to seasonal attendance at school and exam/holiday schedule Monitoring program to ensure that administrations are recorded and coverage is cascaded up for national aggregate

and the potential impact of PCV and Rota vaccines were made available to key decision makers to advocate for the introduction as well as emphasize the importance of strategic planning at all levels for introduction and sustained routine immunization. □ The presence of strong health system in the country, decentralized organization of health structure enabled Ethiopia to successfully introduce PCV and Rota vaccine. □ Early engagement and collaboration with health and partners allowed for stronger PCV and Rota introduction □ Leveraging on lessons learnt from previous vaccine introductions in other countries to inform policy, such as eligibility for Rota, resulted in greater coverage of infants. □ By using existing community partnerships and community structures, EPI is able to more quickly disseminate information, and build awareness and trust for new vaccines being introduced. This was observed during the PCV and Rota introductions as being critical for accelerated coverage of the vaccines. □ Ensuring that HCWs and HEW have access to capacity building services, such as trainings and clear guidelines led to more effective introductions and health services.	□ Logistics are managed timely and appropriately □ Build clear evidence base of cervical cancer and HPV burden in Ethiopia, as well as the impact of the HPV vaccine as a preventative tool to halt the spread and mortality rate. This evidence shall be shared with □ Decision makers □ Leaders at national and subnational level □ HFs, HCWs, schools, and other relevant stakeholders to build support for HPV introduction and increase demand. □ Leverage the decentralized nature of the existing health structure to get both technical as well as administrative support at each level. □ The HPV introduction will, and has already begun, to build strong relationships and collaborate with a number of new stakeholders, including non-traditional partners such as CSOs and the education sector. These new partners will inform □ Planning, such as the administration schedule □ Social mobilization for eligible girls, both those in school and out of school □ Education of new partners, such as teachers □ Social mobilization to ensure acceptability for caregivers and reduce fears or rumors □ Use in-country and global knowledge of HPV introduction best practices. This can be done through research as well as leveraging key lessons from existing in country partners and regional meetings. □ Build community buy in for the HPV introduction to ensure: □ Quality services provided □ Demand is generated □ Sustainability through linking with other adolescent programing □ Capacity building for the HPV program will occur at all leaves of the health system, as well as in engaging new partners (e.g. educators) with similar knowledge. These aids will be developed by the NVI technical working group and will include: □ Trainings □ Manuals for reference □ And guidelines for vaccination and explain the disease

5.1.2 Health planning and budgeting

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

The midterm strategic planning and budgeting cycle of health sector strategic plan is in line with national growth and transformation plan and rolling every five years, whereas the annual operational plan and Woreda based planning is implemented from July to June annually. The current health sector transformation (HSTP) which is the health sector part of the second Growth and transformation plan of the country (GTP II), is being implemented from July 2015 to June 2020.

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

The current strategic plan for health sector is the Health Sector Transformation Plan (HSTP) implemented from 2015/16 to 2019/20 covers from July 2015 to June 2020

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

The cMYP (2016-2020) is aligned with the content and timing of the HPV vaccine national introduction proposal.

Please indicate the national planning budgeting cycle for health

The national health sector planning and budgeting cycle for operational plan is annually from July 8 to July 7

of the following year

Please indicate the national planning cycle for immunisation

The national planning cycle for immunization is the same as the health sector i.e. July 8 to July 7 of the following year.

5.1.3 Coverage and equity

Please describe any health systems bottlenecks or barriers to access, utilisation and delivery of immunisation services at district level (or equivalent), for example geographic, socio-economic and/or gender-related barriers. Please indicated if there are specific populations of concern. If available, please provide subnational coverage and equity data highlighting geographic, socio-economic, gender-related, or other barriers and any other relevant categories of vulnerable or high-risk populations.

The specific challenges that constrained faced by the immunization program in Ethiopia have been well-documented in the past three years with a variety of high-quality, formal various program evaluations, assessments and surveys in the past three to five years. Most notably, this the improvement plan takes into consideration the results findings of the 2012 National Immunization Coverage Survey (2012); the 2013 Post Introduction Evaluation of Pneumococcal Vaccine (2013); the survey 2012 study on Socio-economic, Behavioral and Health Services Determinants of Immunization Service Utilization (2012); the JSI/ARISE Evaluation of the Drivers of Routine Immunization System Performance in Ethiopia (2012); and the Effective Vaccine Management Assessment (2013), Logistics and Cold Chain Report (2011 & 2013). Key challenges and barriers that which reflect hamper reflected major problems in the various immunization service access and utilization are well reflected in the above-mentioned program evaluation studies. delivery system and components.

The sited problems include, but not limited to:

- Infrastructure related barriers such as distance between villages and health facilities, road access, transportation shortage, for example in pastoralist regions the settlement is dispersed and periodic movement is common which hindered immunization service delivery. especially transport and inputs for cold chain equipment in most rural agrarian and pastoralist regions including.
- Shortage and frequent turnover of high skilled human resource particularly in hard to reach woreda. attrition are the major challenges for health programme.
- shortage of cold chain equipment such as SDD in hot weather and hard to reach woredas
- suboptimal functioning of logistics and cold chain management due to inadequate knowledge and skill at various level and particularly at lower woreda and health facility level
- delay in procurement and installation of SDDs refrigerators in hard to reach areas.
- lack of tailored strategy for reaching hard to reach areas.
- Cultural and traditional practices hinder girls and women empowerment.
- Inadequate efforts to increase health awareness among communities to increase demand for service to counteract rumors. For example, majority of care takers responded that time of immunization unknown, fear of side effects and child crying, unaware of the need to return for the next vaccination, rumors and community/family/elders influence); poor interpersonal communication between health service provider and caretakers; and low level of knowledge of communities on immunization are sited as key barriers of immunization in 2012 behavioral determinants study.

Please explain how the proposed NVS support (activities and budget) will be used to improve coverage and equity of routine immunisation with reference to specifically identified health systems bottlenecks and/or specific populations of concern. For countries that will be receiving Gavi HSS and/or CCEOP funding concurrently with NVS funds, please also highlight how NVS funds will support/complement/leverage specific activities or investments included in those other grants.

To address these barriers to access and utilization of immunization service delivery various initiatives are being implemented and planned to strengthen in the future which include but not limited to:

- Expansion of health facilities particularly health posts and health centers in emerging regions through support from federal government.
- Periodic intensification of immunization service through mobile and extended outreach services.
- Deployment and capacity building of health workers on immunization and cold chain management.

- Pastoralist HEP strategy prepared to optimize the health extension program in pastoralist and hard to reach areas. Accordingly, the knowledge and skill of HEWs in pastoralist regions is upgraded through in-service and pre-service training.
- To address demand side barriers, the women health development army in agrarian regions and the community social mobilization committee in pastoralist woredas are equipped with necessary information on vaccination program including the new vaccines information and supported the introduction and continuing their support for the routine immunization.
- National Health promotion and communication strategy is developed and launched which can be adapted to local context
- Since 2004, routine EPI coverage has improved significantly. In 2015, National Penta3 admin coverage was 96% and measles coverage was 87%. However, there regional variation in Penta 3 coverage between agrarian and pastoralist regions- majority districts in pastoralist regions reported less than 70% coverage in 2015. Regions such as Gambella, Somali, Afar and Benishangul- Gumuz have very low coverage, due to poor infrastructure, geographical inaccessibility, security and high staff attrition rates.

- In 2015, National Penta3 admin coverage was 96% and measles coverage was 87%. However, there is regional variation in Penta 3 coverage between agrarian and pastoralist regions- majority districts in pastoralist regions reported less than 70% coverage in 2015. Regions such as Gambella, Somali, Afar
- and Benishangul- Gumuz have very low coverage, due to poor infrastructure, geographical inaccessibility, security and high staff attrition rates. Refer EDHS 2016 as well for urban/rural disparity

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.

- According to the 2016 EDHS, the proportion of fully vaccinated children by sex was 36.5% for males and 40.3% for females. This shows a little difference of coverage by gender. However, the difference in coverage is wide by residence and across urban rural and geographic regions. For example, full vaccination coverage is much higher in urban 65 percent than rural areas which is only 35 percent. Specifically, full vaccination coverage is highest in Addis Ababa (89 percent) and lowest in Afar (15 percent). Vaccination coverage increases with mother's education. About 3 in 10 (31 percent) of children whose mothers have no education are fully vaccinated compared with more than 7 in 10 (72 percent) of children whose mothers have more than a secondary education. Similar patterns are observed by household wealth as well. For example, only 26.4 percent of children among the lowest wealth quantile families are fully vaccinated compared with 61.2 percent of children in the highest quantile are completed all the required vaccination doses as per their age.

As lessons learned from the polio practice, there is an increased participation and engagement of community, civil society organization and other partners at all decentralized level (regional and zonal, woreda and kebele level). For instance, CSO such as Islamic Affairs Supreme Council in Ethiopia Somali

- Region played critical role during polio eradication campaigns. Strengthening engagement of CSOs, community plat forms such as clan and religious leaders and other social networks, strengthen social mobilization committees will be key activities to increase immunization uptake. Cultural and traditional medias and approaches (religious sermons, market places, water points, and related public gatherings) will be used to reach the mass. Appropriate interpersonal communication such as "dagu" system in Afar region will be used. Improving HEWs and W/HDAs IPC skills is being worked through providing training and support materials.

- These initiatives are reflected well reflected in the four HSTP transformation agendas (woreda transformation, information revolution, equity plan and enhancing caring respectful and compassionate health workers). Addressing equity is also well reflected in the HSTP document, equity plan, draft pastoralist HEP and other strategic and operational documents.

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

Routine reporting system does not collect sex disaggregated data. However, population based surveys such as national immunization coverage survey (2012), DHS showed no significant discrepancy between both sexes in coverage with routine immunization but there are differences in utilization of the service among different population groups as indicated above

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.

Ethiopia is a stable and peaceful country with no major security concerns. However, the country is neighboring with fragile countries such as South Sudan, Somali, and Eretria and receiving a lot of refugees from these countries.

There is well established mechanism for delivering of basic health services to refugee communities in Ethiopia. Routine immunization services are being rendered in all refugee sites by refugee health centers. Refugee health centers will be the primary venue of delivering HPV vaccinations for target eligible in refugee communities. ARRA is the responsible government agency for service delivery, UNICEF procures vaccines while UNHCR is responsible to coordinate refugee related activities and provide technical and financial support. MoU is signed between FMOH, ARRA, UNHCR and UNICEF regarding provision of vaccination services to refugees. Good relationship exists between ARRA and FMOH and they are also part of the immunization task force and they actively participate in meetings. Refugee centers have been providing routine and SIAs services which are being successfully provided with high coverage.

Based on experiences of delivering vaccination services to refuges, it is believed that HPV vaccine can also be smoothly introduced in the refugee settings. Organizations that deal with refugee health will be informed about HPV vaccination and they will be invited to participate in advocacy workshops. Staffs working in refugee health facilities will be trained together with health workers serving the host community. Health education will be provided to refugee communities include for target girls. The number of refugees will be updated by ARRA and the data will be shared with FMOH for planning and resource allocation purpose. Refugees will be provided with vaccines and supplies and all necessary materials such as microplaning formats, training guidelines, IEC materials, and recording and reporting formats. Refugee health facility readiness assessment will be done and district health offices will provide the necessary technical and logistics to solve issues. The district health office will also conduct supportive supervision and provide on the job support to refugees. The facility in the host community will be responsible to provide HPV vaccination in refugees where there is significant gap related to human resource capacity and/or logistics or functionality of the health facilities.

5.1.4 Data quality

To support country efforts to strengthen the availability, quality and use of vaccination coverage data for strengthened programme management, Gavi requires that countries applying for all types of Gavi support to undertake routine monitoring of vaccination coverage data through an annual desk review; conduct periodic (once every five years or more frequently where appropriate) in-depth assessments of routine administrative vaccination coverage data; conduct periodic (at least once every five years) nationally representative vaccination coverage surveys; and develop and monitor plans for improving vaccination coverage data quality as a part of their own core work plans.

5.1.5 HPV specific facts

Countries applying for HPV that have already conducted a demonstration or pilot programme, should include details on specific lessons learned for HPV vaccine delivery.

Key programmatic areas	**Lessons Learned**	**How these areas have been addressed in a National Plan**
Preparation & planning	□ Involving all stakeholders from the beginning allowed for more informed decisions throughout the planning process in getting parental buy in and on direct involvement of community mobilization. □ Maintaining the technical working group allowed for greater support and advocacy throughout the introduction process (from application to approval and implementation to monitoring coverage. □ The timing of HPV1 was late, which lead	□ Stakeholders have already been mapped and officially invited to support the full HPV introduction planning, preparation, and implementation process. Should new potential stakeholders be identified, they will be similarly engaged □ The technical working group for introduction will remain intact and coordinate the full introduction process. □ Microplanning will be done and will engage all relevant stakeholders, including non-traditional

	to HPV2 being scheduled during exam time, increase risk of drop out and interrupting the education schedule	partners to ensure that the vaccine schedule is logical and does not disrupt other activities, while leveraging potential synergies.
Communication & social mobilization	□ Involvement of community leaders was useful to link out of school girls and mobilize school girls. However, there was no list of out of school girls at health facility nor at schools – which hindered ability to understand coverage of this population. □ Delayed printing of IEC materials delayed HPV rollout activities □ Advocacy to regions and districts was appreciated and bolstered the demand for the vaccine	□ The HPV program will use the community leaders and structure to identify and list out of school girls to link them with vaccination sites – this will also provide guidance towards coverage and any existing gap in this population □ The HPV program will push for early preparation of IEC materials to ensure that they are developed in time for other rollout activities □ The program will conduct advocacy to all regions and districts with attention across sectors, including outreach to new stakeholders
Delivery strategies	□ School based vaccination was effective to reach high coverage. However, there was inadequate follow up of girls who were absent, during vaccination periods. □ There was no formal structure to reach out of school girls, and therefore there was likely low coverage of this population	□ School based vaccination will be the main strategy. There will be clear school revisit plan and referral of girls who missed class during vaccination. □ Out of school girls will be traced and linked to health facilities using community volunteers and kebele leaders.
Coverage	□ High coverage was achieved in year one of the HPV demo. In Aheferom district the HPV2 coverage was 76.8% (in-school=78.5 and out of school= 7.9%) and in Gomma the coverage was 96.8% (in-school=96.7 and out of school= 100%). The dropout rates in the two districts were low, 5.6% in Aheferom and 3.1% in Gomma. Please annex for detailed information on HPV coverage. • There was denominator discrepancy between actual school attendance and counting of out of school girls and central estimate. Dose 1 vaccinated girls were used as target for dose 2	□ Target population will be set using census and school data. □ For out of school girls, the program will collaborate with community leaders, HEWs to ensure the understanding of identifying and calculating the cohort and coverage (to be emphasized during training)
Reporting & monitoring	□ HMIS does not include indicators on HPV vaccination. □ Vaccination card printing was delayed, as such recording and reporting formats are not integrated with routine services. □ Reporting timeline of HPV vaccination was delayed, which confounded ability to understand coverage	□ Integrate HPV vaccination monitoring indicator in consultation with PPD. Use the opportunity of HPV to design updated immunization registration and reporting format. □ Set clear timelines of when HPV report is to be done for effective coverage understanding and timely response to bottlenecks.
Sustainability	□ The HPV vaccination demo was not integrated with other health or adolescent interventions □ HPV will pose a strain on the financial resources of EPI, which could limit the ability of the program and/or routine immunization if not thoughtfully attended to and allocated within the budget	□ Ministry of health and Ministry of Education agreed to establish school health center and consultative workshop was organized with stakeholders. □ The school health center is mandated to provide health promotion, disease prevention and basic curative services. In addition there will be a strong linkage with the existing health system for additional service

For each district in which the demonstration/ pilot programme was implemented, please complete the following:

District Information	
Name of the district	Gomma district in Jimma Zone of Oromia Region,
Size of target population of the district	
Describe how the district is divided into rural and urban areas:	Grade 4 students: 4186 10 years out of school girls: 54 36 rural areas/kebeles and 4 urban areas/kebeles
Delivery strategy(ies) used (e.g. school based, health centre based, campaign)	School based strategy used for in-school girls and health center based vaccination was conducted for out of school girls
District Information	
Name of the district	Ahferom district in Central Zone of Tigray Region
Size of target population of the district	
Describe how the district is divided into rural and urban areas:	Grade 4 students: 3097 10 years out of school girls: 6 29 rural areas/kebeles and 4 urban areas/kebeles
Delivery strategy(ies) used (e.g. school based, health centre based, campaign)	School based strategy used for in-school girls and health center based vaccination was conducted for out of school girls

5.2. Baseline and Annual Targets for Routine Vaccines

For HPV, Gavi supports the vaccination of girls aged 9-14 years, based on the following cohorts:

- Routine cohort – countries are required to identify a single year cohort of girls to be immunised on a routine basis. (e.g. 9 years old)
- Additional multi-age cohort – in the first year of introduction (or initial year of each phase, if country choose phased introduction), countries also have the option to immunise additional girls within the recommended age groups (e.g. 10-14 years), that are older than the routine cohort.

Note: Countries may choose proxy age of girls based on a school grade (e.g. grade 5 corresponds to approximately 10 year olds). However, grades usually have a range of different aged girls so it is important to keep in mind that girls under 9 years should not be vaccinated, and doses for girls older than 14 years are not provided by Gavi.

Please specify the chosen age for the routine cohort HPV vaccination: e.g. 9 years

9 years

If relevant, please specify the chosen age range for the additional multi-age cohort in the year of introduction: e.g. 10, 11, 12, 13, 14 years
From :

10 years

To :

14 years

Will a phased introduction approach be adopted?

No

If a phased approach will be adopted, please provide an explanation for this approach.

Please refer to cMYP pages to assist in filling-in this section. For HPV, please also refer to Annex 3 of the HPV Guidelines.
The Base year information should be completed for the year in which the application is being completed.

Table 5.2: Baseline NVS routine figures

Number	Base Year	Baseline and Targets			
	2016	2017	2018	2019	2020
Total births	3,173,187	3,255,690	3,340,338	3,427,187	3,516,294
Total infants' deaths	152,313	136,739	120,252	102,816	84,391
Total surviving infants	3,020,874	3,118,951	3,220,086	3,324,371	3,431,903
Total pregnant women	3,173,187	3,255,690	3,340,338	3,427,187	3,516,294
Target population (routine cohort) vaccinated with OPV3*[1]*	2,864,935	2,970,042	3,078,678	3,190,956	0
OPV3 coverage*[2]*	95 %	95 %	96 %	96 %	0 %
Target population (routine cohort) vaccinated with DTP1*[1]*	2,869,830	3,025,382	3,187,885	3,324,371	3,431,903
Target population (routine cohort) vaccinated with DTP3*[1]*	2,748,995	2,900,624	3,059,082	3,191,396	3,294,627
DTP3 coverage*[2]*	91 %	93 %	95 %	96 %	96 %

Wastage*[3]* rate in base-year and planned thereafter (%) for DTP	6	5	5	5	5
Wastage*[3]* factor in base-year and planned thereafter for DTP	1.06	1.05	1.05	1.05	1.05
Number of girls in the routine cohort	1205464	1236808	1268963	1301956	1335807
Target population (routine cohort) vaccinated with 1st dose of HPV	0	1,051,285	1,142,067	1,236,858	1,269,017
Target population (routine cohort) vaccinated with 2nd dose of HPV	0	989,445	1,078,619	1,171,760	1,202,226
HPV quadrivalent coverage 1st dose	0 %	85 %	90 %	95 %	95 %
HPV quadrivalent coverage 2nd dose	0 %	80 %	85 %	90 %	90 %
Additional multi-age cohort					
Number of girls in the additional multi-age cohort	6290619	6454175			
Target population (additional multi-age cohort) vaccinated with 1st dose of HPV quadrivalent	0	5486049			
Target population (additional multi-age cohort) vaccinated with 2nd dose of HPV	0	5163340			
HPV quadrivalent coverage*[2]*	0%	85%	0%	0%	0%
HPV quadrivalent coverage 2nd dose	0%	80%	0%	0%	0%
First Presentation: HPV quadrivalent, 1 dose(s) per vial, LIQUID ROUTINE COHORT + ADDITIONAL MULTI_AGE COHORT					
Wastage*[3]* rate in base-year and planned thereafter (%)	5	5	5	5	5
Wastage*[3]* factor in base-year and planned thereafter (%)	1.05	1.05	1.05	1.05	1.05
Maximum wastage rate value for HPV quadrivalent, 1 dose(s) per vial, LIQUID	5 %	5 %	5 %	5 %	5 %
Second Presentation: HPV bivalent, 2 dose(s) per vial, LIQUID ROUTINE COHORT + ADDITIONAL MULTI_AGE COHORT					
Wastage*[3]* rate in base-year and planned thereafter (%)	5	5	5	5	5
Wastage*[3]* factor in base-year and planned thereafter (%)	1.05	1.05	1.05	1.05	1.05
Maximum wastage rate value for HPV bivalent, 2 dose(s) per vial, LIQUID	10 %	10 %	10 %	10 %	10 %
Target population (routine cohort) vaccinated with 1st dose of MCV	2,805,249	2,939,423	3,047,263	3,158,724	3,273,921
MCV coverage*[2]*	93 %	94 %	95 %	95 %	95 %
Annual DTP Drop out rate [(DTP1 – DTP3) / DTP1] x 100	4 %	4 %	4 %	4 %	4 %

[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.

Number	Baseline and Targets
	2021
Total births	3,607,718
Total infants' deaths	64,939
Total surviving infants	3,542,779
Total pregnant women	3,607,718
Target population (routine cohort) vaccinated with OPV3*[1]*	0
OPV3 coverage*[2]*	0 %
Target population (routine cohort) vaccinated with DTP1*[1]*	3,542,779
Target population (routine cohort) vaccinated with DTP3*[1]*	3,471,923
DTP3 coverage*[2]*	98 %
Wastage*[3]* rate in base-year and planned thereafter (%) for DTP	5
Wastage*[3]* factor in base-year and planned thereafter for DTP	1.05
Number of girls in the routine cohort	1370538
Target population (routine cohort) vaccinated with 1st dose of HPV	1,302,011
	1,233,484
HPV quadrivalent coverage 1st dose	95 %
HPV quadrivalent coverage 2nd dose	90 %
Additional multi-age cohort	
Number of girls in the additional multi-age cohort	
Target population (additional multi-age cohort) vaccinated with 1st dose of HPV quadrivalent	
Target population (additional multi-age cohort) vaccinated with 2nd dose of HPV	
HPV quadrivalent coverage*[2]*	0
HPV quadrivalent coverage 2nd dose	0
First Presentation: HPV quadrivalent, 1 dose(s) per vial, LIQUID ROUTINE COHORT + ADDITIONAL MULTI_AGE COHORT	
Wastage*[3]* rate in base-year and planned thereafter (%)	5
Wastage*[3]* factor in base-year and planned thereafter (%)	1.05
Maximum wastage rate value for HPV quadrivalent, 1 dose(s) per vial, LIQUID	5 %
Second Presentation: HPV bivalent, 2 dose(s) per vial, LIQUID ROUTINE COHORT + ADDITIONAL MULTI_AGE COHORT	
Wastage*[3]* rate in base-year and planned thereafter (%)	5
Wastage*[3]* factor in base-year and planned thereafter (%)	1.05
Maximum wastage rate value for HPV bivalent, 2 dose(s) per vial, LIQUID	10 %
Target population (routine cohort) vaccinated	3.392.973

with 1st dose of MCV	
MCV coverage*[2]*	96 %
Annual DTP Drop out rate [(DTP1 – DTP3) / DTP1] x 100	2 %

[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.

5.2.1 Description of routine and additional multi-age cohorts

Provide the percentage of primary school enrolment

NER is 94.3% nationally (male 97.5% and female 91%)

Provide the percentage of secondary school enrolment

NER is 21% nationally (Male 21.16% and female 20.85%)

Provide the average age of entry for secondary school

The average age of entry for secondary school is 15 years

Please provide a source for the enrolment data (e.g., national statistics office, MOE, recent census, school registers, etc.)

The census Ministry of Education(MOE) report 2014-15

Please provide a source for the enrolment data (e.g., national statistics office, MOE, recent census, school registers, etc.)

The census Ministry of Education report 2014-15

5.2.2 HPV specific targets

Girls to be vaccinated with HPV should be within the WHO-recommended target population of 9-14 years old girls

Please specify the source of data that was used to estimate the number of girls in the routine and, if relevant, additional multi-age cohorts and reported in the above table under "Target population (routine cohort) vaccinated with HPV" and "Target population (additional multi-age cohort) vaccinated with HPV"

Projection based on the 2007 census and MoE 2014/15 Education statistics.

5.3. Targets for Preventive Campaign(s)

No NVS Prevention Campaign Support this year

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

No One time mini-catchup campaign this year

5.5 Targets for Follow up Campaign

Table 5.5 Target figures for measles / MR campaign (Please ensure targets are consistent with Section 7 and the Plan of Action in Section 9) COMPLETE SECOND AND THIRD COLUMNS ONLY FOR PHASED CAMPAIGNS.

	Target
Insert Year	
Target age group	Start
	End
Total population in the target group (nationally)	
% of population targeted for the campaign	
Number to be vaccinated with measles / MR vaccine during the campaign	

*Phased: If a portion of the country is planned (eg. 1/3 of the country each year for 3 years)

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

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

6.1.1 HPV burden specific information

Has the country undertaken an assessment of the burden of cervical cancer? If so, describe the burden, and when and how the assessment was done. If not, countries may report on Globocan data (available on the WHO HPV information Centre website at http://www.who.int/hpvcentre/en).

- Human papillomavirus (HPV) infection is now a well-established cause of cervical cancer and there is growing evidence of HPV being a relevant factor in other anogenital cancers (anus, vulva, vagina and penis) and head and neck cancers. HPV types 16 and 18 are responsible for about 70% of all cervical cancer cases worldwide. HPV vaccines that prevent against HPV 16 and 18 infections are now available and have the potential to reduce the incidence of cervical and other anogenital cancers (WHO 2009).

- Ethiopia has a population of 20.9 million women ages 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 4648 women are diagnosed with cervical cancer and 3235 die from the disease. Cervical cancer ranks as the 2nd most frequent cancer among women in Ethiopia, and the 2nd most frequent cancer among women between 15 and 44 years of age. Data is not yet available on the HPV burden in the general population of Ethiopia. However, in Eastern Africa, the region Ethiopia belongs to, about 33.6% of women in the general population are estimated to harbour cervical HPV infection at a given time (GLOBOCAN 2008).
- In Ethiopia, though there are not many cervical cancer studies conducted in the area, one study assessed five years' histopathological results of cervical biopsies indicated that women were affected in their prime age where the mean age was 48 years. Out of 40,872 biopsies, 4155 (10.2%) were of cervical punch biopsies, in which 65.5% were indicative of malignancy. Human papilloma virus was found in 263 of the 284-biopsy specimens (92.60%) and Human Papilloma Virus type 16 was identified to be the most frequent genotype accounting for more than 76% of all HPV species (Fanta BE.) In a pilot study designed to examine the prevalence and genotypes of HPV in twenty Ethiopian women, who were clinically diagnosed to have cervical neoplasia showed that the most frequent genotype identified was HPV16 (13/20)

Describe the existing cervical cancer prevention and control activities.

Ethiopia has a cervical cancer prevention and treatment strategy that is based on 1) screening for pre-cancerous cells, 2) strengthening the screening to treatment referral system, and 3) providing the preventative vaccine.

1. Screening for pre-cancerous cells;

The primary strategy, screening has limited access and in most settings the infrastructure to traditional screening services (using Pap smears) is non-existent. An alternative approach, Visual Inspection with Acetic Acid (VIA) has been more widely implemented and is more affordable in low resource settings.

2.Strengthening the screening to treatment referral system;

The VIA approach provides immediate results, which promotes the linkage of screening with treatment and reducing the risk that women will get lost in the referral system. VIA screening combined with cryotherapy was piloted in Ethiopia in 2009 at 14 hospitals and further extended to 25 health facilities. Based on the success and lessons learned from this pilot, the FMoH has decided to scale up the service in public health facilities.

3 Providing the preventative HPV vaccine;

Through early intervention with the HPV vaccine, preventing against HPV 16, 18, 6, and 11, the FMoH is aiming to reduce the spread of HPV and incidence/mortality from cervical cancer and other anogenital cancers.

Has the country developed a strategy for establishing or strengthening a national comprehensive approach to cervical cancer prevention and control? **Yes**

If Yes, please attach and refer to section 10. Attachments. (Document N°**15,16**)

If No, are there plans for the country to develop such a roadmap or strategy in the future? Please describe- when, who will be leading the development of the plan, and which agencies will be involved.

6.1.2 Description of province/ region profile

Countries are required to attach a description of the profile for each province/ region, using the template provided by Gavi

Please attach the relevant documents "HPV Region/ Province profile " template provided by Gavi and attach as a mandatory document in the Attachment section. Document number **16**)

6.1.3 Delivery strategies for HPV vaccine

Please provide information on each of the following **delivery strategies** that will be:

- Using outreach to schools as a location for vaccinations
- Using health facilities as a location for vaccinations
- Using community outreach as locations for vaccinations
- Campaign

Using schools as a location for vaccinations

Please describe why this delivery strategy has been chosen for the selection region/ district(s). Will this delivery strategy be used for every year? If so, please describe how this strategy will be financed in future years.

- The school based strategy is selected because high coverage was achieved in the demonstration districts. Since there is high school enrollment of girls, school based vaccination makes it operationally easy to vaccinate most of the eligible routine cohorts as well as additional multi-year cohorts in short period of time. School based strategy will be the main stay of vaccination in the future for the same reasons mentioned above. It is expected that there will not be significant operational cost involved to implement this strategy as schools are considered part of the regular outreach sites. However, any marginal operational cost that is necessary based on the local situation (long distance, hard to reach...) will be covered by the Government.

Please specify whether girls will be vaccinated by selection of a specific age or a specific school grade

- For the national HPV vaccine introduction, which targets routine and additional multi-year cohorts, specific age will be selected to vaccinate eligible girls. However, this will be implemented by vaccinating all girls from 9-14 years attending grade 3 up to grade 8 (primary school as these grades corresponds to 9-14 years as per the standard enrollment in Ethiopia). Before actual implementation of vaccination, for the success of immunization programme, each school will identify appropriate week for “school Immunization days” and included in academic calendar /master plan / so that focused social mobilization activities will be conducted before the due days of immunization. In addition, the number of girls eligible for vaccination (9-14 years) listed by name and age from schools (morning and afternoon shifts attendants) will be identified based on the class rooster from all schools (public, private, community and faith based) During the actual implementation, all girls of age 9-14 years will be called from each grade to be vaccinated in such a way that eligible girls in one grade will be vaccinated first and then move to the next grade. Girls who are in grade 3 but below 9 years of age will be registered separately and provided vaccination when their age turns 9 year. This approach has the advantage of vaccinating all in school eligible girls in short time without disturbing school activities. Since the age of girls in any given grade includes a range of years, this approach enables to vaccinate the additional multi-age year cohorts. After the first year of vaccine introduction, the routine cohort will target eligible girls in grade 3.

Please complete table 6.1.3a vaccination by specific age or table 6.1.3b by specific school grade, depending on above choice

Table 6.1.3 a: Vaccination by specific age

Routine Cohort	
Specific age chosen	9 years
Target population of girls in chosen age	1236806
Girls of chosen age enrolled in schools	1125493

Aditional multi-age cohort	
Specific age-range chosen	10-14 year
Target population of girls in chosen age	6454127
Girls of chosen age range enrolled in schools	5873298

Table 6.1.3 b: Vaccination by specific school grade

Routine Cohort		
School grade	**Average age of girls on school grade**	**Number of girls in grade**
	9 years	

Aditional multi-age cohort		
School grade	**Average age of girls on school grade**	**Number of girls in grade**
	9 years	

If you are vaccinating by grade, provide information on how you will ensure girls under 9 or over 14-years will not be vaccinated

Vaccination will be given for eligible target age group only (9-14 yrs.) and schools teachers will be involved in screening age of girls to ensure that under 9 years or above 14years of age will not be vaccinated

Please describe when vaccinations will be scheduled (school year, holidays, examinations), where vaccinations will be administered, who will do vaccinations, how will the vaccine logistics be assured when using schools as a location for vaccination.

The national school calendar is from mid-September through mid-July. In consultation with the education sector the HPV vaccination sessions are scheduled to start in October to synchronize it with school calendar. This planning allows administration of dose 2 of the HPV vaccine during the second semester (in April/early May), before national examinations and before closure of the academic year. Vaccinations will be provided by trained HWs/HEWs who are competent to give injections. Vaccination corner will be designated in the school and all the necessary vaccine logistics will be transported to the school by health post/health center staff. Injection materials will be disposed in safety boxes which will be transported back to health facilities with incinerators for disposal. Health centers will back up the logistics and human resource gaps in their catchment areas.

Will additional personnel need to be hired in order to vaccinate the introduction year multi-age cohorts? If so, how will this be financed?

Yes, additional personnel will be deployed to vaccinate the additional multi-age cohorts and they will be mobilized from the cluster health centers. Volunteers who will serve as crowd control, recorders and vaccine transporters will also be mobilized from schools and the community. In pastoralist areas where there is high population mobility and relatively low school enrollment rate, additional personnel will be mobilized from cluster health centers or nearby woreda. The cost will be covered using the GAVI approved operational cost grant

Please describe the strategy to capture girls who may miss the initial vaccination session or any of the remaining doses

There will be revisit plan after each initial vaccination sessions. Teachers will screen vaccination status of girls and link them with responsible health workers. Additionally, parent-teacher associations will support tracking

students' vaccination status. Vaccination will be conducted in school or at the nearby health facility

Will the vaccination strategy need to be adapted for at private or religious schools? If so, please elaborate.

Though there were no private and religious schools in the demo districts, special emphasis will be given for the national scale up in case there are some resistances. The national communication plan outlines the strategies to address resistance or crisis and this will be applied accordingly. In addition, advance communication will be sent to private and religious schools.

In Ethiopia all private, religious and public schools are registered by the Minister of Education. Private schools are found predominantly in Addis Ababa, Dire Dawa and regional capitals.

The communication and social mobilization strategy for national scale up of HPV vaccination includes broadcasting of Radio and TV messages for longer period than done for other new vaccines. This allows urban dwellers access HPV related information and raise questions and concerns. The country will also prepare tailored risk mitigation communication strategy based on concerns issues raised by the community. Orientation sessions will be organized for Parent Teacher Association (PTA) who will also inform other parents. Most of the time parents in the private school might seek information from private health practitioners such as paediatricians and obstetricians, therefore orientation and advocacy sessions will also involve private practitioners and professional associations.

Using health facilities as a location for vaccination

Please describe why this approach has been chosen for the selection region/ district(s). Will this approach be used every year?

The selected strategy will maximize the coverage as it was the tested strategy in small scale during the demonstration project. The fact that school enrollment rate is high in the country supports the chosen strategy.

Will additional personnel need to be hired in order to vaccinate the introduction year multi-age cohorts? If so, how will this be financed?

Yes, additional personnel will be deployed to vaccinate the additional multi-age cohorts and they will be mobilized from the cluster health centers. Volunteers who will serve as crowd control, recorders and vaccine transporters will also be mobilized from schools and the community. In pastoralist areas where there is high population mobility and relatively low school enrollment rate, additional personnel will be mobilized from cluster health centers or nearby woreda. The cost will be covered using the GAVI approved operational cost grant

Please provide details of demand generation activities to encourage girls to come to the health facility?

School teachers, religious leaders, clan leaders, PTAs (Parent-teacher associations) leaflets, TV spots, live discussions, mini media, lessons from the demo project will be used to increase vaccine acceptance.

Please provide details on how the country plans to link with schools. Some examples of how schools can be leveraged to increase HPV vaccine uptake include facilitating sensitization and mobilization of parents/communities, identification/validation of the target population (i.e. use of school enrolment lists), and assisting with vaccination call/recall mechanisms. If the country does not plan to link with schools please provide a justification for this decision (i.e. low school enrolment).

School lists will be obtained from the Ministry of Education with its lower level structures and each school will be requested to assign a focal person who will be involved in the HPV working group at all levels. Teachers will be trained and will support obtaining list of all girls by school grade and age. School teachers will be members/observers of the vaccination team and will also help to educate girls and parents on the importance

of HPV vaccination as well as to check vaccination status of girls and link girls who missed initial vaccination to health facilities

Describe if/how this delivery strategy will increase coverage, particularly amongst “hard to reach”/ vulnerable girls.

In pastoralist areas and pocket of hard to reach areas where school enrolment rate is likely to be low, the mixed strategies where school and health facility sites will be augmented by community outreach to ensure no girl is left unvaccinated. Context specific demand creation and social mobilization activities will be done.

Religious and clan leaders will also be informed about HPV to send message to the community using the existing their media of communication in churches and mosques as well as any social events

Describe what follow-up mechanism will be used to ensure girls receive their second dose.

There was minimal dropout reported during year one of the demo project. However, appropriate strategy will be put in place to ensure school girls receive their second dose.

Health workers will communicate the date of second dose vaccination to school teachers and community mobilizers a week or so before the vaccination session in order to remind girls about the time for their second dose.

Main follow up strategy will be to work closely with school teachers to monitor school attendance and identify girls who missed class at the time of vaccination and link them with the vaccination team. There will be mop-up vaccination after the initial vaccination sessions. Girls who change or drop school will be also followed up through existing community mobilization structure and using HEWs.

Using community venues as locations for vaccinations

Please describe why this approach has been chosen for the selection region/ district(s).

For pastoralist communities and girls living in other hard to reach areas, the routine immunization outreach sites as well as temporary sites will be designated to provide HPV vaccination for out of school girls. Community outreaches include major roads/footpaths, market place, churches and mosques, and for HPV this also includes night schools.

Regions that will use this strategy include mainly Afar, Somali, Gambella, Benishangul Gumuz and other pastoral communities in the agrarian regions. In other regions, school and facility based vaccinations will be the main strategies

Will this approach be used for every year? If so, please describe how this strategy will be financed in future years.

Yes, this strategy will be used every year and the financing mechanism follows that of the routine immunization program

Please describe how your community health care workers/ volunteers will be involved with this strategy

Ethiopia has the health extension program which delivers integrated package of health prevention and health promotion services. Two Health Extension Workers (HEWs) are staffed in each health post serving a population of around 5,000. In addition, the HEWs are supported by a community structure of 1 to 5 community network known as Health Development Army (HDA). These HDAs provide support in mobilizing the community, tracing defaulters and transportation of vaccines. Therefore, the community health workers (HEWs) and volunteers (HDAs) are already supporting routine activities at community levels and this will be used to support HPV vaccination activities as well. In pastoralist communities, there is a social mobilization network already established, which is the equivalent of HDAs and eventually transitions to become HDA.

Will additional personnel need to be hired in order to vaccinate the introduction year multi-age cohorts? If so, how will this be financed?

Yes, additional personnel will be deployed to vaccinate the additional multi-age cohorts. Volunteers who will serve as social mobilizers will also be mobilized from the community. The cost will be covered using the GAVI approved operational cost grant

Where in the community will the girls be vaccinated? E.g. schools, fixed outreach sites, streets, parks, malls, markets

Schools (both formal and alternative basic education centers) and other community sites that are used for routine vaccination outreach sites will be used for HPV vaccination

What interventions will be established to increase community based acceptance and increase community support?

Relevant stakeholders such as school teachers, community leaders and religious leaders will be sensitized on the benefits of the HPV vaccine. The existing structures will be used to disseminate messages on HPV and mobilize communities. These include: HDAs, kebele leaders, women and youth affairs, Islamic Affairs and Supreme Councils, churches

Please provide details of demand generation activities e.g. awareness building and information dissemination via community or education sector and/or mass media, including through youth clubs and street theatre

The existing community structures will be major platforms that will be used for creating demand generation

and community mobilization. These platforms include: HDAs, kebele leaders, women and youth affairs, Islamic Affairs and Supreme Councils, Churches.

Additionally, Ministry would like to explore extending its partnership with medias working on youth and adolescent such as ‘’Yegna media’’ which has special innovative approach called girl effect. The benefit of such media to mobilize girls will be studied and engagement will be enhanced accordingly.

Describe if/how this delivery strategy will increase coverage, particularly amongst “hard to reach”/ vulnerable girls?

There are locally generated evidences using experiences gained through provision of routine immunization and other interventions at community level, showing that health workers and community leaders to be major sources of information. Therefore, this approach will help to increase coverage

Describe what follow-up mechanism will be used to ensure girls receive their second dose.

Special strategy will be used to follow up out of school girls who receive their vaccination mainly through community outreaches. Like that of school girls, time of second dose vaccination will be announced in the community a week before the vaccination sessions. List of girls that were vaccinated in the community outreach will be traced from HPV registration book and shared with community mobilizers to remind parents and out of school girls about the date and place of vaccination. The vaccination register will be used to track whether or not all girls have come for their second dose vaccination and any dropout will be tracked by HEWs and community mobilizers. There will be mop up vaccination in the community like that of school mop up session.

Using campaigns to deliver HPV vaccines

Please describe why this approach has been chosen for the selection region/ district(s).

NA

What type of campaign will be used for HPV vaccine delivery e.g. Child Health Days/ Weeks, Measles Rubella or tetanus containing vaccines, supplementary immunisation activities, health education activities? If the campaign is planned to be standalone, please explain why?

NA

How will this campaign impact routine service delivery? For example, will health facility personnel be used for this campaign?

NA

Will additional personnel need to be hired in order to vaccinate the introduction year multi-age cohorts? If so, how will this be financed?

What location(s) will be used to deliver vaccinations during the campaign?

Will this delivery strategy be used for every year? If so, please describe how this strategy will be financed in future years.

Describe if/how this delivery strategy will increase coverage, particularly amongst “hard to reach”/ vulnerable girls?

6.1.4 Social Mobilisation

Please complete the table below to provide details on the types of information and/ or materials that will be used/ disseminated, to which audience, by which mechanism and the frequency of each.

Types of information or materials	**Audience receiving material**	**Method of delivery**	**Who delivers**	**Frequency & Timing**
e.g., leaflet, poster, banner, handbook, radio announcement, etc.	**e.g., girls, parents, teachers, health workers, district officials, community groups, etc.**	**e.g., parent meetings, radio, info session at school, house visit, etc.**	**e.g., teachers, health workers, district official, etc.**	**e.g., daily, weekly, twice before programme starts; day of vaccination, two weeks before programme begins, etc.**
Community engagement: - IPC job aid for HEWs - IEC materials (flyers, brochures and posters) - Community conversation guide Structural stakeholder’s communication: Circulate official letters to communicate the date of the vaccination, target age and targeted grades in school Mass Media: Radio and TV (national and regional) in five local languages Advocacy sessions: Media press release Advocacy visits National and	HEWs, HDA leaders and members, SMCs members (in pastoral settings), religious and clan leaders and followers, girls, parents, teachers, health workers, district officials and community groups MOE (down structures including schools), ministry of women and children Affairs (down structures), mass medias, regional health bureaus (down structures including health centers and health posts), partners HEWs, HDA leaders and members, SMCs members (in pastoral settings), religious and clan leaders and followers, Girls, parents, teachers, health workers, district officials and community groups, HEWs, HDA leaders and members, SMCs members (in pastoral settings), religious and clan leaders and followers, Girls, parents, teachers, health workers, regional and district officials and community groups,	During house to house visits - During HDA and SMCs meetings - During praying sessions - Using school girls club and school mini medias - During health facility morning health education sessions Through email, fax, social media, post office. Using radio and TV Using radio and TV	HEWs, HDAs, religious and clan leaders, teachers, mini media organizers and school girls club leaders and members, health workers, district official, etc. FMOH, MOE, MOWCA and their down structures Media agencies Officials from different ministerial organizations, national and international organizations working for immunization (WHO, UNICEF)	Twice before vaccination starts; day of vaccination, two weeks before programme begins, etc. Two months before starting up of the national introduction. One month before start of national introduction and last through the vaccination period Press release and launching during starting up and Advocacy visit will start a month before the introduction

Regional level
launching

Please describe a crisis communication plan to response to rumors and misconceptions to HPV vaccination.

- There is chain of command already established having members from different sectors to manage and mitigate outbreaks and crisis. This platform will be utilized for HPV crisis management with support from additional members from other sectors, such as education, with clear roles and responsibilities. These procedures will be detailed that will be prepared with input from the technical working group and stakeholders supporting HPV introduction.

- Individuals, groups and public concerns will be assessed, anticipated and monitored through community contacts, mass media and social media. Advocacy activities will be conducted with groups that may have specific concerns or misperceptions and engagement with these groups through influential leaders will be done as early as possible. The EPI and community leaders will discuss and address any concerns while bringing them into the wider coalition to proactively support the HPV introduction.
- To minimize the risk rumors and misconceptions surrounding the vaccine, crisis management trainings will be provided to all vaccinators and partners prior to introduction.
- There is concern about the potential for questions in community surrounding the targeting of girls for vaccination. However, trainings, communications, and community engagement activities will address the issue by explaining that girls are most affected by HPV-related diseases and at much higher risk of HPV related cancers. Additionally, it will be explained that by vaccinating girls, we are indirectly protecting boys (herd immunity). In the future, boys could eventually benefit from the vaccine if sufficient financial resources are available.
- Written consent will not be required since this vaccine will be integrated in the routine systems. In case of concerns by parents or guardians HWs/HEWs will be in a position to provide the necessary information on the importance of the vaccine and its efficacy of vaccine. The fact that and its impact since countries all around the world have started using it a decade ago.
- If a crisis related to HPV vaccination occurs, the situation will be analyzed and the crisis team will move quickly to respond to rumors by clarifying the extent of the rumor or misinformation (type of messages circulating, source, persons or organizations spreading the rumor) and determine the motivation behind the rumor (e.g. lack of information, questioning of authority, political or religious opposition); the team will communicate immediately with the Ministry of Health, the ICC and other high officials; an official statement about the event will be broadcasted on radio and television and a statement published in newspapers; finally, the team will work with community leaders including religious leaders until the crisis is solved.

6.1.5 Adolescent health integration

Irrespective of the strategies, provide a description of existing health services and/or health education currently being provided to young adolescents (both girls and/or boys) within the 9-14 year old age group and indicate and potential synergy by integrating with HPV vaccination:

a. For health services (this can include: what health services are provided, to which age/sex group, whether it's mandatory or voluntary, regularly or ad-hoc, in school or out of school, who provides these (government, NGOs), how often, what is the uptake in the community, how is it perceived by the community.)

- Supplemental immunization activities like men A, measles and polio are provided based on MOH recommendations.
- Life skill training and orientation are being given to enable young students to be assertive and protect themselves from untoward sexual and reproductive health condition
- In consultation and coordination with nearby schools, ad hoc systemic deworming is done in this age group. Health education on prevention of FGM/C and early marriage and arranged marriage.
- Health education on topics of reproductive health such as HIV/AIDS counselling and prevention of other STIs is routinely provided by trained teachers and HEW/HW

b. For health education (this can include: the topic, whether it is national, sub-national, in school or out of school, who provides the education, how often, is it in the school curriculum, are there NGOs providing these? How is it perceived by the community? Has there been an evaluation and if so, how was it evaluated and what were the findings?)

- In order to enhance the ownership of school community and Parents Teacher Associations (PTAs), school based immunization and routine immunization, key messages will be delivered in primary schools using different IEC materials and school mini-media and different extra curricula activity sessions such as school sport competition weeks on regular basis (weekly or monthly). PTAs, Health Development Army (HDA) and communication networks at community level such as religious and clan leaders, influential people will be involved to deliver key messages to children out of school. The topics to be covered include the benefits of infant and adolescent vaccination (routine, HPV and Td vaccination, etc.) and deworming.

c. For improving adolescent immunization platform (this can include integration with: other vaccines provided to adolescents (e.g. measles-rubella, tetanus containing vaccines or Dengue), broader health education services)

- Adolescent immunization platform will be used to deliver vaccines such as school Td, measles-rubella, polio and others new vaccines. School

feeding program is implemented to enhance school attendance, cognitive ability of the students and reduce dropout.

6.1.6 CSO engagement

Please describe how and which CSOs will be included in the delivery of HPV vaccines e.g. demand generation activities, increase coverage of "hard to reach" girls.

- Under CCRDA/CORE Group, there are 13 CSOs [6 international CSOs namely: AMREF, CARE, Catholic Relief Services (CRS), International Rescue Committee (IRC), Save the Children (SC), and World Vision Ethiopia (WVE) and 7 local CSOs namely Ethiopian Evangelical Church Mekane Yesus (EECMY), Ethiopian Orthodox Church (EOC), HCS, OWDA, PC, PPTS, WASDA)] all covering 94 woredas of 6 regions found in the country. By which all are currently supporting the immunization program through engaging in different level of support. There also three professional associations (EPHA, EMA and EPS) working for immunization. As HPV will be considered as part of the routine immunization all CSOs and professional associations will support HPV national introduction with their area of expertise.
- CSOs are committed to contribute in ensuring equity and quality of the immunization service over the past years through partnership, advocacy, social mobilization, research, capacity building and mainstreaming. CSOs are playing a significant role in narrowing the equity gaps among the poor, uneducated in all geographic locations - pastoralists, peri-urban and urban.
- ***CSOs play the following service provisions for national introduction of HPV;***
- House to house education on the importance of HPV vaccine along with routine immunization and map those adolescent girls found out of school
- Advocacy, communication and social mobilization/ community for demand creation for HPV vaccine,
- Producing and disseminating IEC materials on HPV vaccine along with routine immunization
- Provide training to service providers (HWs & HEWs), woreda, zonal and regional staffs,
- Conduct operational research, monitoring and supervision activities
- Provide logistics support (fuel, recording and reporting formats)
- Provide maintenance of refrigerators and motorbikes
- Provide direct vaccination services (church based CSOs)
- Support different outreach strategies designed for hard to reach girls

6.1.7 Key stakeholder and technical partner roles and responsibilities

Please complete the Gavi provided template, to define the respective roles and responsibilities of all in-country stakeholders and technical partners.

Please attach the relevant documents and refer to section 10. Attachments. (Document N°**17**)

6.2. Requested vaccine (HPV quadrivalent, 1 dose(s) per vial, LIQUID)

As reported in the cMYP, the country plans to introduce HPV quadrivalent, using HPV quadrivalent, 1 dose(s) per vial, LIQUID.

When is the country planning to introduce this vaccine? **October 2017**

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

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

- The country has cold rooms in 20 locations with 974 cubic meters' net positive storage capacity and 40 m3 freezer; 477 cubic meters positive storage and 20 m3 freezers at central PFSA and 487 m3 distributed in regions and sub regions. The distribution is supported by 20 refrigerated trucks.

- Additional to the central and sub regional cold storage capacity, as of the 2012 cold chain equipment inventory about 20,500 refrigerators (about 75% were reported functional)were available in districts and health facilities and since the inventory, the country procured and distributed 376 ice lined reflectors (ILR,) 2,244 Solar Direct Drive (SDD) refrigerators to replace the nonfunctional/ obsolete cold equipment and expand the cold chain capacity at different levels including the hard to reach areas. Moreover, a total of 8,134 SDD refrigerators procurement process is in progress and even without these the available storage space in the different health administration levels make the cold storage space sufficient for the HPV introduction and periodic supplementary immunization activities.(see in the attachment document for tabular analysis)

6.2.1. Vaccine Prices

Vaccine	Presentation	2017	2018	2019	2020	2021
HPV quadrivalent, 1 dose(s) per vial, LIQUID	1	4.55	4.55	4.55	4.55	4.55

6.2.2. Co-financing information

The co-financing requirement applies to vaccines for the **routine cohort** (i.e. the cohort that will be routinely vaccinated on an annual basis for the routine immunisation programme). However, Gavi will fully finance vaccines for the **additional multi-age cohort** during the introduction year.

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

Country group	Initial self-financing phase			
	2017	**2018**	**2019**	**2020**
minimum co-financing per dose	0.20	0.20	0.20	0.20
your co-financing per dose (please change if higher)				

	2021
minimum co-financing per dose	0.20
your co-financing per dose (please change if higher)	

6.2.2.1.Specifications of vaccinations with new vaccine for routine cohort

	Source		2017	2018	2019	2020
Number of girls in routine cohort to	Table 5.2	#	1.051.285	1.142.067	1.236.858	1.269.017

be vaccinated with the first dose						
Number of girls in routine cohort to be vaccinated with the second dose	Table 5.2	#	989,445	1,078,619	1,171,760	1,202,226
Immunisation coverage with the second dose	Table 5.2	%	80%	85%	90%	90%
Country co-financing per dose	Table 6.2.2	$	0.2	0.2	0.2	0.2

	Source		2021
Number of girls in routine cohort to be vaccinated with the first dose	Table 5.2	#	1,302,011
Number of girls in routine cohort to be vaccinated with the second dose	Table 5.2	#	1,233,484
Immunisation coverage with the second dose	Table 5.2	%	90%
Country co-financing per dose	Table 6.2.2	$	0.2

6.2.2.2.Specifications of vaccinations with new vaccine for additional multi-age cohort

	Source		2017	2018	2019	2020
Number of girls in the additional multi-age cohort to be vaccinated with the first dose	Table 5.2	#	5,486,049	0	0	0
Number of girls in the additional multi-age cohort to be vaccinated with the second dose	Table 5.2	#	5,163,340	0	0	0
Immunisation coverage with the second dose	Table 5.2	%	80.00%	0	0	0

	Source		2021
Number of girls in the additional multi-age cohort to be vaccinated with the first dose	Table 5.2	#	0
Number of girls in the additional multi-age cohort to be vaccinated with the second dose	Table 5.2	#	0
Immunisation coverage with the second dose	Table 5.2	%	0

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

		2017	2018	2019	2020
Number of vaccine doses	#	87,861	95,609	103,700	106,634
Number of AD syringes	#	0	0	0	0
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	0	0	0	0
Total value to be co-financed by the Country *[1]*	$	535,701	475,801	515,681	522,261

[1] The co-financing amount for initial self-financing countries indicates costs for the vaccines 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.

		2021
Number of vaccine doses	#	109,407
Number of AD syringes	#	0
Number of re-constitution syringes	#	0
Number of safety boxes	#	0
Total value to be co-financed by the Country *[1]*	$	535,841

[1] The co-financing amount for initial self-financing countries indicates costs for the vaccines 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.

6.2.3.1 Portion of supply for routine cohort to be procured by Gavi (and cost estimate, US$)

		2017	2018	2019	2020
Number of vaccine doses	#	1,952,869	2,125,077	2,304,918	2,364,609
Number of AD syringes	#	2,834,065	2,494,718	2,703,745	2,736,452
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	31,175	27,442	29,742	30,101
Total value to be co-financed by Gavi	$	12,036,843	10,689,898	11,585,887	11,706,504

		2021
Number of vaccine doses	#	2,426,088
Number of AD syringes	#	2,807,598
Number of re-constitution syringes	#	0
Number of safety boxes	#	30,884
Total value to be co-financed by Gavi	$	12,010,901

6.2.3.2 Portion of supply for additional multi-age cohort to be procured by Gavi (and cost estimate, US$)

		2017	2018	2019	2020
Number of vaccine doses	#	6,475,494	1,078,619	1,171,760	1,202,226
Number of AD syringes	#	7,123,044	1,186,481	1,288,936	1,322,449
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	78,354	13,052	14,179	14,547

		2021
Number of vaccine doses	#	1,233,484
Number of AD syringes	#	1,356,833
Number of re-constitution syringes	#	0
Number of safety boxes	#	14,926

6.2.4 New and Under-Used Vaccine Introduction Grant

Calculation of Vaccine Introduction Grant for the HPV quadrivalent, 1 dose(s) per vial, LIQUID

Year of New Vaccine Introduction	Girls in routine cohort (From Table 5.2)	Share per Girls in routine cohort in US$	Total in US$
2017	1,236,808	2.40	2,968,339

The Grant will be based on a maximum award of $2.4 per girl in the routine 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 VIG budget for operational activities will be used to finance the activities according to the VIG budget break down. Some of the important activities that will be covered using this grant include, planning, training and preparation, human resources cost, IEC communication and advocacy, production of materials such as guidelines and for monitoring and evaluation

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

Detailed budget attached as Document No. 22,23.

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.

Resorces will be moblized from incountry EPI partners and local government

6.2.5.New and Under-Used Operational support

Calculation of Operational Support for the HPV quadrivalent, 1 dose(s) per vial, LIQUID

Year of New Vaccine Introduction	Girls in additional multi-age cohort (From Table 5.2)	Share per Girls in additional multi-age cohort in US$	Total in US$
2017	6,454,175	0.65	4,195,214

Please describe how the Gavi Operational support will be used to reach the additional multi-age cohorts? How will these funds be used to strengthen routine activities e.g. reinforcing routine outreach activities, additional personnel, additional demand generation activities?

Note: These funds can be used over a longer period than the introduction year in order to strengthen routine immunisation. For example to reinforce routine outreach activities in difficult to access districts.

The fund will be used to improve quality through capacity build activities; build the immunization human resource capacity, improve the vaccine and cold chain management and conduct communication and monitoring activities for immunization. Support the outreach and mobile sessions to ensure equity and improve coverage.

Detailed budget attached as Document No. 22,23.

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.

Where Gavi support is not enough to cover the full needs, optionally resource will be mobilized from in

country partners through direct and technical support. Additionally, local resources will be fully utilized integrated with routine activity

6.2.6.Technical assistance

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

There is need to deploy one technical assistance at national level preferably international consultant and additional 4 consultants for supporting HPV introduction for pastoralist and big regions

7. NVS Preventive Campaigns

No NVS Prevention Campaign Support this year

8. NVS Follow-up Campaigns

No NVS Follow-up Campaign Support this year

9. Procurement and Management

9.1 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):

HPV vaccine and injection supplies will be procured through UNICEF.

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.

NA

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 usual procedure will be followed to transfer Operational budget for VIG directly to FMOH account stated in annex 12(banking form)

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

The Government(FMOH) – through UNICEF.

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

The allocated budget will be utilized as per the VIG breakdown and this will be jointly monitored by the finance and program(MCH/EPI) unit in collaboration with implementing regions. Statement of expenditure will be issued in the agreed time frame

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

In collaboration with the PPD parallel tracking and reporting system will further be developed based on the reporting template used on the demo program. In due time the new vaccines information management will be integrated with the routine HMIS system at all levels. Data will be routinely collected, analyzed and reported following the HMIS guideline

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

9.2 Procurement and Management for NVS Preventive Campaign(s)

No NVS Prevention Campaign Support this year

9.3 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.

Both vaccine presentations are already registered by the regulatory: Federal Democratic Republic of Ethiopia, Food Medicine and Health care Administration and Control Authority (FMHACA).

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

- Quadrivalent HPV vaccine is registered since 15 September 2015 for a period of four years.
- Bivalent vaccine is also registered with FMHACA for a 0.5 pre-filled syringe since 23 Nov 2015

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.

PFSA which government structure will be responsible clearing, storing and distribbution of vaccine, hence delays are not anticipated

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.

Federal Democratic Republic of Ethiopia, Food Medicine and Health care Administration and Control Authority (FMHACA).

9.4 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).

Ethiopia has adopted the WHO and UNICEF joint policy on safety of injections that recommend the use of only Auto Disable syringes and safety boxes together with quality vaccines for all types of immunization activities including elective and emergency mass immunization campaigns. Therefore, only AD syringes will be used to administer HPV and other vaccines integrated in the immunization program. Adequate amount of injection supplies and safety boxes will be procured and distributed to all vaccination sites.

Injectable vaccines are provided by only skilled health extension and health workers and there is adequate workforce at all levels to deliver HPV

. All used needles and syringes will be disposed of using incinerators or burned in a closed pit.

In line with an increase in the number of injections produced in the EPI, the quantity and volume of the health care wastes is highly increasing due to the impressive growth of health service, increasing in EPI and other programs coverage, and introduction of new vaccines (pentavalent vaccine, PCV-10, IPV). Therefore, the country strengthens the waste management capacity at all levels.

To ensure appropriate waste management at all levels Ministry has already started to work towards expanding the availability of high temperature incinerators and the waste management policy also enforces the disposal of used needles and syringes using incinerators where possible or using a closed container. Sharp wastes should be collected from the vaccination sites to the nearby facility with functional incinerator.

All personnel are 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 is 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)

Additionally, there will be extensive supportive supervision to monitor the appropriate practice of safe injections including discarding vial.

10. List of documents attached to this proposal

10.1. List of documents attached to this proposal

Table 1: Checklist of mandatory attachments

Document Number	Document	Section	File
Endorsements			
1	MoH Signature (or delegated authority) of Proposal	4.1.1	Signature of MOE and MOH.pdf **File desc:** **Date/time :** 30/01/2017 06:52:35 **Size:** 272 KB
2	MoF Signature (or delegated authority) of Proposal	4.1.1	Signature of MOE and MOH.pdf **File desc:** **Date/time :** 30/01/2017 06:55:57 **Size:** 272 KB
3	MoE signature (or delegated authority) of HPV Proposal	4.1.1	MOE Signature .pdf **File desc:** **Date/time :** 30/01/2017 11:13:22 **Size:** 107 KB
4	Terms of Reference for the Coordination Forum (ICC/HSCC or equivalent) including all sections outlined in Section 5.2 of the General Application Guidelines (Note: countries applying before May 2017 can submit their existing Terms of Reference)	4.1.2	ICC TOR.pdf **File desc:** **Date/time :** 30/01/2017 06:56:30 **Size:** 101 KB
5	Minutes of Coordination Forum meeting endorsing Proposal	4.1.3	Minute of main ICC Meeting Jan_26, 2017..pdf **File desc:** **Date/time :** 30/01/2017 03:55:56 **Size:** 335 KB
6	Signatures of Coordination Forum members in Proposal	4.1.3	ICC Signature.pdf **File desc:** **Date/time :** 30/01/2017 06:57:01 **Size:** 202 KB
7	Minutes of the Coordination Forum meetings from the past 12 months before the proposal	4.1.3	Minutes of the main ICC Meeting 20 May 15.pdf **File desc:** **Date/time :** 30/01/2017 07:03:35 **Size:** 447 KB
8	Role and functioning of the advisory group, description of plans to establish a NITAG	4.2.1	E- NITAG ToR .pdf **File desc:** **Date/time :** 30/01/2017 06:59:18 **Size:** 332 KB
25	Risk assessment and consensus meeting report for Yellow Fever, including information required in the NVS guidelines on YF Risk Assessment process	5.1	Yellow Fever Risk Assessment_Report December_2015.pdf **File desc:** **Date/time :** 30/01/2017 02:57:16 **Size:** 998 KB

26	List of areas/districts/regions and targets to be supported for meningitis A mini catch up campaigns		Not Applicable.docx **File desc:** **Date/time :** 30/01/2017 11:13:55 **Size:** 9 KB
29	Annual EPI plan for measles and rubella support		Not Applicable.docx **File desc:** **Date/time :** 30/01/2017 02:57:54 **Size:** 9 KB
30	For measles and rubella support, evidence that the country is currently financing the measles mono-valent vaccine component of MCV1, or that it can meet the requirement to be self-financing this from government funds from 2018 onwards		Measles Procurment Order.pdf **File desc:** **Date/time :** 30/01/2017 11:14:34 **Size:** 415 KB
Planning, financing and vaccine management			
9	Comprehensive Multi Year Plan - cMYP	5.1	9 cMYP Revised_ 09 Jan 2017_Final.pdf **File desc:** **Date/time :** 30/01/2017 07:15:42 **Size:** 1 MB
10	cMYP Costing tool for financial analysis	5.1	Copy of Ethiopia_cMYP_Costing_Tool_V3 9 3 December 2016.xlsx **File desc:** **Date/time :** 30/01/2017 01:35:32 **Size:** 3 MB
11	M&E and surveillance plan within the country's existing monitoring plan	5.1.4	Monitoring and Evaluation Framework cMYP that includes NVI.docx **File desc:** **Date/time :** 30/01/2017 07:32:02 **Size:** 55 KB
12	New vaccine introduction plan (NVIP), New Vaccine Introduction Checklist and Activity List & Timeline for routine vaccines or Plan of Action (PoA) for campaign vaccines	5.1	12 HPV introduction action plan.pdf **File desc:** **Date/time :** 30/01/2017 07:37:26 **Size:** 801 KB
15	HPV Region/ Province profile	6.1.1	DESCRIPTION OF REGION HPV NATIONAL ROLLOUT APPLICATION2 (1).pdf **File desc:** **Date/time :** 30/01/2017 08:13:27 **Size:** 345 KB
16	HPV Key Stakeholder Roles and Responsibilities	6.1.1,6.1.2	16 Stakeholder role.docx **File desc:** **Date/time :** 30/01/2017 08:14:25 **Size:** 20 KB
19	EVM report	9.3	19 ETH-EVM- Report-Oct 02_ 2013 Ethiopia.pdf **File desc:** **Date/time :** 30/01/2017 11:17:11 **Size:** 1 MB
20	Improvement plan based on EVM	9.3	21 EVM improvement plan Ethiopia 2014.pdf **File desc:** **Date/time :** 30/01/2017 08:23:33 **Size:** 485 KB

21	EVM improvement plan progress report	9.3	010_Effective Vaccine Management Improvement plan status.pdf **File desc:** **Date/time :** 30/01/2017 08:22:44 **Size:** 133 KB
22	Detailed budget template for VIG / Operational Costs	6.x,7.x.2, 6.x.2	Copy of Detailed Budget template_VIG_Op HPV 2017.xlsx **File desc:** **Date/time :** 30/01/2017 01:37:46 **Size:** 54 KB
23	Risk assessment and consensus meeting report for MenA. If the DPT was used instead, please include this.	6.x,7.x.2, 6.x.2,8.x.3	Not Applicable.docx **File desc:** **Date/time :** 30/01/2017 02:58:35 **Size:** 9 KB
32	Data quality assessment (DQA) report	5.1.4	V6 Final DV-SA Report Jan 2017.pdf **File desc:** **Date/time :** 30/01/2017 11:21:35 **Size:** 2 MB
36	Strategy for establishing or strengthening a national comprehensive approach to cervical cancer prevention and control		CC Guideline FINAL PDF.pdf **File desc:** **Date/time :** 30/01/2017 01:22:03 **Size:** 36 MB

Table 2: Checklist of optional attachments

Document Number	Document	Section	File
13	Introduction Plan for the introduction of RCV / JE / Men A / YF into the national programme	8.x.3	No file loaded
14	Annual EPI Plan with 4 year forward view for measles and rubella		No file loaded
17	Evidence of commitment to fund purchase of RCV (in place of the first dose of MCV) / JE for use in the routine system	5.1.6, 6.1.7	No file loaded
18	Campaign target population documentation	8.x.1, 6.x.1	No file loaded
24	Risk assessment and consensus meeting report for Yellow Fever, including information required Section 5.3.2 in the General Guidelines on YF Risk Assessment process	8.1,5.1	No file loaded
27	National Measles (& Rubella) elimination plan if available		25 Ethiopian Measles Strategic Plan_2012-2020_Final.pdf **File desc:** **Date/time :** 30/01/2017 03:00:00

			Size: 1 MB
28	A description of partner participation in preparing the application	4.1.3	partner participation in preparing HPV application.docx **File desc:** **Date/time :** 30/01/2017 03:00:44 **Size:** 15 KB
31	Minutes of NITAG meeting with specific recommendations on the NVS introduction or campaign	4.2	27 Minutes of the E_NITAG HPV intro.pdf **File desc:** **Date/time :** 30/01/2017 11:47:07 **Size:** 307 KB
33	DQA improvement plan	5.1.4	No file loaded
34	Plan of Action for campaigns	8.1, 8.x.4	No file loaded
35	Other		Table showing adequcy of CC for HPV introduction.pdf **File desc:** **Date/time :** 30/01/2017 06:16:08 **Size:** 252 KB HPV costing perliminary report_Jan 30.pdf **File desc:** **Date/time :** 30/01/2017 01:24:50 **Size:** 782 KB f5 001.jpg **File desc:** **Date/time :** 30/01/2017 03:56:45 **Size:** 264 KB f6 001.jpg **File desc:** **Date/time :** 30/01/2017 03:57:27 **Size:** 345 KB 31 Ethiopia HPV PIE report.docx **File desc:** **Date/time :** 30/01/2017 03:59:26 **Size:** 3 MB
37	Evidence of self-financing MCV1	5.1.5	Measles Procurment Order.pdf **File desc:** **Date/time :** 30/01/2017 03:01:56 **Size:** 415 KB

11. Annexes

Annex 1 - NVS Routine Support

Annex 1.1 - NVS Routine Support (HPV quadrivalent, 1 dose(s) per vial, LIQUID)

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

		2017	2018	2019	2020
Number of vaccine doses	#	87,861	95,609	103,700	106,634
Number of AD syringes	#	0	0	0	0
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	0	0	0	0
Total value to be co-financed by the Country ***[1]***	**$**	535,701	475,801	515,681	522,261

		2021
Number of vaccine doses	#	109,407
Number of AD syringes	#	0
Number of re-constitution syringes	#	0
Number of safety boxes	#	0
Total value to be co-financed by the Country ***[1]***	**$**	535,841

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

Portion of supply for routine cohort to be procured by Gavi (and cost estimate, US$)

		2017	2018	2019	2020
Number of vaccine doses	#	1,952,869	2,125,077	2,304,918	2,364,609
Number of AD syringes	#	2,834,065	2,494,718	2,703,745	2,736,452
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	31,175	27,442	29,742	30,101
Total value to be co-financed by Gavi	**$**	12,036,843	10,689,898	11,585,887	11,706,504

		2021
Number of vaccine doses	#	2,426,088
Number of AD syringes	#	2,807,598
Number of re-constitution syringes	#	0
Number of safety boxes	#	30,884
Total value to be co-financed by Gavi	**$**	12,010,901

Portion of supply for additional multi-age cohort to be procured by Gavi (and cost estimate, US$)

		2017	2018	2019	2020
Number of vaccine doses	#	6,475,494	1,078,619	1,171,760	1,202,226
Number of AD syringes	#	7,123,044	1,186,481	1,288,936	1,322,449
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	78,354	13,052	14,179	14,547

		2021

Number of vaccine doses	#	1,233,484
Number of AD syringes	#	1,356,833
Number of re-constitution syringes	#	0
Number of safety boxes	#	14,926

Table Annex 1.1 C: Summary table for vaccine HPV quadrivalent, 1 dose(s) per vial, LIQUID

	Source		2017	2018	2019	2020
Number of girls in the additional multi-age cohort to be vaccinated with the first dose	Table 5.2	#	5,486,049	0	0	0
Number of girls in the additional multi-age cohort to be vaccinated with the second dose	Table 5.2	#	5,163,340	0	0	0
Immunisation coverage with the second dose	Table 5.2	%	80.00%	0	0	0

	Source		2021
Number of girls in the additional multi-age cohort to be vaccinated with the first dose	Table 5.2	#	0
Number of girls in the additional multi-age cohort to be vaccinated with the second dose	Table 5.2	#	0
Immunisation coverage with the second dose	Table 5.2	%	0

Table Annex 1.1 D: Estimated numbers for HPV quadrivalent, 1 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 1)

		Formula	2017		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,051,285	45,262	1,006,023
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	989,445		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,040,730	87,861	1,952,869
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,142,767	92,254	2,050,513
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]*	535,692	23,064	512,628
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,678,500	115,319	2,563,181
J	Number of doses per vial	*Vaccine parameter*	1		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,834,065	0	2,834,065
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	31,175	0	31,175
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	12,187,175	524,700	11,662,475
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	115,494	0	115,494
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	14,368	0	14,368
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	255,507	11,001	244,506
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)*	12,572,544	535,701	12,036,843
U	Total country co-financing	*I x country co-financing per dose (cc)*	535,700		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 1.1 D: Estimated numbers for HPV quadrivalent, 1 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 2)

		Formula	2018		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,142,067	49,170	1,092,897
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,078,619		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,220,686	95,609	2,125,077
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,331,721	100,389	2,231,332
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]*	47,239	2,034	45,205
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,379,000	102,425	2,276,575
J	Number of doses per vial	*Vaccine parameter*	1		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,494,718	0	2,494,718
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	27,442	0	27,442
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	10,824,450	466,030	10,358,420
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	101,665	0	101,665
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	12,647	0	12,647
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	226,937	9,771	217,166
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)*	11,165,699	475,801	10,689,898
U	Total country co-financing	*I x country co-financing per dose (cc)*	475,800		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 1.1 D: Estimated numbers for HPV quadrivalent, 1 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 3)

		Formula	2019		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,236,858	53,251	1,183,607
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,171,760		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,408,618	103,700	2,304,918
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,529,049	108,885	2,420,164
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]*	49,332	2,124	47,208
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,578,400	111,009	2,467,391
J	Number of doses per vial	*Vaccine parameter*	1		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,703,745	0	2,703,745
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	29,742	0	29,742
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	11,731,720	505,091	11,226,629
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	110,183	0	110,183
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	13,707	0	13,707
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	245,958	10,590	235,368
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)*	12,101,568	515,681	11,585,887
U	Total country co-financing	*I x country co-financing per dose (cc)*	515,680		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 1.1 D: Estimated numbers for HPV quadrivalent, 1 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 4)

		Formula	2020		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,269,017	54,759	1,214,258
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,202,226		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,471,243	106,634	2,364,609
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,594,806	111,966	2,482,840
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]*	16,440	710	15,730
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,611,300	112,678	2,498,622
J	Number of doses per vial	*Vaccine parameter*	1		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,736,452	0	2,736,452
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	30,101	0	30,101
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	11,881,415	512,683	11,368,732
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	111,516	0	111,516
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	13,873	0	13,873
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	221,961	9,578	212,383
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)*	12,228,765	522,261	11,706,504
U	Total country co-financing	*I x country co-financing per dose (cc)*	522,260		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 1.1 D: Estimated numbers for HPV quadrivalent, 1 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 5)

		Formula	2021		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,302,011	56,182	1,245,829
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,233,484		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,535,495	109,407	2,426,088
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,662,270	114,877	2,547,393
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]*	16,866	728	16,138
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,679,200	115,608	2,563,592
J	Number of doses per vial	*Vaccine parameter*	1		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,807,598	0	2,807,598
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	30,884	0	30,884
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	12,190,360	526,014	11,664,346
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	114,415	0	114,415
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	14,234	0	14,234
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	227,733	9,827	217,906
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)*	12,546,742	535,841	12,010,901
U	Total country co-financing	*I x country co-financing per dose (cc)*	535,840		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Annex 2 - NVS Routine – Preferred Second Presentation

Annex 2.1 - NVS Routine Support (HPV bivalent, 2 dose(s) per vial, LIQUID)

Table Annex 2.1 A: Rounded up portion of supply that is procured by the country and estimate of relative costs in US$

		2017	2018	2019	2020
Number of vaccine doses	#	87,861	95,609	103,700	106,634
Number of AD syringes	#	0	0	0	0
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	0	0	0	0
Total value to be co-financed by the Country *[1]*	$	535,701	475,801	515,681	522,261

		2021
Number of vaccine doses	#	109,407
Number of AD syringes	#	0
Number of re-constitution syringes	#	0
Number of safety boxes	#	0
Total value to be co-financed by the Country *[1]*	$	535,841

Table Annex 2.1 B: Rounded up portion of supply that is procured by Gavi and estimate of relative costs in US$

Rounded up portion of supply for the additional cohort that is procured by Gavi and estimate of relative costs in US$

		2017	2018	2019	2020
Number of vaccine doses	#	1,952,869	2,125,077	2,304,918	2,364,609
Number of AD syringes	#	2,834,065	2,494,718	2,703,745	2,736,452
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	31,175	27,442	29,742	30,101
Total value to be co-financed by Gavi	$	12,036,843	10,689,898	11,585,887	11,706,504

		2021
Number of vaccine doses	#	2,426,088
Number of AD syringes	#	2,807,598
Number of re-constitution syringes	#	0
Number of safety boxes	#	30,884
Total value to be co-financed by Gavi	$	12,010,901

Table Annex 2.1 B: Rounded up portion of supply that is procured by Gavi and estimate of relative costs in US$ ADDITIONAL COHORTS

		2017	2018	2019	2020
Number of vaccine doses	#	989,445	1,078,619	1,171,760	1,202,226
Number of AD syringes	#	1,088,390	1,186,481	1,288,936	1,322,449
Number of re-constitution syringes	#	0	0	0	0
Number of safety boxes	#	11,973	13,052	14,179	14,547

		2021

Number of vaccine doses	#	1,233,484
Number of AD syringes	#	1,356,833
Number of re-constitution syringes	#	0
Number of safety boxes	#	14,926

Table Annex 2.1 C: Summary table for vaccine HPV bivalent, 2 dose(s) per vial, LIQUID

	Source		2017	2018	2019	2020
Number of girls in the additional multi-age cohort to be vaccinated with the first dose	Table 5.2	#	0	0	0	0
Number of girls in the additional multi-age cohort to be vaccinated with the second dose	Table 5.2	#	0	0	0	0
Immunisation coverage with the second dose	Table 5.2	%	0	0	0	0

	Source		2021
Number of girls in the additional multi-age cohort to be vaccinated with the first dose	Table 5.2	#	0
Number of girls in the additional multi-age cohort to be vaccinated with the second dose	Table 5.2	#	0
Immunisation coverage with the second dose	Table 5.2	%	0

Table Annex 2.1 D: Estimated numbers for HPV bivalent, 2 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 1)

		Formula	2017		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,051,285	45,262	1,006,023
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	989,445		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,040,730	87,861	1,952,869
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,142,767	92,254	2,050,513
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]*	535,692	23,064	512,628
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,678,500	115,319	2,563,181
J	Number of doses per vial	*Vaccine parameter*	2		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,834,065	0	2,834,065
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	31,175	0	31,175
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	12,187,175	524,700	11,662,475
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	115,494	0	115,494
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	14,368	0	14,368
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	255,507	11,001	244,506
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)*	12,572,544	535,701	12,036,843
U	Total country co-financing	*I x country co-financing per dose (cc)*	535,700		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 2.1 D: Estimated numbers for HPV bivalent, 2 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 2)

		Formula	2018		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,142,067	49,170	1,092,897
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,078,619		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,220,686	95,609	2,125,077
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,331,721	100,389	2,231,332
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]*	47,239	2,034	45,205
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,379,000	102,425	2,276,575
J	Number of doses per vial	*Vaccine parameter*	2		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,494,718	0	2,494,718
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	27,442	0	27,442
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	10,824,450	466,030	10,358,420
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	101,665	0	101,665
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	12,647	0	12,647
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	226,937	9,771	217,166
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)*	11,165,699	475,801	10,689,898
U	Total country co-financing	*I x country co-financing per dose (cc)*	475,800		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 2.1 D: Estimated numbers for HPV bivalent, 2 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 3)

		Formula	2019		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,236,858	53,251	1,183,607
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,171,760		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,408,618	103,700	2,304,918
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,529,049	108,885	2,420,164
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]*	49,332	2,124	47,208
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,578,400	111,009	2,467,391
J	Number of doses per vial	*Vaccine parameter*	2		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,703,745	0	2,703,745
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	29,742	0	29,742
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	11,731,720	505,091	11,226,629
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	110,183	0	110,183
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	13,707	0	13,707
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	245,958	10,590	235,368
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)*	12,101,568	515,681	11,585,887
U	Total country co-financing	*I x country co-financing per dose (cc)*	515,680		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 2.1 D: Estimated numbers for HPV bivalent, 2 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 4)

		Formula	2020		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,269,017	54,759	1,214,258
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,202,226		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,471,243	106,634	2,364,609
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,594,806	111,966	2,482,840
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]*	16,440	710	15,730
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,611,300	112,678	2,498,622
J	Number of doses per vial	*Vaccine parameter*	2		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,736,452	0	2,736,452
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	30,101	0	30,101
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	11,881,415	512,683	11,368,732
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	111,516	0	111,516
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	13,873	0	13,873
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	221,961	9,578	212,383
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)*	12,228,765	522,261	11,706,504
U	Total country co-financing	*I x country co-financing per dose (cc)*	522,260		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Table Annex 2.1 D: Estimated numbers for HPV bivalent, 2 dose(s) per vial, LIQUID, associated injection safety material and related co-financing budget (page 5)

		Formula	2021		
			Total	Government	Gavi
A	Country co-finance	*V*	4.31 %		
B	Number of children to be vaccinated with the first dose	*Table 5.2*	1,302,011	56,182	1,245,829
B1	Number of children to be vaccinated with the second dose	*Table 5.2*	1,233,484		
C	Number of doses per child	*Vaccine parameter (schedule)*	1		
D	Number of doses needed	*B + B1*	2,535,495	109,407	2,426,088
E	Estimated vaccine wastage factor	*Table 5.2*	1.05		
F	Number of doses needed including wastage	*D x E*	2,662,270	114,877	2,547,393
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]*	16,866	728	16,138
I	Total vaccine doses needed	*Round up((F + G) / Vaccine package size) * Vaccine package size*	2,679,200	115,608	2,563,592
J	Number of doses per vial	*Vaccine parameter*	2		
K	Number of AD syringes (+ 10% wastage) needed	*(D + G) x 1.10*	2,807,598	0	2,807,598
L	Reconstitution syringes (+ 10% wastage) needed	*(I / J) x 1.10*	0	0	0
M	Total of safety boxes (+ 10% of extra need) needed	*(K + L) / 100 x 1.10*	30,884	0	30,884
N	Cost of vaccines needed	*I x vaccine price per dose (g)*	12,190,360	526,014	11,664,346
O	Cost of AD syringes needed	*K x AD syringe price per unit (ca)*	114,415	0	114,415
P	Cost of reconstitution syringes needed	*L x reconstitution price per unit (cr)*	0	0	0
Q	Cost of safety boxes needed	*M x safety box price per unit (cs)*	14,234	0	14,234
R	Freight cost for vaccines needed	*N x freight cost as of % of vaccines value (fv)*	227,733	9,827	217,906
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)*	12,546,742	535,841	12,010,901
U	Total country co-financing	*I x country co-financing per dose (cc)*	535,840		
V	Country co-financing % of Gavi supported proportion	*U / (N + R)*	4.31 %		

Annex 3 - NVS Preventive campaign(s)

No NVS Prevention Campaign Support this year

Annex 4

Table Annex 4A: Commodities Cost

Vaccine	Presentation	2017	2018	2019	2020
HPV quadrivalent, 1 dose(s) per vial, LIQUID	1	4.550	4.550	4.550	4.550

Supply	Form

Note: WAP - weighted average price (to be used for any presentation: For DTP-HepB-Hib, it applies to 1 dose liquid, 2 dose lyophilised and 10 dose liquid. For Yellow Fever, it applies to 5 dose lyophilised and 10 dose lyophilised)

Estimated prices of supply are not disclosed

Table Annex 4B: Freight cost as percentage of value

Vaccine Antigen	Vaccine Type	2017	2018	2019	2020
HPV quadrivalent, 1 dose(s) per vial, LIQUID	HPV	2.10 %	2.10 %	2.10 %	1.87 %

Vaccine Antigen	Vaccine Type	2021
HPV quadrivalent, 1 dose(s) per vial, LIQUID	HPV	1.87 %

Table Annex 4C: Initial self-financing phase - Minimum country co-payment per dose of co-financed vaccine

Vaccine	2017	2018	2019	2020
HPV quadrivalent, 1 dose(s) per vial, LIQUID	0.2	0.2	0.2	0.2

Vaccine	2021
HPV quadrivalent, 1 dose(s) per vial, LIQUID	0.2

12. Banking Form

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

Name of Institution (Account Holder):	Federal Ministry of Health		
Address:	Sudan Avenue		
City Country:	Addis Ababa, Ethiopia		
Telephone no.:		**Fax no.:**	
	Currency of the bank account:	Ethiopian Birr	
For credit to:			
Bank account's title:	MOH-MDG DESIGNATED pooled acc		
Bank account no.:	0100081040142(0160101352600)		
Bank's name:	NATIONAL BANK OF ETHIOPIA		

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

By who is the account audited?

Signature of Government's authorizing official

Name:		**Seal**
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:

Annex 5

5.1 HPV performance by dose and delivery strategy, Aheferome district

		HPV 1		HPV 2	
	Targets	Vaccinated	Coverage%	Vaccinated	Coverage %
Strategy	In school 3021	2510	83	2317	78.5
	Out of school 76	7	9.2	6*	7.9
District total	3097	2517	81.2	2377	76.8
DOR(drop out)		5.6 %			

5.2. HPV performance by dose and delivery strategy, Gomma district

		HPV 1		HPV 2	
	Targets	Vaccinated	Coverage%	Vaccinated	Coverage %
Strategy	In school 4,176	4162	98	4,028	96.7
	Out of school 54	54	100%	54	100
District total	4,230	4216	98.4	4,082	96.8
DOR (drop out)		3.1%			