Application Form for Cold Chain Equipment Optimisation Platform support in 2018

Document Dated: September 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.**

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PART A: APPLICANT INFORMATION

1. Applicant information		
Country	Afghanistan	
Date	21 January 2019	
Contact name	Dr Dastagir Nazary	
Email address	dastagger_nazary@yahoo.com	
Phone number	+930797223009	
Total funding requested from CCE Optimisation Platform **(US $)**	*This should correspond exactly to the budget requested in the embedded template.* ***$10,078,578 of which joint investment is $2,015,716***	
Does your country have an approved Gavi HSS support on-going?	Yes ☑	No ☐
	*Indicate the anticipated **final year** of the HSS: **2021***	
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:* ***October 2019***	
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:* December 2021	
Signatures *Include signed (and official) CCE Optimisation Platform application endorsement by:* *a) Minister of Health and Minister of Finance (or delegated authorities)* *b) Members of the Coordination Forum (HSCC/ICC or equivalent body)*	*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 Public Health (or delegated authority)** Name: Signature: Date:	**Minister of Finance (or delegated authority)** Name: Signature: Date:

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 AFG-CCEOP application revised 21.01.2019	Yes Yes	21.01.2019 21.01.2019		
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal[1] HSS steering committee TOR and ICC endorsement	No			Not required for resubmission
3	National Health Sector Development Plan/ Strategy (or similar)	No			Not required for resubmission
4	cMYP National EPI strategy 2015-20	No			Not required for resubmission
5	EVM Assessment	No			Not required for resubmission
6	EVM Improvement Plan	No			Not required for resubmission
7	EVM Annual Workplan and Progress Report on EVM (2014) and Improvement Plan[2] 2018	No			Not required for resubmission
8	WHO CCEI Tool (cold chain inventory)	Yes	January 2019		
9	Inventory Report and Facilities segmentation	no			Not required for resubmission
10	Comprehensive document on CCE needs (Single document): Chapter 1: Cold Chain Rehabilitation and Expansion Plan	Yes	January 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.

2. Mandatory attachments					
No.	**Strategy / Plan / Document**	**Attached Yes/No**	**Final version (dated)**	**Duration**	**Comments**
	Chapter 2: Projected Coverage and Equity Improvements Chapter 3: Operational Deployment Plan, including deviation plan Chapter 4: Equipment Selection				
11	Maintenance Plan with financing and source(s)	No			Not required for resubmission
12	Proof of status for CCE tariff exemptions waiver	No			Not required for resubmission
13	Other relevant documents	Yes	January 2019		Performance evaluation of solar direct drive in Afghanistan

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

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

The CCEOP application has been developed based on the country's policy, strategic documents on immunization, and other mandatory documents for the application. The application is fully aligned with country's National Health and Nutrition Policy 2012-2020 (NHNP, document # 3) and comprehensive Multi Year Plan (cMYP, document #4). Country also has a separate document on National EPI strategy 2015-20 (document # 4.1). The NHNP states a goal to improve the health and nutritional status of people of Afghanistan, with a greater focus on women and children, disabled, marginalized populations, and under-served areas. The critical policy directions in the NHNP to reach the child health goal is to "Ensure delivery of safe, effective, reliable and free services of Expanded Program on Immunization (EPI) for all eligible target groups and assure the people of Afghanistan are protected from morbidity and mortality due to vaccine preventable diseases" (NHNP page-18).

The cMYP has an objective to achieve and sustain 90% coverage of childhood immunization of all antigens among under one years old children at national and 80% at districts level by 2019 (cMYP page-66). To achieve this main objective, it also sets strategic objectives (objective-4) of the immunization supply chain system to improve/sustain uninterrupted supply of vaccines to immunization service delivery points (cMYP page-72).

The strategic objective-4 of the immunization supply chain system (stated in the cMYP) is specifically related to the issues of cold chain infrastructure strengthening. In addition, the strategic objective 4.2 is related to the expansion of existing cold chain and vaccine management for the introduction of new vaccines, and opening of new service delivery facilities (objective-4.5).

Afghanistan immunization supply chain is a 4-tier system having national (PR), regional (SN), Provincial (LD), and SP (SP) stores. Although, administrative districts are existing, they are not functional for immunization supply chain context. In Afghanistan,74% immunization services are delivered through fixed health centres. Though there has been effort to expand more EPI service SPs, still these are not sufficient. On an average, only 57% population can access SP within one hour walking distance.

In addition to cMYP objectives(document # 4), 2018 EVM has also identified the need for expansion of cold chain infrastructure and replacement of very old cold chain equipment with older technology. Consolidated national level EVM criteria score for cold chain maintenance is just 62%, compared to 60% at province (LD) level and less than 56% at SP level. Furthermore, the national average for information and supportive management function is just 58% compared to 55% at LD and SP level.

The MoPH also updated the cold chain inventory in August 2018 which further visualized the most recent status of the immunization supply chain in the country.

Cold chain inventory summary: The cold chain inventory shows that there are total of 3052 cold chain equipment in the country. Of these total units 88% are functional and 19% are PQS qualified. Country is broadly using RCW 50 EG (absorption type 1714 units) and plans to remove this from operation due numerous operational costs, environmental and maintenance issues. Country is using Solar Direct Drive (procured through HSS-3 funds (440 units installed to date, 58 large SDD in stock awaiting installation and another 50 small size in pipeline (procured already and awaiting delivery)) and will continue to invest further using HSS-3 funds in 2019 (142 small SDD) as well as through CCEOP application.

Vaccine volume needs: The currently required cold chain volume per FIC in the country is 164 cm3 at service delivery level and 139.45 cm3 is at supply chain levels. This includes all vaccines in current immunization schedule. Country does not plan to introduce HPV vaccine. There are plans of switching TT with Td and Measles with MR. This will not affect the cold chain needs.

Cold chain situation at national store and regional stores: The National store has a deficient capacity of 30m3 at present. This will be addressed by installing already procured 12 cold rooms (which will replace old cold rooms as well). All regional stores except for Central region have sufficient cold chain capacity. The central region is short of 6m3 capacity. Currently there are space constrains for installing additional cold room. The country will dedicate one of the new 12 cold rooms at national store, which is in same compound to Central region. There are space challenges and moving to a new facility is under discussion.

Cold chain equipment selection: The sites with good electricity and that need a large side refrigerator will be provided with a single chamber refrigerator as GAVI CCEOP grade A list of equipment includes only small size refrigerator. A local deep freezer shall be procured from UNICEF polio resources for all sites that need a large sized refrigerator and freezer (all provinces already have ice pack freezers and deep freezers).
The sites with poor electricity or no electricity will be provided with a dual chamber SDD. The sites with electricity and needing small size will be provided with a dual chamber electric refrigerator.

Urgent reaching the Equity goals: Extension of cold chain: The country is in process of extending cold chain to 252 new health facilities (as top priority to reach equity access). Of these 252 sites (and 253 units for these sites), 50 small SDD has already been procured and allotted to these sites and awaiting delivery from UNICEF supply division. Additional 142 small SDD shall be procured in 2019 using HSS-3 funds to cover these urgent priority sites. 8 units of TCW 2043 SDD (6 large SDDs already procured and awaiting installation) has been allocated to seven densely populated sites. The already procured small SDD (50) and planned 142 in 2019 will not be sufficient to cover all extension needs hence CCEOP proposal includes 55 additional units for extension.

Models	**Overall Extension units (needs)**
TCW 2043 SDD	8 (2 from CCEOP, 6 from HSS-3)
TCW 40 SDD	245 (53 from CCEOP, 192 from HSS-3)
Grand Total needs of equipment for extension to 252 sites : 253 units	

Expansion and replacement of cold chain equipment: the cold chain gap analysis used the FIC volume needed and considered the population of all the health facilities in the supply chain to estimate cold chain needs. Those sites that needed additional cold chain capacity are considered for expansion using appropriate size of refrigerator. Table below lists all the expansion and replacement needs (Non PQS, aging and non-functional units) at province and service delivery level.

Supply chain level	Models	Extension	Expansion	Replacement
Large service delivery (Solar)	TCW 2043 SDD	8	124	3
Small service Delivery (Solar)	TCW 40 SDD	245	151	778
Province (Solar)	VLS 154	0	3	0
Small Service delivery (Electric)	VLS 064 RF	0	99	148
Large service delivery (Electric)	VLS 300 A	0	51	0
Province (Electric)	VLS 400 A	0	73	66
	Grand Total	**253**	**501**	**995**

The table below shows the required CCE from the CCEOP platform for the expansion, extension and replacement of the service points in the country-

Equipment Budgeted under CCEOP

Supply chain level	Models	Extension	Expansion	Replacement
Large service delivery (Solar)	TCW 2043 SDD	2	73	2
Small service Delivery (Solar)	TCW 40 SDD	53	151	778
Province (Solar)	VLS 154		3	0
Small Service delivery (Electric)	VLS 064 RF		99	148
Large service delivery (Electric)	VLS 300 A		51	0
Province (Electric)	VLS 400 A		73	66
	Grand Total	**55**	**450**	**994**

The country would replace all the absorption technology by 2021 and replace them with Grade A quality equipment. The old equipment will be disposed off in environment compliant manner.

Priorities (Ongoing, Urgent and scale up): The ongoing procurements through HSS-3 funds will meet equity needs, All remaining extension, all expansion needs and replacement of electric units will be deployed as urgent needs and all remaining replacements of Absorption with SDD will be deployed as scale up needs.

These requires an additional amount of ***$10,078,578*** that has been proposed through the present Gavi CCEOP application.

The 20% country joint investment ($2,015,716) for the CCEOP budget will come from the approved HSS3 fund.

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)*

A Core Working Committee was established for the development of the application under the stewardship of the Director General (DG) of Preventive Medicine with the strategic guidance from Deputy Minister of Policy and planning of the MoPH. Technical leadership was provided by the National Expanded Program on Immunization (EPI) unit of the General Directorate of the Preventative Medicine, MoPH.

During the development of this proposal, several relevant Departments and Units were consulted such as DG of preventive medicine, M&E; Policy & Planning General Directorate.

ICC is headed by the deputy minister of health and all the partners are members. During the course of the development of this proposal, two ICC meetings held where the following development partners were consulted: UNICEF, WHO, USAID, World Bank, WHO, Canadian International Development Agency, EU, representative of CSOs including BPHS implementing partners on the progress and component of the proposal. The ICC held on 27th August 2017 endorsed the first proposal for submission to the Gavi CCEOP and subsequent submission for November 2018 round of IRC was discussed and approved over email on 2nd September 2018. This current submission does not require ICC approval.

The National Cold Chain & Supply Committee (NCCSC) is also functional in the country, headed by the National EPI manager. National cold chain manager, national cold chain consultant and the national cold chain engineers are other important members of the group. The group was also consulted for determining the cold chain technology to be requested in the proposal, disposal method of the non-functional equipment of the immunization supply chain.

PART C: SITUATION ANALYSIS AND REQUESTED SUPPORT

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

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

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

Information is required to cover the following areas:

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

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

The National EPI manager is responsible for policy, standards and guidelines, procurement and distribution of vaccines and logistics in the country. There are 7 regions (for managing EPI), 34 provinces in the country. The immunization supply chain system in Afghanistan is administered through four levels which are as follows:

- **Level 1: Primary store (PR)** known as **National Store**, where vaccine is received directly from manufacturers or from international suppliers. This store is located at National EPI division, Kabul. The national store currently has 9 cold rooms and one freezer room are functional and 12 cold rooms and 8 freezer rooms yet to be installed. The supply interval is 6 months and the usual safety stock period is 2 months. In addition to this, there is a mini National EPI store with 3 cold rooms at the Kabul international airport for emergency vaccine storage particularly for campaigns. National EPI dry store is located at a distance of 7 km from the national EPI vaccine store to accommodate the dry logistics including syringes, cold box, vaccine carriers, ice packs and cold chain equipment.

- **Level 2: Sub national store (SN),** commonly known as **Regional Vaccine Stores**. There are 7 regional vaccine stores which are known as Central (attached to national store), East,

North, North East, South, South East and Western based on the administrative divisions of Afghanistan aiming to facilitate logistical needs. These stores are equipped with cold rooms and freezer rooms for vaccine storage and they receive vaccines and logistics from the national EPI stores at Kabul. The supply interval for these regional vaccine stores are 3 months and the usual safety stock period is 1 month. They distribute vaccines to lower levels i.e. provincial vaccine stores.

- **Level 3: Lowest Delivery Level (LD**), commonly known as P**rovincial Vaccine Store**. There are 26 currently operational provincial vaccine stores and one provisional store of Nuristan is under construction. These provincial stores are equipped with ice lined refrigerators, and freezers. They receive vaccines from regional vaccine stores and stock vaccines for two months and the usual safety stock period is 1 months and they distribute vaccines to SPs stores.

  The seven regional stores are located in the headquarters of seven provinces and also act as provincial (LD) stores for the SPs of the respective provinces.

- **Level 4: Service Delivery Points (SP),** known as SPs or clinics and sub-centres. All SPs and sub-centres do not provide EPI services. There are 1966 SPs but only 1,714 of them provide EPI services. These 1,714 EPI centres collect vaccines from the province stores once in a month and provide EPI services at the facilities and also undertake outreach immunization sessions in their catchment areas.

The majority (73 %) of the immunization sessions take place at the SP and only 27 % in outreach and mobile sessions in the villages/fields.

Current immunization schedule of Afghanistan includes the traditional vaccines (BCG, Penta, OPV, IPV, Measles, TT, PCV13, Hep B birth dose and Rota-liquid single dose).

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

The key weaknesses/risks identified in Afghanistan immunization supply chain are identified through two EVM conducted in last four years. The country has under taken EVM in 2014 and also a follow up assessment in April 2018.

There has been moderate improvement in the score of ISC performances as observed in the 2018 EVMA scores. (EVMA 2014 and 2018 Report attached, Doc # 5.1, 5.2)

EVMA 2018:

2018 EVM assessment Mean Criteria scores

#	Criteria	Levels			
		National	Regional	Provincial	Service Delivery
1	Pre-Shipment and vaccine arrival procedures	96%	Not Applicable		
2	Storage Temperature	86%	83%	88%	74%
3	Capacity	67%	87%	88%	79%
4	Building Equipment and transport	87%	85%	84%	82%
5	Maintenance	81%	76%	72%	66%
6	Stock management	93%	81%	74%	64%

7	Distribution	59%	82%	81%	83%
8	Vaccine Management	98%	97%	90%	88%
9	MIS and supportive Supervision	92%	74%	65%	77%

This EVM assessment indicates level-specific findings. At the national level, three areas need to be improved: 1) Distribution of supplies at 59 per cent; 2) Storage capacity at 67 per cent; and 3) Maintenance at 78 per cent. At the regional level, maintenance and MIS supportive functions were found lower than recommended range while at the provincial level, poor maintenance, stock management and MIS. Almost all criteria were found lower than 80 per cent except building space at the SP level.

Temperature monitoring

- Temperature monitoring study to be conducted across all levels of Immunization supply chain
- Calibration mechanism in for National and regional to be implemented
- Cold chain mapping to be conducted at all regional vaccine store
- Reinforce the documentation procedures of continuous temperature monitoring.

Cold chain capacity

- Need of refrigerated vaccine vans for transportation of vaccine across supply chain levels
- Shortage of vaccine storage at national and central regional office
- Dry space at Provincial store and health facility to be enhanced.
- Contingency plan to be prepared at all levels

Buildings, equipment and transport

- Walls and roof to be repaired
- Reinforce the space for ice pack conditioning
- Space enhancement for dry storage
- Diesel Generator (DG) sets are not equipped with auto main failures panel
- Cold rooms and freezer room to be equipped with auto dialler system (alarm system)
- Expansion of space for storing vaccines and dry supplies

Maintenance

- Instituting planned preventive maintenance and emergency repairs.
- At all levels, there is clearly a need for SOPs on planned preventive maintenance

Stock management

Reinforcing the use of computerized stock management system at all regions
Stock control principles – Introduce policies and practices aimed at eliminating stock outs and overstocking though implementing stock level policy: Maximum and a safety stock level for each vaccine.

Distribution

Introduction of a distribution plan and monitoring system which are designed to ensure that stock levels are routinely kept within the recommended limits.

Vaccine management

Capacity building needs of EPI staff of REMT and PEMT level for vaccine wastage control, stock management and distribution planning and monitoring.

Management Information System and Supportive Functions

Developing a list of key Standard Operating Procedures (SOPs) for adoption and use at stores and service delivery levels.

- Integrating and monitoring of key EVM criteria indicators into the EPI supportive supervision activities.
- Implementation of vaccine logistics management system across all the levels

Other common challenges of EPI service delivery related to immunization supply chain are as follows:

- **Access**: Poor infrastructure of road and connectivity to SPs. Informal estimates show that approximately 40% of villages are not accessible due to security and accessibility issues
- **High breakdown rate of CCE**: The average break down rate of CCE in Afghanistan is 7% % with highest break down rate of 59.4% considered as one of the biggest challenge for EPI supply chain with a negative impact on coverage as well as the quality of coverage. The present cold chain technicians who also work as vaccine handlers at province levels who are not very skilled and proficient to repair CCE. Out of the 80 Cold Chain Technicians (CCTs), only 16 are technically competent to undertake CCE repair and preventive maintenance. This is further compounded by the lack of spare parts, funding for repair, absence of regular reporting of non-functional equipment and monitoring makes the cold chain maintenance.
- **Capacity building**: There is no training centre for cold chain nor any workshop for repair of non-working CCE in Afghanistan.
- **Immunization session micro-plan:** These plans are not realistic and does not take into account the vaccine delivery challenges to remote sites especially in the absence of high holdover time vaccine carrier.
- **Absence of Immunization Supply Chain Action Plan (ISCAP):** Country does not have a comprehensive national immunization supply chain action plan. The approach to ISC system strengthening is ad-hoc by donors and partners in the form of support to procure CCE, key HR and funds for immediate activities.

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

Following interventions have been done so far to address the weaknesses in the immunization system and those concerning the safety and quality of vaccine./

Temperature Monitoring

- Temperature mapping of 10 cold rooms completed at national store
- Introduction and implementation of 30-day temperature recorders at 90% of service delivery facilities.
- Of the 440 SSD 289 were pre-installed with RTM by manufacturer and remotely monitored by EPI, Ministry of Public Health and partners
- Installation of central temperature monitoring system (Beyond wireless) of cold rooms at national and all 7 regions.

Cold chain capacity

- Six cold rooms and one freezer rooms were installed with remote temperature monitoring device in 2015-16 at national level and regional vaccine stores.
- Development and compliance with a detailed written contingency plan at all the levels.
- Country has already procured and installed 440 SDDs (included in cold chain inventory). Additional 58 is in stock and awaiting installation. 50 small SDD are in pipeline and 142 shall be procured in 2019
- Three cold rooms have been installed at Kabul International Airport as contingency plan for delays in vaccine clearance

Building, equipment and transport

- Dry storage: 4 regional warehouse and 8 provincial dry store has already been constructed.
- Procurement in process for 1 big refrigerated truck (at national level) and 7 small refrigerated trucks for regional level
- Building for 4 provincial vaccine stores has been completed

Maintenance

- Toolkits for repairing both cold rooms and refrigerators has been procured for national and regional level technicians
- Spare parts are now procured based on annual demand using HSS3 budget

- Preventive maintenance of CCE is part of other health worker training programs
- Outsourcing of maintenance is being practices on need basis

Stock management

- VSSM has been introduced in Afghanistan for stock management at national, regional and provincial level
- MOPH started using UNICEF supply division's vaccine stock visibility tool called VIVA at national and regional level

Distribution

- Process is ongoing the standardize the distribution plan from national to regional and regional to province

Vaccine Management

- Following capacity building programs have been implemented to date for improved capacity of health workers and cold chain technicians./

Training conducted between 2015-2018 EPI			
SN	Name of training conducted	# of participants	Year
1	Vaccine management ToT	18	2015
2	Vaccine management and cold chain (4days)	191	2015
3	Cold Chain SOP workshop (3 days)	23	2015
4	Installation of Solar Refrigerators (3 days)	14	2015
5	WIC, WIF, ILR, DF and solar equipment repair, maintenance and management 12 days residential training at NCCRC, India	16	2016
5	Vaccine management, cold chain and minor repair(3 days)	234	2016
6	Regional and Global ISC workshop (5 days)	3	2015 &2016
7	Vaccine management and cold chain (4days)	63	2017
8	Hands on training and Installation and Maintenance of SDDs	141	2018

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

1. **Funding**
    - MoPH contributes the operational cost of 48 cold chain staff and all vaccinators at the provincial capitals while UNICEF is supporting 32 cold chain staffs and some vaccinators in the provincial capitals.
    - MoPH does not have the budget to procure the cold chain equipment, spare parts and transportation cost of cold chain staff.
    - The National EPI program is mostly supported by the various donors and UN agencies including GAVI, Government of Japan, CDC, BMGF, UNICEF, WHO, USAID and World Bank. However, iSC is primarily supported by WHO, GAVI, UNICEF.

2. **Human Resources and Capacity Building**
    - Lack of cold chain training centre and regional workshops for repair and maintenance. However, funds for regional repairing workshop and technical training for cold chain staff are secured under HSS-3.
    - Limited availability of third party vendors in the country to outsource/facilitate the critical repair works. This is particularly an issue when complex repairing is required.

3. **Security, geographic and other challenges**

   Difficult access of beneficiary to health services in terms of physical distance to SPs, travel mode and travel time involved, insecurity, cost, cultural and social norms. areas.

   Disruption of the supply chain due to harsh winter, snow, active fighting in the remote areas.

   All 1966 SPs are not providing EPI services (only 1714 SP are providing EPI services currently).

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

The lessons learnt from supply chain related work in Afghanistan used to inform CCEOP request are as follows:

- Country is addressing the ISC challenges by a cold chain repair and maintenance plan with multiyear planning and budgeted activities.
- Expansion of the cold chain space to accommodate new vaccine like Rota at all levels.
- Experiences from installation of SDD refrigerators in SPs opened a new opportunity to extend it to all SPs currently using costly gas refrigerators.
- Implementation of real time vaccine logistics management tracking system including temperature monitoring for the national and regional levels will leverage tracking of CCE in provinces and CCEOP supported CCE up to SPs in future.
- Delay in the deployment of recently procured CCE advocates the need for future deployment (e.g. CCEOP equipment) by contracted agencies covered in service bundle.
- Regional & provincial cold chain technicians' training and infrastructure (cold chain work shop) development by HSS3 support will leverage the better maintenance of the future CCEOP supported equipment.
- Experience of recently introduced 30DTRs at SPs will leverage the better temperature maintenance in the future equipment at SPs.

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

All the 1,966 service points in the country were segmented according to grid electricity, required cold chain volume and type of service provided. Out of 1,966 service points 1,347 (69%) SPs have no grid electricity, 243 (12%) SPs have unreliable grid electricity while only 376 (19%) SPs have >8 hours grid electricity available.

Electricity >16 h	Electricity 8-16 h	Electricity <8 h	No Electricity	Total
256	120	243	1,347	**1,966**

Table6: Distribution of service points per electricity

(CCE inventory and facility segmentation report, page-26)

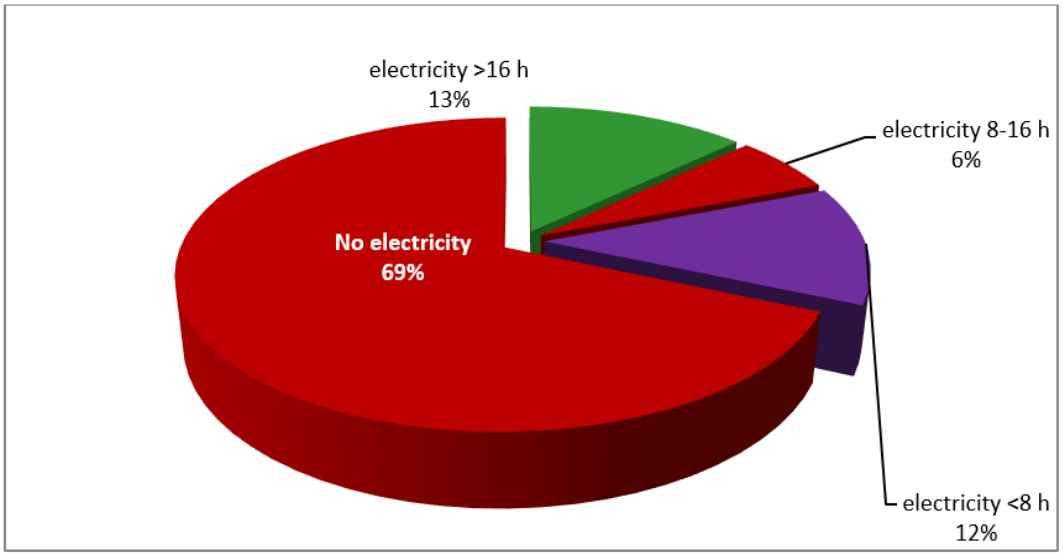
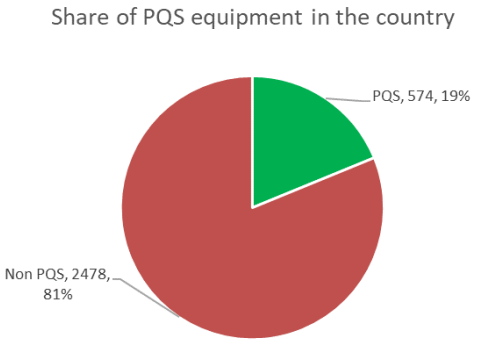


Chart6: Distribution of service points per electricity

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?***

Below table and pie chart describe PQS and non-PQS equipment status. There are total of 574 (18.8%) equipment which is PQS qualified.

PQS status of equipment	Functional	Need repair	Non-Functional	Uninstalled	Grand Total
PQS	554			20	574
Non PQS	2122	11	206	139	2478
Grand Total	**2676**	**11**	**206**	**159**	**3052**



Following table shows the functional status of all the models in the country classified by source of energy.

Models	Functional	Need repair	Non-Functional	Uninstalled	Grand Total
Electricity					
FCW 200			2		2
MF 314	169	1	4	31	205
MF314	99		12		111
MK 204	3			5	8
MK 304	96	1	2	28	127
MK074	12		2		14
MK144	1				1
MK204	14		1		15
MK304	133		21		154
SB300	9		3		12
TFW 800	74	3	1	11	89
TFW791	4		6		10
TFW800	61		5		66
WICR-25m3	2				2
WICR-30m3	21				21
WICR-40m3	4			12	16
WIFR-15m3	5				5
WIFR-20m3	1				1
WIFR-30m3	1				1
WIFR-40m3				8	8
Electricity Total	**709**	**5**	**59**	**95**	**868**
Gas					
RCW 42 EG/CF	6	1	2		9
RCW 50 EG/CF	1507	3	131	64	1705
Gas Total	**1513**	**4**	**133**	**64**	**1714**
Kerosene					
RCW 50 EK	16		14		30
Kerosene Total	**16**		**14**		**30**
Solar					
BLF100 DC	8				8
TCW 2043 SDD	397	1			398
TCW 3000 DC	18	1			19
VC 150 SDD	15				15
Solar Total	**438**	**2**			**440**
Grand Total	**2676**	**11**	**206**	**159**	**3052**

In reference to the CCE inventory report and facility segmentation report (page 17)

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

The total birth cohort is 1,557,356 (4% of 38,933,909) as per the national EPI and the partners and implementing NGOs. There is a total of 3052 CCE in the country at levels of the supply chain of which only 574 (19 %) are PQS qualified. Out of 1,966 SPs only 425 are served by PQS CCE. Total target population served by PQS CE at SP is 336,661.

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

- Presently used equipment like RWC 50 EG requires gas and are non-PQS which has constraint in terms of operational and running cost as well as to maintain adequate vaccine storage temperature. Repair and maintenance of these equipment has several challenges and hence require gradual replacement. By supplying SDD fridges from the CCEOP for these SPs will reduce operation cost and improve vaccine quality and availability.
- The SPs currently having no CCE will be equipped by the platform support to increase coverage in those remote SPs.

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

In addition to expansion of EPI services to new SPs, CCEOP will support replacement of old and non-PQS equipment to-

- Improve temperature monitoring of vaccine and cold chain at all level of supply chain.
- Improve the maintenance system of the CCE in the country by user's training as part of the service bundle as well as providing spare parts support for the new equipment.

l) What are the overall CCE needs?

Country need overall a total of 1749 units of refrigerators to address, extension, expansion and replacement needs. However 250 of these needs will be covered by ongoing activities and CCEOP will need to cover urgent needs and scale up needs which is 1499 units.

		Urgent Needs		Scale UP needs	
Models	**Ongoing**	**2019**	**2020**	**2021**	**Grand Total**
TCW 2043 SDD	58	75		2	135
TCW 40 SDD	192	204		778	1174
VLS 154		3			3
VLS 064 RF			247		247
VLS 300 A			51		51
VLS 400 A			139		139
Grand Total	**250**	**282**	**437**	**780**	**1749**

The overall cold chain equipment needs are summarized by the level of supply chain as following:

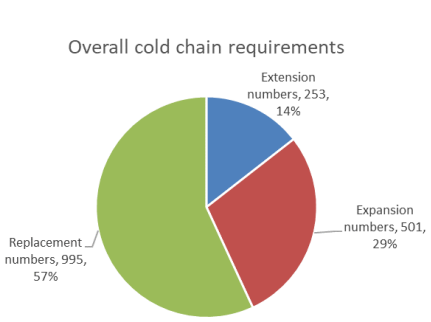
Supply chain level and model needed	**Total units**
Province	**142**
VLS 154	3
VLS 400 A	139

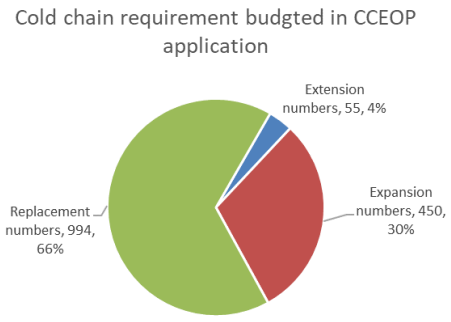
Service delivery	1607
TCW 2043 SDD	135
TCW 40 SDD	1174
VLS 064 RF	247
VLS 300 A	51
Grand Total	**1749**

The overall needs from CCEOP application (as some needs are covered by HSS-3) is as following at various supply chain levels

Supply chain level and models	total unit
Province	**142**
VLS 154	3
VLS 400 A	139
Service Delivery	**1357**
TCW 2043 SDD	77
TCW 40 SDD	982
VLS 064 RF	247
VLS 300 A	51
Grand Total	**1499**

While 16 of 27 provinces have cold chain gap, this is to note that the four largely populated provinces of Faryab, Helmant, Takhar and Ghazni need more than 10 VLS 400A at each site. this is an opportunity of supply chain optimization by providing a cold room at these sites. Unfortunately there is neither a scope of installing the cold room at these provincial stores as building are not designed/suitable for installation and operation of cold room, nor a separate building could be provided at the moment. Hence refrigerators are being provided to these sites.





This requires an amount of ***$10,078,578 including 6% additional buffer*** that has been requested from the Gavi CCEOP platform.

Please see the rehabilitation expansion plan of Afghanistan for the entire rehabilitation and expansion plan and CCE needs.

6. Expected immunisation coverage, equity and sustainability results *(Maximum 2 pages)*
Please respond to all questions

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

Information is required to cover the following areas:

a) *How will the requested Platform support concretely contribute to addressing identified geographic and socio-economic inequities and gender barriers to sustainable improvements in coverage and equity of immunisation? Examples may include (not exhaustive):*
    - *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?*

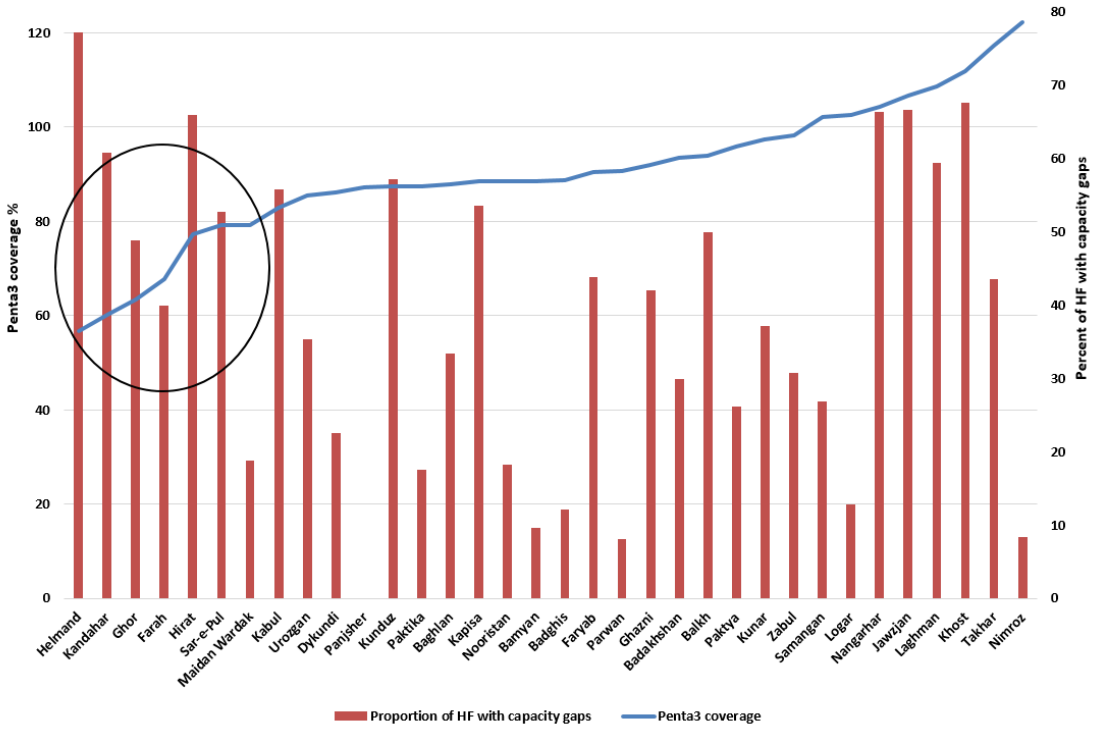
The penta3 coverage in the country widely varies by provinces, ranging between 57-122% in 2016 reported coverage data. Six provinces have reported a low penta3 coverage (<80%) in the year 2016. These are Helmand, Kandahar, Ghor, Farah, Hirat, and Sar-e-pol. Geographical challenges to access SPs (long way to reach facilities), active fighting, insecurity, scattered population are the common reasons for low coverage.

Penta3 coverage is also variable among the provinces by gender in the reported coverage 2016, which is linked to factors other than immunization supply chain e.g. cultural context. Immunization coverage status is higher among children living in urban areas compared to those living in rural areas. The full immunization coverage is 61.8% in urban areas and 49.0% in rural areas (CES 2013).

Recruitment of female vaccinators who are from the same locality is a key intervention for improving immunization coverage.

As previously mentioned (cMYP), around 1.5 million individuals belong to the Kuchi population in Afghanistan, a nomadic group spread across 12 provinces with constant movement, requiring special attention to ensure immunization coverage. Currently, the coverage data of this population is not available but it is assumed that the coverage is very low in these community. The special mobile health strategy was designed and implemented in the country needs continuation and more improved implementation and meticulous monitoring. At present this group is receiving services by fifteen mobile health teams through HSS-3 grant from 2016-2019.

It is also noted in the CCE inventory that there are significant numbers of SPs (625) having cold chain capacity gaps and 252 SPs not providing immunization services due to lack of CCE. The chart below shows the province wise Penta3 coverage and the proportion of SPs with cold chain capacity gaps in those provinces. It shows that, some of the provinces having low Penta3 coverage also have high number of SPs with cold chain capacity gaps indicating a relation between cold chain capacity and coverage (Cold chain rehabilitation and expansion plan-chapter2, page 24).



Although there are other factors among the provinces which impact the immunization coverage like the number of outreach sessions conducted per year. Since, the outreach session data is not available, its impact cannot be analysed.

Expansion of the cold chain capacity in the existing cold chain points and the extension of the cold chain capacity in the new facilities will improve the overall vaccine availability at the service delivery points. It will also improve the capacity of the service points to increase the number of outreach sessions in the catchment areas.

Transition of the country from RED to REC needs improved micro-planning to identify and reach all communities along with preparation of due lists to ensure that children receive age appropriate vaccination and do not drop out from subsequent doses. Expansion of cold chain infrastructure will certainly facilitate this process.

The current target population for Penta3 is 1,546,487 and coverage is 84% (2017 Joint Appraisal), leaving 249,487 children (16%) missed. Sine the national EPI target is to reach 90% coverage of Penta3, it is expected that the CCEOP support will bring the remaining 6% (92,789) children under penta3 coverage every year.

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?

Current maintenance policy:

The current maintenance is typically conducted by the MOPH by a network of cold chain engineer and cold chain technician(CCT) throughout the country. Since MOPH do not have specific funding for CCE maintenance, UNICEF Afghanistan has been supporting this activity for the last two decades through MOPH. In addition, UNICEF also supports the regular capacity building of cold chain technicians posted at the national, regional and province level for both corrective and preventative maintenance. There is adequate technical capacity within MOPH technicians posted at a national and regional level to manage repair and maintenance of all WICs and WIFs located at the central and regional stores. A central pool of technicians has been prepared who are normally deputed to provinces and SPs for any major break down of CCE, but this is with a high response time.

Current maintenance procedures:

The preventive maintenance at health facility level is conducted mainly by the cold chain handlers (vaccinator) whereas, cold chain technician conducts the preventive maintenance occasionally. Monthly 10% of SPs are visited by the provincial CCT and required corrective maintenance is also done at the site. Corrective maintenance is conducted by cold chain technicians at higher levels (province, region, and national level) as per the requirement. All levels except SPs are equipped with spare parts and tool lkits. UNICEF supports the spare parts requirement and toolkits.

The SP notifies the provincial cold chain technicians through cell phone immediately whenever the equipment breaks down. The provincial cold chain technician responds to SP within 2-3 days and conduct the corrective maintenance onsite. In case of complex repairing the equipment is transported back to the regional store for repair and then sent back to the health facilities. Once the corrective maintenance is done and the troubleshooting is fixed, the cold chain technician immediately shares the maintenance report with provincial EPI manager. Required transportation and DSA support are provided by UNICEF through quarterly budget prepared by the provincial store.

Remote temperature monitoring devices used at the central and regional level are constantly monitored for temperature breeches and appropriate actions are taken quickly to fix the CCE.

Current challenges in CCE maintenance:

- Out of a total of 87 cold chain maintenance personnel, only 21 technicians have the technical background for corrective repair and rest 66 CCTs have the skill only for preventive maintenance
- Out of the 21 CCTs with technical background only 16 have been provided with specialized training on corrective maintenance at National Cold Chain Resource Center(NCCRC, Pune, India) and the rest 71 cold chain technicians are locally trained by MOPH trained technicians with the support of UNICEF
- The turnover of the existing technicians is high due to low wages (paid by UNICEF and MOPH).
- The transport support for technicians and off-site repair is solely provided by UNICEF which has a risk of sustainability.
- There is no workshop for offsite maintenance at national, regional and provinces
- Maintenance toolkits for provincial technicians are inadequate and not complete
- Lack of country CCE guidebook and spare parts and SOP for equipment repair and maintenance
- There is no standard format and SOPs for reporting repair and maintenance from the SPs and LDs due to lack of staffs and system

- The makeshift workshop is not functional
- The major fund for the maintenance system (salary, mobility, DSA, spare parts, toolkits) is funded by the UNICEF and this has been the reality
- The majority of the cold chain equipment (1744 out of 3052) is powered by non-green energy source- LP gas, which is prone to frequent breakdown and requires costly maintenance and additional resources to be in functional condition.

Improvement plan for Cold Chain maintenance

The objective of the Improvement plan is to to establish system responsive to all immunization supply chain levels maintenance needs, which include planning, implementation, supervision, monitoring, documentation and reporting of cold chain maintenance activities. Following strategies to be followed:

1.Develop maintenance approach with priority tag

Priority I: Transition phase-strengthening the existing cold chain technicians' capacity to continue conducting preventive and corrective maintenances. These will be conducted as a maintenance request are coming from the provinces and health facilities and the technicians will conduct a periodic assessment – conduct the repair works onsite and providing in-service training for users. These will continue until the national and provincial workshops are established and functioning. In case the cold chain technicians in a province are not able to handle major repair works they will use the local market (private workshops) to fix the broken equipment.

Priority II: Establishing the national and provincial cold chain maintenance workshops, equipped with the basic/necessary human resources, equipment/toolkits, and operational resources. Training of the manpower in the training centers, to enhance the capacity/skills of the workshops working force. Linked with and commissioned local workshops available and recommended by CCE suppliers for knowledge exchange and HR capacity building for CCE installation and maintenance when required.

2.In-service training

Currently, the EPI unit is using powerpoint slides for the training of cold chain technicians. Appropriate training manuals will be developed to conduct the in-service training. These manuals will be updated regularly to accommodate the new technologies and as per the need.

EPI offices at national, regions and provincial levels will conduct cold chain technicians training need assessment, assist provincial health offices in planning and implementing the planned training activities - cascaded basic and refresher training will be provided. This process will include the following-

- Prepare a profile of the trained technicians by province and maintain updated contact address.
- Train/demonstrate to staff how to install/assemble and use the cold chain equipment.
- Technical advice to cold chain technicians responsible for provincial health office through the phone.
- For minor cold chain breakdowns fixing by developing video clips for various trouble shootings.
- Conduct periodic preventive and curative repair works as required.

3.Establishing national and regional cold chain equipment maintenance workshop and its operationalization

To facilitate the process of a sensitive & effective maintenance system, MoPH and partners will support the establishment of the maintenance workshops at national and seven regions. The workshops will be equipped with skilled human resources (cold chain technicians and engineers), repair toolkits, transportation, and operational budget. It will support the maintenance activities through supportive supervision, practical training and conduct major corrective maintenance for cold chain and other medical equipment.

4.Cold Chain Equipment Inventory

The country has used excel sheet for collecting the cold chain inventory data. Recently the country started using WHO CCE inventory gap analysis tool. All cold chain and EPI focal persons are responsible to use and send updated data to the next level following the reporting period advised by the national, regional and provincial EPI offices, at least on half yearly basis. In future, an online CCEI and MIS system will be developed for regular reporting and tracking of non-functional equipment. Vaccine Store Stock Management System (VSSM version 4.7) system is in place by which the data can be easily collected from the field. This is a computerized system. At the beginning, it was used only for vaccines and dry supplies, but now the National EPI team is working to also use it for other EPI supplies including cold chain.

5.Standard Operating Procedures (SOPs) for cold chain maintenance

Separate and detail SOPs (store and equipment specific), job aids for cold chain equipment maintenance will be developed and will be used to guide the cold chain maintenance manuals – these are yet to be developed for the three-level (user, mid-level and senior). Once finalized, the manuals will be disseminated and will be in use for the training and to guide maintenance activities.

6. Procure and supply Maintenance toolkits

There is plan to provide small tool kits for provincial stores which will be required for maintenance and small repair works. The monitoring of their utility and effectiveness will be evaluated supportive supervision checklist MoPH

7.Spare parts procurement, distribution and management

Currently, spare parts are procured by and through UNICEF using HSS-3 funds and distributed to regional and provincial facilities. Technicians collect required spare parts from store as per the requirement (regional/provincial). The cold chain technicians will be responsible for keeping the records of spare parts and consumables. The spare parts management in terms of critical and fast moving spare parts will be a key accountability of cold chain technicians. On the basis of the spare parts consumption and the spare parts inventory, the cold chain technicians will also be able to forecast the requirement of spare parts.

Preventative maintenance:

Cold chain equipment users and mid-level technicians are expected to conduct all preventive maintenance activities at all levels of supply chain. The midlevel technicians have a capacity of conducting minor corrective and all preventive maintenance and senior level technicians are

expected to conduct all type of corrective maintenance, mentoring the midlevel and users on proper use of the cold chain equipment and preventive maintenance.

Corrective maintenance:

Corrective cold chain equipment maintenance for all types of equipment including SDD refrigerators installation will be conducted by the regional and provincial senior level technicians, supplier representative (if any). Midlevel provincial technicians also will conduct corrective maintenance of EPI refrigerators in their jurisdiction.
Outsourcing of the EPI refrigerators maintenance activities will also be explored in a difficult to reach areas when the need will be beyond the skill and capacity of the existing maintenance team for the location. The protocol will be developed to administer this modality.

Cold rooms and refrigerated trucks cooling unit maintenance

Cold rooms, freezer rooms, and refrigerated trucks will be maintained by national, regional cold chain engineers and technicians. Adequate spare parts will be provided by UNICEF.

Temperature monitoring system

The country initiated the use of continuous temperature monitoring system and introduced the new technologies ICE [3] -extra at national and regional level. For provincial and service level 30 days temperature recording devices are in use. Currently, MoPH is collecting temperature data from the field, analyzing the data and use the information for identification of equipment those are not maintaining temperature. All cold stores and service points will use the continuous temperature monitoring data as an indicator to monitor the performance of the equipment as well as trigger for corrective maintenance

Disposal of non-functional and obsolete cold chain equipment

All the existing non PQS and outdated technology that needed replacement will be disposed within 6 months from the date of its replacement. Following section explains the process of disposal.

Presently the country is not having any disposal policy for obsolete/not- repairable /condemned equipment, but, MOPH in consultation with national environment protection agency, UNICEF and WHO is working on the disposal/condemnation policy for the cold chain equipment. This guideline will be finalized by Q1 2018. The outline of the guideline so far agreed are as follows-

- MOPH will establish a national and regional level condemnation committee for disposal of obsolete equipment.
- There will be a 3-members committee at national level comprising of national EPI manager, cold chain engineer, and finance officer and same will be followed for the regional level (regional EPI manager, regional cold chain manager and finance officer).
- The disposal will be conducted by the outsourced company due to the low capacity of MOPH.
- The national cold chain engineer/regional cold chain technicians will certify the equipment as non-repairable/condemned and the committee will then finally endorse the disposal letter of that equipment.
- Once the equipment is declared for disposal, they will be backhauled to their respective provincial stores.
- The outsourced agency will remove the refrigerant from the condemned equipment (except RCW 5 which are still functional) in an environmentally friendly manner.

All the condemned equipment including the functional RCW 50 will be auctioned

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

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

Information is required to cover the following areas:

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

b) What is the source of the joint investment? Is the country's joint investment secured?

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

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

The country will set a task force with the partners who will oversee and facilitate the procurement, and deployment process. The country will interact with the supplier through UNICEF CO and the UNICEF supply division to ensure that the CCEOP models selected are procured and arrive at the country. The country will provide the operation deployment plan to suppliers/representative before the arrival of the equipment in the country. The EPI cold chain technicians will accompany the suppliers' representatives at the time of installation to facilitate the end-users training. Specifically, the country will assist with:

- Completed operational deployment plan (list of facilities, list of users, distances, facility assessment etc., where equipment is to be deployed)
- Access to existing storage facilities to temporarily store equipment if necessary
- Security assurance for supplier's representative in the insecure areas

b) What is the source of the joint investment? Is the country's joint investment secured?

The source of the joint investment for the CCEOP is the HSS-3 grant. The joint investment amount is $2,015,716 (excluding the 8.5% procurement fee of $171,336). the joint investment will be provided through savings of $1.9m from HSS-3 extension funds and remaining $115,616 from HSS-3 cold chain budget.

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

Any supply provided to MoPH by donors is exempted from tax/tariff. It was confirmed by Ministry of Finance to Ministry of Public Health through a written formal letter dated 07th May 2014. Both the original and translated version of the mentioned letter are attached as annex 11 to this application.

PART D: INITIAL SUPPORT PHASE

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

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

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	Provide equipment to all remaining extension sites (those remaining after ongoing HSS-3 investments). Additionally, expansion of cold chain to all solar sites at service delivery level and include all equipment needed for province without electricity
Justification	This urgent priority will provide equipment for equity access for service delivery of vaccine reaching the unreached and adequate storage capacity at service delivery level that does not have sufficient capacity at present. This will improve stock management and prevent stock outs. This will also improve the storage capacity of province that does not have electricity
Expected outcome	Extension of cold chain at 54 remaining service delivery sites (55 equipment), improved capacity at service delivery and province without electricity leading to overall improvement in coverage
Total CCE budget	***$2,467,836***
Prioritised (Urgent) CCE Need #2	
The need	All equipment needs at electric sites (expansion and replacement)
Justification	There is urgent need to upgrade (replacement and expansion) the capacity and technology at service delivery and province level where there is quality electricity

Expected outcome	Improved quality of vaccine and stock management at sites with quality electricity leading to improved coverage
Total CCE budget	***$1,475,268***
Prioritised (Urgent) CCE Need #3	
The need	
Justification	
Expected outcome	
Total CCE budget	
Prioritised (Urgent) CCE Need #4	
The need	
Justification	
Expected outcome	
Total CCE budget	
GRAND TOTAL CCE BUDGET: Initial support (Years 1 and 2)	$3,943,104

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*
214	162			450	360	55	54
Total 214	***Total 162***			***Total 450***	***Total 360***	***Total 55***	***Total 54***

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.*	*Training of regional & provincial cold chain managers and cold chain technicians on vaccine management and CCE maintenance in support of Gavi HSS3*
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.*	*VSSM 4.7 is in used at central, regional and provincial levels. Online temperature data monitoring system is in place at national and all 7 regional stores. Online cold chain equipment information management system will be developed by Q4 of 2019. For tracking and monitoring of cold chain systems performance management.*
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.*	*Procure refrigerated vehicle for national and regional stores to strengthen vaccine transportation from national to provincial levels in support of Gavi HSS3 by 2019.*
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	*Construction of 7 workshop buildings at regional levels to establish dedicated CCE maintenance workshops by 2019 in support of Gavi HSS3*
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.*	*RTMD is being installed up to province levels. 30 DTRs are already in use for temperature monitoring in LD and SP levels. Focus will be given in 2019 to use 30 DTR data for performance tracking of cold chain equipment..* *Online temperature monitoring system is in place for national and regional level stores*

PART E: SCALE-UP SUPPORT PHASE

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

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

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 (in 2021)	
The need	The replacement of all needed solar cold chain equipment at service delivery level
Justification	To migrate from absorption technology to Solar Direct Drive technology
Expected outcome	Improved cold chain at service delivery level (quality assurance of vaccine and safety from damage from freezing)
Total CCE budget	***$6,135,474***
Prioritised (Additional) CCE Need #2 (in 2022)	
The need	
Justification	
Expected outcome	
Total CCE budget	
Prioritised (Additional) CCE Need #3	
The need	
Justification	
Expected outcome	
Total CCE budget	
Prioritised (Additional) CCE Need #4	
The need	

Justification	
Expected outcome	
Total CCE budget	
GRAND TOTAL CCE BUDGET: "Scale-up support" (Year 3)	USD ***6,135,474***

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*
780	780						

14. Ongoing or planned activities around other supply chain fundamentals in the scale-up support phase	
In this section, linkages must be drawn between requested CCE Optimisation Platform support, 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.*	*Training of regional & provincial cold chain managers and cold chain technicians on vaccine management and CCE maintenance in support of Gavi HSS3 will be completed.*
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.*	*VSSM 4.7 is in used at central, regional and provincial levels. Online temperature data monitoring system is in place at national and all 7 regional stores. Online cold chain equipment information management system will be functional.*
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.*	*Functional and start delivering vaccines by refrigerated vehicle from national to regional stores, regional stores to provincial stores.*
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	*7 workshop buildings at regional levels will be functional for CCE maintenance.*
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.*	*RTMD will functional up to province levels. 30 DTRs are already in use for temperature monitoring in LD and SP levels. Focus will be given in 2019 to use 30 DTR data for performance tracking of cold chain equipment.* *Online temperature monitoring system is in place for national and regional level stores*

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,[3] such as demonstrated by remote temperature monitoring; **and***

[3] **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

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) 2019*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 1 2020*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 2 2021*** *(Provide numerator and denominator for calculating percentage)*	***Target Year 3 (If applicable) 2022*** *(Provide numerator and denominator for calculating percentage)*
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)*	*WHO CCEI tool*	*Half yearly*	*Numerator = 0* *Denominator= 994* *Percentage= 0*	*Numerator = 0* *Denominator= 994* *Percentage= 0*	*Numerator = 994* *Denominator= 994* *Percentage= 100%*	
2. ***CCE expansion in existing equipped sites:***	*Percentage of existing sites being equipped with ADDITIONAL pieces of equipment for new vaccine introduction and/or to serve an increasing population;*	*WHO CCEI tool*	*Half yearly*	*Numerator = 227* *Denominator=450* *Percentage=50%*	*Numerator = 223* *Denominator=450* *Percentage=50%*		
3.. CCE extension in unequipped existing and/or	*Percentage of previously unequipped sites (providing immunisation services or not,*	*WHO CCEI tool*	*Half yearly*	*Numerator = 55* *Denominator=55*			

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.

new sites:	*including existing sites without active devices) and new service sites being equipped with Platform eligible equipment.*			*Percentage=100%*			
*4. **CCE maintenance***	*Percentage of functional CCE in the system*	*WHO CCEI tool*	*Half yearly*	*Numerator = 3332* *Denominator=3583* *Percentage=93%*	*Numerator = 3540* *Denominator=3806* *Percentage=95%*	*Numerator = 3540* *Denominator=3806* *Percentage=95%*	*Numerator = 3540* *Denominator=3806* *Percentage=95%*
*. **Freeze-free to non-freeze-free carrier ratio***	*Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country*						

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 SPs 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.Temperature alarm	*To monitor the events of temperature excursion at national and regional level*	*Field visit report*	*Quarterly*	*0%*	*Reduction by 5%*	*Reduction by 10%*	*Reduction by 10%*
2. Temperature monitoring record and device reviewed	*To monitor the events of temperature excursion at national and regional level*	*Field visit report*	*Yearly*	*0%*	*Reduction by 5%*	*Reduction by 10%*	*Reduction by 10%*
3.							
Add more indicators HERE if needed.							