Application Form for Cold Chain Equipment Optimisation Platform support in 2019

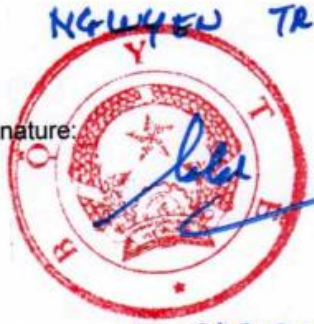
Document Dated: November 2018

CCE Application Form	**Purpose of this document:** This application form must be completed in order to apply for support related to the CCE Optimisation Platform. Applicants are required to read the **Application guidelines** and **How to request new Gavi support** documents. Thereafter, applicants should complete this CCE Application Form and submit by email to proposals@gavi.org.
CCE TG 	**Resources to support completing this application form:** **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/ **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
Weblinks and contact information: All application documents are available on the Gavi Apply for Cold Chain Equipment support webpage: http://www.gavi.org/support/process/apply/cceop/. For any questions regarding the application guidelines please contact countryportal@gavi.org or your Gavi Senior Country Manager (SCM).	

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

CONTENTS

PART A: APPLICANT INFORMATION

1. Applicant information		
Country	Viet Nam	
Date	28 August 2019	
Contact name	Prof. Dr. Dang Duc Anh National Institute of Hygiene and Epidemiology (NIHE) Director, National Expanded Program on Immunisation (NEPI) Manager	
Email address	dangducanh.nihe@gmail.com; ducanh@nihe.org.vn	
Phone number	(+8424) 39712989	
Total funding requested from CCE Optimisation Platform **(US $)**	*This should correspond exactly to the budget requested in the embedded template.*	
Does your country have an approved Gavi HSS support on-going?	Yes ☐	**No X** ☐
	*Indicate the anticipated **final year** of the HSS: Not applicable*	
Proposed CCE Optimisation Platform **support start date** *(please be informed the actual start date should be at least 8-10 months from application date):*	*Indicate the month and year of the planned start date of the support, based on the strategic deployment plan: Sept. 2020*	
Proposed CCE Optimisation Platform support end date:	*Indicate the month and year of the planned end date of the support, based on the strategic deployment plan: Sept. 2021*	
Signatures *Include signed (and official) CCE Optimisation Platform application endorsement by:* a) *Minister of Health (or delegated authorities)* b) *Members of the Coordination Forum (HSCC/ICC or equivalent body)*	*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:* **Minister of Health (or delegated authority)** Name: Vice Minister of Health NGUYEN TRUONG SON Signature:  Date: 30 SEP 2019	

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.

☆	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.

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	Yes	30 Sept. 2019		
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal[1]	Yes	Sept. 2019		
3	National Health Sector Development Plan/ Strategy (or similar)	Yes	2015	2016-2020	
4	cMYP	Yes	2015	2016-2020	
5	EVM Assessment	Yes	2015	2015	EVMA report
6	EVM Improvement Plan	Yes	2015	2016-2020	EVM IP Plan
7	EVM Annual Workplan and Progress Report on EVM Improvement Plan[2] - 7.1: Progress report on implementation of EVM IP (word file) - 7.2: Progress report on implementation of EVM IP (Excel file)	Yes	2019	2019	Progress report
8	WHO CCEI Tool/UNICEF IMT/PATH CCEM Tool/CHAI tool[3,4]	No			CCE inventory report 2018
9	Inventory Report and Facilities segmentation - 9.1: CCE segmentation Viet Nam (Excel file) - 9.2: Facility segmentation plan	Yes	2019	2019	CCE inventory report 2018 and facility segmentation plan
10	Comprehensive document on CCE needs: Chapter 1: Cold Chain Rehabilitation and Expansion Plan Chapter 2: Projected Coverage and Equity Improvements	Yes	2019	2019	

[1] In the case of HSS and CCE Optimisation Platform requests, minutes must reflect that both were discussed and endorsed.
[2] The EVM IP and annual work plan progress report must have been updated within three (3) months before applying for Platform support.
[3] The CCE Inventory must have been updated within no more than one (1) year of applying for Platform support.
[4] 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**
	Chapter 3: Operational Deployment Plan, including deviation plan Chapter 4: Equipment Selection				
11	Maintenance Plan with financing and source(s)	Yes	2019	2019	
12	Proof of status for CCE tariff exemptions waiver	Yes			The Law on Value-Added Tax
13	Other relevant documents: • 13.1. Letter from World Bank on the co-financing for this CCEOP • 13.2. Experience and lessons learnt on implementation of the first CCEOP • 13.3. The Viet Nam Communist Party Resolution on strengthening and improving health care and protection to the people in the new context • 13.4. Viet Nam WHO-UNICEFJRF 2018	Yes	Aug. 2019 Sept. 2019 Oct. 2017 Mar 2019		

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)*

There is strong enabling environment for immunization in Viet Nam. This is evident through the Government's development and implementation of the Health Sector Plan 2016-2020 [5], the comprehensive Multiple Year Plan (cMYP) 2016-2020 [6], and the Viet Nam Communist Party Resolution on strengthening and improving health care and protection to the people in the new context. [7] These key policies set clear strategies, objectives and tasks for the national Expanded Programme on Immunization (NEPI) to achieve and maintain high immunization coverage especially in the hard to reach areas and introduce new vaccines in Viet Nam. The targets of obtaining the full immunization rate of at least 95 per cent for 12 and 14 vaccines by 2025 and 2030 respectively facilitate further investment to strengthen the cold chain system and capacity for vaccine storage and supply especially at district and commune level. The Communist Party Resolution enables Ministry of Health (MOH) to plan for introducing 2 new vaccines such as Rotavirus and PCV vaccines in routine immunization by 2030. At this stage, MOH has approved the introduction of Rota vaccine in Viet Nam starting from 2021. The introduction of new vaccines also requires significant improvement of existing storage capacity to accommodate increased volume of vaccines.

The latest Effective Vaccine Management Assessment (EVMA) in 2015 [8] produces key recommendations for ensuring sufficient capacity of cold chain through the implementation of EVM Improvement Plan (EVM IP).[9] The key findings of the EVMA are outstandingly high for all levels of the supply chain. The EVM IP lists 67 recommendations to increase EVM criteria, 14 of which were related to cold chain equipment improvement. The EVMA has identified the cold chain needs of providing refrigerators for provincial and district stores with insufficient storage capacity in consideration of new vaccine introduction such as rotavirus

[5] Document 3: The Health Sector Plan 2016-2020
[6] Document 4: The comprehensive Multiple Year Plan (cMYP) 2016-2020
[7] Document 13.3: The Viet Nam Communist Party Resolution No 20 NQ-TW dated on 25 Oct. 2017 on strengthening and improving health care and protection to the people in the new context
[8] Document 5: Effective Vaccine Management Assessment (EVMA) Report in 2015
[9] Document 6: EVM Improvement Plan (EVM IP)

vaccine and replacing TCW 3000 older than 10 years of functioning. These needs have formed the first cold chain application of Viet Nam (CCEOP1) which has been approved by Gavi since 2017. The deployment of the CCEOP1 is planned to start from November 2019 and complete by August 2020.

Viet Nam operates a 5-tier supply chain system that consists of 1 national, 4 regional vaccine stores, 63 provincial stores, 712 district vaccine stores, and 11,160 commune health centre (CHC)[10]. Cold chain capacity appeared to be sufficient at this stage; however, with slight delay in implementation of the CCEOP1, the CCE gap remains almost unchanged and the existing capacity is not sufficient for 2021 onwards when at least two new vaccines including Rotavirus are introduced through funding from the government. In addition, there are needs for extra cold chain storage capacity for different scenarios for new vaccine introduction and ensuring capacity to reach to the unreached children (e.g. introduction of PCV, HPV and supply of CCEs for provision of Hepatitis B birth dose at hospitals). The latest cold chain inventory in 2018 showed that 1,681 TCW 3000 refrigerators at provinces and districts are in use and functional, of which 1,158 (69%) were installed in 2008.[11] Obviously, there is an urgent need for EPI Viet Nam to gradually replace 1,158 refrigerators with ageing more than 10 years.

From 2019-2024, MOH will implement a Project of "Investing and Innovating for Grassroots Health Service Delivery" in 13 provinces of Viet Nam (Grassroots Health Project) financed by a loan for the World Bank (WB). Improving immunization coverage including the Hepatitis B birth dose in those provinces is a priority, and in this regard, this Project plans to procure and supply appropriate cold chain equipment for district hospitals and commune health centers in the hard to reach areas. The investment value of approximately USD 1,000,000 for cold chain equipment will serve as the Government's share needed to leverage a matching in-kind grant from Gavi through its CCEOP.[12]

Given the needs for strengthening cold chain system and capacity and the opportunity of doubling the impact of the Grassroots Health Project's investment in vaccine cold chain, the MOH has approved the second application for cold chain equipment (CCEOP2) which will be submitted to Gavi for support to strengthen further the national cold chain capacity for introduction of new vaccines and reaching to the un-reached children in Viet Nam.[13] The CCEOP2 proposal is for procurement and installation, in the initial phase, of 182 ILR refrigerators (TCW4000AC 240L) for 182 difficult districts of 19 provinces; and 873 appropriate refrigerators ((e.g. HBC80 61 L) for 128 district hospitals providing childbirth vaccination (Hepatitis B birth dose) and 745 hard-to-reach communes of 12 districts of 13 provinces under the Grassroots Health Project financed by a loan from WB. In the scale-up phase from 2022 onwards, priority is given for deployment of CCEs to districts and communes without functioning equipment (destroyed or new facilities); facilities where the storage capacity needs to be expanded for increasing target population and new vaccines introduction, and replacement of the CCEs with age more than 10 years.[14] The total funding requested for CCEOP2 is USD 1,999,917 over a period of 12 months from Sept. 2020-Sept. 2021, of which USD 999,958 (approximately USD1,000,000) joint-investment (50%) coming from the World Bank's loan Project in 13 difficult provinces.

The CCEOP2 will complement investments in supply chain fundamentals funded by the CCEOP1, domestic budget, HSS (GAVI), bilateral cooperation (Luxembourg Development, JICA), and INGOs (PATH). These fundamentals will contribute to the sustainability of the National EPI, reinforce the coverage and equity of immunization as per Viet Nam's vision to reach every child even in isolated and disadvantaged areas.

Overall, the deployment of CCEOP1 and this proposed CCEOP2 will strengthen the national cold chain capacity especially at district and community level in the difficult and hard to reach areas of Viet Nam where the need is the greatest. This will contribute to successful introduction of new vaccines such as the Rota vaccine which is planned in 2021, reaching to the hard to reach children, and increasing and maintaining high coverage of full immunization in Viet Nam.

[10] Document 11: Maintenance Plan with financing source (s), page 3-4
[11] Document 8: CCE Inventory Report 2018
[12] Document 13.1: Letter from World Bank on the co-financing for this CCEOP
[13] Document 1: Signature sheet for the Minister of Health and Minister of Finance, or their delegates
[14] Document 9.2: Facility segmentation plan

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 (NWLG)? 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)*

On basis of a Grassroots Health Project in 13 provinces of Viet Nam financed through a WB's loan, the concept for development of this CCEOP2 was initiated by MOH represented by the General Department of Preventive Medicine, Department of Planning and Investment, and National EPI; and by WB, Gavi, and UNICEF. In addition, relevant representatives from the Ministry of Planning and Investment and the Ministry of Finance were consulted. The full application was then developed with active participation and technical support from EPI mangers and officials, cold chain experts and technicians of NEPI, and technical staff from CHAI, PATH, WHO and UNICEF. The ICC facilitated the process of application development with programmatic questions and operations including immunization supply chain (iSC) and, consequently, involved in the entire process of preparation of technical documents and development, review and finalization of the application. At the ICC meeting on 6th September 2019, ICC members (MOH, NEPI, CHAI, PATH, WHO, and UNICEF) endorsed the CCEOP2 application for submission to Gavi.[15]

The NEPI has a functioning working group with job description for vaccines and cold chain equipment which is comprised of one full time national cold chain expert and 7 engineers and technicians at national level; 5 engineers and 13 technicians at regional level; and 13 engineers and 25 technicians at provincial level. Although this group is not considered as the formal NLWG, it provided support for updating and reviewing the CCE inventory list, identifying the gaps and developing the rehabilitation and expansion plan as well as the deployment plan. They also provided technical review and recommendations on selection of equipment. NEPI has plan to review and establish a formal NLWG based on the existing working group on cold chain equipment in 2020 and the Central Procurement Unit established by MOH.

MOH has just established a permanent Central Procurement Unit which at this stage is mainly responsible for planning, procurement and supply of medicine and relevant biological products for the country. It would be possible to expand and strengthen the roles and responsibilities of this unit to cover procurement and supply of vaccines, medical and cold chain equipment in the future.

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?

[15] Document 2: Minutes of the ICC meeting

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?*
l) *Is the country policy to use cool water packs or conditioned ice packs?*

a. Viet Nam immunisation supply chain administration

Viet Nam with a population of 96.2 million (*Population Census 2019 Initial Report*) has recently experienced steady rates of economic growth and social development. The country is divided into 6 major geographical zones, including Red River Delta Area, Northern Midlands and Mountain Area, North Central and Central Coastal Area, Central Highlands, South East and Mekong River Delta. The rapidly growing urban centers of Ha Noi in the north (population 8.05 million), and Ho Chi Minh City in the south (population 8.7 million) could be considered as an additional highly urbanized ecological zone. The health sector structure conforms to the administrative structures with a network of national hospitals and institutes, provincial hospitals, provincial Center for Disease Control (CDC), district health centers including district hospitals, and commune health centers, which are further networked by a system of village health workers. Viet Nam operates a 5-tier supply chain system that consists of 1 national, 4 regional vaccine stores, 63 provincial stores, 712 district vaccine stores, and 11,160 commune health centre (CHC).[16] The cold chain system is managed by the NEPI board of managers. Each CHC is one immunization point but EPI vaccines are not stored in CHC, except in very hard to reach communes. Monthly fixed routine immunization session lasting for 1 – 3 days is organized at CHC and, in addition, outreach sessions are carried out at village level in the hard to reach communes of about five percent of CHC national wide. The NEPI vaccines are distributed by vehicles with frequencies of bi-monthly from national and regional storages to provincial storages and monthly from provincial to district and commune storages. All vaccines used in the routine immunisation program are produced in country except the DTP-HepB-Hib and the IPV vaccines that are imported. In June 2015, The World Health Organization formally certified Viet Nam as having a fully equipped national regulatory authority (NRA) that ensures the safety and efficacy of vaccines produced and used in the country. The certification means that Viet Nam's NRA is compliant in all areas required to provide regulatory oversight of vaccines: overall system framework; marketing authorization and licensing; post-

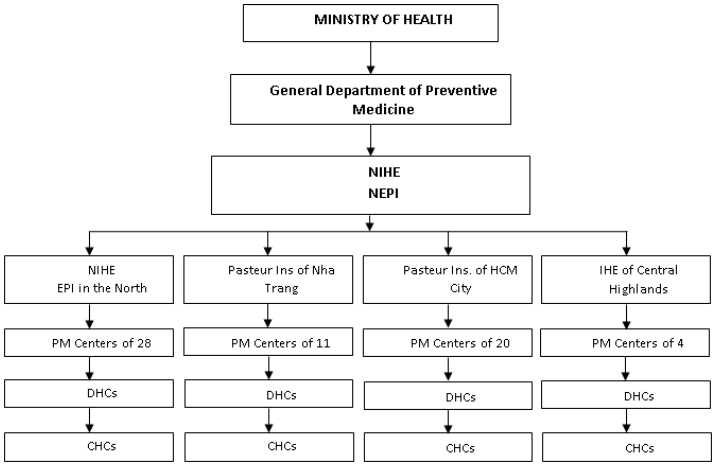


Figure 1Vietnam NEPI organization chart

[16] Document 11: Maintenance Plan with financing source (s)

marketing surveillance, including for adverse events following immunization; lot release; laboratory access; regulatory inspections of manufacturing sites and distribution channels; and authorization and monitoring of clinical trials.

b. Viet Nam Supply Chain Weaknesses

Viet Nam has achieved very good results in the EVM.[17] The aggregate performance across all nine vaccines management criteria assessed achieved or exceeded the WHO's minimum recommended levels of performance across all criteria assessed (Table 1).

Tier of Supply Chain	E1: Vaccine arrival	E2: Temperatur	E3: Storage capacity	E4: Buildings, equipment,	E5: Maintenanc	E6: Stock manageme	E7: Distribution	E8: Vaccine manageme	E9: MIS, supportive functions
Primary Store	77%	90%	79%	92%	100%	96%	79%	96%	78%
regional Stores	84%	84%	96%	84%	84%	92%	89%	96%	96%
Provincial Stores		89%	96%	92%	92%	93%	90%	95%	93%
district Stores		92%	96%	95%	88%	86%	89%	89%	89%
Clinics		88%	78%	94%	84%	81%	95%	87%	85%

Table 1: 2015 EVMA Results

Likewise, the EVMA revealed key weaknesses that need to be addressed:

1) VVM is not used in local vaccines: local vaccine manufacturers do not use Vaccine Vial Monitors (VVM) time/temperature indicators. This will add approx. USD cents 6/vial on vaccine costs of vaccine typically with 10-20 doses/vial. There are no major capital investment costs for manufacturers and one manufacturer (Polyvac) is apparently already set up with cap labelling equipment. Use of VVM's provides scope to introduce the Multi Dose Vial Policy (MDVP) which can potentially reduce wastage levels to the recommended WHO levels which are approximately 25% lower than current wastage levels in Vietnam. Economies from reduced wastage are likely to more than offset the increased costs of vaccines.
2) The supply chain is critically short of refrigerated storage space for vaccines particularly at the national and 2 regional stores and to some extent at provincial stores. This is an impediment to permit maximum and minimum stick levels and reserve stick levels to be aligned with WHO's recommended practices. Likewise, cold rooms are insufficiently fitted with state of the art WHO/PQS prequalified temperature monitoring systems so to provide program managers with a real-time dashboard of vaccine storage quality at all cold room storage locations.
3) The data management system does not include an inventory of supply chain equipment, hence a correlation between available storage space at any location and stock volumes cannot be made. The system also does not provide a direct linkage between the supply chain and immunised children record; hence, its present form does not include provision for batch tracking to the point of use. Likewise, it appears that data from immunisation activity in the private sector may not be reported in NEPI immunisation statistics.
4) The web-based tool used for stock management of supplies does not include stock management at district stores. Indeed, it covers national, regional and provincial stores. There is no link to immunisation records, and no link between stock management, vaccine quality monitoring and available storage capacity for vaccine on a real-time basis.

[17] Document 5: Effective Vaccine Management Assessment (EVMA) Report in 2015

5) Some vaccine refrigerators are not fitted with continuous monitoring devices and personnel have yet to receive training in the use of 1,350 temperature monitoring devices recently supplied. Additionally, there are insufficient freeze indicators for use in cold boxes and vaccine carriers used to transport freeze sensitive vaccines.
6) Lessened equitable immunization access and coverage for remote, ethnic minority and migrant populations because of a lack of vaccine storage equipment in closer proximity with increased frequency of opportunities for contact.
7) Insufficient skills/competencies: The latest 'National EPI Review' in 2015 found that training for EPI staff is heavily focused on *immunisation - particularly injection safety* - and does not give adequate emphasis to other components like *planning, budgeting, management and monitoring*. Likewise, supervisory visits are reasonably regular at all levels of the supply chain; however there appears to be no systematic checklists of supervisory tasks and no register of actions for follow-up. Also, waste management practices at service delivery points are frequently less than adequate and there is no clear evidence that used syringes and other waste is systematically recovered from immunisation sessions and disposed safely.
8) High frequency for vaccine deliveries because of storage capacity and supplier constraints, more deliveries take place more frequently at the higher levels of the supply chain than should be the case.
9) The MDVP is not practiced in Vietnam because of the nature of immunisation service delivery from 11,500 community clinics on designated days, there is a policy which does not allow to store vaccines at most of these locations and VVM indicators are unavailable on locally produced vaccines.
10) No assigned manager to oversee the implementation of the cEVM improvement plans with direct reporting to the national EPI manager and program technical advisory and coordinating committees (NITAG/ICC).

c. Planned interventions to address weaknesses of Supply chain

There are 68 activities planned to address the iSC weaknesses at all level of the immunization system in Viet Nam, and the key priorities are the following:

1) Additional vaccine refrigerators to district stores without sufficient storage space to accommodate current and new vaccines (e.g. rotavirus) are provided.
2) Temperature-monitoring studies are conducted in each region as per WHO/IVB 5.01 Rev A. or the UNICEF revised temperature monitoring protocol (2015).
3) Temperature mapping practices are revised to be compliant with the WHO recommended procedures for identifying hot/cold spots.
4) Continuous temperature monitoring devices are installed in all vaccine refrigerators and personnel trained.
5) Freeze indicators for vaccine transport are supplied, and training provided on their use where necessary.
6) The vaccine storage capacity of primary stores is increased prior to the introduction of new vaccines.
7) Non-functioning WIC/WIF alarms are repaired as a priority.
8) Clear guidelines on max/min stock levels should be issued and stock requisitions and supply based upon max/min stock levels. Province and district personnel should be trained on this topic.
9) VVMs are provided on locally produced vaccines inclusive of bOPV when local production is licensed.
10) A waste management assessment using WHO assessment tool (Tool Reference http://www.who.int/water_sanitation_health/medicalwaste/hcwmtool/en/.) is conducted.
11) A cold chain equipment inventory management system is put in place which assures that EPI national, regional and provincial managers are continuously aware of the available storage capacity at all storage locations.
12) The national program establishes and implements a policy of reserving stock levels of all vaccines inclusive of those locally manufactured which ensures the availability of all vaccines at all times. At national level, this should be a minimum stock reserve level of 3 months.
13) A working group is established to review the immunisation logistics planning process and submit a plan for ICC endorsement which modernises and streamlines the immunisation logistics planning process,

improves the security of supply and provides a transparent supply chain network with clear guidelines for management and operation.

14) Plan and implement activities for institutionalization of the WHO cold chain equipment inventory tool and gap analysis in immunization system, potentially integrate in the National Immunization Information System (NIIS) which is being implemented national wide at present.

15) Conduct EVMA in 2020 and develop and implement EVM IP in the period of 2021-2015.

d. Challenges hindering the implementation of these interventions

1) Viet Nam, as a graduated country, is no longer eligible for further support from Gavi. NEPI will need to advocate and mobilize more financial support from Government to implement these interventions

2) Coverage and equity: even with high DTP3 coverage (95%), Viet Nam envisions reaching 100% coverage is equitable access by the entire population, including hard-to-reach areas, and ethnic minority groups. It is critical for NEPI to ensure sufficient provision of human resource, cold boxes and vaccine carriers, and vaccines for outreach sessions in the hard to reach communes.

3) Inclusion of private sector immunisation and inclusion of their data to the national ISC statistics. According to estimations of the national authorities (NEPI), the share of the private sector in vaccinating children may constitute up to 15% in the two largest cities and include provision of non-EPI vaccines in public sector facilities.

4) Cost of inclusion of VVM indicators to locally produced vaccines.

5) Vaccine hesitancy and the recent anti-vaccine movement in Viet Nam.

e. Lessons learnt from recent supply chain related support that inform the current request for CCEOP support

From 2003 to 2019, Viet Nam had three major experiences in the procurement, delivery, installation and maintenance of CCE:

1) **Experience #1:** NEPI received support from Luxemburg Development Corporation for improving cold chain system including provision of a total of 5,630 refrigerators (Phase 1 from 2003 to 2005 and Phase 2 from 2008 to 2012). The grant covered all activities from procurement to delivery, installation and maintenance. The process was managed by a dedicated team set up in NEPI office. The Luxembourg Development Corporation provided technical assistance in form of a technical advisor that was seconded to NEPI. Two local sub-contractors from the private sector were contracted for the implementation. One service provider was responsible for managing the in-country distribution and logistics, while the other supported the installation of CCE. The installation was controlled through commissioning and hand-over reports to the local authorities. During this time, NEPI (at regional and provincial level) also established a new maintenance system. Technicians were trained in corrective maintenance and EPI staff was trained in preventative maintenance. Accountabilities, SOPs and guidelines were developed. In addition, spare parts management systems were implemented.

2) **Experience #2:** NEPI successfully conducted a national wide Measles and Rubella (MR) Campaign from 2014 to 2015 and then included MR in routine immunization. The MR SIA included procurement and supply of a total of 430 refrigerators. The process was fully managed by NEPI. The procurement was done via a public tender process and awarded to a local private company that received funds for the procurement, delivery and installation of refrigerators. The installation was controlled through commissioning and hand-over reports to the local authorities. Based on this experience, there is adequate evidence that the country has the capacity to pursue self-procurement and has in-country expertise to ensure that the equipment will be properly installed and maintained. The government of Viet Nam, therefore, wants to pursue self-procurement.[18]

3) **Experience #3:** NEPI applied for the first cold chain equipment support (CCEOP1) and it was approved by Gavi in 2017. However, there has been a delay in implementation of the CCEOP1.[19]

- NEPI has to comply with the current government regulations on use of government budgets for procurement of public goods. There were a number of national and sub-national level consultations on equipment selection with participation of national EPI managing board; national, regional and provincial EPI managers; cold chain experts and technicians; and EPI officials (the end users). Factors for equipment selection included the storage capacity, the performance of equipment, recurring and running costs of equipment, the experience in using equipment, and the past and current knowledge

[18] Document 11: Maintenance Plan with financing source (s), page 11

[19] Document 13.2: Experience and lessons learnt on implementation of the first CCEOP

and expertise of EPI officials and cold chain experts, engineers and technicians on using equipment. In addition, the recent problems occurred with a few VLS in the list of PQS CCEs were taken into consideration. The national and sub-national consultations on equipment selection resulted in the consensus and decision on selection of a unique product of TCW4000AC 240L for provincial and district level facilities.

- NEPI has informed and consulted Gavi and partners on these issues. Recognizing the evolving situation and the country, the specific context, and overall the need for improving the national cold chain system for the survival and development of children in Viet Nam, Gavi has agreed with NEPI's proposal of conducting self-procurement of their financing part and the country's preference of equipment selection (TCW4000AC 240L). In addition, given the Viet Nam's experience and capacity in cold chain deployment, it is agreed that UNICEF will only help with procurement and delivering of the CCEs financed by Gavi to the port of entry to Viet Nam, and NEPI will be then responsible for installation of all CCEs which are financed by both Gavi and Viet Nam under the CCEOP1. With this amendment, the CCEOP1 deployment will be commenced in Nov. 2019 and completed in Aug. 2020 the latest.
- This self-procurement mechanism for country's financing portion and selection of cold chain equipment of TCW4000AC for district stores would be applied for this second application for cold chain equipment (CCEOP2). Per the approved project documents (including Procurement Plan), procurement and supply and installation of CCEs for 13 provinces under the WB's PHC Project (with a total investment value of USD 1,000,000) will be through UNICEF Supply Division. The reason for that is that, at the time of project approval, it was understood that in order to avail of the CCEOP2 platform, and thus get more value-for-money out of the project spending, procurement through UNICEF Supply Division is required. The project's procurement arrangements can be modified during project implementation, however, the procurement arrangements (including the formal revised Procurement Plans) will be subject to the World Bank's prior review and no-objection.

f. Percentage of facilities with reliable access to grid electricity for up to or more than 8 hours per day

- 100% of facilities at province, district, and commune levels have access to reliable grid electricity for up to or more than 8 hours per day.

g. Quantity and percentage of current CCE that is: a) functional; b) PQS-approved; c) non-PQS-approved; and/or d) obsolete?

The cold chain inventory report in 2018 showed that [20]:

- 1,681 TCW 3000 ILR at provinces and districts are in use and functional: 1158 (69%) and 523 (31%) were installed in 2008 and 2015 respectively
- PQS-approved: 1,681 (100%)
- Non-PQS approved: 0%
- Obsolete: 3,988 RCW50 EG refrigerators were installed in 2003.

h. Percentage of the birth cohort served by effectively functioning PQS-approved CCE currently

- Currently, 100% of the birth cohort is served by effective function PQS CCE.

i. Bottlenecks that CCE can address in the current supply chain set-up *(for example, capacity and technology constraints)*

- Lack of storage capacity for IPV, JE, and Rotavirus vaccines
- Lack of CCEs for district health centers for strong EPI vaccines and for district hospitals that providing Hepatitis B birth dose vaccine especially in districts of 13 provinces under the WB's PHC Project
- Inequity access of immunization services in districts with low coverage, and poorest communities, including ethnic minority groups (14% of the population).
- Inadequate knowledge and skills of EPI officials especially at district and commune level in cold chain maintenance and management.

j. Other supply chain challenges that CCE optimisation platform support will assist in mitigating

- Costs of transportation
- Reducing the number of vaccine delivery because of low vaccine storage capacity
- Energy and cost saving
- Unnecessary maintenance costs

[20] Document 8: CCE Inventory Report 2018

k. ***Overall CCE needs***

1) According to the 2015 EVMA, the total number of required CCE is indicated in the table 2 below [21]:

Annual Requirements for Refrigerators (2017 – 2020)					
	2017	**2018**	**2019**	**2020**	**Total**
Provincial stores, district stores VLS400A 145L required for IPV and Rota vaccine, introducing reduced – dose multi dose vaccine vials, for new districts and for areas with refrigerators ruined by disasters	30	30	90	52	**202**
Replace TCW3000 with more than 10 years functioning at both provincial and district level stores	60	640	220	238	**1,158**
Total	**90**	**670**	**310**	**290**	**1,360**

Table 3: Annual requirement for refrigerators 2017-2020 (EMVA 2015)

- These CCE needs formed the first application for cold chain equipment support (CCEOP1) with 50% budget financed by Viet Nam which was approved by Gavi in 2017. The CCEOP1 plans to procure and supply 60 units of VLS400A and 700 units of TCW3000 from 2017-2018. However, since then, the CCEOP1 has yet been deployed and therefore the overall CCE needs remain almost unchanged. The total number of TCW3000 which needs to be replaced is **1,158 of which 352 units for provincial level and 806 units** for district level.
- Given the recent agreement of Gavi on NEPI's proposal on self-procurement of their financing part and the country's preference of equipment selection (TCW4000AC 240L), CCEOP1 will be deployed immediately starting from November 2019 and resulted in supply of approximately 590 units of TCW4000AC (with vaccine storage capacity of 240 L) by August 2020. Respectively, 302 and 288 units will be installed at provincial and district levels vaccine stores. The deployment of CCEOP1 helps ensuring sufficient cold chain capacity at provincial level for the needs of current and future vaccines such as Rota vaccine. However, it will only partly meet the needs at district level.
- Despite the deployment of CCEOP1 which is expected to complete in August 2020 the latest, there is still the need to gradually replace approximately the rest of **568 units of TCW3000 refrigerators** aged more than 10 years at district level facilities in Viet Nam from 2021 onwards. This need will inform the development of the CCEOP2.
- In addition, according to the 2018 CCE inventory report, there is a need to replace 3,988 RCW50EG for CHCs which were installed in the years to come

2) Summary on the need for cold chain replacement and the support provided by CCEOP1 and CCEOP2:

Needs for replacement of CCEs aged more than 10 years according to 2018 CCE inventory report					
Replace TCW3000 at both provincial and district level stores					1,158 units
Replace RCW50EG at commune health centers					3,988 units
CCE replacement supported by CCEOP1 and CCEOP2					
	2019	**2020**	**2021**	**2022 onwards**	**Total**
CCEOP1	240 units of TCW4000AC	350 units of TCW4000AC	0	0	590 units of TCW4000AC
Proposed CCEOP2	0	0	182 units of TCW4000AC	386 units of TCW4000AC *(in scale up phase with 100% of Govt. budget)*	568 units of TCW4000AC
	0	873 unit of HBC80	0	1,000 units of HBC80 (*in scale up phase with 100% of Govt. budget)*	1,873 units of HBC80

3) Approximately **1,000 provincial and district hospitals** administering childbirth vaccines (Hep B birth dose) to new-borns. These locations will need to be equipped with appropriate refrigerators to store vaccines.

4) The cMYP includes provision of Rota (Liquid, 2-dose) vaccine and Viet Nam is applying for Gavi's support in 2019 and planning to introduce Rota vaccine in 2021. In addition, to meet the target set by

[21] Document 5: Effective Vaccine Management Assessment (EVMA) Report in 2015, Table 3, page 14

the Viet Nam Communist Party's Resolution, Viet Nam will need to introduce one more vaccine (in addition to the Rota). Although at this state the decision has not been made on which vaccine, there is obviously a need to expand cold chain capacity of Viet Nam in the next 5 years.

5) To maintain and reach high coverage of at least 95%, it is necessary for Viet Nam to continue investing in provision of CCE, amongst the other interventions, for the hard to reach districts and communes where DPT3 and MCV2 coverages are notably low.
6) Viet Nam has introduced IPV and JE since 2018. The transition from the presently used JE vaccine to a new generation (WHO recommended) vaccine raises a number of issues relating to local production, for instant, no additional provision is made in supply chain requirements over and above those already included for the currently used JE vaccine.
7) NEPI equipped **3,988 RCW50EG for CHCs** in 2003 through bi-lateral funding, and it is necessary for EPI to plan for and gradually replace these 3,988 units in the years to come.
8) The feasibility analysis of the Work Bank's Grassroots Health Project in 13 provinces of Viet Nam has estimated the need of procurement and supply of 873 appropriate CCEs to 128 difficult districts and 745 hard-to-reach commune health centers. This need also informs the development of the CCEOP2 and actually forms the 50% funds financing by Viet Nam to match that of 50% funds financing by Gavi for the CCEOP2.[22]

l. ***Is the country policy to use cool water packs or conditioned ice packs?***

- The country policy is to use conditioned ice packs.

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):
  - *Geographically remote districts or those with low coverage*
  - *Poorer communities (e.g. in the poorest 10% of the population)*
  - *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?

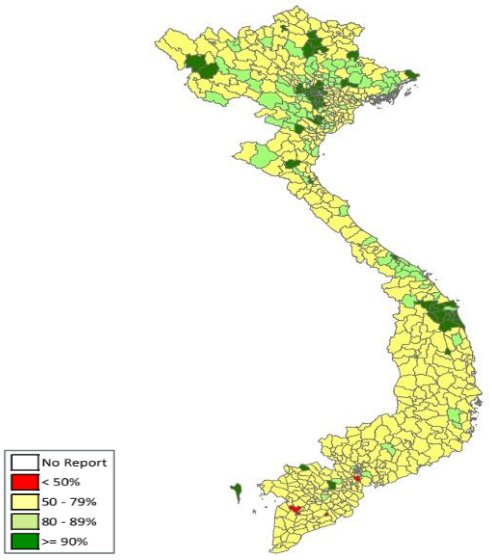
a) How will the requested Platform support concretely contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation?

- The 2015 EPI Review highlighted challenges in consistently reaching the most disadvantaged populations. The review highlighted the complexity and diversity of the equity issue and the types of population groups at risk of not accessing to immunisation services. These include the following: *migrants, mobile populations, remote area residents and ethnic minority populations.*[23]
- In this context, Viet Nam needs to expand the cold chain to provide immunization services to remote areas and to ethnic minority populations (14% of the population). In these areas, more refrigerators

[22] Document 13.1: Letter from World Bank on the co-financing for this CCEOP
[23] The 2015 EPI Review Report

will be installed for storing EPI vaccines. A group of CHCs may share one refrigerator for storing vaccines.

- In 2018, there were 9 provinces with 12 districts that had low full immunization coverage under 80%, and 142 districts that had low DTP3 coverage under 80%. [24] These districts will be given priority for consideration and replacement of CCEs and will have sufficient capacity to store and supply vaccines to fixed and outreach immunizations sessions.



Map of district with DPT3 coverage 2018

Map of 13 provinces under the WB Project

- The Grassroots Health Project of Viet Nam will use a loan from the World Bank for improving the coverage of healthcare interventions including immunization in 13 difficult provinces of Viet Nam. This Project was approved by the World Bank's Board of Directors in June 2019. The World Bank's Project will finance CCEs for vaccine storage in the CHCs in disadvantaged communes and in the obstetric wards of district hospitals for providing childbirth vaccination such as Hepatitis B birth dose. The investment of the WB's Project in CCE together with Gavi's will effectively double the impact of the project's investment in vaccine cold chain for 13 provinces under the WB's Project and for other provinces in Viet Nam. [25]
- Consequently, the CCEOP2 will contribute to supporting Viet Nam to increasing immunization coverage in hard to reach districts and communes and thus addressing the issue of inequities.

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

- In Vietnam, 52% of locally manufactured vaccines are distributed directly to regional stores [26]. This distribution system enables the national store to only manage stock of locally manufactured vaccines for distribution to the Northern region. Frequency for deliveries are defined, but due to storage capacity and supplier constraints, more number of deliveries take place and more frequently at the higher levels of the supply chain than should be based on the plan. (i.e. the national store made 56 deliveries in 2014). The analysis indicated a higher cost and a higher risk of stock out because of the lack of CCE at central, provincial and district levels.
- In order to ensure optimizing the design of supply chain distribution system, Viet Nam planned to reduce frequency of delivery and costs of transportation (vehicle and air) by expanding the cold chain capacity to provide immunization services of 712 districts with aged and damaged refrigerators; 61 provinces with obsolete and damaged refrigerators; and possibly 20 new districts

[24] Viet Nam WHO-UNICEF JRF 2018
[25] Letter from World Bank on the co-financing for CCEOP
[26] EVMA 2015 Report

in remote and disadvantaged areas (mountainous and ethnic minority groups). In addition, NEPI plans to use freeze indicators for transported vaccines.

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

- The need to ensure sufficient vaccine storage at provincial, district and commune level for introduction of new vaccines (Rota vaccine in 2021) has resulted in replacement of TCW3000 and with more than 10 years functioning with TCW4000AC
- The need to increase the coverage of Hepatitis B birth dose and the full immunization coverage in hard to reach communes in 13 provinces under the WB's Project has resulted in placement of appropriate refrigerators (e.g. HBC80) for district hospitals and commune health centers to ensure sufficient storage capacity and timely provision of vaccines to newborns and children in the hard to reach communes
- The need for equipment replacement because of obsolescence or non-repairable equipment
- The availability of reliable electricity (Grid Supply) in remote areas
- The required vaccine storage capacity of the facilities considering the current and new vaccine introduction (Rota vaccine in 2021)
- The performance of equipment: ILRs run on electricity or power from a generator. They are designed to require only eight hours of power per day to keep vaccines within the required temperature range
- The past and current knowledge and skills of EPI officials and CCE technicians in maintaining and repairing the CCE using in EPI as well as experience of using the CCE.

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

The platform support will help to sustain and strengthen the supply chain system by:

- Increasing the capacity of vaccine storage in the perspective of new vaccines introduction
- Improving the storage of vaccines at recommended temperatures
- Increasing the capacity to reach every child with a focus on isolated and deprived areas
- Introducing more efficient cold chain equipment
- Reducing the costs of highly frequent vaccine deliveries
- Reducing the maintenance and repairing costs of aged CCEs.

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

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

- **Preventative and corrective maintenance:**
  - ⇨ Viet Nam has developed SOPs and guidelines for CCE maintenance. The "EPI in Practice" guidelines that are distributed to all facilities. The PEM (Provincial Equipment Manager) is

responsible to keep an updated inventory in Excel of all the equipment within the province. This list is updated on a quarterly basis and indicates changes, e.g. new equipment arriving, equipment taken out of service

- ⇨ EPI staff is in charge of preventative maintenance that consists in conducting daily, weekly and monthly checks, cleaning, and adjustments of the CCE. The supportive supervisory visits include the monitoring of 30 DTRs and aim to control the implementation of the preventative maintenance check-list
- ⇨ SOPs and guidelines on maintenance of CCE were developed and disseminated. Technicians and engineers are in charge of corrective maintenance and trained on these SOPs and guidelines. There is a spare parts management system. In case that additional capacity for corrective maintenance is needed, EPI system may contract private service providers. The country also harmonized its equipment with the vast majority now being provided by domestic which has greatly simplified the maintenance and spare parts management. The corrective maintenance is performed by the Regional Equipment Manager (REM) with spare parts that are managed at regional level. Broken equipment is transported by EPI owned trucks to the repair centers or repaired on site.

- **Financing for maintenance:**
  - ⇨ The maintenance budget is estimated by the Ministry of Health (annex 1 – 2016-2020 cMYP) and the source of funding is from central and local governments.[27] Annually, the spare parts budget of about 1.2 billion VND (~USD 55,000) is allocated by the national government. Other maintenance costs are covered by the local government. [28]

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

- At national level, the National Equipment Manager (NEM) is responsible for coordinating, monitoring and evaluating all equipment related activities. The NEM must have good management skills, logistic experience and sound technical understanding. The workload requires a 100% post (1 full time position).
- The NEM will combine the reports of all regions and prepare adequate statistics including
  - ⇨ Equipment data like age, no. of breakdowns, etc.,
  - ⇨ Maintenance performance i.e. downtime of equipment, cost of repairs etc.
  - ⇨ Asset data, i.e. inventory, remaining value, stock of spares, etc.

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

- The disposal of CCE will be aligned with the Viet Nam public procurement and disposal policy and will follow the procedure of disposal of government equipment. The obsolete or not-reparable refrigerators will be decommissioned and disposed following the methods as follows:
  - ⇨ Transferring to another public entity or part of a public entity, with or without financial adjustment
  - ⇨ Selling through public tender
  - ⇨ Selling through public auction
  - ⇨ Destructing, dumping, or burying
  - ⇨ Trading-in.
- The NEPI will support districts and provinces in ensuring that the public procurement and disposal policy's practices are followed.

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?

[27] 2016-2020 cMYP, annex 1
[28] Maintenance Plan with financing and source(s)

b) What is the source of the joint investment and how much from each donor? Is the country's joint investment secured? Please complete the table below

c) If the country joint investment is coming from HSS, is this leading to a reallocation of the HSS budget? If yes, please inform which HSS activities are being replaced by this joint investment?

d) Has the country secured import tariff exemptions for CCE? If yes, attach proof.

a) How will the country facilitate the manufacturer's or representative's role in equipment purchase, distribution and installation?

The MOH will interact with the manufacturer or the representative to ensure that the CCEOP activities will be properly managed and implemented. From 2003 to 2015, NEPI already experienced this type of collaboration and closely collaborated with the providers to facilitate the procurement, delivery, installation and maintenance of the CCE.

b) Source of the joint investment

Sources of funding	Amount in US$
Total country joint investment (same amount as cell T34)	US$ 999,958 (round up: US$ 1,000,000)
Government budget (WB's Project)	US$ 999,958 (round up: US$ 1,000,000)
Gavi resources	0
Current Gavi HSS	0
Future Gavi HSS	0
Gavi PBF	0
Total Gavi resources	0
Other donor funding (mention the name of donor/s)	0
Donor 1:	0
Total other donor/s funding	0
Other funding (clarify the source)	0
Other 1:	0
Total other sources of funding	0

c) ***If the country joint investment is coming from HSS***:

- The country investment is not coming from HSS. It is from the 13-provincial government's investment under the World Bank's loan PHC Project.[29]

d) ***Has the country secured import tariff exemptions for CCE?***

- As per the Law on value added tax (VAT) pursuant to the 1992 Constitution of the Socialist Republic of Viet Nam, which was amended and supplemented under Resolution No. 51/2001/QH10, the government is exempted from paying taxes for official aid funded projects.[30]

PART D: INITIAL SUPPORT PHASE[31]

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.

[29] Letter from World Bank on the co-financing for CCEOP

[30] The Law on value added tax (VAT)

[31] Countries are kindly advised to apply for their full needs regardless of the Gavi CCEOP joint investment ceiling and the funding availability. It is important to inform however how CCEOP will be contributing towards fulfilling the needs identified.

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

CCE	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Application guidelines Section 5, available at http://www.gavi.org/support/process/apply/cceop/

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	
The need	• Replacing old TCW3000 with 182 units of TCW4000AC 240L in 182 districts of 19 provinces other than the 13 provinces under the World Bank's PHC Project from 9/2020-9/2021.
Justification	• Replacing refrigerator with age more than 10 years • Ensuring enough vaccine storage volume for introduction of Rota vaccine by end of 2021 and for introduction of another vaccine by end of 2025/2030 • There will be further administrative restructuring at district and commune level and it is necessary to supply CCE for new districts and groups of communes without any vaccine refrigerator or with obsolete refrigerators • Ensuring sufficient vaccine storage capacity to maintain higher immunization.
Expected outcome	• Increased vaccine storage capacity for new vaccines introduction • Increased coverage of full immunization.
Total CCE budget	• US$ 999,958
Prioritised (Urgent) CCE Need #2	
The need	• Equipping the existing district hospitals with 873 appropriate CCEs for 128 difficult districts and 745 hard to reach commune health centers of 13 provinces under the WB's PHC Project from 9/2020-9/2021.
Justification	• Supplying for district hospitals in hard to reach districts so that they have sufficient cold chain capacity to store vaccines (e.g. BCG, Hepatitis B) and provide these vaccines to the newborns. This support is critical to increase the coverage of Hepatitis B birth dose which are still low in Viet Nam (74.4% in 2018) • Supplying and replacing aged CCEs for commune health centers in hard-to-reach areas • Ensuring sufficient vaccine storage capacity to maintain higher immunization.

Expected outcome	• Increased equity and coverage in target areas especially in the hard to reach districts and communes of 13 provinces under the WB's PHC Project and thus contributing to increasing the full immunization coverage of Viet Nam • Increased coverage of Hepatitis B birth dose in 13 provinces under the WB's PHC Project and thus contributing to increasing the national wide coverage of Hepatitis B birth dose.
Total CCE budget	US$ 999,958
GRAND TOTAL CCE BUDGET: Initial support (9/2021-9/2022)	**US$ 1,999,917**

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. 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	
No of Equipment	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*
0	0	182	182	0	0	0	0
0	0	873	873				
Total: 0	***Total: 0***	***Total: 1,055***	***Total: 1,055***	***Total: 0***	***Total: 0***	***Total: 0***	***Total: 0***

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, on-going 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 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.*	• With Government budgets and via the implementation of the current Gavi's Transition Plan, NEPI has conducted and plans to conduce annual trainings for all national, regional, provincial and district supply chain managers on general vaccine management and supply chain logistic topics including the modules of management and planning; vaccine management and supply chain; immunization safety, surveillance, supervision and monitoring; and partnering with communities.
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.*	• The national immunization information system (NIIS) was initiated with funding and technical support from PATH and has been scaled up national wide in all public facilities including 712 commune health centers with Government funding support, and in 927 private facilities offering vaccination services. The NIIS has included vaccine stock inventory and management. Evaluation on implementation of NIIS is being conducted with support from PATH and UNICEF and the findings will be used for further improvement and possible inclusion cold chain equipment inventory and management in the NIS soon. • EVMA will be conducted early 2020 with support from Gavi, PATH, UNICEF and relevant partners. • Plan for institutionalization of the WHO cold chain equipment inventory tool and gap analysis in immunization system, potentially integrate in the National Immunization Information System (NIIS) which is being implemented national wide at present.
Optimised, efficient design of distribution system *Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.*	• Since the certification of the NRA in 2015, Viet Nam is well positioned to include VVM's on locally produced vials, as this will also open industry opportunity for exports not only of currently produced vaccines but new vaccines currently undergoing clinical trials. • MOH has issued a standard list of cold chain equipment for storage and transportation of EPI vaccines in Viet Nam. This list is applied in EPI at all level especially at provincial level for local

	authorities to review and make decision on procurement of CCE in line with the standards and using local budget.
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	• EPI activities for strengthening the cold chain system were mentioned in Improvement Plan.[32] In addition, Viet Nam will be conducting new EVMA in the last quarter of 2019 with funds and technical support from Gavi and PATH respectively. The findings and recommendations of this 2019 assessment will inform development of the next five-year cMYP and continuous improvement plan 2021-2025. • MOH has issued a Circular on Good Storage Practice (GSP) including vaccine storage and provided training on implementation of the GSP for all national and regional vaccine storage managers. It is planned that by 2020, all provincial and district level vaccine storages will be granted with GSP certificates. • MOH and NEPI has issued 17 Standard Operational Procedure (SOP) on management, storage, logistics of vaccine and temperature monitoring.
Temperature monitoring *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).* *Furthermore, describe which measures are in place to a) obtain temperature data from the various devices;* *b) act following temperature alarms (curative maintenance);* *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.*	• Fridge Tags: all vaccine refrigerators should be fitted with 30 DTR continuous temperature monitors (fridge tag 2) and data reported as per the national norms and SOP's. In 2018, NEPI procured and distributed 1,000 fridge tag 2 for all provincial, district vaccine storages. In 2019 other 600 fridge tag 2 have been procured and distributed. • The 30DTR and Freeze Tags are now systematically used for transporting freeze sensitive vaccines in Viet Nam. Stocks will be maintained at province and district stores and included with all cold box and vaccine carrier dispatches. • In 2018, EPI procured and distributed 8,600 freeze tags and 40,000 thermometers to commune health centers. In 2019, 10,000 freezer tags have been procured and distributed for CHCs. • Rapid response teams are established at national, regional and provincial level for cold chain maintenance and responsive action when needed. In case of temperature alarms, the response teams will be informed and deployed immediately to check, evaluate and fix the problems that occur.

[32] EVM IP progress report

Part E: Scale-up support phase[33]

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.

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:* *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 (Additional) CCE Need #1	
The need	• Replacing old units of old TCW3000 with 386 units of TCW4000 AC 240L from 2022 onwards
Justification	• Refrigerators that start functioning from 2008 need to be replaced to assure safety and sufficient volume of the cold chain. The refrigerators are also used for areas with refrigerators ruined by natural disasters.
Expected outcome	• All old vaccine refrigerators will be replaced by new ones and cold chain equipment at district and province levels will be at good condition for storing EPI vaccines. This will definitely maintain a high vaccination coverage
Total CCE budget	• US$ 1,776,696
Prioritised (Additional) CCE Need #2	
The need	• Replacing at least 1,000 out of 3,988 RCW50EG refrigerators installed in 2003 for commune health centers from 2022 onwards
Justification	• Refrigerators that start functioning from 2003 need to be replaced to assure safety and sufficient volume of the cold chain. The refrigerators are also used for areas with refrigerators ruined by natural disasters.
Expected outcome	• All old vaccine refrigerators will be replaced by new ones and cold chain equipment at commune levels will be at good condition for storing EPI vaccines. This will definitely maintain a high vaccination coverage.

[33] Countries are kindly advised to apply for their full needs regardless of the Gavi CCEOP joint investment ceiling and the funding availability. It is important to inform however how CCEOP will be contributing towards fulfilling the needs identified.

Total CCE budget	• US$ 1,201,600
GRAND TOTAL CCE BUDGET: "Scale-up support" (Years 2022 onwards)	**US$ 2,978,296** *Note: National EPI is planning to mobilize local Government budget, and support from international organization, partners and Gavi for implementation of the scale up phase in the period of 2022 onwards.*

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. 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	
No of Equipment	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*	*No of Equipment*	*No of sites*
0	0	386	386	0	0	0	0
0	0	1,000	1,000	0	0	0	0
Total: 0	***Total: 0***	***Total: 1,386***	***Total: 1,386***	***Total: 0***	***Total: 0***	***Total: 0***	***Total: 0***

14. Ongoing or planned activities around other supply chain fundamentals <u>in the scale-up support phase</u>	
In this section, linkages must be drawn between requested CCE Optimisation Platform support, on-going 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 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.*	• With Government budgets, NEPI has conducted and plans to conduce annual trainings for all national, regional, provincial and district supply chain managers on general vaccine management and supply chain logistic topics including the modules of management and planning; vaccine management and supply chain; immunization safety, surveillance, supervision and monitoring; and partnering with communities.
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.*	• The national immunization information system (NIIS) has been scaled up national wide in all public facilities including 712 commune health centers, and in 927 private facilities offering vaccination services. The NIIS has included vaccine stock inventory and management. Evaluation on implementation of NIS is being conducted and the findings will be used for further improvement and possible inclusion cold chain equipment inventory and management in the NIS soon. • Develop and implement EVM IP 2021-2025 based on the findings and recommendation of the EVMA in 2020. • Implement activities for institutionalization of the WHO cold chain equipment inventory tool and gap analysis in immunization system, potentially integrate in the National Immunization Information System (NIIS) which is being implemented national wide at present.
Optimised, efficient design of distribution system *Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.*	• Since the certification of the NRA in 2015, Viet Nam is well positioned to include VVM's on locally produced vials, as this will also open industry opportunity for exports not only of currently produced vaccines but new vaccines currently undergoing clinical trials. • MOH has issued a standard list of cold chain equipment for storage and transportation of EPI vaccines in Viet Nam. This list is applied in EPI at all level especially at provincial level for local authorities to review and make decision on procurement of CCE in line with the standards and using local budget.

Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	• EPI activities for strengthening the cold chain system were mentioned in Improvement Plan (see EVM IP progress report). In addition, Viet Nam will be conducting new EVMA in the last quarter of 2019 with funds and technical support from Gavi and PATH respectively. The findings and recommendations of this 2019 assessment will inform development of the next five-year cMYP and continuous improvement plan 2021-2025. • MOH has issued a Circular on Good Storage Practice (GSP) including vaccine storage and plans to organize annual trainings on implementation of the GSP for all national and regional vaccine storage managers. It is planned that by 2020, all provincial and district level vaccine storages will be granted with GSP certificates. • MOH and NEPI has issued 17 Standard Operational Procedure (SOP) on management, storage, logistics of vaccine and temperature monitoring.
Temperature monitoring *Describe how the temperature monitoring system will evolve? Which devices will be used?* *Furthermore, describe which measures are in place to* *a) obtain temperature data from the various devices;* *b) act following temperature alarms (curative maintenance);* *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.*	• Fridge Tags: all vaccine refrigerators should be fitted with 30-DTR continuous temperature monitors and data reported as per the national norms and SOP's. • The 30-DTRs and Freeze Tags are now systematically used for transporting freeze sensitive vaccines in Viet Nam. Stocks will be maintained at province and district stores and included with all cold box and vaccine carrier dispatches. • NEPI plans to procure and supply 15,000 30-DTRs and Freeze Tags.

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.

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 <u>if countries are procuring User independent freeze protected cold boxes and vaccine carriers;</u> 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,[34] such as demonstrated by remote temperature monitoring; **and***

[34] **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

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 (please note that indicators should be cumulative, where appropriate)

Indicator *(Provide name of the mandatory indicator as shown above)*	***Definition*** *(Provide definition if not already specified)*	***Data Source*** *(identify data source)*	***Reporting frequency*** *(annual, semi-annual, quarterly etc.)*	***Baseline (Year)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*
1. ***CCE Replacement/rehabilitation in existing Equipped sites***	*Percentage of district facilities with (non)functional and/or obsolete TCW 3000 to be replaced with TCW 4000 AC 240L*	Inventory report	Annual	*Numerator = 0* *Denominator=182* *Percentage=0*	*Numerator = 182* *Denominator=182* *Percentage=100*	*Numerator = 0* *Denominator=0* *Percentage=0*	*Numerator = 0* *Denominator=0* *Percentage=0*
2. ***CCE expansion in existing equipped sites:***	*Percentage of existing district hospitals being equipped with ADDITIONAL pieces of appropriate refrigerators for provision of Hepatitis B birth dose vaccine and introduction and/or to serve an increasing population*	Inventory report	Annual	*Numerator = 0* *Denominator=128* *Percentage=0*	*Numerator = 128* *Denominator=128* *Percentage=100*	*Numerator = 0* *Denominator=0* *Percentage=0*	*Numerator = 0* *Denominator=0* *Percentage=0*

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.

Indicator *(Provide name of the mandatory indicator as shown above)*	***Definition*** *(Provide definition if not already specified)*	***Data Source*** *(identify data source)*	***Reporting frequency*** *(annual, semi-annual, quarterly etc.)*	***Baseline (Year)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*
3. CCE extension in unequipped existing and/or new sites:	*Percentage of old refrigerators being replaced with new refrigerators at commune level service sites (commune health centers).*	Inventory report	Annual	*Numerator = 0* *Denominator= 3,988* *Percentage=0*	*Numerator = 0* *Denominator=0* *Percentage=0*	*Numerator = 0* *Denominator=0* *Percentage=0*	*Numerator = 1,000* *Denominator= 3,988* *Percentage=25*
4. ***CCE maintenance***	*Percentage of equipped facilities at national, regional, provincial and district level with functioning cold chain*	Inventory report	Annual	*Numerator = 780* *Denominator= 780* *Percentage=100*	*Numerator = 780* *Denominator=780* *Percentage=100*	*Numerator = 780* *Denominator=780* *Percentage=100*	*Numerator = 780* *Denominator=780* *Percentage=100*
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*	Inventory report	Annual	*Numerator = to be determined* *Denominator= to be determined* *Percentage= to be determined*	*Numerator = to be determined* *Denominator= to be determined* *Percentage= to be determined*	*Numerator = to be determined* *Denominator= to be determined* *Percentage= to be determined*	*Numerator = to be determined* *Denominator= to be determined* *Percentage= to be determined*

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 *(Provide name of the **additional** indicators as shown above)*	***Definition*** *(Provide definition if not already specified)*	***Data Source*** *(identify data source)*	***Reporting frequency*** *(annual, semi-annual, quarterly etc.)*	***Baseline (Year)*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 (If applicable)*** *(Provide numerator and denominator for calculating percentage)*
1.	Ratio of functioning CCE at provincial level facilities	Inventory report	Annual	100	100	100	100
2.	Ratio of functioning CCE at district level facilities	Inventory report	Annual	100	100	100	100
3.	Ratio of district-level facilities without any stock out	NIIS	Real time monitoring	0	0	0	0

PART H: PROJECT MANAGEMENT

The effective and successful implementation of the CCEOP relies heavily on the in-country project management team (PMT) which needs someone to manage the PMT. This project manager, designated by the MoH, will have to:

- Establish the Project Management Team (refer to UNICEF's Project Management Support Package for ToRs)
- Coordinate the planning, rollout and monitoring of the CCE OP
- Mobilise the required resources for the project
- Provide status updates to the NLWG
- Coordinate with all stakeholders including the vendor and UNICEF
- Report on deviations
- Managing risks

17. Project Management
The country is asked to please provide the following information: *a) Name and contact details of the dedicated project manager designated by the MoH* *b) Describe how the project manager will be empowered and supported to ensure the smooth implementation of CCE OP*
a) Project Manager details are presented below: i. First and last Name: ANH DUC DANG ii. Title: Director iii. Department/Direction: National Institute of Hygiene and Epidemiology, National EPI iv. E-mail: dangducanh.nihe@gmail.com v. Cell phone: (84) 903229425 b) The project manager is assigned by MOH as the representative of MOH and given full authority to make decision on planning, implementation including deviation if any for CCEOP. The project manager is assigned by MOH as the budget owner and fully responsible for budget planning, allocation, releasing and liquidation, and mobilizing the required resources for the project. The project manager will be supported by deputy managers of NEPI, technical experts and officials on EPI and CCE from national, regional and provincial level, and the project manager of the World Bank's project in 13 provinces. In addition, technical officers from relevant partners (World Bank, PATH, CHAI, WHO and UNICEF) will provide necessary technical advice and support to the project manager during the planning, implementation, and following up action of the CCEOP2.