

Application Form for Cold Chain Equipment Optimisation Platform support in November 2017 only

Document Dated: April 2017

Application documents for 2017:

Countries applying for Gavi Cold Chain Equipment (CCE) Optimisation Platform support in 2017 are advised to refer to the following documents in the order presented below:



 <p>CCE Application Form</p>	<p>Purpose of this document:</p> <p>This application form must be completed in order to apply for support related to the CCE Optimisation Platform.</p> <p>Applicants are required to first read the General Guidelines for all types of support, followed by the CCE Optimisation Platform guidelines. Thereafter, applicants should complete this CCE Application Form and submit by email to proposals@gavi.org.</p>
 	<p>Resources to support completing this application form:</p> <p>Technology guide for equipment selection for counties wishing to request CCE Optimisation Platform support is available here: www.gavi.org/support/hss/cold-chain-equipment-optimisation-platform/</p> <p>Extensive technical resources relating to vaccine cold chain equipment management are available on TechNet-21: www.technet-21.org/en/resources/cold-chain-equipment-management</p>
<p>Weblinks and contact information:</p> <p>All application documents are available on the Gavi Apply for Support webpage: www.gavi.org/support/apply. For any questions regarding the application guidelines please contact countryportal@gavi.org or your Gavi Senior Country Manager (SCM).</p>	

	<p>Countries are informed that based on post IRC recommendations, final approved amounts may be different from what countries have requested.</p> <p>This final approved amount will be dependent on the availability of funding.</p> <p>Gavi will respect countries' equipment selection. However, countries could also receive their 2nd or 3rd preference based on their selection in the budget.</p>
---	---

CONTENTS

Part A: Applicant information	1
Part B: Mandatory attachments: National strategies and plans.....	2
Part C: Situation analysis and requested support	9
Part D: Initial support phase	24
Part E: Scale-up support phase	30
Part F: Budget templates.....	34
Part G: Performance framework	35

PART A: APPLICANT INFORMATION

1. Applicant information	
Country	Nepal
Date	8 th September 2017
Contact name	Dr. Bikash Lamichhane, Director Child Health Division, Department of Health Services, Ministry of Health, Government of Nepal
Email address	bikash_moon1@yahoo.com
Phone number	+977-9851136766
Total funding requested from CCE Optimisation Platform (US \$)	<i>This should correspond exactly to the budget requested in the embedded template.</i> \$ 3,340,300¹
Does your country have an approved Gavi HSS support on-going?	Yes <input checked="" type="checkbox"/>
	No <input type="checkbox"/>
	<i>Indicate the anticipated final year of the HSS: 2022</i>
Proposed CCE Optimisation Platform support start date (please be informed the actual start date should be at least 8-10 months from application date):	<i>Indicate the month and year of the planned start date of the support, based on the strategic deployment plan:</i> January 2019
Proposed CCE Optimisation Platform support end date:	<i>Indicate the month and year of the planned end date of the support, based on the strategic deployment plan:</i> December 2022
Signatures Include signed (and official) CCE Optimisation Platform application endorsement by: a) Minister of Health and Minister of Finance (or delegated authorities) b) Members of the Coordination Forum (HSCC/ICC or equivalent body)	<i>We the undersigned, affirm the objectives and activities of the Gavi CCE Optimisation Platform proposal are fully aligned with the national health strategic plan (or equivalent) and that the funds for implementing all activities, including domestic funds and any needed joint investment, will be included in the annual budget of the Ministry of Health:</i> Ministry of Health Name: _____ Signature: _____ Date: _____ Ministry of Finance Name: _____ Signature: _____ Date: _____

¹ This revision is as per WHO Pre review committee recommendation

PART B: MANDATORY ATTACHMENTS: NATIONAL STRATEGIES AND PLANS

This section provides a list of national strategies, plans and documents relevant to supply chain and requested support, which must be attached as part of the application.

	<p>All documents listed in the table below are mandatory, must be attached to your application, and they must be final and dated. Only complete applications will be assessed.</p>
---	---

2. Mandatory attachments					
No.	Strategy / Plan / Document	Attached Yes/No	Final version (dated)	Duration	Comments
1	Signature sheet for the Minister of Health and Minister of Finance, or their delegates			30 August	
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal ²	Yes		22 Aug	
3	National Health Sector Development Plan	Yes	Final	2016-2021	
4	cMYP	Yes	Final	2017-2022	
5	EVM Assessment	Yes	Final	2014-2017	
6	EVM Improvement Plan	Yes	Final	2015-2017	
7	EVM Annual Workplan and Progress Report on EVM Improvement Plan ³	Yes	Final	2017	
8	WHO CCEI Tool/UNICEF IMT/PATH CCEM Tool/CHAI tool ^{4,5}	Yes	Final	November 2016	
9	Inventory Report and Facilities segmentation	Yes	August 2017		
10	Single document: Chapter 1: Cold Chain Rehabilitation and Expansion Plan Chapter 2: Projected Coverage and Equity Improvements Chapter 3: Strategic Deployment Plan Chapter 4: Equipment Selection	Yes	August 2017		
11	Maintenance Plan with financing and source(s)	Yes	August 2017		
12	Proof of status for CCE tariff exemptions waiver				
13	Terms of Reference for the relevant Coordination Forum (such as ICC)	Yes			

² In the case of HSS and CCE Optimisation Platform requests, minutes must reflect that both were discussed and endorsed.

³ The EVM IP and annual work plan progress report must have been updated within three (3) months before applying for Platform support.

⁴ The CCE Inventory must have been updated within no more than one (1) year of applying for Platform support.

⁵ Tool should allow reviewers to understand targeting of equipment to locations relative to contribution towards improving coverage and equity of immunisation.

2. Mandatory attachments

No.	Strategy / Plan / Document	Attached Yes/No	Final version (dated)	Duration	Comments
	including all sections outlined in Section 5.2 of the General Application Guidelines				
14	Minutes of the Coordination Forum meetings from the past 12 months before the proposal	Yes			
15	Other relevant documents				
16	CCEOP supplementary recommended information	Yes	August 2017		
17	Response to the previous CCEOP proposal comment	Yes			14 August

3. How do the above strategies, plans and documents inform the CCE Optimisation Platform support request (initial support and scale-up support)? (Maximum 1 page)

Countries are encouraged to reference relevant sections of the above documents as much as possible.

Health System in Nepal

Despite the geographical, economic and political constraints, Nepal has unprecedentedly shown improvement in maternal and child survival in last two decades (page-4, Nepal Health Sector Strategy-NHSS). The NHSS has set policy goal to realize health as a fundamental right of every citizen by ensuring access to quality health services delivered through equitable and accountable health systems (page-20, NHSS). The cMYP of Nepal Immunization programme is responsible for setting the implementation policy and strategy to achieve the immunization objectives as well as to reach the broader goal set by the NHSS. Likewise, the cMYP 2017-21 has a specific goal for reduction of morbidity, mortality and disability associated with vaccine preventable diseases. To reach this goal, cMYP 2017-21 finalized sets of immunization objectives & strategies. Strengthening immunization supply chain and vaccine management system for quality immunization services is one of these major strategies (see page-46, cMYP 2017-21). This application for the Gavi CCEOP support has been developed in line with the cMYP 2017-21 goals and strategies in Nepal.

The public health structure until now has been divided into three tier system to deliver public health services. At the household level the outreach based services provide preventive, promotive and to an extent some curative services. At this level the outreach based health worker conduct immunization clinic three to four times a month based on the geographical location and micro-planning. The second tier consist of services provided from the static health facilities where in the peripheral health workers provide preventive, promotive and curative services. At this level, the health workers conduct immunization clinic once a week. At some places, some of these health facilities also function as vaccine stores wherein the vaccines are distributed to other health facilities using passive containers. The third tier consist of service provided from referral health facilities also known as hospitals wherein curative services are provided. At this level, immunization clinic is conducted on a daily basis and usually are attached to a vaccine store (page-33, NHSS).

National Immunization program (NIP)

NIP in Nepal started in 1978 with three antigens in three districts. Currently the NIP provides 11 antigens for vaccine preventable diseases during infancy. There are more than 16,000 service delivery points (sessions) per month that run throughout the year totalling around 192,000 sessions in country. In an average, some 4-5 children are served in each session in rural setup. However, there are higher number of children in the urban and densely populated districts. (Page-36 cMYP 2017-2021). The Penta3 coverage in 2016 is 82% (Government Annual Report 2016 from the Health Management Information System), while the MICS-5 2014 report indicates the Penta3 coverage of 88%.

Up to 2021 vaccine introduction plan, the country will introduce Rota vaccine in 2018, HPV in 2019 and OCV is expected to be introduced by 2020 which will raise the required cold chain volume in the immunization supply chain system significantly. The currently required cold chain volume per FIC in the country is 96cm³ at service delivery level stores (+5°C) and will increase to 181cm³ due to introduction of these new vaccines by 2021

Immunization supply chain system

The immunization supply chain is 4-tier system starting from the national level to the service delivery facilities in the community. There is one primary store at national level, 6 regional stores, 75 district stores and 421 service point stores. Vaccines are delivered from national to regional and to district stores (push system), while the service points collect their vaccines from the district stores as per their supply interval and storage capacities.

Current situation of the immunization supply chain

EVM assessment was conducted in 2014 to assess the status the performance of the supply chain and vaccine management in the country. The EVMA 2014, identified a number of critical gaps in the immunization supply chain, some of which were addressed under the EVM improvement plan funded by UNICEF, Lifeline Nepal and Gavi HSS3 (Procuring 96 fridges, refrigerated vans, RTMD, 30 DTRs etc). Despite addressing those issues, some critical gaps are still persistent in the Nepal immunization supply chain which are mentioned below-

- Net storage capacity at +2°C to +8°C for central vaccine store, one regional vaccine store is not sufficient for vaccine storage
- Sub-national level stores are lacking adequate cold boxes for transportation of vaccine
- The use of the electronic freeze indicators is sub-optimal while transporting vaccines from district to service points and to the outreach sessions
- Continuous temperature monitoring devices (30 DTRs) are not used for recording the temperature at any of the service points
- The manual temperature recording forms used were not designed to record any alarm event and not reviewed, analysed for feedback
- Preventive maintenance is not regular at service points and the equipment breakdown rate is still high
- Voltage regulators were not available for majority of equipment at districts and service points
- Supply of spare parts are not adequate
- Cold boxes and vaccine carriers are aged and prone to breakage

Cold chain Equipment Inventory November-2016

The national cold chain equipment inventory was conducted by the National EPI team, UNICEF, WHO and Lifeline Nepal (a national NGO in Nepal working with immunization supply chain) in October- November 2016 using WHO Cold Chain Equipment & Inventory Gap analysis tool.

The inventory recorded a total of **1,377 CCE from all 503 cold chain stores** (1 primary stores, 6 regional stores, 75 district stores and 421 service points), some of their key findings are as below-

Out of the **1,377 CCE**, overall **72% are functional**. At district level, **73.6%** of CCE are functional while **at SP level, 67.5% are functional**.

97% (1,329) of CCE in the country uses electricity as a source of energy and 3% (41) uses solar technology.

54% of the CCE are more than 10 years old.

Overall, **62% of the CCE are non-PQS** and 38% are PQS, whereas, **81% of the CCE at SP level are non-PQS** and 44% at LD level are non-PQS.

The national store has a capacity gap of **26,106 litres** at +5°C, while one of the six regional stores (**Hetauda**) has a gap of **3,695 litres** at +5°C.

Out of 75 district stores, 24 have capacity gaps at +5°C ranging between 24 litres to 1,486 litres and the total gap is 6,466 litres.

Out of the 421 current service point stores, 158 have vaccine storage capacity shortages at +5°C. Of the remaining 3,608 service points, 24 are providing immunization services using passive containers, 213 more facilities have an average population of >20,000 and requires storages volume more than 10 liters per supply interval, if cold chain point is established in those facilities.

Gap in capacity at +5°C (litres)	Number of Service Points
0-36L	157
36-70L	1
No gap	263
Total	421

Required capacity at +5°C (litres)	Number of service points
Required <10 litres	3,368
Required >=10 litres	240
Total	3,608

Inequity in coverage

Due to the geographical and social differences, Nepal has significant inequity in immunization coverages. The reported Penta3 coverage in 2016 is 82%. However, in geographically challenging areas, it is as low as 57%. The coverage is also low in poor and illiterate sections of the population who are more rural where there are challenges of cold chain capacity.

Rehabilitation and expansion plan for the immunization supply chain in Nepal

Based on the EVM Assessment 2014, EVM IP 2015, CCE inventory 2016, EVM IP implementation status 2017, and other programme parameters and proposed supply chain design in the country, a comprehensive rehabilitation and expansion plan has been formulated for Nepal immunization supply chain for the period of 2016-22. This rehabilitation and expansion plan focuses on the following-

- Expanding vaccine storage capacities in national, regional, district and health facility stores
- Extending cold chain capacity in new sites (health facilities) in the low performing and geographically challenging areas
- Replacement of non-PQS and sick CCEs from the supply chain
- Improve CCE maintenance system
- Improve temperature monitoring system in the vaccine supply chain
- Building capacity of the human resources in the supply chain
- Improving infrastructure and vaccine distribution system
- Improve data management system

Detailed and specific CCEs, temperature monitoring devices, spare parts, infrastructures, vehicles, training plan, data management system required for this rehabilitation and expansion have been outlined in the initial plan for 2016-21. Some supports are being provided (cold rooms, freezer rooms, infrastructures, vehicles, trainings) from the Gavi HSS3 2016-21 for few components of this rehabilitation plan.

The rehabilitation & expansion plan has been updated in July 2017 extending its implementation up to 2022 focusing the need at district and health facility levels with a view to strengthen strategy and design of vaccine delivery and service delivery (increase outreach sites) at health facility levels. This updating is well aligned with the existing Gavi HSS3.

The component of CCE & logistics as part of this rehabilitation & expansion plan which are not covered and funded by the Gavi HSS3 or any other funding sources, is now being requested for funding from the Gavi CCEOP. The summary of the support requested are shown below-

Item	Quantity required	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	Year 2021	Year 2022	Total cost/ budget (\$)	Source of funding
Walk in coldroom 15 m ³ , 40 m ³	7	2	1	2	1				700,000	HSS3
Refrigerated pickup van for central and regional stores	8	7	1						480,000	HSS3
Construction of central warehouse cum workshop for central and regional stores	7	2	2	1	1	1			2,100,000	HSS3
Establish dual feeder three phase electric supply system for central and regional stores	7	2	2	2	1				420,000	HSS3
Establish solar back up system in 60 districts	60	30	15	15					300,000	HSS3
Procure micro bus/pickup van for regional stores / RHTC	6	3		3					360,000	HSS3
Training of cold chain staff regional, districts and few service points	500	50	50	100	150	150			175,000	HSS3
Cold room for 7th regional store 30 m ³	1			1					40,000	GoN
HSS3 total									4,575,000	HSS3
ILR Vestfrost VLS200A (for Service points)	511				157	171	183		739,846	CCEOP
Freezer Vestfrost MF114 (for Service points)	491				139	169	183		556,362	CCEOP
ILR Vestfrost VLS350A (for District stores)	140							140	242,682	CCEOP
Freezer Vestfrost MF314 (for District stores)	53							53	69,078	CCEOP
Combined Refr. & freezer Dometic TCW40SDD (for Service points)	68				26	19	23		483,649	CCEOP
Sets of spare parts for existing and CCEOP equipment	150				50	50		50	450,000	CCEOP
Voltage stabilizer for existing CCE	200				100	100			20,000	CCEOP
Fridge tag 2 /30 DTR existing	1,900				700			1200	83,600	CCEOP
Long term passive container	70					30	40		206,010	CCEOP
Freeze free cold box	300						100	200	120,000	CCEOP
Freeze free vaccine carrier	3,000					1000	1000	1000	180,000	CCEOP
CCEOP total									3,151,226	CCEOP
CCEOP Total including the 6% additional buffer									3,340,300	
Grand Total budget for rehabilitation and expansion									7,915,300	

The total fund required for the entire rehabilitation and expansion of the country immunization supply chain for the period of 2016-22 is **\$7,915,300**. Gavi HSS3 & the Government of Nepal will contribute **\$4,575,000**. The rest of the fund required is **\$3,340,300** which is being requested to Gavi CCEOP in this proposal.

The support will improve the vaccine availability and quality in all levels of the supply chain, enable 230 new sites to establish cold chain stores for vaccines to initiate immunization services and strengthen the strategy of immunization service delivery at community level and thereby eliminate the inequity in coverage.

4. Describe how supply chain stakeholders (including Coordination Forum (ICC/HSCC or equivalent), government, NLWG, NITAG, key donors, partners, CSOs and key implementers) have been involved in the application development including if the quorum at the endorsing meeting was met

Does the country have a permanent and functioning National Logistics Working Group (NLWG)? If No, does the country plan to establish one and when?

Gavi and its Alliance partners encourage the establishment of such group that coordinates Government and non-Government partners' activities and investments related to the health supply chain including immunization.

Were any of Gavi's requirements to ensure basic functionality of Coordination Forums not met? Then please describe the reasons and the approach to address this (refer to section 5.2 of the General Guidelines for the requirements) (Maximum 1 page)

The ICC committee in Nepal is a 22 Member committee consists of representation from Ministry of Finance, Ministry of Education, Ministry of Health, UNICEF, WHO, DFID, USAID, World Bank as permanent member and it is chaired by the Director General of Health Services (DG-DoHS). The ICC committee meets at least 4 times a year and as and when needed.

Nepal has planned to make the second submission of the Gavi CCEOP proposal in September 2017. The ICC committee was convened on April 17, 2017 to update the committee about the Gavi

IRC comments on the February 2017 CCEOP proposal. The group reviewed the comments of the IRC committee feedback and planned to make a next submission in September 2017.

The ICC committee decided and formed a CCEOP proposal development task team to develop the proposal and mandatory documents. This team started working from April 2017 and was coordinated by National Manager for National EPI program, Child Health Division, representation from Logistic Management Division, representative from UNICEF, WHO and Life Line Nepal. The committee had advisory oversight from Director of Child Health Division and Director of Logistic Management Division. The TOR for the proposal development committee is attached.

The ICC committee reconvened on 23 August 2017 to review the status of the proposal and endorsed the new proposal for submission to Gavi.

Does the country have a permanent and functioning National Logistics Working Group (NLWG)? If No, does the country plan to establish one and when?

The country has a Logistic Working Group (LWG) established to improve the performance of supply chain of all health commodities. The LWG is chaired by Director of Logistic Management Division. It consists of 7-9 members from concerned division and other key stakeholders (LWG TOR, page 4). The LWG was consulted for selecting the CCE and new technology as part of the CCEOP proposal.

Were any of Gavi's requirements to ensure basic functionality of Coordination Forums not met? Then please describe the reasons and the approach to address this (refer to section 5.2 of the General Guidelines for the requirements) (Maximum 1 page)

The Gavi requirement to ensure basic functionality of the coordination forums in the development process of the proposal were all met well. The proposal development task team met on a fortnightly basis to update on the proposal development status as well as provide update to the LWG and ICC committee. UNICEF and WHO HQ and regional office also provided necessary guidance and technical assistance in the development of the proposals.

PART C: SITUATION ANALYSIS AND REQUESTED SUPPORT

This section gives an overview of the types of information the IRC will anticipate from countries in their application for CCE Optimisation Platform support. This section must be filled with appropriate reference to the country documents listed in Part B. Countries are required to provide a narrative in response to the following questions.

5. Situation analysis of country's supply chain and CCE (number, distribution, functionalities etc.) (Maximum 3 pages) Please respond to all questions

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

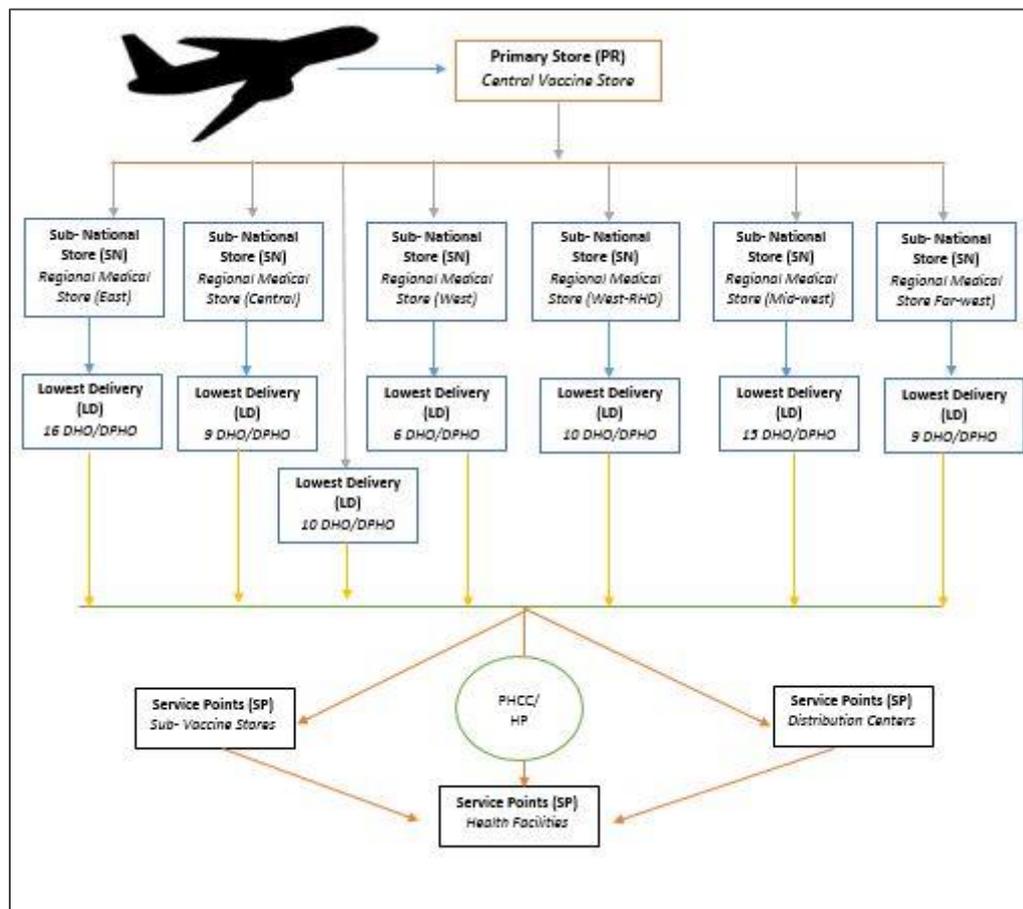
- a) *How is the country's immunisation supply chain administered?*
- b) *What weaknesses have been identified in the country's supply chain?*
- c) *Through what interventions are these weaknesses currently being addressed?*
- d) *Describe challenges that are hindering the implementation of these interventions.*
- e) *Describe lessons learnt from recent supply chain related support that inform the current request for CCE Optimisation Platform support.*
- f) *What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?*
- g) *Please give the quantity and percent of current CCE that is: a) functional; b) PQS-approved; c) non-PQS-approved; and/or d) obsolete?*
- h) *What percent of the birth cohort is served by effectively functioning, PQS-approved CCE currently?*
- i) *What are the bottlenecks that CCE can address in the current supply chain set-up (for example, capacity and technology constraints)?*
- j) *Describe any other supply chain challenges that CCE Optimisation Platform support will assist in mitigating?*
- k) *What are the overall CCE needs?*

a. How is the country's immunisation supply chain administered?

The vaccine supply chain in Nepal is a four-tier system. Vaccines, consumables and cold chain equipment are procured by the Government except in case of emergency and Gavi co-financing part of the procurement. The distribution of vaccines and consumables from National EPI stores to regional stores and regional to district stores is a push system based on annual forecasting and distribution plan. The service points collect the vaccines from the district stores (pull system).

- The primary (PR - generally national) level store where vaccines are received directly from the vaccine manufacturers or from international suppliers. Typically, vaccine is stored in large cold rooms and freezer rooms at this level.
- The sub-national (SN) level where vaccines are received from the primary store, stocked for four months, and then distributed to district level stores and to some of the health facilities. These stores have a cold room and/or a number of vaccine refrigerators and freezers. There are six sub-national stores or Regional Medical Stores in the country.
- The lowest delivery level (LD) stores are typically district stores, where vaccines are received, either from the primary store or from a sub-national/regional store. They store vaccines for a period of two months and distribute directly to the service delivery points. There are 75 LD stores.

- Service points (SP) such as primary health care centers (PHCC) and health posts (HP), where vaccine is stored for a short time (one month) before delivering to the target population. There are a total 4,029 such health facilities of which 421 have cold chain stores and 24 more provide immunization service using passive containers. The health workers of all these facilities conduct immunization clinic (outreach session) once a week, while the 421 facilities conduct additional fixed session (weekly) at the facilities. (Nepal CCE inventory & facility segmentation report, page-4).



b. What weaknesses have been identified in the country's supply chain?

Despite the improvement seen in the immunization coverage, the penta3 coverage has declined from NDHS 2011 to MICS 2014 from 91% to 88% (cMYP page-22) The HMIS reported a Pent3 coverage of 82% in 2016 which is ranging from 57% to 119% at district levels. Also, the wastage rate of vaccines is higher than the expected rate at storage level - unopened vials due frequent CCE breakdown, unavailability of gas in some areas. (cMYP, page 24).

This is an alarming indicator for National Immunization Programme (NIP) and there are urgent needs for strengthening of the immunization supply chain system along with other components of the immunization service delivery in the country to improve the coverage.

Furthermore, the EVMA 2014 and CCE inventory updating 2016 highlighted the key gaps and challenges persisting in the country immunization supply chain in terms of vaccine storage, temperature monitoring, CCE maintenance and vaccine distribution system.

EVMA 2014-

- Overall score for all criteria was 64%
- Temperature monitoring study for the vaccine supply chain was not conducted

- Temperature mapping of all cold rooms were not conducted
- Continuous temperature monitoring study was not being used for all levels of the supply chain except in primary store
- Net storage capacity at +2°C to +8°C for central vaccine store, one regional vaccine store and few district stores were not sufficient for vaccine storage required for current immunization schedule
- Sub-national level stores are lacking adequate cold boxes for transportation of vaccine
- The use of the electronic freeze indicators is sub-optimal while transporting vaccines from district to service points and to the outreach sessions
- The manual temperature recording forms used were not designed to record any alarm event and not reviewed, analysed for feedback
- Preventive maintenance is not regular at service points and the equipment breakdown rate is still high
- Voltage regulators were not available for majority of equipment at districts and service points
- Supply of spare parts are not adequate

As a requirement of the Gavi disbursement linked financing EVM secretariat, Nepal has conducted another EVM Assessment in June 2017 and the report is yet to be finalized and endorsed by the MOH.

Cold chain inventory 2016-

The national cold chain equipment inventory was conducted in October- November 2016 using WHO Cold Chain Equipment & Inventory Gap analysis tool. There is a total of 1,377 CCE recorded from all 503 cold chain points (1 primary stores, 6 regional stores, 75 district stores and 421 service points). Gap analysis was conducted by using a cold chain volume required for all vaccines planned for introduction up to 2021 as well as for the projected population of 2021. The key gaps identified are as below-

- Out of the **1,377 CCE**, **72% are functional**, 8% are non-functional but repairable, 19.6% are non-functional and non-repairable (waiting for condemnation) and remaining 0.4% are recently procured and are waiting for installation
- At district level, **73.6% of CCE are functional** while **at SP level, 67.5% are functional**
- **54% of the CCE are more than 10 years old**
- Overall, **62% of the CCE are non-PQS** and 38% are PQS, whereas, **81% of the CCE at SP level are non-PQS** and 44% at LD level are non-PQS
- The **national store has a capacity gap of 26,106 litres** at +5°C against the requirement for immunization schedule which includes planned vaccine introduction and population up to 2021
- Out of the six regional stores, only **Hetauda has a gap of 3,695 litres at +5°C**
- Out of 75 district, **24 district stores have capacity gaps** at +5°C ranging between 24 litres to 1,486 litres and the total gap is 6,466 litres. The gap is further increased into 52 district stores if obsolete CCE is removed.
- Out of the 421 current **service point stores, 158 have vaccine storage** capacity shortages at +5°C

- Of the remaining 3,608 service points, **213 facilities** have an average population of >30,000 and **requires storages volume more than 10 liters per supply interval**, if cold chain point is established in those facilities

Gap in capacity at +5°C	Number of Service Points	Required capacity at +5°C	Count of Region
0-36L	178	Required <10 litres	3,371
36-70L	1	Required >10 litres	213
No gap	266	Total	3,584
Total	445		

- Out of the total 4,029 service points (Health facilities), **727 (395 SPs having <8 hours and 332 having no electricity)** currently do not have reliable grid electricity. Among the 421 service points currently having cold chain stores, **370 (88%) have reliable grid electricity** while the remaining **51(12%) have no reliable grid electricity**
- The country has no immediate plan to shift to cool water pack policy, rather, intends to continue conditioned ice pack policy, and hence needs freezing capacity at district and service points. In 75 district stores, due to removal of obsolete freezers from the supply chain, 53 district stores will have freezing capacity shortage of varying quantities (see table below). These district stores also need freezing capacity to monthly replenish ice pack for the 70 planned long term passive containers to be located in those districts.

District store	Total freezing capacity need at district at -20°C (litres)	Freezing capacity available by removing obsolete & >10yrs old freezers (litres)	Gap in freezing capacity (litres)
Achham DHO	130	0	130
Arghakhanchi	128	1012	-884
Baitadi DHO	130	0	130
Bajhang DHO	129	247	-118
Bajura DHO	127	0	127
Banke DHPO	136	0	136
Bara DHO	141	0	141
Bardiya DHO	134	271	-137
Bhojpur DHO	126	0	126
Dadeldhura DHO	127	247	-120
Dailekh DHO	130	247	-117
Dang DHO	138	271	-133
Darchula DHO	129	247	-118
Dhading DHO	132	0	132
Dhankuta DPHO	128	0	128
Dhanusa DHO	142	0	142
DHO Baglung	130	0	130
DHO Manang	124	0	124
DHO Mustang	124	0	124
DHO Myagdi	126	0	126
DHO Nawalparasi	139	0	139
DHO Palpa	130	0	130
DHO Parbat	127	0	127
DHO Syangja	130	0	130
DHO Tanahun	132	271	-139
Dolakha DHO	128	518	-390
Dolpa DHO	125	247	-122
Doti DHO	129	247	-118
DPHO Bhaktapur	132	0	132
DPHO Chitwan	138	0	138
DPHO Gulmi	130	0	130
DPHO Kaski	136	0	136
DPHO Kathmandu	169	0	169
DPHO Lalitpur	136	0	136
DPHO Lamjung	128	518	-390
DPHO Makwanpur	134	0	134
DPHO Parsa	139	0	139
DPHO Rupendehi	146	0	146
DPHO Sarlahi	143	0	143
DPHO Sindhuli	131	0	131
Gorkha	130	247	-117
Humla DHO	125	0	125
Ilam DHO	131	0	131
Jajarkot DHO	128	247	-119
Jhapa DHO	144	0	144
Jumla DHO	127	0	127
Kailali DHO	144	0	144
Kalikot DHO	127	0	127
Kanchanpur DHO	135	518	-383
Kapilvastu	138	271	-133
Kavrepalanchwok DHO	133	0	133
Khotang DHO	128	271	-143
Mahottari DHO	139	0	139
Morang DHO	147	0	147
Mugu DHO	125	0	125
Nuwakot DHO	130	471	-341
Okhaldhunga DHO	127	471	-344
Panchthar DHO	128	247	-119
Pyuthan DHO	129	0	129
Ramechhap DHO	129	0	129
Rasuwa DHO	125	0	125
Rautahat DHO	141	0	141
Rolpa DHO	129	0	129
Rukum DHO	129	0	129
Salyan DHO	130	518	-388
Sankhuwasabha DHO	127	0	127
Saptari DHO	139	789	-650
Sindhupalchowk DHO	130	0	130
Siraha DHO	139	0	139
Solukhumbu DHO	126	0	126
Sunsari DHO	143	0	143
Surkhet DHO	129	0	129
Taplejung DHO	127	0	127
Tehrathum DHO	126	0	126
Udayapur DHO	132	0	132

- Standalone freezers are also required for all service point stores to conduct outreach sessions which are the main strategy of immunization in the community. Due to removal of obsolete and non-PQS CCE from these service point stores, 308 on-grid existing sites and 183 on-grid new sites will require on-grid freezers.

Other bottlenecks of the immunization supply chain-

Apart from the findings described in the EVM assessment and Cold chain inventory report, the country supply chain is also facing several challenges and bottlenecks which includes-

- Presence of outdated cold chain equipment technologies that are either over 10 years in the field and or Non-PQS/PIS compliant, which are prone to frequent breakdowns and poor temperature control.
- 3,608 health facilities (service points) have no cold store and providing immunization services to their catchment population through outreach services only. Many of them have large catchment area as well as population and require dedicated cold chain store to cater both fixed and outreach session to improve the immunization coverage.
- The maintenance system is largely partner/donor dependent lacking adequate technical manpower and spare parts.

c. Through what interventions are these weaknesses currently being addressed?

Following the EVMA 2014 and development of EVM IP in 2015, there have been several interventions carried out to improve the immunization supply chain system-

- 93 on-grid ILRs and 3 SDD refrigerators (SureChill) procured and installed 45 district 55 health facilities to improve the storage capacity in 2016 funded by UNICEF
- 6 cold rooms procured in 2017 for national and regional stores and under process of installation funded by Gavi HSS3
- The central and the 6 regional vaccines stores are equipped with RTMD (multilog) to monitor the temperature in 2015 funded by UNICEF
- 7 refrigerated vans procured in 2017 and under process of commissioning funded by Gavi HSS3 (EVM IP progress report)
- 359 mid-level managers are trained on EVM SOP all throughout the country (EVM IP progress report)
- Online Inventory System to get the real-time information on vaccine stock have been developed and implemented in national & 6 regions stores (EVM IP progress report).
- 2,000 CTMD (30DTR) were procured and distributed to all LD and some SP in 2015 funded by UNICEF (EVM IP progress report)
- Partnership with national level NGO (Lifeline Nepal) was initiated to provide technical assistance for maintenance of CCE and capacity building MOH staffs at all levels of the supply chain on effective vaccine management from 2015 funded by UNICEF

d. Describe challenges that are hindering the implementation of these interventions.

- Transportation and installation of CCE in hard to reach area was challenging in terms of resources
- Onsite maintenance cost is very high in remote facilities in terms of transportation
- Spare parts supply is not secured for CCE maintenance
- The 30DTRs procured and distributed in 2015 are in the verge of expiry and needs replacement and funding is not secured
- There are challenges hindering the implementation of EVM Improvement Plan as the government's budget allocation for the EVM Improvement plan has been inadequate.

- e. **Describe lessons learnt from recent supply chain related support that inform the current request for CCE Optimisation Platform support.**

Lessons learnt from deployment of sure chill refrigerators

In 2015, UNICEF supported with 96 on-grid and off-grid refrigerators in 45 districts. The distribution and installation of the refrigerator was supported by Lifeline Nepal (LLN). Two refrigerator technicians from national store and two from Lifeline Nepal were trained for the installation and preventive & corrective maintenance of these equipment. Major problem identified was with the distribution of the equipment due to geographical terrain. These technicians were also trained on installation of SDD refrigerator during this installation.

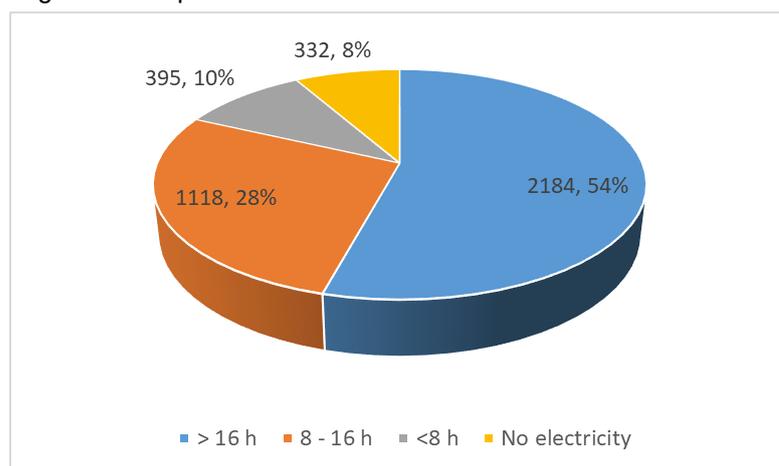
Temperature monitoring data from the newly installed CCE indicates that the incidence of temperature excursions is minimized leading to improved vaccines quality

Data from the 30DTRs show that old and non-PQS CCE are prone to incidence of temperature excursions

Installation of new CCE in health facilities increased their storage capacity and improved vaccine availability to conduct more outreach sessions

- f. **What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?**

The chart below shows the segregation of 4,029 service point facilities based on the access to grid electricity for > 8 hours per day. The data is derived from WHO CCEI tool and facility segmentation plan.



Among the 421 service points currently having cold chain stores, 88% have grid electricity >8 hours per day. Overall, 82% of all the storage facilities (national, regional, district and service points) have grid electricity for >8 hours per day.

- g. **Please give the quantity and percent of current CCE that is: a) functional; b) PQS-approved; c) non-PQS-approved; and/or d) obsolete?**

Out of the total 1,377 CCE in the country, 72% of the CCE are functional, 8% are non-functional but repairable, 19.6% are non-functional and non-repairable (waiting for condemnation) and remaining 0.4% are recently procured and are waiting for installation.

Overall, 62% of the CCE are Non-PQS and 38% are PQS, Whereas, 81% of the CCE at SP level are Non-PQS and 44% at LD level are Non-PQS.

- h. **What percent of the birth cohort is served by effectively functioning, PQS-approved CCE currently?**

10% of the birth cohort is served by effectively functioning PQS-approved currently (excluding the PR, SN & LD CCE).

i. What are the bottlenecks that CCEOP can address in the current supply chain set-up (for example, capacity and technology constraints)?

Following are the bottlenecks that CCEOP can address in the current supply chain set-up-

- Health facilities and district stores which are currently having shortage of storage capacity may be addressed
- Health facilities which have currently no storage capacity but urgently need to store vaccines to conduct immunization sessions may be addressed
- Non-PQS and >10 years old equipment may be replaced
- Vaccine wastage in facilities with unreliable electricity may be addressed by shifting of technology to SDD
- Long term passive container shortage to improve vaccine availability at remote small health facilities may be addressed
- Monthly replenishment of ice packs for long term passive devices stationed in remote facilities from on-grid district stores by providing them freezers

j. Describe any other supply chain challenges that CCE Optimisation Platform support will assist in mitigating?

- Maintenance challenges due to lack of adequate spare parts may be addressed
- Lack of continuous temperature monitoring devices shortage/challenges at service points level may be addressed

k. What are the overall CCE needs?

In reference to the Nepal CCE inventory & facility segmentation report by using WHO CCEI tool (page-19), it is noted that, of the total 4,029 health facilities, 158 need expansion (due to capacity gaps), 230 need extension (old and new sites without CCE), and 190 need replacement due to >10 years old CCE. Also, 24 district stores need expansion, 28 district stores need replacement of ILRs and 53 district stores need to replace freezers. The table below shows the need of a total 1,263 CCE-

HSS3 total									4,575,000
ILR Vestfrost VLS200A (for Service points)	511			157	171	183			739,846
Freezer Vestfrost MF114 (for Service points)	491			139	169	183			556,362
ILR Vestfrost VLS350A (for District stores)	140						140		242,682
Freezer Vestfrost MF314 (for District stores)	53						53		69,078
Combined Refr. & freezer Dometic TCW40SDD (for Service points)	68			26	19	23			483,649
Sets of spare parts for existing and CCEOP equipment	150			50	50		50		450,000
Voltage stabilizer for existing CCE	200			100	100				20,000
Fridge tag 2 /30 DTR existing	1,900			700			1200		83,600
Long term passive container	70				30	40			206,010
Freeze free cold box	300					100	200		120,000
Freeze free vaccine carrier	3,000				1000	1000	1000		180,000
CCEOP total									3,151,226
CCEOP Total including the 6% additional buffer									3,340,300

A total of 1,263 refrigerators & freezers, 150 sets of spare parts, 200 units of voltage stabilizers, 1,900 units of Fridge Tag2, 70 units of long term passive containers, 300 freeze free cold boxes and 3,000 freeze free vaccine carriers are requested from the CCEOP.

These require an amount of **\$ 3,340,300** that has been requested from the Gavi CCEOP platform.

PS: Spare parts price has been assumed as 10% of the CCE price.

Service bundles: Nepal is a landlocked country and uses a sea port in India for receiving sea freights. The usual cost for a container from Indian port to Nepal land port costs \$4000-5000.

Also, the district and health facilities are in mountain and hilly areas with poor road communication. Therefore, the service bundles for both on-grid and off-grid equipment considered relatively higher than the lower limit.

Please see the rehabilitation expansion plan of Nepal (page-17) for the entire rehabilitation and expansion plan and CCE needs.

6. Expected immunisation coverage, equity and sustainability results (Maximum 2 pages)

Please respond to all questions

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

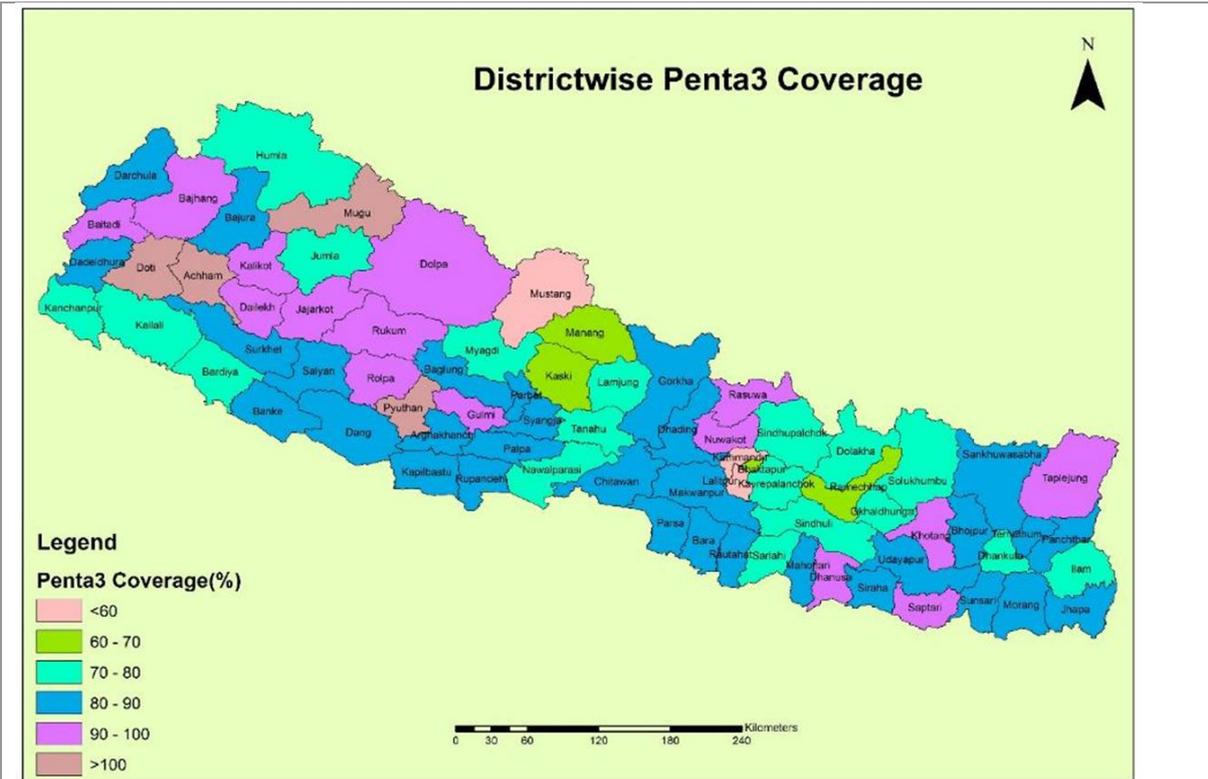
- a) *How will the requested Platform support concretely contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation? Examples may include (not exhaustive):*
 - o *Geographically remote districts or those with low coverage*
 - o *Poorer communities (e.g. in the poorest 10% of the population)*
 - o *Communities where gender barriers are significant and/or where low levels of female education is common (as this is often associated with lower coverage)*
- b) *What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?*
- c) *How have these system design considerations impacted the choice of CCE to be supported by the Platform?*
- d) *Concretely, how will Platform support help improve the sustainability of the supply chain system?*

a. Geographic and socio-economic inequities in immunization

Inequity in immunization coverage due to geographical differences-

Nepal has a diverse geographical terrain with more than 40 percent of the population residing in hill and high mountain region (46 out of 75 districts in the country is mountainous). The average time to reach for the health service seekers to a health facilities in the hills and high mountainous region is 2-3 hours. To improve the access to basic services such as immunization, the health facility conduct outreach clinics 3-5 times in a month. However, the number of service point vaccine stores/cold chain points in these geographical remote areas are only 2-3 per district. According to the HMIS reported 2016 penta3 coverage, 23 out of 75 districts have a coverage <80%. Of this, 19 districts are located in these hilly/mountainous and hard to reach areas. This increases the distance to access vaccine sub-store from the health facility ranges from 6 hours to 2 days resulting in hindrance of access to immunization services.

The figure below shows the low performing district located in the hills and mountains in the north and east.



Inequity in immunization coverage due to other social factors

In reference to the MICS 2014, there are significant differences in Penta3 coverage in terms of family income, which shows that the poorest quintiles have 63% Penta3 coverage which is 88% in the richest quintile. Largely, the poorest section of the population is living in the rural areas in hills which have persistent challenges in terms of immunization supply chain and immunization service delivery. On the other hand, there is no significant differences in the coverage of male and female target population.

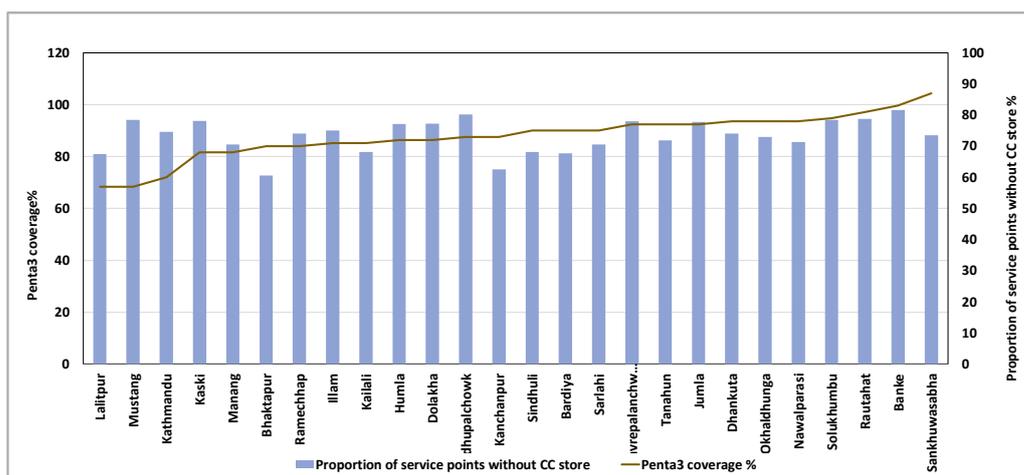
In terms of mothers' education, women who are illiterate having 53% more chance of not being fully immunized and children who reside in the mountains have 47% more chance of not being fully immunized (table below).

Multivariate logistic regression displaying adjusted odds ratios for children not being fully immunized (BCG, DTP x3, Polio x3 and Measles) at 12 months in Nepal. (Adjusted for sex of child).

	2001		2006		2011		2014	
	OR	CI 95%						
Non-poor (2 nd -5 th Percentile)	Ref		Ref		Ref		Ref	
Poor (Lowest percentile)	1.56	1.37-1.79	2.05	1.71-2.46	1.70	1.44-2.22	1.17	0.93-1.46
Literate	Ref		Ref		Ref		Ref	
Illiterate	4.13	3.52-4.85	3.12	2.60-3.75	3.20	2.57-4.00	1.53	1.20-1.96
Hill/Terai	Ref		Ref		Ref		Ref	
Mountain	1.03	0.82-1.30	1.55	1.20-2.01	0.75	0.57-0.98	1.47	1.14-1.90
Urban	Ref		Ref		Ref		Ref	
Rural	1.13	0.85-1.51	0.63	0.48-0.82	0.89	0.68-1.17	1.41	0.96-2.08

b. What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?

The chart below shows 23 districts with Penta3 coverage < 80% and proportion of health facilities in those districts not having any cold chain stores (as per the CCE inventory 2016). It indicates that these particular districts have a high number of facilities without any cold chain equipment. However, there are other factors among the districts which impact the immunization coverage like the number of outreach sessions conducted per year.



Based on this analysis and taking into account the existing CCE and HR capacities, the country intends to extend cold chain in currently unequipped facilities as well as expand capacities in existing cold chain points having shortages and replace the non-PQS and obsolete CCE in health facilities and districts stores to improve the vaccine availability and quality.

c. How have these system design considerations impacted the choice of CCE to be supported by the Platform?

Based on the CCE inventory, facility segmentation, and inequity in coverage, a summary of CCE expansion & rehabilitation plan has been updated (see rehab and expansion page-13). To optimize the CC system, standalone ILRs & freezers were chosen for the on-grid facilities and some district stores. Likewise, SDD technology and long-term passive containers were selected for off-grid and remote small facilities respectively. Country has large number of unequipped facilities covered only by outreach sessions. Strategic extension of cold chain capacity into these facilities has been planned and appropriate CCE have been included in the request for 230 such sites.

The country has no immediate plan to shift to cool water pack policy, rather, intends to use freeze free passive containers. Although the existing freezers in district stores are mostly obsolete and non-PQS. Therefore, freezers at district and service point stores are planned for rehabilitation and new freezers and freeze free cold boxes and vaccine carriers are requested for procurement. Removal of non-PQS and obsolete and >10 years old freezers from 75 district stores will lead to freezing capacity shortage in 53 districts. These district stores also need freezing capacity to replenish ice pack monthly for the 70 long term passive containers located in those districts.

Standalone freezers are also required for all service point stores to conduct outreach sessions which are the main strategy of immunization in the community. Due to removal of obsolete and non-PQS CCE from these service point stores, 308 on-grid existing sites and 183 on-grid new

sites will require on-grid freezers. The off-grid sites will mitigate the ice pack freezing capacity by the TCW40SDD.

d. Concretely, how will Platform support help improve the sustainability of the supply chain system?

Expansion of cold chain capacity in the existing cold chain points and the extension of the cold chain capacity in the new facilities will improve the overall vaccine availability at the service delivery points in the country. It will also improve the capacity of the service points to increase the number of outreach sessions in the catchment areas. The current target population for Penta3 is 623,000 and coverage is 82%, leaving 112,140 children (18%) missed every year. CCEOP support will improve the vaccine availability and other supply chain fundamentals (HR, maintenance, temperature monitoring, data management, etc.) which is expected to improve the penta3 and other antigens' coverage significantly.

7. Maintenance plan (and its source of funding) and equipment disposal (Maximum 2 pages)
Please respond to all questions

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

- a) *How will the country ensure that aspects of maintaining the cold chain are addressed (e.g. preventive and corrective maintenance, monitoring functionality, technicians, financing for maintenance, etc.)?*
 - o *What is the frequency of preventative and corrective maintenance that the country commits to (supported by partners)?*
 - o *What technical support is anticipated for maintenance?*
- b) *How will the country monitor the completion of preventive and corrective maintenance?*
 - o *Which source(s) of funding will be used for maintenance, and to what extent are they assured?*
- c) *How will the country dispose of obsolete and irreparable equipment replaced by CCE Optimisation Platform equipment?*

a) How will the country ensure that aspects of maintaining the cold chain are addressed (e.g. preventive and corrective maintenance, monitoring functionality, technicians, financing for maintenance, etc.)?

The EVM Assessment report 2014 showed that the maintenance criteria E5 requires more attention and intervention to obtain 80% target level set by WHO-UNICEF. EVM improvement plan has provided a clear framework for addressing the bottlenecks of cold chain equipment maintenance in Nepal. The framework includes the policy and procedural aspects of preventive & corrective maintenance, monitoring & reporting, and continuous capacity building and financing of the maintenance system. The strategies on CCE maintenance highlighted by the EVM IP are as follows-

- o Collection of Cold Chain Equipment Inventory data from all levels and stores, its integration in eLMIS and update of the inventory quarterly in order to keep proper track of cold chain performance and maintenance.
- o Development of repair and maintenance plan at central level and disseminate in lower levels by assessing the needs acknowledged by cold chain equipment inventory.
- o Detail costing and budget for the maintenance activities (requirements of spare parts, manpower, travel and DSA of technicians) and source of funding.
- o Work in close coordination with partner organizations like WHO, UNICEF, Lifeline Nepal and National Health Training Centre for technical and financial provision required for the planning, implementation and monitoring of maintenance plan.
- o Capacity building of staff involved in maintenance and repair of the cold chain equipment.

- **What is the frequency of preventative and corrective maintenance that the country commits to (supported by partners)?**

The Logistics Management Division in the MOH in association with the partners, has developed the repair and maintenance plan for the period of 2017-2021 in line with CCE rehabilitation and expansion plan and EVM IP. The policy and procedures as per this plan on preventive and corrective maintenance are as follows-

The maintenance system is mix of government and outsourced initiative. At central, regional and districts level there are Mechanical engineers, refrigerator technicians and Cold Chain Officer/assistants respectively. In addition, there are contracted outsourced agency who provides services whenever requested by the government maintenance network.

For corrective maintenance, whenever required, the responsible store/CCE handler co-ordinate to respective district and regional level. Regional technician will respond to fix the problem or contact to national level who further contact the outsourced company for complex repair onsite. The spare parts are stored at central and regional levels. UNICEF Nepal is also providing technical support and emergency supply of some spare parts stock at national and regional stores. The corrective maintenance is reported and compiled at region and forwarded to national level.

The CCE handlers are responsible for the preventive maintenance at health facilities and district levels while the cold chain technicians/refrigerator technicians are responsible at regional and national level. The activities for preventive maintenance will be done as defined by EVM SOP manual) on weekly, monthly and annual basis & and emergency basis. The preventive maintenance activities are reported upward up to national level on a quarterly basis.

- **What technical support is anticipated for maintenance?**

For effective cold chain equipment maintenance, technical support is anticipated in following area-

- Development of module for capacity building and develop competency of cold chain and EPI staffs/CCE handlers in cold chain management.
 - Train EPI staff/CCE handlers on Cold Chain management component
 - Train Refrigerator technicians and cold chain assistants in equipment maintenance
 - Train staffs on operating and maintaining new cold chain equipment and temperature recorders supplied with them.
- Development of SOP for different CCE models/technologies for specific store levels.
- Disposal of non-functioning and non-repairable cold chain equipment and other unwanted commodities for strengthening the storage space in cold room.
- Training and tools development for updating of inventory on 6 monthly basis

b) How will the country monitor the completion of preventive and corrective maintenance?

The country will monitor the completion of preventive and corrective maintenance by establishing a quarterly maintenance reporting system from each district store to regions and

to national level. Temperature monitoring data including the incidence of temperature excursions will also be reported from health facilities to district, to regions and to national levels quarterly. A national focal person will monitor the maintenance and temperature data by using the appropriate indicators (percentage of CCE functional, CCE sickness rate, temperature excursion rate etc.) to provide feedback to respective stores and maintenance technicians.

CCE inventory updating will be conducted every six months to monitor the functionality of existing CCE and the CCEOP supported equipment.

Maintenance and temperature monitoring data will be incorporated in eLMIS system when it is fully functional with the support of UNICEF.

- ***Which source(s) of funding will be used for maintenance, and to what extent are they assured?***

The provision is guided by cMYP. The source of funding involves government budget, funding from partner organizations such as UNICEF and Gavi for the maintenance of cold chain equipment. These organizations have been working closely with the government system for the strengthening of health systems since decades. Their role in effective vaccine management and cold chain management is impeccable. The maintenance budget for 2017-2021 is **\$1,023,000** (Nepal CCE maintenance plan, page-11).

- c) ***How will the country dispose of obsolete and irreparable equipment replaced by CCE Optimisation Platform equipment?***

The country will dispose obsolete and irreparable equipment replaced by CCE Optimisation Platform by conducting auctioning as per the guideline for auction and disposal, revised by LMD in 2010. The process of auction involves following steps.

- Segregation of unusable and non-repairable goods (according to government regulation) from physical inventory and collect them for auctioning in separate locations.
- Preparation of list of unusable items for auditing purpose
- Inspection of unusable items according to government regulations by evaluating committee of government representatives
- Determination of prices of goods to be auctioned by evaluation committee.
- Preparation of necessary auctioning document and publishing of notice of auctioning.
- Auctioning and handover of auctioned items to the buyer.

The process helps to generate revenue for the government and expand the storage space in the cold room by freeing the space occupied by obsolete and non-repairable equipment. Lifeline Nepal (National NGO) is assisting the LMD in providing technical support required for carrying out auctioning process in government health institutions.

8. Other implementation details (Maximum 1 page) Please respond to all questions

Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

Information is required to cover the following areas:

- a) How will the country facilitate the manufacturer's or representative's role in equipment purchase, distribution and installation?*
- b) What is the source of the joint investment? Is the country's joint investment secured?*
- c) Has the country secured import tariff exemptions for CCE? If yes, attach proof.*

Nepal agrees to Gavi CCEOP recommendations to engage UNICEF supply division to deal with the supplier for all the procurement and deployment of the new equipment. The country will liaise through the UNICEF country office with the SD to communicate with the manufacturers/suppliers on modalities and details of custom clearances, warehousing, transportation, installation and user training. The operation deployment planning for 681 CCE in year 1 & 2 (2019-20) is ongoing and will be provided to the Gavi by January 2018. The Logistic Management Division will tag its technicians/personnel with the supplier representative to assist the process of installation.

Nepal has received the HSS3 grant for 2016-2021 of 36.75 million USD for the Nepal Health Sector Strategy 2016-2021. As per the guidance from the Gavi CCEOP, the 20% co-financing amount **\$668,060** Nepal will provide the co-funding from the HSS3.

As per the government's New Procurement Act and Regulation 2017, the country will have any duty exemption if procured through UN and bilateral agency. Following the approval of the CCEOP Application submitted by the government to Gavi the Ministry of Finance will issue a Duty Exemption Letter for the supply of CCE to the country. (See the letter from Child Health Division).

PART D: INITIAL SUPPORT PHASE

This **initial support phase** (through years 1 and 2) is designed to address urgent CCE needs contributing to improvements in coverage and equity, to protect vaccine stocks, complement investments in other supply chain ‘fundamentals’ and contribute to full scale-up of optimised, sustainable supply chains.

	Budgets are not inclusive of operational cost. Operational costs must be financed by Ministry of Health or other partners.
---	--

	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Annex 3 of the CCE Optimisation Platform Guidelines, available at www.gavi.org/support/apply/
---	--

9. Prioritised (Urgent) CCE needs (Maximum 3 pages)

Provide information on **2 to 4 prioritised (urgent) CCE needs** as identified in the ‘CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements’.

For each prioritised (urgent) CCE need, please provide the following information:

1. **The need:** Type of activity (e.g. replace obsolete CCE, extend CCE to unequipped facilities, etc.); specific CCE site (facility); type of equipment required; quantity of equipment items.
2. **Justification:** Reasons for urgent need (e.g. low CCE and/or immunisation (Penta3) coverage area, gender barriers, mobile population, etc.); current CCE and immunisation (Penta3) coverage in the population area.
3. **Expected outcome:** Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).
4. **Total CCE budget:** includes Gavi and country joint investment share

Prioritised (Urgent) CCE Need #1 (in 2019)

The need	<table border="1"> <thead> <tr> <th>CCE model</th> <th>Number of CCE</th> </tr> </thead> <tbody> <tr> <td>Vestfrost VLS200A (ILR)</td> <td>157</td> </tr> <tr> <td>Vestfrost MF114 (Freezer)</td> <td>139</td> </tr> <tr> <td>Dometic TCW40SDD (Combined)</td> <td>26</td> </tr> <tr> <td>Fridge Tag2 (30DTR)</td> <td>700</td> </tr> <tr> <td>Sets of spare parts</td> <td>50</td> </tr> <tr> <td>Voltage regulator</td> <td>100</td> </tr> <tr> <td>Total refrigerators & freezers</td> <td>322</td> </tr> </tbody> </table>	CCE model	Number of CCE	Vestfrost VLS200A (ILR)	157	Vestfrost MF114 (Freezer)	139	Dometic TCW40SDD (Combined)	26	Fridge Tag2 (30DTR)	700	Sets of spare parts	50	Voltage regulator	100	Total refrigerators & freezers	322
CCE model	Number of CCE																
Vestfrost VLS200A (ILR)	157																
Vestfrost MF114 (Freezer)	139																
Dometic TCW40SDD (Combined)	26																
Fridge Tag2 (30DTR)	700																
Sets of spare parts	50																
Voltage regulator	100																
Total refrigerators & freezers	322																
Justification	322 CCE for expansion of 158 health facilities (existing sites) that require urgent expansion due to current shortage in storage capacity and extension of cold chain into 24 old unequipped sites. The freezing capacity is also required in 158+24 facilities as a result of removal of non-PQS and obsolete CCE. These facilities are mainly from the low performing districts as well as with inequity in immunization coverage. 700 fridge Tag (30DTRs) to replace the existing devices procured and installed in 2015 that are expiring in 2017.																
Expected outcome	Health facilities will have adequate storage capacity so is the availability of vaccines with better temperature monitoring in the low performing areas. Vaccine storage will also be established in 24 sites. This will enable the service points to increase the fixed and outreach sessions as well as accommodating new vaccine introduction to improve the equity in coverage.																

Total CCE budget	\$ 806,171																		
Prioritised (Urgent) CCE Need #2 (in 2020)																			
The need	<table border="1"> <thead> <tr> <th>CCE model</th> <th>Number of CCE</th> </tr> </thead> <tbody> <tr> <td>Vestfrost VLS200A (ILR)</td> <td>171</td> </tr> <tr> <td>Vestfrost MF114 (Freezer)</td> <td>169</td> </tr> <tr> <td>Dometic TCW40SDD (Combined)</td> <td>19</td> </tr> <tr> <td>Sets of spare parts</td> <td>50</td> </tr> <tr> <td>Voltage stabilizer</td> <td>100</td> </tr> <tr> <td>Arktek YBC 5 (Long term passive container)</td> <td>30</td> </tr> <tr> <td>Freeze free vaccine carrier</td> <td>1000</td> </tr> <tr> <td>Total refrigerators & freezers</td> <td>359</td> </tr> </tbody> </table>	CCE model	Number of CCE	Vestfrost VLS200A (ILR)	171	Vestfrost MF114 (Freezer)	169	Dometic TCW40SDD (Combined)	19	Sets of spare parts	50	Voltage stabilizer	100	Arktek YBC 5 (Long term passive container)	30	Freeze free vaccine carrier	1000	Total refrigerators & freezers	359
	CCE model	Number of CCE																	
	Vestfrost VLS200A (ILR)	171																	
	Vestfrost MF114 (Freezer)	169																	
	Dometic TCW40SDD (Combined)	19																	
	Sets of spare parts	50																	
	Voltage stabilizer	100																	
	Arktek YBC 5 (Long term passive container)	30																	
	Freeze free vaccine carrier	1000																	
Total refrigerators & freezers	359																		
Justification	359 CCE for replacement of CCE in 190 health facilities (old sites) that require urgent replacement due to huge obsolete and non-PQS CCE. Extension of storage capacity in 30 remote facilities with 30 long term passive containers to initiate immunization sessions. 1000 freezer free vaccine carrier to replace aged vaccine carriers which are prone to breakage.																		
Expected outcome	This will enable the service points to improve the vaccine storage quality currently having non-PQS & old CCE as well as initiate immunization sessions in some new remote facilities. This will also increase the immunization coverage by establishing cold chain in remote areas with long term passive container.																		
Total CCE budget	\$ 935,455 (Spare parts price has been assumed as 10% of the CCE price).																		
GRAND TOTAL CCE BUDGET: Initial support (Years 1 and 2)	\$ 1,741,626																		

10. Summary of INITIAL SUPPORT PHASE replacement/rehabilitation, expansion and extension plan

All countries must fill this section to highlight the number of equipment and corresponding number of sites these equipment will serve to meet their replacement/rehabilitation, expansion and extension targets. See Section 6.2 of the CCE optimisation Platform Guidelines for the definitions of replacement/rehabilitation, expansion and extension. The values entered below must align with those in Section 9 above and in other parts of the application form.

Replacement/Rehabilitation		Expansion		Extension	
Existing sites with (non)functional and/or obsolete non-PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)	Existing sites with (non)functional and/or obsolete PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)	Equipping existing sites with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population		Equipping previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and add new service sites	
<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>
171 ILR	171	133 ILR	132 (SP)	24 ILR	24 (SP)
169 Freezer		115 Freezer		24 Freezer	
19 SDD	19	26 SDD	26 (SP)		

359	190	Total	Total	274	158	48	24
------------	------------	--------------	--------------	------------	------------	-----------	-----------

11. Ongoing or planned activities around other supply chain fundamentals in the initial support phase

In this section, linkages must be drawn between requested CCE Optimisation Platform support, ongoing Gavi investments (especially through the Health Systems Strengthening support) and other partner supply chain support.

Describe planned or ongoing activities related to other supply chain fundamentals (see section 3.1 of the CCE Optimisation Platform Guidelines) during the initial support phase, including their sources of funding. Responses to this section should be linked to the EVM Improvement Plan.

Supply chain managers

Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.

The immunization officers and the cold chain management officers in the central vaccine stores, regional vaccine stores and district vaccine stores are being trained on the EVM standard operating protocol.

Training has been also provided in the preventive maintenance of the cold chain equipment.

This support has been provided through the UNICEF support and will be supported through the Gavi HSS grant in 2017-2021.

Currently, USAID through its grant to Chemonic, has been providing training to supply chain managers in the general store in the central Ministry of Health and provincial government in the warehouse management.

The trained manpower will be able to better manage the CCEOP funded CCE deployment and subsequent maintenance.

Data for supply chain management

Describe all planned or ongoing activities related to data for management, their sources of funding, and partner support. In particular, provide information explaining how improvements to the functionality of logistics management systems will improve the visibility of up-to-date and accurate vaccine stock records at each level of the vaccine supply chain.

To improve the vaccine stock management, an online inventory system for vaccine and devices has been developed. The online inventory system provides real time stock management of vaccine.

Currently the online vaccine inventory system is being piloted in central vaccine stores and regional vaccine stores.

Plan has e been made to expand the online vaccine inventory system to 25 more districts in 2017 and remaining completion by 2019.

Currently, USAID is planning to expand the online inventory system into a eLMIS system.

	CCEOP funded CCE performance will be monitored through this online eLMIS once implemented.
<p>Optimised, efficient design of distribution system <i>Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.</i></p>	<p>In order to optimise the efficient design of the distribution system, UNICEF has embedded cold chain management mentors in 22 low performing districts in 2015-2016. The aim of cold chain management mentor is to improve the vaccine supply system in districts and below.</p> <p>A new regional (provincial store) has been established in province-7. CCE (cold room) are being procured to make it functional by 2018.</p> <p>CCEOP funded CCE like freeze free cold boxes and vaccine carriers and long-term passive containers will further complement the improvement of vaccine distribution and management in remote areas.</p>
<p>Continuous improvement process <i>Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.</i></p>	<p>In 2014, to improve the capacity of the ministry on vaccine supply chain management and optimized cold chain system, UNICEF provided additional support to provided full time experts in Cold Chain system at the Logistic Management Division, MoHP. An Effective Vaccine Management Secretariat was formed under the leadership of Director of logistic Management Division which coordinates the functions as increasing fiscal space and technical capacity for cold chain management, introducing better technology for vaccine management. The terms of reference of the EVM secretariat is to provide continuous support to review the progress made in the EVM IP as well as to monitor the EVM IP progress at the sub-national level.</p>
<p>Temperature monitoring <i>Describe the temperature monitoring devices that are currently available in the country? E.g. central level (CTMS), sub-national, lowest distribution and service delivery levels (30 DTRs and RTM devices), and during transportation (freeze tags).</i> <u>Furthermore, describe which measures are in place to</u> <i>a) obtain temperature data from the various devices;</i> <i>b) act following temperature alarms (curative maintenance);</i></p>	<p>All the CCE equipment in central vaccine store and regional store have temperature monitoring devices in place with a centralized monitoring system (RTMD). At the district and sub-district sub-vaccine store are also provided CTMD.</p>

c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and

d) countries wishing to purchase such devices are required to demonstrate how the recurrent costs, such as HR, data transmission, analysis etc., will be covered in this section.

The remaining existing CCE and the CCEOP funded CCE will be equipped with CTMD.

The use of electronic RTMD in higher level stores and CTMD in peripheral storage locations, vaccine quality will be improved and sustained in the supply chain.

PART E: SCALE-UP SUPPORT PHASE

This second phase of Gavi CCE Optimisation Platform support (provided from approximately year 3 onwards) is designed to address additional CCE needs as part of optimising design and increasing the sustainability of the supply chain.

	Budgets are not inclusive of operational cost. Operational costs must be financed by Ministry of Health or other partners.
---	--

	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Annex 3 of the CCE Optimisation Platform Guidelines, available at www.gavi.org/support/apply/
---	--

12. Prioritised (Additional) CCE needs (Maximum 3 pages)

Provide information on **2 to 4 prioritised (additional) CCE needs** as identified in the 'CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements'.

For each prioritised (additional) CCE need, please provide the following information:

- The need:** Type of activity (e.g. replace obsolete CCE, extend CCE to unequipped facilities, etc.); specific CCE site (facility); type of equipment required; quantity of equipment items.
- Justification:** Reasons for urgent need (e.g. low CCE and/or immunisation (Penta3) coverage area, gender barriers, mobile population, etc.); current CCE and immunisation (Penta3) coverage in the population area.
- Expected outcome:** Anticipated increase in CCE and immunisation coverage (Penta3); anticipated progress against identified inequity (describe, in alignment with country Performance framework).
- Total CCE budget:** includes Gavi and country joint investment share

Prioritised (Additional) CCE Need #1 (2021)

The need	<table border="1"> <thead> <tr> <th>CCE model</th> <th>Number of CCE</th> </tr> </thead> <tbody> <tr> <td>Vestfrost VLS200A (ILR)</td> <td>183</td> </tr> <tr> <td>Vestfrost MF114 (Freezer)</td> <td>183</td> </tr> <tr> <td>Dometic TCW40SDD (Combined)</td> <td>23</td> </tr> <tr> <td>Arktek YBC 5 (Long term passive container)</td> <td>40</td> </tr> <tr> <td>Sets of spare parts</td> <td>50</td> </tr> <tr> <td>Freeze free cold box</td> <td>100</td> </tr> <tr> <td>Freeze free vaccine carrier</td> <td>1000</td> </tr> <tr> <td>Total refrigerators & freezers</td> <td>389</td> </tr> </tbody> </table>	CCE model	Number of CCE	Vestfrost VLS200A (ILR)	183	Vestfrost MF114 (Freezer)	183	Dometic TCW40SDD (Combined)	23	Arktek YBC 5 (Long term passive container)	40	Sets of spare parts	50	Freeze free cold box	100	Freeze free vaccine carrier	1000	Total refrigerators & freezers	389
CCE model	Number of CCE																		
Vestfrost VLS200A (ILR)	183																		
Vestfrost MF114 (Freezer)	183																		
Dometic TCW40SDD (Combined)	23																		
Arktek YBC 5 (Long term passive container)	40																		
Sets of spare parts	50																		
Freeze free cold box	100																		
Freeze free vaccine carrier	1000																		
Total refrigerators & freezers	389																		
Justification	All the 389 CCE under Need #1 will be installed in currently unequipped 206 health facilities (service points), to extend cold chain capacity that are currently partially covered by outreach sessions only. 40 long term passive containers will be installed in 40 remote facilities in the low performing mountain areas which are also partially covered currently.																		
Expected outcome	This will enable the new service points in few urban and mostly remote areas to establish vaccine storage/vaccine availability and quality and to initiate regular fixed and outreach immunization sessions. This will also increase the immunization coverage by establishing cold chain in remote areas with long term passive container.																		
Total CCE budget	\$ 904,840 (Spare parts price has been assumed as 10% of the CCE price).																		

Prioritised (Additional) CCE Need #2 (2022)																	
The need	<table border="1"> <thead> <tr> <th>CCE model</th> <th>Number of CCE</th> </tr> </thead> <tbody> <tr> <td>Vestfrost VLS350A (ILR)</td> <td>140</td> </tr> <tr> <td>Vestfrost MF114 (Freezer)</td> <td>53</td> </tr> <tr> <td>Sets of spare parts</td> <td>50</td> </tr> <tr> <td>Fridge Tag2 (30DTR)</td> <td>1,200</td> </tr> <tr> <td>Freeze free cold box</td> <td>200</td> </tr> <tr> <td>Freeze free vaccine carrier</td> <td>1000</td> </tr> <tr> <td>Total refrigerators & freezers</td> <td>193</td> </tr> </tbody> </table>	CCE model	Number of CCE	Vestfrost VLS350A (ILR)	140	Vestfrost MF114 (Freezer)	53	Sets of spare parts	50	Fridge Tag2 (30DTR)	1,200	Freeze free cold box	200	Freeze free vaccine carrier	1000	Total refrigerators & freezers	193
	CCE model	Number of CCE															
	Vestfrost VLS350A (ILR)	140															
	Vestfrost MF114 (Freezer)	53															
	Sets of spare parts	50															
	Fridge Tag2 (30DTR)	1,200															
	Freeze free cold box	200															
	Freeze free vaccine carrier	1000															
Total refrigerators & freezers	193																
Justification	All the 193 CCE will be installed in 53 district stores to replace non-PQS and >10 years old ILRs and freezers. 140 ILRs will be required to mitigate the gap in 24 district and to replace obsolete ILRs in 28 more districts. Also, 53 freezers are required in 53 district stores which will have shortage of freezing capacity due to removal of non-PQS and obsolete freezers. Also, these districts need to replenish ice packs for the long-term passive containers located in these districts and to provide ice pack for conducting outreach sessions in unequipped facilities around and to support ice pack when remote facilities collect their monthly vaccine supply.																
Expected outcome	This will enable the districts stores to improve the vaccine storage quality as well as temperature monitoring in the stores currently having non-PQS & old CCE. The maintenance cost will come down by replacing old CCE. Arktek will also get regular ice pack replenishment from district stores.																
Total CCE budget	\$ 693,833 (Spare parts price has been assumed as 10% of the CCE price).																
GRAND TOTAL CCE BUDGET: \$ 1,598,673																	
“Scale-up support” (Years 3, 4 & 5)																	

13. Summary of SCALE-UP SUPPORT PHASE replacement/rehabilitation, expansion and extension plan

All countries must fill this section to highlight the number of equipment and corresponding number of sites these equipment will serve to meet their replacement/rehabilitation, expansion and extension targets. See Section 6.2 of the CCE optimisation Platform Guidelines for the definitions of replacement/rehabilitation, expansion and extension. The values entered below must align with those in Section 9 above and in other parts of the application form.

Replacement/Rehabilitation		Expansion		Extension			
Existing sites with (non)functional and/or obsolete non-PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Existing sites with (non)functional and/or obsolete PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)		Equipping existing sites with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population		Equipping previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and add new service sites	
<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>	<i>No of Equipment</i>	<i>No of sites</i>
140 ILR	53					183 ILR	183
53 Freezer						183 Freezer	
						23 SDD	23
193	53	Total	Total	Total	Total	389	206

14. Ongoing or planned activities around other supply chain fundamentals in the scale-up support phase

In this section, linkages must be drawn between requested CCE Optimisation Platform support, ongoing Gavi investments (especially through the Health Systems Strengthening support) and other partner supply chain support.

Describe planned or ongoing activities related to other supply chain fundamentals (see section 3.1 of the CCE Optimisation Platform Guidelines) during the scale-up support phase, including their sources of funding. Responses to this section should be linked to the EVM Improvement Plan.

Supply chain managers

Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.

The immunization officers and the cold chain management officers in the central vaccine stores, regional vaccine stores and district vaccine stores are being trained on the EVM standard operating protocol.

Training has been also provided in the preventive maintenance of the cold chain equipment.

This support has been provided through the UNICEF support and will be supported through the Gavi HSS grant in 2017-2021.

Currently, USAID through its grant to Chemonic, has been providing training to supply chain managers in the general store in the central Ministry of Health and provincial government in the warehouse management.

The trained manpower will be able to better manage the CCEOP funded CCE deployment and subsequent maintenance.

Data for supply chain management

Describe all planned or ongoing activities related to data for management, their sources of funding, and partner support. In particular, provide information explaining how improvements to the functionality of logistics management systems will improve the visibility of up-to-date and accurate vaccine stock records at each level of the vaccine supply chain.

To improve the vaccine stock management, an online inventory system for vaccine and devices has been developed. The online inventory system provides real time stock management of vaccine.

Currently the online vaccine inventory system is being piloted in central vaccine stores and regional vaccine stores.

Plan has e been made to expand the online vaccine inventory system to 25 more districts in 2017 and remaining completion by 2019.

Currently, USAID is planning to expand the online inventory system into an eLMIS system.

CCEOP funded CCE performance will be monitored through this online eLMIS once implemented.

<p>Optimised, efficient design of distribution system</p> <p><i>Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.</i></p>	<p>In order to optimise the efficient design of the distribution system, UNICEF has embedded cold chain management mentors in 22 low performing districts in 2015-2016. The aim of cold chain management mentor is to improve the vaccine supply system in districts and below.</p> <p>A new regional (provincial store) has been established in province-7. CCE (cold room) are being procured to make it functional by 2018.</p> <p>CCEOP funded CCE like freeze free cold boxes and vaccine carriers and long-term passive containers will further complement the improvement of vaccine distribution and management in remote areas.</p>
<p>Continuous improvement process</p> <p><i>Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.</i></p>	<p>In 2014, to improve the capacity of the ministry on vaccine supply chain management and optimized cold chain system, UNICEF provided additional support to provided full time experts in Cold Chain system at the Logistic Management Division, MoHP. An Effective Vaccine Management Secretariat was formed under the leadership of Director of logistic Management Division which coordinates the functions as increasing fiscal space and technical capacity for cold chain management, introducing better technology for vaccine management. The terms of reference of the EVM secretariat is to provide continuous support to review the progress made in the EVM IP as well as to monitor the EVM IP progress at the sub-national level.</p>
<p>Temperature monitoring</p> <p><i>Describe how the temperature monitoring system will evolve? Which devices will be used?</i></p> <p><u><i>Furthermore, describe which measures are in place to</i></u></p> <p><i>a) obtain temperature data from the various devices;</i></p> <p><i>b) act following temperature alarms (curative maintenance);</i></p> <p><i>c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system; and</i></p> <p><i>d) countries wishing to purchase such devices are required to demonstrate how the recurrent costs, such as HR, data transmission, analysis etc., will be covered in this section.</i></p>	<p>All the CCE equipment in central vaccine store and regional store have temperature monitoring devices in place with a centralized monitoring system (RTMD). At the district and sub-district sub-vaccine store are also provided CTMD.</p> <p>The remaining existing CCE and the CCEOP funded CCE will be equipped with CTMD.</p> <p>The use of electronic RTMD in higher level stores and CTMD in peripheral storage locations, vaccine quality will be improved and sustained in the supply chain.</p>

PART F: BUDGET TEMPLATES

This section details the number of requested equipment items and equivalent budget. A maximum investment amount (and indicative number of equipment items) corresponding to the phased support request will be considered for recommendation of approval by the IRC and subsequent decision by Gavi.

However, in consultation with the Secretariat and in-country partners, the number of equipment items may be modified when the detailed operational plan is developed subsequent to the Platform proposal and the support may vary within the limit of the approved maximum amount.

Budgets must be completed in the attached budget template, and with reference to the **CCE Optimisation Platform Guidelines, Gavi CCE Optimisation Platform Technology Guide and CCE planning prices and Total Cost of Ownership (TCO) analysis tool**.

15. CCE Optimisation Platform - Budget Template

*To be filled by **ALL** countries after selection of equipment that best suit their CCE needs (e.g. specific model and make).*

Countries will plan with indicative PQS prices and corresponding service bundle estimates (depending on equipment being on/off-grid and estimated costs of service bundle).

Planning price ranges are provided in this template.

How to fill the attached budget template: Countries should:

- *Select appropriate 'Equipment Model' against the listed equipment types*
- *Fill out the 'Estimated service bundle cost' and 'Number of equipment' requested*
- *(In the last 'Total CCE OP Request' table), fill out second and third preference for each model selected. The second and third preference should be comparable products in the same capacity segment. **Countries are informed that Gavi, and its Alliance partners principally UNICEF, will try as much as possible to respond to countries' first preference, but manufacturers' lead time could also lead to countries receiving cost estimates for either their second or third preference.***

Completed budget template should be sent as an attachment along with application form.

Budgeting for Buffer and Procurement fees

- *Buffer fees: A 7% buffer on **total equipment cost** is built into country yearly budgets. This will cover currency variations, demurrage and associated costs and will be returned to country, if unused.*
- *Procurement fees: Countries will also need to **pay UNICEF's procurement costs for the country joint investment portion**, estimated to be up to 8.5%. Please obtain actual amounts from the UNICEF country office.*

PART G: PERFORMANCE FRAMEWORK

Countries must include **CCE Optimisation Platform indicators** in the application. The indicators need to be included in the Performance Framework for the current and/or proposed Gavi HSS support, after Platform proposal approval.

According to their specific context, countries are required to consider the most appropriate data sources to report on programme implementation and progress against the targets set. This should be discussed with partners (which may provide technical assistance) and the Gavi Secretariat.

Programmatic reporting updates, as well as targets and indicator updates, will be made as part of the Gavi performance framework and annual Joint Appraisal process. Countries are expected to consider relevant smart indicators to be monitored and reported against, in terms of intermediate results or outcomes/impact.



Further information on developing relevant indicators, including a list of possible data sources, is provided in Section 7.2 of the CCE Optimisation Platform Guidelines, available at www.gavi.org/support/apply/

16. Indicator monitoring and reporting requirements

As a **minimum**, countries need to monitor and report on:

- **5 MANDATORY intermediate results indicators;**
- **1 MANDATORY intermediate result indicators if countries are procuring User independent freeze protected cold boxes and vaccine carriers; and**
- **1 to 3 ADDITIONAL intermediate results indicator(s).**

- 1) **CCE Replacement/Rehabilitation in existing equipped sites:** Percentage of existing sites with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)
- 2) **CCE Expansion in existing sites:** Percentage of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population;
3. **CCE Extension in unequipped existing and in new sites:** Percentage of previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and new service sites being equipped with Platform eligible equipment.

4. CCE maintenance : Well-defined indicator proposed by country to reflect appropriate maintenance of equipment; for example percentage of equipped facilities with functioning cold chain,⁶ such as demonstrated by remote temperature monitoring; **and**

3) **5. Freeze-free to non-freeze-free carrier ratio**: Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country?

USE THE TABLE BELOW TO COMPLETE MANDATORY INDICATORS

Indicator <i>(Provide name of the mandatory indicator as shown above)</i>	Definition <i>(Provide definition if not already specified)</i>	Data Source <i>(identify data source)</i>	Reporting frequency <i>(Annual, semi-annual, quarterly etc.)</i>	Baseline (2018) <i>(Provide numerator and denominator for calculating percentage)</i>	Target Year 1 (2020) <i>(Provide numerator and denominator for calculating percentage)</i>	Target Year 2 (2021) <i>(Provide numerator and denominator for calculating percentage)</i>	Target Year 3 (2022) <i>(Provide numerator and denominator for calculating percentage)</i>
1. CCE Replacement/ rehabilitation in existing Equipped sites	Percentage of existing sites with (non)functional and/or obsolete non-PQS and PQS equipment to be replaced with platform-eligible ILR, SDD or long-term passive devices (including equipping sites with a larger equipment)	Annual Inventory Report	Annual	Numerator = 0 Denominator=552 Percentage= 0%	Numerator = 359 Denominator=552 Percentage=65%	Numerator = 0 Denominator=552 Percentage=0%	Numerator = 193 Denominator=552 Percentage=35%
2. CCE expansion in existing equipped sites:	Percentage of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population;	Annual Inventory report	Annual	Numerator = 0 Denominator=274 Percentage=0%	Numerator = 274 Denominator=274 Percentage=100%	Numerator = Denominator= Percentage=%	Numerator = Denominator= Percentage=

⁶ **Indicator definition:** % CCE functioning = (# functioning CCE devices) / (total # of CCE devices designated for use). CCE devices considered for this indicator include all refrigerators, fixed passive storage devices, walk-in cold rooms and freezers designated for string vaccines. Both the numerator and denominator should be collected from the same geographical area / period in time and should not include decommissioned equipment. Functionality of CCE is broadly defined to mean that the device is operable at a particular point in time for storing vaccine.

3.. CCE extension in unequipped existing and/or new sites:	Percentage of previously unequipped sites (providing immunisation services or not, including existing sites without active devices) and new service sites being equipped with Platform eligible equipment.	Annual Inventory Report	Annual	Numerator = 0 Denominator=1070 Percentage=0	Numerator = 48 Denominator=437 Percentage=11%	Numerator = 389 Denominator=437 Percentage=89%	Numerator = Denominator= Percentage=
4. CCE maintenance	Percentage of functional CCE in the system	Annual Inventory Report/ routine maintenance report	Six monthly	Numerator = 0 Denominator=681 Percentage=0	Numerator = 612 Denominator=681 Percentage=90%	Numerator = 963 Denominator=1070 Percentage=90%	Numerator = 1137 Denominator=1263 Percentage=90%
5. Freeze-free to non-freeze-free carrier ratio	Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country	Annual Inventory Report/ routine maintenance report	Six monthly	Numerator = 0 Denominator=6500 Percentage=	Numerator = 1000 Denominator=5500 Percentage=	Numerator = 2000 Denominator=4500 Percentage=	Numerator = 3000 Denominator=3500 Percentage=

ADDITIONAL intermediate results indicator(s): Countries are required to suggest 1 to 3 intermediate results indicators to track performance of rehabilitation, expansion, maintenance and/or other supply chain fundamentals (include baseline, data source, targets and frequency of reporting).

Examples of additional intermediate results indicators options are:

1. **Functional status of cold chain equipment:** Ratio of functional CCE and ratio of districts with at least 90% functional equipment;
2. **Closed vial wastage:** Rate at a national, district and facility level;
3. **Forecasted demand ratio:** Ratio of actual usage compared to forecast (vaccines);
4. **Full stock availability:** Ratio of facilities/districts without any stock out;
 - a. Stocked according to plan: Percentage of facilities/stores/districts that have stocks levels between set minimum and maximum stock levels;
5. **Temperature alarms:** Frequency and magnitude of heat and cold alarms per monitoring period (i.e., temperature excursion) and number of CCE devices with more than a certain level of temperature excursion;
6. Rate of health facilities dashboard use, timely analysis and use for decision making;
7. **On-time and in-full (OTIF) delivery:** Ratio of order completely delivered on time; **or**
8. Number of health managers trained and despatched for supply chain oversight function and rate of reported monitoring activities.

USE THE TABLE BELOW TO COMPLETE ADDITIONAL INDICATORS

Indicator <i>(Provide name of the additional indicators as shown above)</i>	Definition <i>(Provide definition if not already specified)</i>	Data Source <i>(identify data source)</i>	Reporting frequency <i>(Annual, semi-annual, quarterly etc.)</i>	Baseline (Year) <i>(Provide numerator and denominator for calculating percentage)</i>	Target Year 1 <i>(Provide numerator and denominator for calculating percentage)</i>	Target Year 2 <i>(Provide numerator and denominator for calculating percentage)</i>	Target Year 3 (If applicable) <i>(Provide numerator and denominator for calculating percentage)</i>
Ratio of district with functional CCE	90% out 75 districts should have all CCE functional	CCE Inventory reporting/ routine maintenance	Quarterly	Numerator = 0 Denominator=0 Percentage=0	Numerator = 68 Denominator=75 Percentage=90%	Numerator = 68 Denominator=75 Percentage=90%	Numerator = 68 Denominator=75 Percentage=90%

		<i>report</i>					
<i>Incidence of temperature excursions</i>	<i>Less than 5 % from all equipment</i>	<i>Temperature monitoring report</i>	<i>Quarterly</i>	<i>Numerator = 0</i> <i>Denominator=0</i> <i>Percentage=0</i>	<i>Numerator = 0</i> <i>Denominator=0</i> <i>Percentage=0</i>	<i>Numerator = 0</i> <i>Denominator=0</i> <i>Percentage=0</i>	<i>Numerator = 0</i> <i>Denominator=0</i> <i>Percentage=0</i>