Application Form for
Cold Chain Equipment Optimisation Platform
in 2017

Document Dated: January 2017

CONTENTS

PART A: APPLICANT INFORMATION

1. Applicant information		
Country	The Republic of Djibouti	
Date:	15 January 2017	
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Total funding requested from CCE Optimisation Platform **(US $)**	**Total: $337,815.05** including $270,252.04 (GAVI Support) $67,563.01 (Djibouti)	
Does your country currently have an approved Gavi HSS grant?	Yes [X]	No [ ]
	anticipated final year of HSS support: 2020	
Proposed CCE Optimisation Platform support start date (*please be informed the actual start date should be at least 8-10 months from application date*):	December 2017	
Proposed CCE Optimisation Platform support end date:	July 2021	
3. 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 Health (or delegated authority)** Name: Signature: Date: **Minister of Health (or delegated authority)** Name: Signature: Date: *See Attachment 1*	

Executive summary

1 Current status

Djibouti is a country located in the Horn of Africa; it shares borders with Ethiopia, Somalia and Eritrea with Yemen on the other side of the Red Sea. It has a total surface area of 23,000 km². The status of neighbouring countries leads to a flood of refugees and complicates the situation and accessibility, in particular in the north of the country.

The country has 15 community health centres in the capital, Djibouti Ville, which has about 600,000 inhabitants in an area of about 600 km² and 38 health posts in the regions and five Medical-Hospital Centres (MHC) for a population of about 400,000 inhabitants partially nomadic, spread over the rest of the territory including a large portion that is hard to reach.

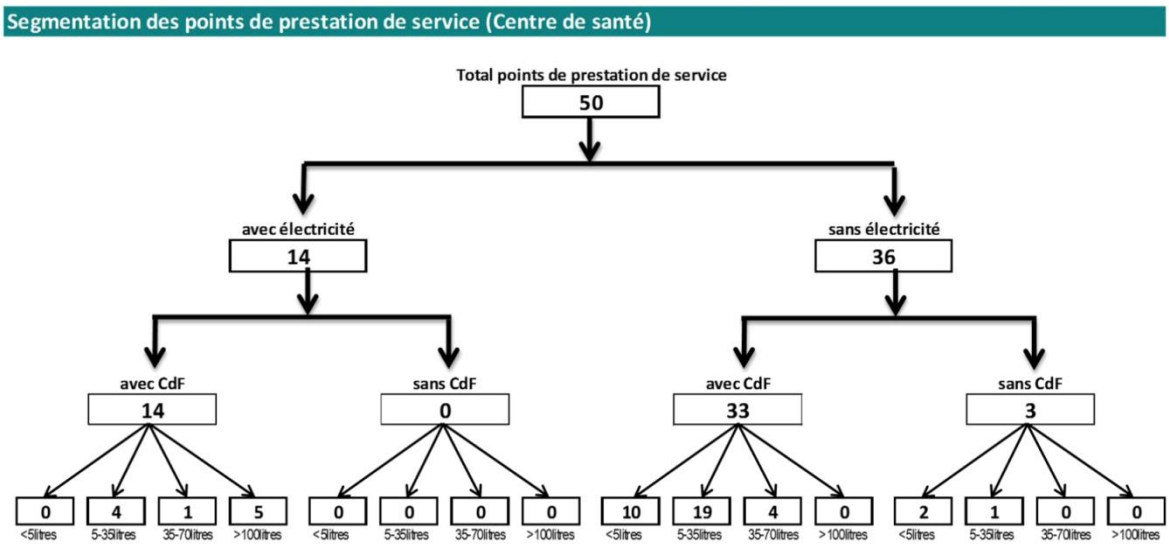
The country's vaccination status remains delicate. The average Penta3 vaccination rate is 78%, but it hides significant disparities between city and regions and also between the urban zone of the regions and the rural zones. For example, the Arta region has a 64% vaccination rate. The average vaccination rate is furthermore going down.

One of the main causes of this situation is the obsolescence of the installed base of cold chain equipment (CCE) about 60% of which is currently obsolete and/or out-of-service. By the 2020 horizon, nearly all the base will have exceeded its estimated life of about 10 years.

Although, the health situation has improved; however for vaccination a drop in the immunization coverage rates, in particular at the regional level, has been observed in recent years. Aware of the situation, the Ministry of Health undertook a reform dynamic in order to strengthen the Expanded Program on Immunization (EPI) in all its components including the cold chain. With the support of UNICEF, the Ministry of Health therefore undertook an inventory of the CCE and the EPI logistics and took advantage of the cold chain equipment optimization platform opportunity from Gavi. In that way, urgent measures and measures in order to turn the situation around quickly were taken:

- A good immunization practices coordinating committee (GICC) was created within the national working group with the assignment of steering the EPI vision and creating an environment favourable to achieving the objectives set by the 2016-2020 cMYP.
- An exhaustive inventory of the equipment and their condition was done and correlated with a detailed analysis of the cold volume needs; this way, a very precise vision of the CCE needs was obtained.

In the scope of the first measurements, a complete inventory and a segmentation study were in particular done in order to establish a detailed status of the situation.



The political and technical reorganizations undertaken, the work done on the analysis of the situation and also the means put to use for cold chain maintenance and operation confirm the seriousness with which the country is currently approaching the health problem and in particular establishing and managing an effective cold chain.

The commitment of the country and in particular the Ministry of Health to immunisaton improvement is reflected in the importance given to mother and child health in general with the strengthening of programs dedicated to maternal and child health at the base level, the creation of clinics providing services at the secondary level and thus unclogging the reference structures such as the Dar El Hanan maternity ward, and the intent to create a centre of excellence for the specific care of mothers and children. This commitment is also seen by the intent of the country to provide the Expanded Program on Immunization with an adequate structure thereby improving the work context of the staff and increasing their motivation to provide quality service.

2 General Objectives

The 2016-2020 cMYP is the main reference document for this proposal. It details the means to be used and defines the objectives for reaching the vaccination levels according to the WHO's standards and achieving vaccination equity. The following are the main objectives related to the present proposal:

- ***Improvement of immunization equity***

  On this subject, the observed inequity resides principally on the disparity between the urban zones, which are well covered, and the rural zones, which in all the regions are below 80% Penta3 coverage. The causes are given in the following points.

- ***Immunization coverage***

  Over these last years, we have observed a disturbing drop in the vaccination coverage which has reached an average value of 78% for Penta3 in 2015. The objectives for 2020 set by the cMYP are:

Antigens	Immunization coverage objectives				
	2016	2017	2018	2019	2020
BCG	**92%**	**92%**	93%	94%	95%
HeptBO	**92%**	**92%**	93%	94%	95%
Penta3	**84%**	**87%**	90%	93%	95%
MCV1	**74%**	**80%**	84%	88%	92%
Measles 2	**82%**	**85%**	87%	90%	92%
OPV3	**84%**	**87%**	90%	93%	95%
IPV (one dose)	**84%**	**87%**	90%	93%	95%
PCV-13	**84%**	**87%**	90%	93%	95%
Rota1	**86%**	**87%**	90%	93%	95%
Rota2	**82%**	**87%**	90%	93%	95%

TT2+ Women	64%	68%	72%	76%	80%
Anti-HPV			50%	55%	60%
MR1			40%	92%	95%
MR2			40%	92%	95%

Cf.: cMYP Table 35

- ***Introduction of new vaccines***

  In order to hold back the mortality related to immunization avoidable diseases, introducing HPV (human papilloma virus) and MR (MR1 and 2) vaccines in the routine program by 2018 is planned. These vaccines are distinguished by the fact that they take up a very large volume and are going to influence the CCE volume requirements.

- ***Establish a maintenance and monitoring plan***

  The preventive and reparative maintenance of the cold chain was neglected for a long time and remains the most vulnerable point of the EPI. The inventory and Effective Vaccine Management (EVM) assessment done in 2014 and extended in 2015 and early 2016 brought up the following items:

  Regionally: five health regions – Obock, Ali Sabieh, Dikhil, Arta and Tadjourah – have a cold chain with which to store vaccine stocks meeting “standard” needs. However, the central cold chain warehouses are installed in Djibouti.

  It is appropriate to note that during national vaccination campaigns, this cold chain becomes insufficient for adequate storage of vaccines.

  In the health stations: nearly all equipment is solar.

  At this level, the lack of preventive and curative maintenance poses a major problem.

  This observation, which at the very least is alarming, motivated us to develop a maintenance plan (provided in detail in the following points and in Attachment 10) and to set up a monitoring system whose purpose is to monitor the condition of our equipment and measure the maintenance effectiveness.

3 Bottlenecks

The following bottlenecks were identified:

- **Affected by the CCEOP**

  The base of cold chain equipment in the regions and health centres is no longer operational or is on its way to becoming nonoperational. The attached inventory gives an exhaustive status of the sites

  - Prior generation solar CCE whose batteries are at end of life.
  - Obsolete or broken CCE.
  - Use of domestic refrigerators not meeting WHO standards.

- Mismatch between the actual cold volume needs and the equipment in place.
- Maintenance and repair deficiency.

- **Other bottlenecks**
  - Insufficient health coverage in remote zones does not support good immunization coverage.
  - Pour vaccine management *Resolved by establishing new teams supported by the government.*
  - Delay implementing the HSSS/Gavi project (for example availability of transportation vehicles). *Resolved by the new political and technical organization and release of funds.*

4 Risks inherent in the current situation

Some health stations do not have functional cold equipment and cannot perform their routine immunization missions. The regions' immunization rate is going to make itself felt progressively.

Around 2020, if nothing is done, 78 of 86 units will be out of service or at end of life putting the immunization program at serious risk.

5 IV. Conclusion

Poor CCE management and insufficient preventive and reparative maintenance have contributed over recent years to the progressive breakdown of operational capacities with a significant drop in the immunization coverage rate, especially in the regions, as a consequence.

The situation has changed, and the conditions are now favourable and are conducive to considering a significant EVM improvement.

The Ministry of Health currently enjoys a strong leadership, fully aware of the weaknesses of the vaccination system and resolutely committed to improving the situation. Staff motivation remains an important point and the ministry is trying to find solutions for improving the context for the work and the recognition for work done based on the performance.

It is in this context that we are taking the step of requesting, through this CCEOP grant application, Gavi-WHO-UNICEF support on top of the HSS project in progress.

PART B: MANDATORY ATTACHMENTS: NATIONAL STRATEGIES AND PLANS

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	10 January 2017	N/A	
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal[1]	Yes	09 July 2016	N/A	
3	National Health Sector Development Plan	Yes	January 2013	2013 2017	
4	cMYP	Yes	June 2016	2016 2020	Key document
5	EVM Assessment	Yes	August 2014		The *Executive Summary Report* is also attached.
6	EVM Improvement Plan	Yes	June 2016	2014 2016	Located in the cMYP
7	EVM Annual Workplan **and** Progress Report on EVM Improvement Plan[2]	Yes	June 2016		Located in the cMYP
8	CCE Inventory Report[3] **and** Facilities Segmentation Plan	Yes	June 2016	N/A	Inventory report and analysis
9	Cold Chain Rehabilitation and Expansion Plan, **and** Equipment Selection and Strategic Deployment Plan	Yes	June 2016	2017 2020	Inventory report and analysis
10	Maintenance Plan with financing	Yes	June 2016		
11	Proof of status for CCE tariff exemptions waiver	Yes	18 January 2017	N/A	
12	Terms of Reference for the relevant Coordinating Committee for Good Vaccination Practices including all	Yes	July 2016	N/A	

[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 of applying for Platform support.

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

2. Mandatory attachments:					
No.	**Strategy / Plan / Document**	**Attached Yes/No**	**Final version (dated)**	**Duration**	**Comments**
	sections outlined in Section 5.2 of the General Application Guidelines[4]				
13	Minutes of the committee meetings for the 12 months preceding the proposal	No	The committee was established July 2016 for steering the project. There are no previous minutes.		
14	Other relevant documents	Yes			TCO analysis BUDGET 2017 2020 Contingency plans

[4] Countries applying before May 2017 can submit their existing Terms of Reference

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)*

1) The following documents describe the general situation, identify the constraints, and define the objectives and the cold chain equipment needs:

- A detailed inventory of the cold chain equipment done in mid-2016 indicates for each piece of equipment its location, the equipment type and power source (solar or electric), its compliance, the manufacturer, the acquisition date, whether it is operational or not, whether it is repairable or not, its obsolescence, and the renewal year (attachment number 8 "Inventory Report and Analysis"). In particular can be seen that 61% of the base is out-of-service and 10% of the equipment are not functional or waiting for repair.
- Since the National Health Development Plan (in attachment number 3 "NHDP 2013 2017") is reaching its end in 2017, the Ministry developed a complete multiyear plan for vaccination for 2016 to 2020 with the support of WHO, UNICEF and Gavi (in attachment number 4 "cMYP 2016-2020, Djibouti"). This document is in line with the cMYP 2011-2015, the objectives of the Global Action Plan For Vaccines 2011-2020, Sustainable Development Goals 2030 and the Health Development Plan 2016-2020. It provides the necessary statistics in all the domains, provides an update on the social, economic and health situation of the country, describes the organization of the health system, the current status and identifies the causes or constraints which brought about the situation, makes the connection with the cold chain problem and sets goals and strategies to reach the expected vaccination and quality of service levels. It reviews the conclusions of the EVM report and proposes solutions and a general schedule for the activities in table form by subject.
- A detailed evaluation at all levels of the cold chain equipment needs relative to the population and cMYP objectives was made in attachment number 9 "EPI Logistics Forecasting Tool Djibouti." The documents in attachment number 8 "Djibouti HF Segmentation Summary" and "Segmentation Interpretation Final" support the analysis.
- The document in attachment number 14 "PATH TCO of DT_ccce_tco_tool_update_v1_2_à _Djibouti" analyses the various equipment against all criteria for making the best selection. The selected equipment meets the needs until after 2020 and meets Gavi guidelines.

2) The following documents present the maintenance project which will be applied to the base of equipment and indicates how the performance of the health system and the operation will be tracked through data collection:

- The documents in attachment 10 "*COLD CHAIN EQUIPMENT MAINTENANCE PLAN Final draft", "CONTINGENCY PLAN FOR HF COLD CHAIN STORES", "CONTINGENCY PLAN FOR REGIONAL COLD CHAIN STORE"* and "*CONTINGENCY PLANS FOR NATIONAL CS*" repair, standardisation), the management system and responsibilities, task to be performed and their frequency, and rules for calling on subcontractors. The backup plans were established at all levels.
- The document in attachment number 5 "MONITORING & EVALUATION TRANSLATION" indicates by theme (cold chain performance, health system, supplies and logistics) how monitoring of operation will be done, including collecting data from the lowest level.

3) The document in attachment number 14 "Djibouti CCEOP Budget, January 2017" presents the full budget for requested equipment, by year, matching the needs definition from attachment 9.

4) The attachments number 2 "ICC COMMITTEE MEETING OF 9 July 2016", "Attendance List IAC 9 July 2016" and "ToR for the National Logistics Working Group" and also the relevant chapters from the cMYP confirm the involvement of the relevant groups (see following point). Since the committee was created for this project, there are no minutes from previous sessions.

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

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 0.5 page)

The start up of the CCEOP project was done by the Ministry of Health, in collaboration with the WHO, UNICEF and Gavi, our health system partners.

An ad hoc committee including all the stakeholders was formed for this project (see point 4 from the preceding chapter) which confirmed the strategies, objectives and means.

PART C: SITUATION ANALYSIS AND REQUESTED SUPPORT

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.

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

The EPI in collaboration with UNICEF establishes the forecasts for quantities of vaccines, injection and vaccination safety supplies, and the CCE needs along with the vaccine shipping plan. On this basis, the orders are placed by the government; the traditional vaccines and injection supplies are purchased by UNICEF and the new vaccines by Gavi through UNICEF with a country cofinancing share. Once they arrive in the country, the vaccines are quickly transported to the central warehouses of the capital or the vaccines are stored in Djibouti Ville. The warehouses are managed by the leaders of the EPI logistics. The vaccine distribution is done by level with a monthly distribution for the community health centres (CHC) and Djibouti Ville and quarterly for the regions. The Medical-Hospital Centres (MHC) in the regions play the role of regional central warehouses and distribute the vaccines to the health stations (HS) monthly and on a preset schedule. The vaccine management collection and tracking tools (e.g. purchase order, schedule sheet, stock tracking card, vaccination register and vaccination card) are regularly duplicated and tracked by the EPI logisticians and coordination. There are practically never vaccine stock outages even if effective vaccine management has shortcomings and needs strengthening.

The central level is made up of the office of the Minister, the General Secretariat and Central Directorates and Program Coordinations.

The regions (administrative and health) are combined with the districts and are directed by head physicians, responsible for health services managers including vaccination services. The community health centres in Djibouti Ville are managed by a physician. The Health Region Management is the entity administratively responsible for health formations.

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

The following are the identified weaknesses and bottlenecks:

Equipment: The equipment for the health regions and stations is no longer up-to-date: prior generation solar CCE whose batteries are at end of life, not meeting Gavi requirements (domestic equipment), obsolete, at end of economic life or having exceeded it, nonfunctional and without possibility of repair. The available volumes no longer meet the needs generated by the new packaging and with the planned introduction of HPV and MR vaccines, which are very bulky.

Maintenance: The difficulty of access in the regions, the lack of technical means, the lack of internal

skills at the Ministry of Health and the difficulty finding agreements with private companies from the maintenance domain led to the current situation.

Human resources: The health system is facing a staff shortage at all levels and is encountering difficulties because of turnover of already trained agents. The lack of staff motivation is also a major factor contributing to the problems described above. The problem particularly affects health stations located in the rural level. For its share, Djibouti Ville has nearly 80% of all available staff.

The mobile teams do not go out regularly for lack of means and maintenance.

Transportation and storage chain: The conditions for transportation of vaccines from the centre to the regions are not adequate. The transportation is done with inappropriate vehicles, without refrigeration. The distribution to health stations in hard-to-reach zones is frequently difficult or even impossible. In light of the budget, the financing for transportation is problematic, which causes delivery limitations.

During transportation there is almost no temperature control which could result in vaccine wastage.

Data and statistics: The available data comes from various discordant sources and are limited and unreliable. They cannot be used to produce statistics that are usable for good decision-making. There is no use of electronic means for consolidating the data, no clearly defined process for reporting. However, the Ministry of Health, aware of this problem, has strengthened the health information system by implementing a national health information division.

Management of the vaccines: The EVM is not up to standard and the improvement plan rarely implemented with an execution rate of around 30%, which leads to significant vaccine wastage.

Health Centre Accessibility: At the health region level, the populations have difficulty accessing the health stations. The coverage areas exceed the 5 km acceptable radius. The average radius is 12 km and goes out to 16 km; this greatly limits the possibility for vaccinating children.

Energy: No CCE connected to the electric grid has a voltage regulator or stabilizer, which causes breakdowns. Almost none of the health stations are connected to the electric grid; they are powered by solar energy with obsolete equipment.

Funding: For a long time the health budget has remained very small; which explains the lack of means at all levels. The Gavi HSS project, which should strengthen the health system, has experienced a year of delay in the disbursement of funds so the immunisation chain renovation program has not been able to start.

c) What are the actions which would currently serve to resolve these weaknesses?

The HSS project should make it possible to resolve a good portion of the problems encountered in the cold chain.

Steps have been taken in connection with the preparation for cold chain rehabilitation, in particular at the human resources level which saw the redefinition of its functions and responsibilities.

The recruiting and training processes have already started, in particular with the recruitment of an engineer specialized in solar energy, responsible for maintenance management, and the training of a logistics manager on inventory management and training on the computer tool.

A maintenance plan and the monitoring structure were established.

The CCEOP request is among the steps taken to improve the CCE situation.

Staff motivation is a point seriously considered by the ministry which is working to create a stimulating and positive work environment.

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

- The delay starting up the Gavi/HSS project is thus blocking the process on the ministry side.
- The current understaffing with personnel and the large turnover
- The delays in the disbursement of funds, in particular blocked by the HSS delay
- The insufficient training of managers on cold chain and vaccine management and nonuniform procedures
- Lack of routine maintenance

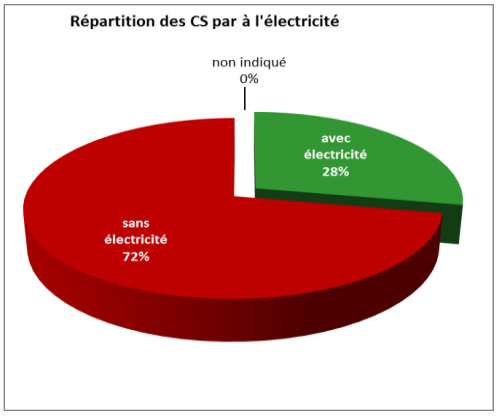
e) Describe the lessons which contribute to the current Cold Chain Equipment Optimization

Platform support request.

In connection with the general review, the government became aware of the decline of the vaccination system, the lowering of coverage and the risks which that represents. In connection with the preparation of the proposal, lessons were drawn on the maintenance process, providing qualified resources, training and the essential need of providing good vaccination chain management.

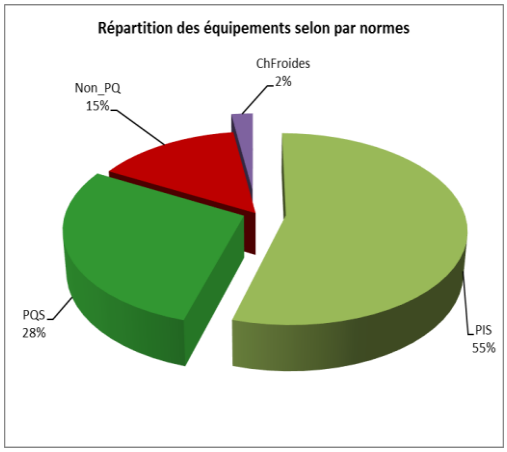
f) What percentage of facilities have reliable access to grid electricity for up to or more than 8 hours per day?

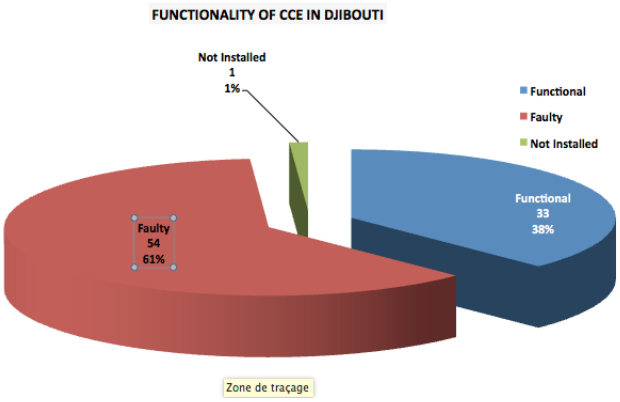
14 of 50 health centres have reliable electricity (28%)

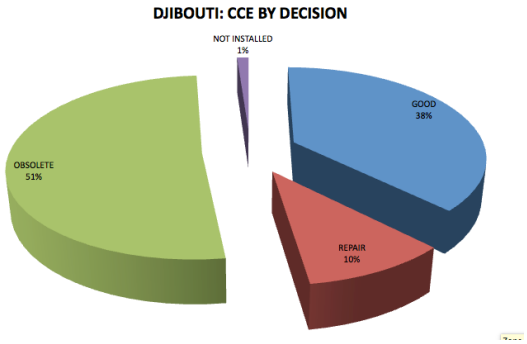


4 of 5 regional centres have reliable electricity (80%)

g) Please indicate the quantity and percentage of current CCE that: a) works; b) is PQS approved; c) is not PQS approved; and/or d) is obsolete







h) What is the current percent of the birth cohort served by an operating and PQS approved

CCE?

	Total	Avec EcF fonctionnel	Sans EcF fonctionnel
Population	1 001 000	541 000	460 000
Naissances	30 030	16 230	13 800
Pourcentage		54%	46%

i) What CCE bottlenecks can it address in the current supply chain organization (for example, capacity and technology constraints)?

Bottlenecks in the following domains will be resolved with the CCEOP:

- **Equipment:** Moving ahead with the replacement and disposal of equipment to assure adequate storage volumes and conditions.
- **Maintenance:** Simplifying and relieving because of simpler, more robust and effective equipment and in that way reducing its cost; repairing still functional equipment; guaranteeing a better operating level and reducing vaccine wastage.
- **Human resources:** Improving motivation and quality of service by offering suitable equipment and a positive working environment; Recruiting and progressively training workers
- **Transportation chain:** Acquiring electronic thermometers (fridge tags) for tracking temperatures and reducing vaccine wastage;
- **Data and statistics:** Getting quality data through fridge tags and improving tracking quality
- **Management of the vaccines:** Reducing vaccine wastage and assuring service quality by making the entire distribution chain consistent.
- **Health Centre Accessibility:** Reorganize current cold chain management, thus supplying a stable and professional base for extending coverage
- **Energy:** Improving the reliability of equipment connected to the grid through the planned acquisition of voltage regulators and provide cold capacity in all health centres with solar installations
- **Funding:** Guaranteeing the establishment of attached budgets

j) Describe any other supply chain related problem that CCE Optimization Platform support will serve to mitigate?

No specific comment

k) What are the overall CCE needs

Replacing all the country's obsolete and nonfunctional CCE requires the following equipment

Modele	Marque	Qtes
TCW 40SDD	B Medical	33
VLS 200A Green Line	Vestfrost	20
VLS 300A Green Line	Vestfrost	5
MF 114	Vestfrost	20
TOTAL		**78**

For 2017–2021

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.

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

Immunization coverage is equitably distributed between males and females and there is no ethnic disparity.

2014 FIC	BCG/Polio	Penta1/Polio1	Penta2/Polio2	Penta3/Polio3	Measles vaccine	DTP booster 1
Djibouti Ville	100.0	92.7	87.9	80.9	73.7	46.7
Balbala	100.0	94.0	88.3	81.7	72.4	57.1
Ali Sabieh	98.6	92.6	82.8	75.2	75.7	58.3
Dikhil	100.0	92.7	81.3	73.7	65.9	33.3
Tadjourah	98.1	90.7	86.1	75.8	72.3	51.5
Obock	93.4	89.4	72.8	52.6	45.1	32.2
Arta	97.2	92.7	79.0	64.4	61.7	54.0
	Residence environment					
Urban Djibouti Ville	100.0	93.5	88.3	81.6	72.2	53.6
Rural	97.6	89.5	77.2	64.2	59.0	55.6
Total	99.5	93.0	86.1	78.0	71.2	38.3
	Gender					
Male	99.5	97.7	95.8	91.2	82.9	50.4
Female	99.4	97.3	94.1	90.2	83.4	54.5
Total	99.4	97.5	95.0	90.7	83.1	52.2

In contrast, a flagrant inequality exists between cities and regions. With the CCEOP, cold chain storage capacity can be provided in all existing health formations. The city/region equity will be greatly improved by it, and this sound base will serve to move forward the development of health structures in the regions with which to improve the local equity by bringing inhabitants and health centres closer.

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

The following analyses were done:

- Exhaustive equipment inventory with which to analyse the gaps and identify the needs from it
- Segmentation Plan
- Preparation of National Health Development Plan
- Develop 2016-2020 cMYP
- EVM analysis

Among the existing opportunities:

- HSS/Gavi project
- Large political will which is seen as a unfailing commitment for the improvement of the EPI and therefore the cold chain (e.g. Cofinancing, human resources development, construction of new space for EPI, etc.)
- The restructuring of EPI health staff dedicated to vaccination
- Training for EPI logistics managers and regional teams
- Support from technical partners (WHO/UNICEF/Gavi)

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

During the initial support phase, with the acquisition of new equipment and replacement parts, the CCE can be rehabilitated in all health formations offering vaccination services, where some obsolete but functional equipment still remains in use.

Fridge tags will be deployed so it will be possible to follow temperature deviations and act more quickly.

During the first phase, CCE acquisition will progressively replace the remaining base for equipping care centres with reliable equipment and offering adequate storage capacities everywhere.

During the second phase, the maintenance service will be expanded to increase independence of the Ministry of Health maintenance team. The replacement parts will be used both to maintain broken obsolete equipment until its replacement and also to provide a rapid repair in case of failure of new CCE.

In the long term the durability of the cold chain will be assured by establishing reliable maintenance and by systematic tracking of the EPI performance. A CCE tracking system will be implemented with which to better respond to the country's needs.

7. Maintenance plan (and its funding source) and retirement of equipment *(two pages maximum). Please respond to all questions*

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

a) How will the country assure that certain aspects of cold chain maintenance will be guaranteed

The maintenance problem is accentuated by the lack of specialized companies and trained staff, the lack of replacement parts on the local market and difficulty getting funds for regularly performing preventive and reparative maintenance.

Corrective measures have been applied by setting up a detailed maintenance plan which provides for systematic reporting, temperature tracking, a preventive maintenance program, and action plans in case of unexpected events.

An engineer specialized in solar energy has been hired and recently named maintenance manager. One of his tasks will be to implement this plan which calls for systematic inspections at various levels on daily, weekly and monthly bases with reporting.

As a first step, the ministry will call on outside companies until in-house technicians are trained (underway).

Maintenance will be done on the basis of standard and planned operational procedures.

d) How will the country monitor the proper execution of preventive and corrective maintenance?

The maintenance plan described above calls for a CCE monitoring system with clear and well defined responsibilities for the teams in charge of the maintenance and the EPI logistics managers. The

failures of the cold chain can be identified with this monitoring system leading to a rapid response. The recently established Immunisation Practices Coordinating Committee will also do monitoring by meeting regularly for discussing the development of the cold chain and will provide major direction for proper maintenance of the cold chain and vaccine management.

Regular monitoring of daily and monthly temperature readings will be the subject of reporting and will allow close monitoring of the CCE and validation of both equipment reliability and also operation quality. In parallel, spot checks will be done in the centres.

The maintenance implementation budget, including the purchase of maintenance equipment, replacement parts and training costs is broken down as follows:

The annual maintenance cost is estimated:

2017	2018	2019	2020
$30,000	$30,000	$20,000	$10,000

The lowering of the costs at the end is justified by the replacement of equipment by more reliable devices requiring fewer operations. The lowering of the costs will enable financing the maintenance.

The budgets will be sent to the ICC committee for review and approval.

c) How is the country going to dispose of obsolete and irreparable equipment replaced by CCE optimisation platform equipment?

The withdrawal of equipment from the cold chain will be done according to the provisions of the Public Equipment Acquisition and Disposal act, law number 51/AN/09/6th on the environment, and the directives of the National Environmental Agency. Additionally, the obsolete equipment will be transferred to technical high schools and will serve not only for hands-on work for the students in the professional tracks, but also for recovering functional elements from these equipment.

8. National logistics working group (*one page maximum*). *Please respond to all questions*

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

Does the country have a continuing and operational good immunization practices coordinating committee (GICC)?

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.

The GICC did not exist and was established in July 2016 in connection with the CCEOP project.

It operates according to the document "Terms of Reference for the National Logistics Working Group in EPI Djibouti" and includes:

- A team from the Ministry of Health composed of EPI logisticians, a national coordinator from the EPI and central directors
- UNICEF: 1 representative
- WHO: 1 representative
- Gavi: The Gavi country focal point

Refer to ToR in Attachments

9. Other implementation details (*one page maximum*). *Please respond to all questions*

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

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

The country has defined the number and type of equipment required. The acquisition will be done according to the procedure defined with UNICEF. The manufacturer will perform the deployment.

The acceptance of the equipment will be done in Djibouti Ville at the national centre. The ministry will make space and lifting equipment (forklift) available . It will make the list of affected health centres available and the list of central, regional and local contacts.

The health formations in Djibouti are made of hard structures and aluminium roofs. The deployment and installation will be done quickly and the maintenance team will do the tracking. One worker will help with the handling of the equipment, a technician will help with cabling and will be trained by the supplier's representative. Two local collaborators will also participate for training purposes.

The contact people for the deployment are:

Dr. Farhan Ali Mohamed; farhangyno@hotmail.fr, +25377871115 / +25321351491 (National EPI Coordinator)

Ms. Noura Abdi Farah; noura.abdi@gmail.com; +25377833734/ +25321320500 (Gavi Country Focal Point)

Dr. Moktar Ahmed Omar mahmedomar@unicef.org, +25377817174; (Child Survival and Development Specialist)

M. Idris Ali Amir iamir@unicef.org, +25377850257; (UNICEF Supply Service Assistant)

b) What is the source of the cofinancing share? Is the country's cofinancing share guaranteed?

The cofinancing share comes from HSS and received Gavi's approval.

The country's funding share comes to $67,663.01.

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

The document "courrier exo_18012017201526" is attached in Annex 11.

Medical supplies and equipment for the account of the Ministry of Health are exempt from all taxes according to national regulation.

PART D: INITIAL SUPPORT PHASE

This **initial support phase** is designed to address urgent CCE needs through years 1 and 2.

10. Prioritised (Urgent) CCE needs (*Maximum 3 pages*)

Prioritised (Urgent) CCE Need #1

The need

The out-of-service, electrical and solar equipment are replaced or installed in all centres without functional CCE for 2017-2018. This is done in order to reestablish and provide continuity of immunisation service delivery.

The following are the quantity of equipment and selected models:

Equipment	Code	Capacity in litres	Quantity 2017	Quantity 2018
TCW 40SDD	E003/042	36	17	9
VLS 200A	E003/031	60	3	5
VLS 300A	E003/032	98	1	1
MF 114	E003/024	105	6	3
		Total	**27**	**18**

For reasons of deployment capacity, a portion of the equipment, whose replacement would be necessary in 2017, was postponed to 2018.

Justification

The priority centres cover a population of over 680,000 inhabitants, or 68% of the population, including Djibouti Ville.

The currently installed equipment is no longer functional and deprives this population of routine vaccination services.

The replacement of this equipment will allow **20,400 children under one-year-old** to receive adequate vaccination services.

Expected outcome

- Improvement of equity.
- Provide cold storage capacity that is reliable and adequate for the needs for new vaccines beyond 2020.
- Provide an ice pack production capacity necessary during vaccine transportation and outreach strategy.
- Routine vaccinations will be able to resume reliably.
- The falling coverage rate will be stabilized and start to increase.
- Vaccine wastage will be minimized.
- Vaccine quality improved
- Introduction of temperature monitoring system which will produce data indispensable to the maintenance program and for performance assessment.

Total CCE budget

Equipment	2017	2018
TCW 40 SDD	$119,170	$63,090
VLS 200A	$3429	$5715
VLS 300A	$1312	$1312
MF 114	$5202	$2601
Total	**$129,113**	**$72,718**

The prices are prepared based on the limited base

Prioritised (Urgent) CCE Need #2

The need

The broken and repairable CCE are quickly repaired in 2017 in so far as possible.

A stock of replacement parts for existing equipment is expected.

Fridge tags are also necessary for monitoring temperatures and triggering maintenance when necessary.

Justification

The affected centres do not have sufficient cold capacity or have no cold capacity at all. They find themselves confronted with the same constraints as those expressed in the previous need.

Expected outcome

The result is the same as that expected with the replacement of out-of-service equipment.

Total CCE budget

	2017	2018
Replacement parts	$15,000	$7500
100 fridge tags	$4400	
Voltage regulators	$1120	$80
Total	**$20,520**	**$7580**

GRAND TOTAL CCE BUDGET: "Initial support "(Years 1 and 2)

	2017	2018
Total year 1	$129,113	$72,718
Total year 2	$20,520	$7580
Annual TOTAL	**$149,633**	**$80,298**
Total	**$229,831**	
Reserve	**$16,195.17**	
GRAND TOTAL	**$246,026.17**	

11. Ongoing or planned activities around other supply chain fundamentals in the initial support phase	
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.*	○ Biannual manager and health team training on the cold chain ○ Customs personnel training on vaccine arrival procedures ○ Improving operational and technical skills of the Ministry of Health staff ○ Regularly holding GICC and ICC meetings ○ Monthly tracking of statistics for improving employee performance and steering maintenance. ○ Tracking of recommendations from the EVM report, annual update of the action plan and planning actions These activities will be financed by the HSS for a planned amount of $36,500
Data for supply chain management *Describe all planned or ongoing activities related to data 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.*	○ Training on using computer tools ○ Keeping data consistent ○ Monitoring temperatures at all steps of the chain and systematic data collection ○ Conducting quarterly CCE inventory ○ Collecting and analysing data making rapid response possible if needed ○ Tracking and consolidating statistics ○ Conducting regular audits for assuring adherence to procedures These activities will be financed by the HSS for a planned amount of $12,580
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.*	○ Planning for distribution and tracking of orders ○ Acquisition of 50 ice chests with UNICEF, delivery planned beginning 2017 in keeping with the EVM plan ○ Tracking equipment maintenance and performance ○ Acquisition of a refrigerated truck to provide adequate transportation These activities will be financed by the HSS for planned amount of $75,000
Continuous improvement process *Describe all planned or ongoing activities related to **data management**, their sources of funding, and partner support.*	○ Develop standard procedures and frequencies for reading data ○ Organize data analysis and prepare the sessions These activities will be funded by the country

Temperature monitoring *Describe the temperature monitoring devices that are currently available in the country? For example, central level (CTMS), subnational level, the weakest distribution and services levels (30 DTR and RTM devices) and during transportation (freeze tags – electronic monitoring of the temperature of freezing sensitive merchandise)* *Furthermore, describe which measures are in place to a) obtain temperature data from the various devices;* *b) interpreting the following temperature alerts (reparative maintenance); and* *c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system.*	○ Fridge tags are used in operational equipment at all levels of the chain. ○ Temperatures are reported on monitoring charts which are gathered at the ministry and analysed. ○ The temperatures are not checked during transportation. ○ UNICEF funded 100 fridge tags. ○ UNICEF is going to implement a temperature monitoring system in the cold rooms. These activities will be funded by the CCEOP

12. Reviewing implementation of initial support activities
Support for approximately years 3 onwards will be contingent on reporting and performance of activities implemented during the initial support phase.
Through commitments made by the ministry, and also the development of the maintenance plan and execution of the HSS plan in progress, and support from WHO and UNICEF, everything is in place today to provide for the sustainability and quality of the cold chain beyond 2021. In fact, establishing teams trained and supported by an optimal specifications document, standard procedures and a monitoring process amply detailed in the maintenance plan are going to make an efficient and effective cold chain durable.

PART E: SCALE-UP SUPPORT PHASE

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

Prioritised (Additional) CCE Need #1

The need

Progressive replacement of the balance of the equipment. Replacements will be done in priority order reflecting the year placed in service.

The affected centres touch the following population:

Equipment	Code	Capacity in litres	Quantity 2019	Quantity 2020	Quantity 2021
TCW 40SDD	E003/042	36	4	1	2
VLS 200A	E003/031	60	4	4	4
VLS 300A	E003/032	98	1	1	1
MF 114	E003/024	105	4	3	4
		Total	**13**	**9**	**11**

Justification

The affected centres cover a population of over 270,000 inhabitants, or 27% of the population, including Djibouti Ville.

The currently installed equipment is no longer functional and deprives this population of routine vaccination services.

Because the replacement **8100 children under one-year-old will have access to quality vaccination services**

Expected outcome

- Provide equitable continuity of vaccination services
- Contribute to achieving immunization coverage objectives
- Provide quality vaccination services
- Provide compliant storage capacity suited to the needs of the country based on large volumes of the HPV and MR vaccines which will be introduced soon
- Have an operational and optimal temperature monitoring and tracking system

Total CCE budget

Equipment	2019	2020	2021
TCW 40 SDD	$28,040	$7010	$14,020
VLS 200A	$4572	$4572	$4572
VLS 300A	$1312	$1312	$1312
MF 114	$3468	$2601	$3468
Total	**$37,392**	**$15,495**	**$23,372**

Prioritised (Additional) CCE Need #2

The need

Provide for the proper operation of the new base of equipment by providing quick and effective maintenance. Replacement parts are difficult to find in Djibouti and will be even more so for the new, technologically advanced equipment. Maintenance is a long-term investment which requires means and

<table>
<tr><td></td><td>available parts in order to be able to provide the expected service quality.
Maintenance must create a stock of parts.</td></tr>
<tr><td>Justification</td><td>The new equipment will be much more reliable than the current equipment, but the possibility of breakdowns is not ruled out. If parts must be ordered, maintenance intervals will not be met and the entire cold chain will again be at risk, with vaccination services again unavailable in some zones. The teams risk losing their motivation again .</td></tr>
<tr><td>Expected outcome</td><td>Respond quickly to any breakdown and provide reparative maintenance
Maintain the project dynamics by seeking to keep a quality standard
Keep the confidence of the users over the long-term</td></tr>
<tr><td>Total CCE budget</td><td>
<table>
<tr><th></th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td>Replacement parts</td><td>$3750</td><td>$1875</td><td>$1500</td></tr>
<tr><td>100 fridge tags</td><td></td><td></td><td>$2200</td></tr>
<tr><td>Voltage regulators</td><td>$120</td><td>$40</td><td>$40</td></tr>
<tr><td>Total</td><td>$3870</td><td>$1915</td><td>$3740</td></tr>
</table>
</td></tr>
<tr><td>GRAND TOTAL CCE BUDGET: “Scale-up support” (Years 3, 4 & 5)</td><td>
<table>
<tr><th></th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td>Total year 1</td><td>$37,392</td><td>$15,495</td><td>$23,372</td></tr>
<tr><td>Total year 2</td><td>$3870</td><td>$1915</td><td>$3740</td></tr>
<tr><td>Annual TOTAL</td><td>$41,262</td><td>$17,410</td><td>$27,112</td></tr>
<tr><td>Total</td><td colspan="3">$85,784</td></tr>
<tr><td>Reserve</td><td colspan="3">$6004.88</td></tr>
<tr><td>GRAND TOTAL</td><td colspan="3">$91,788.88</td></tr>
</table>
</td></tr>
</table>

14. Ongoing or planned activities around other supply chain fundamentals in the scale-up support phase	
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.*	Same as point 11
Data for supply chain management *Describe all planned or ongoing activities related to continuous improvement processes, 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.*	Same as point 11
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.*	Same as point 11
Continuous improvement process *Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.*	Same as point 11
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) interpreting the following temperature alerts (reparative maintenance); and* *c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system.*	Same as point 11

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 embedded 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).*	 Modèle de budget pour la plateforme (
Total cost of ownership	Completed and attached to the file
BUDGET	Completed and attached to the file

PART G: PERFORMANCE FRAMEWORK

<table>
<tr><th colspan="2">16. Indicator monitoring and reporting requirements</th></tr>
<tr><td colspan="2">At a minimum, countries must verify and prepare reports on:
3 MANDATORY intermediate results indicators;
1 MANDATORY intermediate result indicators <u>if countries are procuring freeze protected cold boxes and vaccine carriers from an independent supplier; and</u>
1 to 3 ADDITIONAL intermediate results indicator(s).</td></tr>
<tr><td>MANDATORY intermediate results indicators (must include baseline, data source, targets and frequency of reporting):
Number of equipped health facilities replacing CCE with (any) platform-eligible ILR (ice lined refrigerator), SDD or long-term passive devices, and irrespective of their funding source;
Number of facilities previously without equipment, newly equipped with platform-eligible equipment (i.e. ILRs, SDDs or long-term passive devices); and
Precisely defined indicator proposed by the country to reflect appropriate equipment upkeep; for example, the percentage of facilities equipped with a working cold chain,[5] such as shown by remote temperature control.
Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country?</td><td>Provide list of planned additional intermediate results indicators:
Number and size of daily temperature reports by equipment and consolidation according to maintenance plan.
Number and length of outages by equipment and consolidation according to maintenance plan
% of CCE with maintenance level according to plan
Number of preventive maintenance per day, consolidated
Number of corrective maintenance per day, consolidated
% of centres with vaccines out of stock
% of deliveries according to plan
% of vaccines lost in delivery
% of vaccines lost per centre, consolidated</td></tr>
<tr><td>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</td><td>Provide list of planned additional intermediate results indicators:
List of centres sending reports late, with consolidation
List of centres producing complete</td></tr>
</table>

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

options are: 1. *Operational status of the cold chain equipment: proportion of operational CCE and proportion of districts that have at least 90% operational equipment;* 2. *Loss of sealed vials: proportion on the national level ,by district and facility;* 3. *Proportion of planned demand: Ratio of actual usage compared to forecast (vaccines);* 4. *Full availability of inventories: proportion of facilities/districts that have experienced no inventory outages;* a. *Stocks in compliance with the plan: percentage of facilities/stores/districts with stocks between the minimum and maximum stock levels;* 5. *Temperature alerts: 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 complete delivery: proportion of orders delivered in their entirety and on time or* 8. *Number of health managers trained and despatched for supply chain oversight function and rate of reported monitoring activities.*	reports, with consolidation ○ % the centres with full and trained staff ○ Inventory of spare parts stock The monitoring and evaluation Annexe presents the core indicators which will be produced.