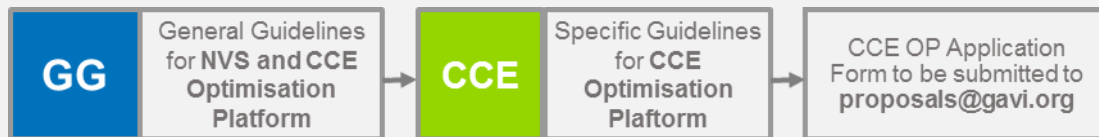


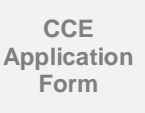


Application Form for Cold Chain Equipment Optimisation Platform support in 2017

Document Dated: November 2016

Application documents for 2017:

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



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



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.

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PART A: APPLICANT INFORMATION

1. Applicant information									
Country	<i>Kyrgyz Republic</i>								
Date	January 2017								
Contact name									
Email address									
Phone number									
Total funding requested from CCE Optimisation Platform (US \$)	<i>USD 1,658,246</i>								
Does your country have an approved Gavi HSS support on-going?	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> Yes <input type="checkbox"/> </td> <td style="width: 50%; border: none;"> No <input type="checkbox"/> </td> </tr> </table>	Yes <input type="checkbox"/>	No <input type="checkbox"/>						
Yes <input type="checkbox"/>	No <input type="checkbox"/>								
	<i>Indicate the anticipated final year of the HSS: 2020</i>								
Proposed CCE Optimisation Platform support start date <i>(please be informed the actual start date should be at least 8-10 months from application date):</i>	<i>Indicate the month and year of the planned start date of the support, based on the strategic deployment plan:</i> July 2017								
Proposed CCE Optimisation Platform support end date:	<i>Indicate the month and year of the planned end date of the support, based on the strategic deployment plan:</i> December 2020								
Signatures <i>Include signed (and official) CCE Optimisation Platform application endorsement by:</i> a) <i>Minister of Health and Minister of Finance (or <u>delegated authorities</u>)</i> b) <i>Members of the Coordination Forum (HSCC/ICC or equivalent body)</i>	<i>We the undersigned, affirm the objectives and activities of the Gavi CCE Optimisation Platform proposal are fully aligned with the national health strategic plan Den Sooluk and Multi-year immunization plan 2017-2021 and that the funds for implementing all activities, including domestic funds and any needed joint investment, will be included in the annual budget of the Ministry of Health:</i> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Minister of Health (or delegated authority)</td> <td style="width: 50%; border: none;">Minister of Finance (or delegated authority)</td> </tr> <tr> <td style="border: none;">Name:</td> <td style="border: none;">Name:</td> </tr> <tr> <td style="border: none;">Signature:</td> <td style="border: none;">Signature:</td> </tr> <tr> <td style="border: none;">Date:</td> <td style="border: none;">Date:</td> </tr> </table>	Minister of Health (or delegated authority)	Minister of Finance (or delegated authority)	Name:	Name:	Signature:	Signature:	Date:	Date:
Minister of Health (or delegated authority)	Minister of Finance (or delegated authority)								
Name:	Name:								
Signature:	Signature:								
Date:	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	Yes			
2	Minutes of the Coordination Forum meeting (ICC, HSCC or equivalent) endorsing the proposal ¹	Yes	12.01.17		
3	National Health Sector Development Plan	Yes		2012-2018	
4	cMYP	Yes	Dec-2017	2017-2021	
5	EVM Assessment	Yes	Dec-2015		
6	EVM Improvement Plan	Yes	Dec-2015	2016-2019	
7	EVM Annual Workplan and Progress Report on EVM Improvement Plan ²	Yes			
8	CCE Inventory Report ³ and Facilities Segmentation Plan	Yes	Jan-2017		
9	Cold Chain Rehabilitation and Expansion Plan, and Equipment Selection and Strategic Deployment Plan	Yes	Jan-2017	2017-2020	
10	Maintenance Plan with financing	Yes			
11	Proof of status for CCE tariff exemptions waiver	Yes			
12	Terms of Reference for the relevant Coordination Forum including all sections outlined in Section 5.2 of the General Application Guidelines ⁴	Yes			
13	Minutes of the Coordination Forum meetings from the past 12 months before the proposal	Yes			

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.

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

2. Mandatory attachments

No.	Strategy / Plan / Document	Attached Yes/No	Final version (dated)	Duration	Comments
14	Other relevant documents - EPI review - MICS				

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.

National Health Sector Development Plan

The National Health Reform Program in the Kyrgyz Republic for 2012-2016-2018, called “Den Sooluk” has a component dedicated to mother and child health. Among the expected outcomes of the Program is to achieve “coverage of at least 96% of children under 2 years with vaccination complex” (Chapter 9, Child Health). Initially scheduled to end in 2016, Den Sooluk implementation has been extended to 2018 following a 2016 Government and Partner’s joint review of its performance. The CCEOP support will facilitate achieving this goal through improving the infrastructure for delivery of vaccines to children which are most difficult to reach and children which do not have access to immunization on a continuous basis due to lack of infrastructure and cold chain equipment.

GAVI HSS proposal

Kyrgyzstan HSS proposal has a specific objective to ensure that not less than 95% of children under 2 years of age receive vaccinations that are part of the country’s national routine immunization schedule. A number of bottlenecks which impede the achievement of this objective are identified: Low awareness, beliefs and attitudes among the population; Lack of communication skills and practice among health workers; Geographical access to MCH services in remote mountainous areas; Low availability of health services in urban migrant settlements; Out-of-date knowledge, skills and practices among health workers; Deficiencies in cold chain infrastructure; Manual data collection; CCEOP support will address deficiencies in cold chain infrastructure and geographical access to MCH services directly, while indirectly improving availability of health services in urban migrant settlements, skills and practices among health workers, and data collection processes.

cMYP

A new five-year country immunization programme for 2017-2021 has been recently developed in alignment with the national 5-year planning cycle. Its objectives align the objectives and the strategies to the 5 defined objectives of European vaccine action plan and its subsequent priority action areas, formulated as strategies. It incorporates findings and key recommendations of most recent assessments, including EVM assessment, and cold chain inventory and needs assessment. Five CCEOP performance monitoring indicators have been aligned with cMYP performance monitoring framework, providing a sound base for sustainable improvement.

EVM Assessment

The key problems identified by the latest EVM assessment in 2015, are related to maintenance and information systems and supportive functions. Accordingly, recommendations for improvement largely focus on activities aimed at improving maintenance procedures through a systematic approach to maintenance and introducing a supervision system. Additionally, significant deficiencies are identified in cold chain equipment capacities, especially at the service provider level (health facilities). Identified weaknesses include lack of refrigeration equipment, old and inadequate refrigeration equipment and electrical power supply issues.

The EVM assessment recommendations which will be directly addressed by the CCEOP support are listed below:

E4. 30 day temperature recorders should be available in all refrigerators.

E4. All domestic refrigerators should be replaced with WHO recommended Ice-lined vaccine

refrigerators.

E5. Written preventive and breakdown maintenance plans should be prepared for buildings, equipment and vehicles at all levels. All maintenance activities should be clearly documented and archived by store managers.

E5. Non-operational cold chain equipment should be treated according to the SOPs.

E6. NIP should consider implementing a minimum-maximum stock management system to comply with EVM requirements.

E9. A standard cold chain equipment inventory system should be introduced (this recommendation is already met, in the process of preparing the CCEOP application)

E9. NIP should consider organizing district level refresher trainings for proper use of SOPs and new temperature monitoring devices.

A number of other recommendations will be addressed indirectly by the CCEOP support.

CCE Inventory Report, 2016

The CCE inventory identified that 178 (11 percent) primary health care facilities having access to grid power supply do lack refrigerators to store vaccines. The situation is critical for 45 remote facilities (>50km from vaccine supply source);

A high proportion (52%) of inadequate cold chain equipment (domestic refrigerators), especially at the immunization provider level, exposing vaccines to potential risks. This is critical in facilities with power supply less than 16 hours a day (29 facilities);

A very limited equipment maintenance programme (implemented in 7 percent of facilities) and lack of trained technicians and spare parts for WHO prequalified equipment (19 percent of existing WHO prequalified equipment is not working or requiring maintenance);

Old prequalified cold chain equipment, requiring gradual replacement (55% prequalified refrigerators at regional/district stores and 33% at service delivery sites is > 10 years old);

Inadequate power supply especially at immunization provider level in remote areas and insufficient power protection and backup Lack of supportive equipment (generators, voltage regulators available in 17% facilities);

Poor temperature monitoring practices and lack of continuous temperature monitoring devices.

All of these deficiencies of the vaccine supply chain will be directly addressed by the CCEOP support.

EPI Review, 2016

The EPI Review conducted in July 2016 identified the following issues in regard to vaccine management and immunization supply chain: Transportation - no funds for vaccines delivery beyond oblast level, lack of funds for reaching remote area and for supervisory visits; multi-dose presentation (BCG, bOPV 20 doses) - delay in immunization in sparsely populated areas; vaccine stock management practices outdated; in some health facilities, no vaccine carriers, refrigerators not of quality-standard (domestic, old, not functioning) – lack of generators in some facilities. The EPI review team recommended to: Continue procuring and distributing quality-standard refrigerators, temperature monitoring devices, vaccine carriers and refrigerated vehicles (under GAVI HSS funds); Encourage local and national support (funding) to ensure vaccine and supplies distribution within oblasts/rayons; Improve vaccine stock management practices by implementing SOPs; Encourage repair and maintenance agreements – distribute to oblasts the list of qualified cold chain technicians trained by UNICEF.

MICS-2014 survey

MICS-2014 assessed vaccination coverage by various background characteristics. Timely coverage by individual antigens in general was found above 90 percent. The lowest coverage was found in urban settings and among households of richest quintile raising mainly service acceptance concerns. No gender discrimination in terms of vaccination coverage was observed.

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 composition and terms of reference of the National Inter-agency Coordination Committee (ICC), were reviewed with the MoH Order n°218 "On improving work of ICC" (March 2016). The ICC is chaired by Deputy Minister of health - Chief sanitary doctor of Kyrgyzstan, responsible for public health, who has decision making authority. The Deputy chair – is the head of the MoH public health department. The key ICC objectives focus on providing policy, technical and financial support to NIP; coordination of partner's support towards achieving sustainability of the immunization programme; advocacy for increasing national ownership to strengthening immunization programme. ICC decisions follow the quorum (presence of 50 percent of members or their substitutes during meetings) as defined in the TOR. ICC composition includes 30 members with defined responsibilities across three areas: coordination, technical support and social mobilization. Members include senior-level representatives with decision-making authority representing immunization programme, financing and procurement, public health and disease surveillance, primary health care and drugs regulation, development partners, including World Bank, WHO and UNICEF. The CCEOP application planning and development was reviewed at ICC meetings – in August 2016, September 2016 and January 2017 (relevant meetings minutes attached). A number of national structures have been involved in providing inputs to developing the CCEOP application, including: Deputy minister of health, MoH Public health department, Medical Accreditation Commission, Mandatory health insurance fund; National Immunization Programme, National HSS coordinator, MoH department for medical equipment. WHO Country Office played an essential role in engaging partners support to the process, including Regional expertise and consultancy support, the World Bank Country Office and UNICEF Country Office technical inputs. Views of non-statal organizations – such as Kyrgyzmedtechnika, a private company providing medical equipment maintenance services – were consulted in order to outline the equipment maintenance strategy. Country sources for CCEOP joint investment were reviewed, including national budget, development partners support, SWAp funding, GAVI HSS as well as other donor/s support in the area of cold chain. In addition, synergies with the existing policies and health projects were explored in supporting long term sustainability of the CCEOP investment. The CCEOP development was aligned with the 2016 partner's review of the national health strategy (Den Sooluk) and its extension to 2018 as well as with the development of the cMYP 2017-2021. In addition, HSS cold chain component was reviewed and aligned with the CCEOP application. CCEOP monitoring indicators were integrated into the cMYP performance monitoring framework and will be subject to systematic monitoring of broader programme performance. A specific indicator monitoring vaccination coverage inequities will be monitored starting 2017. According to 2014 MICS survey, no gender inequalities related to vaccine coverage were observed in Kyrgyzstan.

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?

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

Kyrgyzstan has undertaken wide-ranging reforms of its health system in a challenging socioeconomic and political context. The country has developed three major health reform programmes after becoming independent, the latest one being Den Sooluk national health reform Programme (2012-2016). These reforms introduced comprehensive structural changes to the health care delivery system with the aim of strengthening primary health care, developing family medicine and restructuring the hospital sector.

Five-year immunization programmes are endorsed by the Government to define the national immunization schedule, to set vaccination coverage and disease control targets. A new immunization programme is being developed currently to cover the years 2017-2021 to be approved by a Government decree.

Before 1994, immunization services were managed and supervised according to a vertically structured system of Sanitary Epidemiological Services (SES) of the Republican, regional and local level. The Ministry of Health created a Republican Center of Immunoprophylaxis (RCI) in 1994 to strengthen immunization services. Its functions were to shape immunization policies, perform EPI monitoring, procure and provide vaccines, provide guidance on programme management and conduct surveillance for vaccines preventable diseases.

The Republican Center of immunoprophylaxis has its own budget. The Center reports to the Ministry of Health. At sub-national level RCI is represented technically by regional branches created within public health structures represented by Sanitary-Epidemiological Service (SES) in the city of Bishkek (1), city of Osh (1), Osh region (1) and immunization officers within

rayon (district) SES (49), of which six do perform functions of both district and sub-national stores.

RCI is responsible for vaccine forecasting, procurement and distribution. It procures EPI vaccines and immunization supplies through UNICEF Supply Division.

The immunization supply chain follows the structure of EPI and has four levels: the national vaccine store at RCI, regional vaccine stores at regional SES, vaccine stores in city Bishkek and Osh, district level vaccine stores and immunization service delivery sites. In remote and difficult to access areas there are defined two district stores which are expected to act as intermediary hubs for several more districts in those areas (i.e Uzgen rayon in Osh region will host temporarily vaccines for Karakuljinsky rayon; and Aksy rayon in Jalal-Abad region will host temporarily vaccines for Alabukinsky, Toguz and Torouz rayons).

The national store distributes vaccine and immunization supplies four times a year to all oblasts and cities. An old refrigerated truck (14 m³) is available at the national level and is used to pick vaccines from the airport, as well as to perform distribution to some oblast stores and an identical vehicle is available for southern regions. An identical vehicle is available at Osh regional store. Once every month, rayon stores using their own vehicles (general purpose cars or ambulances equipped with cold boxes) travel to oblast stores to pick up their needs. Health centers, using the same requisition system, collect monthly vaccines from the rayon cold stores in vaccine carriers using public transportation or other transport arrangements.

Central distribution programmes from oblast to rayon or from rayon to immunization providers do not exist and often healthcare workers at service provider level have to provide vaccine transport/collection at their own expense.

Immunization is carried out by about 1871 health facilities across the country, involving primary health care (PHC) and delivery departments of hospitals. Private sector has little representation in immunization service delivery – seven private birth delivery clinics were reported to provide immunization.

• Feldsher-midwifery posts (FAPs)	1026
• Family groups practices (FGP)	694
• Family medicine centres (FMC)	64
• General practice centres (GPC)	27
• State maternities	53
• Private maternities	7

FMCs are the largest outpatient health facilities in the country. They employ from 10 to 20 doctors providing primary and specialized outpatient services, as well as diagnostics and minor surgeries. Typically, there is one FMC per rayon (district) that is responsible for all FGPs and FAPs located in their respective catchment area. Therefore, they play an important role in allocating human and financial resources to address immunization supply chain needs in facilities hold under their oversight.

GPC provide both primary and secondary care. GPCs were formed in 2006 by merging territorial hospitals and PHC facilities in remote areas with population less than 25,000 people. FGPs are the main providers of PHC services and usually consist of three to five doctors supported by nurses.

FAPs provide PHC services in small and/or remote rural areas. They are usually staffed by at least one paramedic health worker, called feldsher, but in larger villages, FAPs employ also a midwife and a nurse. FAPs offer the most basic services such as antenatal and postnatal care, immunizations, and health education.

Financing of the immunization supply chain running costs in Kyrgyzstan is performed with involvement of various sources, including RCI central budget (vaccine receipt and running the national vaccine store), Sanitary-Epidemiological service central budget (vaccine transportation and storage at oblast and district level) and primary health care budget (vaccine transportation and storage at service delivery sites). Financing of the primary health care is performed through health insurance based on “per-capita” scheme and accounted for 500 SOM (USD7.3) per capita per year in 2016. Managers of facilities at each level are responsible to allocate funds to cover all the needs of facilities, including costs related to salaries, infrastructure and functioning and maintenance of the immunization supply chain.

2. What weaknesses have been identified in the country’s supply chain?

The following weaknesses of the country’s supply chain have been identified:

- a) Insufficient storage capacity for the increasing volumes of vaccines as a consequence of changes in the national immunization programme (PCV and IPV were introduced recently, rotavirus and human papilloma vaccine are planned to be introduced in 2018). This is especially going to affect the central level, which already has reached its storage limits and does not have sufficient storage capacity to observe a reserve stock policy;*
- b) Vaccines exposed to risks during transportation from higher levels of the supply chain to the lower levels (national - to oblast; oblast – to district). Existing transport and cold boxes capacity does not meet the needs of increased vaccine volumes;*
- c) Lack of refrigerators in 178 (11 percent) primary health care facilities which do have access to grid power supply. Situation is critical for 45 remote facilities (>50km from vaccine supply source);*
- d) High proportion (52%) of inadequate cold chain equipment (domestic refrigerators), especially at the immunization provider level, exposing vaccines to potential risks. This is critical in facilities with power supply less than 16 hours a day (29 facilities);*
- e) Equipment maintenance programme very limited (implemented in 7 percent of facilities) and lack of trained technicians and spare parts for WHO prequalified equipment (19 percent of existing WHO prequalified equipment is not working or requiring maintenance);*
- f) Ageing prequalified cold chain equipment, requiring gradual replacement (55% prequalified refrigerators at regional/district stores and 33% at service delivery sites is > 10 years old);*
- g) Inadequate power supply especially at immunization provider level in remote areas and insufficient power protection and backup equipment (generators, voltage regulators available in 17% facilities);*
- h) No funds for vaccines delivery beyond oblast level, lack of funds for reaching remote areas. In addition, 5% of facilities collecting vaccine more frequently than once per month raising efficiency concerns;*
- i) No vaccine safety stock maintained. Stock-outs experienced by 80 percent facilities during the previous year;*
- j) Delay in immunization in sparsely populated areas due to cold chain limitations and restricted use of WHO multi-dose open vial policy. Every fifth facility provides immunization sessions once a month or less frequent;*
- k) Poor temperature monitoring practices and lack of continuous temperature monitoring devices.*
- l) Insufficient supervision visits and lack of supervisory tools to identify weaknesses in a systematic manner and monitor progress towards improvement.*

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

In order to accommodate the vaccines at the national vaccine store, the programme considers reducing the supply interval, in particular for bulky vaccines. The safety stock is currently not maintained.

Inadequate transport capacities to sub-national levels are partly addressed by having multiple vaccine collections per supply period performed by oblast and rayon level and by implementing private arrangements from rayon level to immunization provider level. This raises both concerns in regard to exposing vaccines to risks as well as efficiency concerns due to increasing transportation costs.

Provision of immunization services in facilities lacking refrigerators or in those where refrigerators are not working/require maintenance is performed through outreach sessions (97 facilities reported providing outreach immunization services) or by reducing the frequency of immunization sessions and provide immunization during the day the vaccine is received only. Considering constraints in applying multi-dose open vial policy and lack of safety stock, this leads to rescheduling and delays in immunizing children.

EPI undertakes continuous efforts to replace domestic refrigerators with WHO prequalified equipment – 230 ILRS MKF074, including spare parts and voltage regulators were procured in 2012 with JICA support; 240 refrigerators MK-144 were procured through UNICEF SD in 2015 with support from a local charity foundation and have been distributed during 2015-2016; and 216 ILRS HBC-70 were procured towards the end of 2016 using System Wide Approach (SWAp) funds (supported by Government and in-country development partners). With GAVI support, UNICEF CO started during 2016 implementation of a project to strengthen vaccine cold chain maintenance: 18 private technicians were trained to repair prequalified refrigerators, a repair toolkit to setup a repair workshop is being procured. Procurement of cold chain equipment spare parts has been budgeted with GAVI HSS project. Considering equipment maintenance as an important component of quality of services, the Ministry of Health issued in 2015 the Order no. 454 “On the improvement of the quality management systems in health organizations of the Kyrgyz Republic” which endorsed among others the guidelines on organization of the maintenance of medical equipment and devices in health facilities, which requests managers of health facilities to have annual maintenance contracts with specialized services for medical equipment and to allocate up to 1.5% of the facility budgets to equipment maintenance.

The observed lack of continuous temperature monitoring devices is due to end battery life of supplied in 2012-2013 30DTRs (FridgTag) and delays in replenishing the stock due to late HSS budget approval and allocation. The problem is partly addressed by using stem thermometers and manual recording of temperatures. Still, 49 vaccine refrigerators did not have any temperature monitoring device according to the recent cold chain inventory. Lack of generators and voltage regulators is partly addressed by using ice-lined refrigeration equipment at oblast and rayon level.

Inadequate power supply at immunization provider level is partly addressed by scheduling immunization sessions on the day when vaccines are collected from the rayon SES.

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

Increasing storage volumes at the central store is hindered by the space limitations of the current infrastructure to expand and accommodate new equipment.

Additional funding is required to cover multiple vaccine collection transportation costs (both to oblast and to district level) and considering budgetary limitations it hinders the timely collection and availability of vaccines.

The lack of institutional arrangements to ensure safe transportation of vaccines from district

level to immunization service delivery sites (providing transportation means or reimbursing travel expenditures of health workers) may expose vaccines to risks resulting from ad-hoc private arrangements for vaccine transportation. All the above may lead to stock-outs, missed opportunities, delayed immunization or affecting the potency of vaccines and trust of communities to immunization.

The lack of spare parts for the existing prequalified cold chain equipment may hinder the use of technical expertise of the trained cold chain technicians. In addition, the newly adopted complicated procedures of public procurement of services as well as distances and geographical barriers (in case of remote facilities) may limit the access to maintenance services of trained technicians.

Using stem thermometers instead of continuous temperature monitoring devices carries a risk of unrecognized temperature excursions which can damage vaccines.

Allocating facility budgets for equipment maintenance may be challenging (due to “per capita” funding allocation) for small and remote facilities. Further monitoring and follow up is required to document challenges and identify opportunities.

Reducing the frequency of immunization services may have long term negative impact on acceptance and demand for immunization services and jeopardize vaccination coverage targets.

Establishing a strong supervision programme requires both, engaging financial and human resources, as well as developing appropriate tools, procedures and skills to implement it. Further external technical assistance is required to overpass the existing limitations in those areas.

5. Describe lessons learnt from recent supply chain related support that inform the current request for CCE optimisation platform support.

Country has experience of procuring, installing and using various types of prequalified cold chain equipment; The last lot of 216 ILRs procured through SWAP funding have been distributed basing on individual facility needs assessment using the CCEM database. Equipment was distributed and installed in September-October 2016. RCI hired services of a private transport company (average USD17 per refrigerator) to transport refrigerators to regional stores. Each district collected then refrigerators from regional store using SES or hospital transport and distributed them further to primary health facilities. The lessons learned from organizing equipment deployment will be further shared to health workers from the sites that will receive new equipment under the CCEOP support;

The previously procured cold chain equipment was not accompanied by an effective supply and management of spare parts (in some cases spare parts were supplied, however there is no central inventory on the received equipment and store managers often do not know what spare parts are available), resulting in a high proportion of equipment being not functional. According to cold chain inventory, lack of spare parts was stated as a problem in 80 facilities with not working refrigerators (most of them – prequalified equipment). Spare part supply and management is seen essential in ensuring functionality of cold chain;

Technical expertise for cold chain equipment maintenance is available in the country, as a matter of principle. UNICEF organized in 2016 (with GAVI funding) training of 18 private cold chain technicians and 9 store managers on maintenance and repair of WHO prequalified equipment. Training was led by experts from a local private company – Kyrgyzmedtechnica

(previously a state company providing maintenance to all categories of medical equipment). This resource needs to be mapped out, further trained and engaged to perform maintenance of the supplied prequalified cold chain equipment; Contact details of trained cold chain technicians shall be made available to each facility manager and the role of EPI structures at national, oblast and rayon level is essential.

The cold chain inventory database established basing on Cold Chain Equipment Manager tool covers 1602 health care facilities (87%) providing immunization services, as well as all vaccine stores at rayon, oblast and national level. It would represent an important resource for equipment follow up, maintenance planning, needs assessment and equipment allocation. A systematic update process needs to be setup (including supplementation of database with missing facility and equipment data) and further training of users on data analysis and use for decision making is required. Furthermore, access to data shall be provided to cold chain technicians for maintenance planning. In addition, opportunities for data harmonization and exchange should be considered with the recently established MoH database on medical equipment monitoring, which aims to collect and monitor information regarding the functioning status of all medical equipment in all health facilities in Kyrgyzstan.

Country experienced important issues with the lot of prequalified refrigerators Vestfrost MKF 074, procured in 2012 through UNICEF SD using JICA funds (including spare parts). As of 2016, 18% of equipment was reported as not working and 3% - requiring maintenance. Absence of a locally supported equipment maintenance programme during the warranty period and after its end did not allow proper documentation, communication and resolution of the problem. As a result the efficiency and effectiveness of the equipment supply programme was seriously questioned by health workers.

Kyrgyzstan has been supplied in 2012-2013 with 2,800 units of 30DTR (Fridge Tag) using JICA and GAVI funds. Most of them came to the end of their life by mid-2016 (505 units found by 2016 cold chain inventory) and lack of continuous temperature monitoring has been documented both by EVM-2015 and the recent EPI review. A systematic supply programme and stock management of 30-day electronic continuous temperature recording devices is required to timely replace devices which come to the end of their life. A 30DTR safety stock policy (as in case of vaccines) may be required to prevent further stock-outs and interruption of continuous temperature monitoring;

Systematic collection of grid electricity supply data allowed to identify areas and specific facilities affected by severe power cuts and plan for alternative power supply solutions, including the use of SDD prequalified refrigerators.

The EPI received notifications in regard to exposure of vaccines to freezing temperatures in the refrigeration compartment of some ILRs. This issue needs further documentation through implementation of 30DTRs and setting up a temperature alarm notification and response system.

There is in-country experience on planning and installing solar power electric systems in health facilities as well as establishing a network of local experts to independently maintain the equipment (i.e. CREEED service center, <http://creeed.net/>). Within the framework of the project "Supply of Reliable Energy to Rural First Aid Stations" (UNDP/UNIDO/UNV/WHO 2010-2012) and "Improving of First Aid Medical Services to the Rural FAS through Access to Alternative Energy" (UNDP/UNV/WHO-2013) 18 rural health facilities were supplied with voltaic systems of 1,5-3,0 kWt. This positively contributed to the pilot facility operations: reliable uninterruptable service for the rural populations and proper functioning of lighting and

equipment, including refrigeration of essential medicines and vaccinations, and sterilization equipment.

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

Based on the cold chain inventory, 97% of health facilities have access to grid electricity for more than 8 hours per day. Electricity supply problems are clustered in few districts. All (35) facilities from Karakuljinsky rayon, Osh region reported access to electricity less than 8 hours a day. Systematic electricity supply problems are notified in facilities (23) of Manas rayon, Talas region – in most of the cases power cuts in this rayon are less than 8 hours a day.

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

Based on the cold chain inventory, which covered all vaccine stores and 86 percent of facilities providing immunization services, 10 cold rooms and 1931 refrigerators and freezers were documented (including 806 PQS/PIS ILRs, 111 PQS/PIS Freezers and 1014 domestic refrigerators) in use in the immunization supply chain. Overall more than 300 models of refrigerators and freezers have been identified.

Out of total number of primary health care facilities providing immunization services, cold chain inventory identified that 214 (13.3%) facilities did not have any refrigeration equipment.

Four cold rooms (2 at the national vaccine store, 1 at Osh regional store and 1 at Jalal Abad regional store) were found to have one running cooling unit only.

In working condition were found 1693 (88%) refrigerators and freezers, including 670 (83%) PQS/PIS ILRs, 68 (61%) PQS/PIS freezers and 955 (94%) domestic refrigerators).

Requiring urgent maintenance were found 36 (2%) refrigerators and freezers, including 21 (3%) PQS ILRs, 3 (3%) PQS Freezers and 12 (1%) domestic refrigerators).

Not working equipment included 115 (14%) PQS ILRs, 40 (36%) PQS Freezers and 47 (5%) domestic refrigerators).

Out of total number of refrigerators and freezers 560 (29%) were older than 10 years, including 277 (34%) PQS ILRs, 94 (85%) PQS Freezers and 189 (19%) domestic refrigerators). At the rayon and region store level 69% of the existing ILRs and freezers are older than 10 years and require replacement.

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

That percentage of immunization service delivery facilities having functioning ILRs as of January 2017 is 43%.

Based on the cold chain inventory, at the service provision level about 31% of the birth cohort was served by functioning PQS-approved CCE. After completion of the cold chain inventory, 216 ILR HBC-70 procured with SWAP funds were distributed to immunization providers in October 2016. The CCEM database will be updated to take into the account the newly supplied equipment.

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

Deficiencies in cold chain infrastructure and geographical access to MCH services in remote mountainous areas will be directly addressed by the CCEOP support.

Additionally, the following bottlenecks will be indirectly addressed by the CCEOP:

Low availability of health services in urban migrant settlements;

Out-of-date knowledge, skills and practices among health workers;

Data collection practices.

Inability to store vaccines in the facilities which do not have electrical power supply and the inability to provide vaccinations continuously, in a timely manner at health facilities will be addressed by procuring SDD refrigerators.

Old, missing and inadequate refrigeration equipment in health facilities with adequate power supply will be addressed by procuring ice-lined refrigerators.

Voltage fluctuations will be addressed by providing voltage regulators.

Transportation deficiencies will be addressed by this CCE optimisation platform because more funds from other sources (including HSS) will be made available to procure refrigerated vehicles that would allow implementing vaccine distribution down to the district level.

Skills and knowledge of health care professionals will be improved through training on the use of new equipment.

Data collection practices will be improved by enabling good storage and distribution practices at health facilities.

10. Describe any other supply chain challenges that CCE optimisation platform support will assist in mitigating?

The CCE optimisation platform support will improve technical skills of cold chain personnel, through training which will be provided.

Monitoring of the CCEOP process will strengthen managerial skills at the health facility level.

Supplying health facilities with appropriate refrigeration equipment will enable observing maximum/minimum stock levels at health facility level, thus improve stock management procedures.

Training of technical staff in maintenance will improve proper maintenance of equipment and procurement of equipment through the platform will leave more funds from other sources for funding maintenance activities.

11. What are the overall CCE needs?

The cold chain needs include all facilities involved in the immunization supply chain.

Equipment estimates for facilities not covered by CCEM database are built on the assumption that they follow the same patterns as facilities included in the cold chain inventory assessment (i.e. a multiplier of 1.13 is applied to CCEM database driven numbers to cover the needs of the remaining 13% facilities). The estimates below take into consideration as well the recently procured 216 ILRs using SWAp funds. Accordingly, the future CCE needs are estimated as follows:

Equipment to be covered by CCEOP with HSS contribution:

- 36 SDD refrigerators (up to 30Lt) to equip facilities with power supply less than 8 hours a day (of them 18 newly equipped and 18 replacing obsolete and inadequate equipment);
- 870 on-grid ILRs (up to 60Lt) to equip PHC facilities providing immunization services. Of them 16 units to equip PHC facilities with power supply 8-16 hours a day ((of them 1 newly equipped and 15 replacing obsolete and inadequate equipment) and remaining – to equip facilities with power supply >16 hours a day having > 15 children under one (of them 211 newly equipped, 209 replacing obsolete ILRs and 424 replacing domestic refrigerators);
- 30 on-grid ILRs (up to 100Lt) to equip District vaccine stores – all have power supply >8 hours (to expand storage capacity and replace obsolete and inadequate equipment)
- 50 on-grid ILRs (up to 130Lt) to equip District vaccine stores – all have power supply >8 hours (to expand storage capacity and replace obsolete and inadequate equipment)
- 61 on-grid freezers (up to 300Lt) to equip District and Regional vaccine stores – to

- replace obsolete equipment)
- 1,140 voltage regulators to be provided (including 129 to the existing equipment and 1011 bundled with new equipment)
- 3,100 30-day continuous temperature monitoring devices (for new and existing equipment) to re-establish continuous temperature monitoring and replenish the device stock every 3 years;
- 1 set of remote temperature monitoring equipment (24 sensors) for central vaccine store
- 9 sets of remote temperature monitoring equipment (4 sensors) for sub-national vaccine stores
- 75 sets of spare parts for CCEOP equipment to establish a stock of spare parts for all types of the supplied CCEOP equipment.

CCE needs that will be covered additionally by HSS funds:

- 4 cold rooms – 10 m³ & 3 cold rooms – 30 m³ (including 3-phase voltage regulators) to expand storage capacity of regional vaccine stores;
- 1 cold room – 40 m³ (including 3-phase voltage regulators) to expand storage capacity of the national vaccine store;
- 1 refrigerated truck 30m³ for national vaccine store;
- 7 refrigerated trucks (5 x 6-9m³ and 2 x15m³ for regional vaccine stores (to collect vaccines from the national vaccine store and provide vaccine distribution to district level);
- 1 Pickup/Minivan vehicle to support equipment deployment monitoring& supervision;
- 1 Power generators 50kW (standby) to equip the national vaccine stores;
- 8 Power generators 15kW to equip sub-national vaccine stores with old and new cold rooms;
- 7 voltage regulators, 10 KVA 3-phase, for existing cold rooms-10m³;
- 1 voltage regulators, 20 KVA 3-phase for existing cold rooms-30m³;
- Repairs and expansion of cold store infrastructure at national, sub-national and district level.
- 4 cooling units to equip cold rooms at national and regional stores having one functioning unit only. This will ensure each cold room is powered by 2 functional cooling units.
- 93 sets of spare parts for corrective maintenance and repair of ILRs and freezers which are less than 10 year old (CCEOP non-eligible equipment);
- Corrective maintenance services to repair/rehabilitate cold rooms and ILRs less than 10-year old.
- 216 vaccine Cold boxes, 7LT – to equip large facilities;
- 800 vaccine carriers, 2.6Lt– to equip smaller immunization service providers;
- 2,000 electronic freeze indicators, Freeze Tag – to monitor freeze exposure during vaccine transportation;
- EVMP improvement plan activities, such as vaccine management and temperature monitoring trainings;
- Printing of stock management forms, temperature monitoring forms, preventive maintenance aid-jobs;

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

Please respond to all questions

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

Information is required to cover the following areas:

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

equity of immunisation? Examples may include (not exhaustive):

- *Geographically remote districts or those with low coverage*
 - *Poorer communities (e.g. in the poorest 10% of the population)*
 - *Communities where gender barriers are significant and/or where low levels of female education is common (as this is often associated with lower coverage)*
- b) What analyses have been made, or what plans are underway, to optimise the design of the supply chain distribution system in order to improve the efficiency of the supply chain and contribute to achieving coverage and equity goals?*
- c) How have these system design considerations impacted the choice of CCE to be supported by the Platform?*
- d) Concretely, how will Platform support help improve the sustainability of the supply chain system?*

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

- *Geographically remote districts or those with low coverage*

Geographically remote areas will benefit from the Platform because purchase of adequate CCE will enable continuous immunization of children according to the national programme. Additionally, this will allow proper stock management procedures to be implemented (introducing minimum/maximum vaccine levels, reserve stock policy).

- *Poorer communities (e.g. in the poorest 10% of the population)*

Since poorer communities mostly inhabit remote rural areas, the benefits for the rural areas primarily correspond to the benefits for poorer communities.

One of the factors affecting vaccination coverage in Kyrgyzstan is acceptance of vaccines and immunization by richest quintile (as documented by MICS-2014) which showed the lowest coverage figures. It is expected that improvements in the quality of the immunization supply chain will contribute to improving acceptance of vaccines among both the health workers and beneficiaries from all income groups.

- *Communities where gender barriers are significant and/or where low levels of female education is common (as this is often associated with lower coverage)*

The analysis of the immunization coverage data basing on DHS-2012 and MICS-2014 data did not identify gender inequities in Kyrgyzstan as regards to vaccination coverage and access to immunization.

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

The EVM assessment conducted in 2015, the cold chain inventory conducted in May-June 2016 and the EPI review conducted in July-August 2016 complement each other in identifying weaknesses of the immunization supply system and point for the need to optimise the design of the supply chain.

Vaccine transport needs to be redesigned. First, it needs to address the increasing vaccine capacity requirements during transportation. While this is applicable to all levels, the biggest problems are faced by stores at the regional and district level. The current vaccine collection system (regions collecting from national store, districts – collecting from regional stores; and service providers – collecting from district stores) expose vaccines to uncontrolled risks (both in terms of supply availability and vaccine potency).

A conducted analysis by each regional and district store of the current and future vaccine volume requirements per supply period shows that the former strategy of using ice-packs equipped cold boxes and general purpose transport is not feasible anymore due to both the large number of required cold boxes and ice-packs, as well as due to the need to invest in large vehicles to accommodate the cold boxes. The EVM assessment conducted in 2015, the cold chain inventory conducted in May-June 2016 and the EPI review conducted in July-August 2016 complement each other in identifying weaknesses of the immunization supply system and point for the need to optimise the design of the supply chain.

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A conducted analysis by each regional and district store of the current and future vaccine

volume requirements per supply period shows that the former strategy of using ice-packs equipped cold boxes and general purpose transport is not feasible anymore due to both the large number of required cold boxes and ice-packs, as well as due to the need to invest in large vehicles to accommodate the cold boxes required during a shipment (the average vaccine capacity per supply period will reach about 250Lt for districts and 3400 Lt for regional stores). In addition, that raises the issue of preparing and handling large amounts of ice-packs, which do represent a recognized risk to expose vaccines to sub-zero temperatures. In order to handle vaccines safely vaccines with the current system design, the frequency of shipments has increase dramatically, which does not represent a sustainable solution due to efficiency concerns and budget limitations. Furthermore, the transport availability and capacity to invest is different across regions and districts, generating new equity concerns.

The vaccine transportation system from national to district level will be redesigned, giving the authority and responsibility to regional SES to both collect vaccine from the national store and to distribute it centrally to each district. GAVI HSS project funds will be used to procure 7 refrigerated vehicles of various capacity to meet each region specific needs. This will allow reducing district inequities, standardize and monitor quality of the transported vaccines and using efficiently funds invested in vaccine transportation by optimizing transport routes, ensuring transport maintenance and having a better control over the budget allocation. According to cold chain equipment inventory, at service delivery level only 0,5% of health facilities use facility transport for vaccine collections. The majority of facilities collect their vaccines using public transport, private transport or making other arrangements, in most cases - at the expense of the health workers. In addition to concerns in regard to the timely availability of supply (80 percent facilities have experienced stock-outs according to cold chain inventory) it raises equally concerns in regard the potency of vaccines delivered to the last mile. Considering the magnitude and complexity of the problem, it is seen essential that facility managers identify and put in place institutional arrangements for vaccine transportation to health facilities. Options could range from providing transportation means, exploring for opportunities to integrate transport of vaccines and other facility goods, or allocate funds to cover the costs encountered by staff to collect the vaccines. Monitoring of allocation and reimbursement of vaccine transportation costs does represent an opportunity for further cooperation between the immunization programme and the World Bank project Results-based Financing, subject to its further expansion to primary health care facilities. The Platform investment in effective equipment will allow the limited health facility (or from other sources) funds to be allocated to vaccine transport as well.

Strengthening CCE maintenance represents another opportunity to increase efficiency and effectiveness of the programme. Procuring new high quality equipment and spare parts will reduce the cost of corrective maintenance.

Stock management, in terms of observing minimum/maximum vaccine levels and reserve stock at facility level could not have been properly implemented in facilities without adequate refrigerators, so the Platform will allow improvements in stock management as well.

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

The choice of CCE to be supported by the Platform aimed to establish functional cold chain capacity at district stores and immunization sites, which would accommodate vaccine storage needs for the current and new vaccines, having a 10-year long perspective and would reduce financial burden to the country to invest in cold chain equipment. It complements supply chain optimization and strengthening efforts at higher levels. Technology and equipment was chosen depending on availability of grid electricity at health facilities. Holdover time was an important parameter, considering existing power cuts in the country. Energy saving parameters of equipment models were considered as well in order to reduce facility running

costs for electricity. Harmonization of models, i.e. limiting the number of suppliers and the number of supplied models was equally considered to make use and maintenance easier and less costly.

Earlier, the supply chain distribution system was focused on providing generators and other alternatives for managing electrical power supply deficiencies. Such an approach required much user involvement and was burdened by lack of funds, fuel, spare parts and proper maintenance.

The new design of the system anticipates introduction of more user independent equipment. This led to choosing SDD refrigeration equipment for health facilities without electrical power and VLS series ILRs as on-greedy equipment.

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

Reducing the number of vaccine collections will reduce operating costs of the Programme, allow implementation of minimum/maximum vaccine levels policy and allow timely immunization of children

Energy efficient equipment will additionally reduce operating costs of facilities. The user independent equipment will reduce the risk of vaccine damage due to temperature excursions and harmonization of equipment models will reduce the cost of maintenance.

Voltage regulators will reduce the damage to cold chain equipment due to voltage oscillations. Establishing a stock of equipment spare parts will enable proper maintenance of the cold chain equipment

Establishing maintenance programmes will extend the working life of the equipment and strengthen quality management of the system.

The cost of transportation of vaccines to health facilities and maintenance will not need to compete with CCE procurement for allocation of limited facility/local administration/national funds.

Platform funding of the supply chain needs at lower levels of the system allowed releasing important GAVI HSS funds that will be directed to re-design the immunization supply chain and improve its operation at higher levels. That allows the government focus its limited funding on system running costs, management and maintenance.

7. Maintenance plan (and its source of funding) and equipment disposal (Maximum 2 pages)

Please respond to all questions

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

Information is required to cover the following areas:

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

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

At the policy level, Ministry of Health has defined maintenance of medical equipment as a priority. The issued in 2015 Order no. 454 "On the improvement of the quality management systems in health organizations of the Kyrgyz Republic" endorsed among others the guidelines on organization of maintenance of medical equipment and devices in health facilities, which requests managers of health facilities to have annual maintenance contracts with specialized services for medical equipment and to allocate up to 1.5% of the facility budgets to equipment maintenance.

The Medical Accreditation Commission at the Ministry of Health, conducts every 3 years accreditation of health care facilities based on a score list covering indicators which also covers vaccine cold chain equipment maintenance.

The World bank project on Results-based Financing in Primary Health care assesses health care facilities against a set of indicators, among which indicators of maintenance of equipment are part of the assessment. Inclusion of indicators on maintenance builds a quality assurance system and stronger involvement of health facility management in ensuring proper maintenance systems.

In addition to the developed EVM SOPs on equipment maintenance, preventive maintenance job aids will be made available for each refrigerator model at each facility.

Technical expertise for cold chain equipment corrective maintenance is available in the country and will be used more efficiently in the future. UNICEF organized in 2016 (with GAVI funding) training of 18 private cold chain technicians and 9 store managers on maintenance and repair of WHO prequalified equipment. Training was led by experts from a local private company – Kyrgyzmedtechnica (previously a state company providing maintenance to all categories of medical equipment). This resource will be made available with support from EPI structures at national, oblast and rayon level and will be engaged to perform maintenance of the supplied prequalified cold chain equipment;

In the initial phase of the Platform, technicians which will be involved in preventive and corrective maintenances will be trained by the CCE manufacturer (or their local representative) as this will be a requirement to the manufacturer.

A central stock and a database of spare parts will be established and will be operated by the RCI. This will allow allocating spare parts when and where needed. The existing cold chain inventory database will be upgraded with information on available spare parts.

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

Preventive maintenance will be performed according to manufacturer's specifications. Adequate installation and environment for equipment (placement, ambient temperature, cleanliness, humidity) will be addressed prior to and during equipment installation. Gavi HSS

support dedicated to repairs and renovation of vaccine stores will also contribute to creating better operating environment for the equipment.

In order to facilitate user training and performance, preventive maintenance job aids will be made available for each refrigerator model at each facility and will include maintenance checklists and tasks to be performed daily, weekly and monthly.

As mentioned above, the Ministry of Health has already an established policy in regard to equipment maintenance – requiring facilities to have annual maintenance contracts and allocate budget for that.

What technical support is anticipated for maintenance?

The CCE producer/representative (or distributor) should establish their presence in the country either by outsourcing the service to an existing in-country professional company or by establishing an in-country presence. The preferred option is to building capacity of an existing resource. In the initial phase, the manufacturer should provide training to designated technicians in the country.

Training will be provided by the manufacturer (or distributor) of CCE.

During the warranty period, the manufacturer is expected to provide corrective maintenance and local technicians will provide preventive maintenance. After the warranty period, local trained technicians will provide all maintenance.

EPI programme needs additional training on organization of maintenance and preventive maintenance and include it into the supervision tools.

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

A clear responsibility will be assigned to all four levels (national, regional, rayon and facility). SES will be responsible for organizing maintenance of CCE at district and oblast level and primary health care facility managers will be responsible for organization of maintenance at immunization service delivery sites.

Implementation of maintenance will be monitored through a number of mechanisms, such as facility accreditation, Ministry of Health central equipment database, annual vaccine cold chain inventories, World bank results based financing project, as well as during supervision visits.

A list of trained technical staff will be available at the central level at the RCI. At district and oblast level, SES will be responsible for updating a list of trained technicians in their respective geographical area.

Functioning status of cold chain equipment will be reported to higher level each time a facility will be collecting/receiving the vaccine. This will allow documentation of problems and engagement of higher levels in identifying a solution in case of equipment malfunctioning.

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

According to The Order 454, health facilities are responsible for allocating up to 1,5% of their budget to maintenance activities. If needed, for facilities which have very limited financial resources, contracting technicians can be funded through dedicated budget line of HSS funding. Gavi HSS budget includes a budget for maintenances and spare parts which will be essential to supporting establishing an effective maintenance system.

The Ministry of Health will monitor (follow-up) the allocation of funds to maintenance, which is required by Order 454.

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

The MoH order no. 488 of 03.08.2012 "Endorsing the Instruction" On the procedure for

disposal of the decommissioned medical equipment in health care organizations of the Kyrgyz Republic" sets the rules and procedures for decommissioning and disposing of various types of medical equipment. In particular, it provides guidance on collection of decommissioned medical equipment; accounting for non-ferrous and (or) ferrous metals; storage of equipment; transport to metal processing enterprises; procedure of payments for sold waste; Collection, recording, storage and recycling of parts.

The obsolete and irreparable equipment will be recycled to the greatest possible extent, following national legislation. Where possible it will also be used for harvesting spare parts to maintain the existing old but functional equipment. Non-functional parts will be delivered to waste processing companies.

While the above policy sets key requirements for disposing off medical equipment, it does not address particular aspects of disposing off cold chain equipment, i.e. preventing harm to the environment from coolant agents.

There is a need for further work in this area, in particular by formulating specific recommendations on disposing off cold chain equipment. This work needs to be undertaken in consultation with the Ministry of Environment.

8. National Logistics Working Group (Maximum 1 page) Please respond to all questions Countries are encouraged to cross reference (document title, page number) attached mandatory documents.

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

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

A permanent and functioning National Logistics Working Group is not available currently in Kyrgyzstan. Key decisions are taken by the ICC and routine technical work is performed by RCI.

During its meeting on 16th January 2017, ICC decided to recommend to the Ministry of Health establishing a standalone National Logistics Working Group to coordinate and monitor Government and non-Government partners activities and investments related to the immunization supply chain. Further opportunities will be explored to expanding terms of reference of the group to broader health supply chains. The group is expected to be accountable to ICC in regard to the conducted work, in particular basing on CCEOP monitoring framework.

**9. 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 procure the CCE through the UNICEF Supply Division. Conditions of the tender will require the manufacturer/representative/distributor to distribute and install the equipment.

The distribution will have to follow a detailed operational Deployment plan which will be developed by the national counterpart (Republican Center of Immunoprophylaxis) and UNICEF SD.

Deputy minister of Health through the Department of Public Health will coordinate work at the national level.

The existing CCE database will be used to develop the detailed deployment plan, indicating priority facilities and timeline

Existing regional structures (SES) will be used to coordination installation at each level. A focal point will be assigned at each level correspondingly.

A responsible person will be designated in each facility for providing conditions for installation and taking care of the equipment.

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

The country's joint investment is secured through the GAVI HSS fund allocated to the country. The project has been approved on January 2014 for a period 5 years (2014-2018). Since disbursement of HSS funds started in 2017, the project implementation has been extended to 2020 to reach its objectives.

The total HSS budget is USD 4,596,656 USD and out of it USD1,830,433 is allocated to the Objective 4-Strengthen physical capacity of cold chain and project management. Therefore, the country investment is secured.

The total CCEOP budget for Kyrgyzstan is USD 1,658,246.

The 50% country investment to the CCEOP proposal will be covered by HSS cold chain component budget in the amount of USD 829,123.

The HSS remaining budget for cold chain (USD 937,310) will be used to purchase cold chain equipment (cold rooms, refrigerated vehicles, generators, spare parts, cold boxes) not covered by platform and to cover other aspects such as maintenance, refurbishment and expansion of storage capacities, capacity building and printings.

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

National legislation allows import tariff exemptions for the equipment received as a donation.

The Government decree № 43 from February 1, 2016 "Provisions on the procedure for acceptance and distribution of humanitarian assistance to the Kyrgyz Republic" (attached)

regulates the import of humanitarian assistance and outlines specific procedures to be followed by the recipients of humanitarian aid. It defines humanitarian assistance as "...assets gratuitously provided by states and organizations to the Government of the Kyrgyz Republic, local authorities, state, non-profit organizations, as well as persons in need in the form of food, equipment, gear, equipment, and medical devices, medications or other assets to improve the living conditions and life of the population, as well as prevention and elimination of consequences of emergencies (natural, biological and social, following conflicts, environmental and man-made) with the subject to their further use and / or free distribution".

The provisions state under the art. 6 "Goods imported to the territory of the Kyrgyz Republic as humanitarian donation, and vehicles delivering humanitarian supplies are exempted from collection of taxes, customs duties and fees...".

Considering that both GAVI HSS funding contribution and CCEOP funding originate from donor's support, the CCEOP equipment will be qualified by the Ministry of Health as "humanitarian assistance" and will be exempt from import taxes.

This practice has been applied during previous procurements of cold chain with donors support.

PART D: INITIAL SUPPORT PHASE

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



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 Annex 3 of the CCE Optimisation Platform Guidelines, available at www.gavi.org/support/apply/

10. 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

The urgent needs for the initial support, according to type of activity are the following:

- a) 36 SDD refrigerators up to 25Lt (VLS 024 Green Line SDD) to equip

	<p>facilities with power supply less than 8 hours a day (of them 18 newly equipped and 18 replacing obsolete and inadequate equipment), in particular 14 group family practice centers and 22 remote health posts (FAP) in Karakuljinsky rayon); The facilities to be supplied with SDD equipment will be further validated before developing the detailed deployment plan.</p> <p>b) 200 on-grid ILRs up to 60Lt (VLS 200A Green Line) to equip PHC facilities providing immunization services.</p> <p>c) 280 voltage regulators (80 for district vaccine stores and 200 for immunization delivery sites)</p>
Justification	<p>Provision of solar drive refrigerators aims expanding functional CCE to facilities with lack of access to reliable power supply, including those located in remote and hard to reach areas, mobile/nomadic populations and with a poor population. Although no available baseline facility based coverage data, the cold chain inventory identified that, since these facilities do not have refrigerators, the coverage is achieved by more frequent vaccine collections than at facilities which have refrigerators (at the expense of health care workers), lack of flexibility in scheduling children for immunization and delays in vaccination.</p> <p>On-grid ILRs(VLS 200A Green Line) will be supplied to address the needs of facilities with no refrigerators and those with unreliable power supply or unreliable equipment preventing imminent risks to vaccines. Of them 16 units to equip PHC facilities with power supply 8-16 hours a day – in particular Manas rayon (of them 1 newly equipped and 15 replacing obsolete and inadequate equipment) and 184 - to equip facilities with power supply >16 hours a day having > 15 children under one (all 184 newly equipped)</p>
Expected outcome	<p>Proportion of immunization delivery sides equipped with functional ILRs (less than 15 years old) <u>to reach 57%.</u></p> <p>Most critical existing equity issues in access to timely and high quality immunization services addressed; That would allow building trust to the quality and safety of vaccines and immunization services.</p> <p>It will allow establishing safe storage capacity for vaccines, and surge capacity for delivering to communities other essential life-saving medicines, requiring cold chain (such as oxytocin or insulin).</p> <p>In addition, it will allow long term effective equipment functioning by preventing exposure of new and existing ILRs to risks from voltage fluctuations.</p> <p>In addition to measuring impact on vaccine equity, the effectiveness of procurement of CCE will be measured through outcomes related to reducing vaccine transport costs, increasing frequency of immunization sessions, improving timelines of immunization and preventing vaccine stock-outs.</p>
Total CCE budget (incl 7%)	\$ 409,515
Prioritised (Urgent) CCE Need #2	
The need	<p>a) 30 on-grid ILRs (VLS 300A Green Line) and</p> <p>b) 50 on-grid ILRs (VLS 350A Green Line) to equip District vaccine stores</p> <p>c) 1,200 continuous temperature recorders (30DTR, Vax Tag)</p> <p>d) 9 Remote temperature monitoring devices, 4 channels (ICE3-BC140)</p> <p>e) 1 Remote temperature monitoring device, 24 channels (ICE3-extra-BC440)</p>
Justification	<p>Provision of on-grid ILRs (VLS 300A and VLS 350A Green Line) to equip District vaccine stores with power supply >8 hours will allow establishing adequate storage capacity at district level to accommodate introduction of new vaccines. It will also allow replacing obsolete and inadequate equipment, such as domestic refrigerators)</p>

	<i>Temperature monitoring has been identified as a major problem. Most of the 30DTRs supplied in 2012-2013 came to the end of their life and 2016 cold chain inventory found 505 functional units only (which are expected to come shortly to the end of their life as well). In addition, 49 vaccine refrigerators did not have any temperature monitoring device. 1,200 thirty-day continuous temperature monitoring devices will be procured to re-establish continuous temperature monitoring at all levels; In addition an integrated remote temperature monitoring system will be established at the national and sub-national vaccine stores.</i>
Expected outcome	<i>Proportion of district stores (lowest distribution level) equipped with functional ILRs of adequate capacity (less than 15 years old) <u>to reach 100%</u>. Maintaining vaccine potency through continuous temperature monitoring and documenting temperature excursions/alarms, identifying equipment failures, guiding equipment maintenance or replacement</i>
Total CCE budget (incl 7%)	<i>\$175,494</i>
Prioritised (Urgent) CCE Need #3	
The need	<i>a) 250 on-grid ILRs up to 60Lt (VLS 200A Green Line) to equip PHC facilities providing immunization services. b) 265 voltage regulators (for existing and platform equipment for immunization delivery sites)</i>
Justification	<i>ILRs to equip facilities with power supply >16 hours a day having > 15 children under one (of them 11 newly equipped, 88 replacing obsolete ILRs and 101 to replacing domestic refrigerators); New ILRs are primarily designated to health facilities serving large numbers of children having now refrigerators which pose a serious risk for stored vaccines. The main reason to include them into the initial phase is the fact that large amounts of vaccine would be damaged in case of operating failure of the refrigerators and many children would be affected.</i>
Expected outcome	<i>Proportion of immunization delivery sides equipped with functional ILRs (less than 15 years old) <u>to reach 70%</u> Safe vaccine storage conditions are established in large facilities with power supply >16 hours a day having > 15 children under one. Vaccine potency ensured in facilities serving large populations Long term term effective equipment functioning by preventing exposure of new and existing ILRs to risks from voltage fluctuations.</i>
Total CCE budget (incl 7%)	<i>\$333,540</i>
Prioritised (Urgent) CCE Need #4	
The need	<i>a) 5 sets of spare parts for VLS 024SDD refrigerators; b) 45 sets of spare parts for VLS 200A – to meet the long term needs</i>
Justification	<i>Cold chain inventory found a high proportion of ILRs not working – 14% of ILRs and 36% of freezers. ` In order to provide timely corrective maintenance, if required, a stock of spare parts for the newly supplied equipment will be established</i>
Expected outcome	<i>Long term effective equipment functioning by establishing a stock of spare parts to support timely corrective maintenance of the newly supplied equipment.</i>
Total CCE budget (incl 7%)	<i>\$8,991</i>

GRAND TOTAL CCE BUDGET: Initial support (Years 1 and 2)	\$927,540
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11. Ongoing or planned activities around other supply chain fundamentals in the initial support phase

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

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

<p>Supply chain managers</p> <p><i>Describe all planned or ongoing activities related to improving the availability and performance of supply chain managers, their sources of funding, and partner support.</i></p>	<p><i>The HSS project's goals are to increase access to MCH services in hard-to-reach areas and for urban migrants, strengthen quality immunization services through revised guidelines and training on adverse effects following immunization, provide investments in the cold chain and improve immunization data collection and reporting. Training provided through the HSS project, improvements of data collection and reporting and planned investments in the cold chain will significantly improve performance of supply chain managers.</i></p>
<p>Data for supply chain management</p> <p><i>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.</i></p>	<p><i>Under the earlier GAVI HSS project, a software for the immunization status registry and vaccine supplies management was developed and piloted. The software has been developed but not tested and installed yet.</i></p> <p><i>The country has also a successfully working Newborn registry that has data on vaccines given in the first days of life. The registry is working in all territorial hospitals, except those in Jalal-Abad (insufficient financing).</i></p> <p><i>This existing HSS grant will support the installation of the software and linking the immunization registry to the newborn registry. The HSS grant will also support procurement of computers, training, the development of manuals and support during the first two years. This is a logical step given the support in previous GAVI HSS and will improve the functionality of the logistics management system. Visibility of up-to-date and accurate vaccine stock records will be improved by implementing revised stock recording records through the software which is at the moment in its pilot phase.</i></p> <p><i>In addition, the established CCEM data base will be updated systematically and will represent an essential tool in assessing the needs, deciding on equipment allocation, monitoring deployment and installation of equipment, as well its functioning status.</i></p>
<p>Optimised, efficient design of distribution</p>	<p><i>Through Gavi HSS funds numerous other activities</i></p>

<p>system</p> <p><i>Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.</i></p>	<p><i>related to the distribution system design optimisation will be conducted.</i></p> <p><i>The vaccine transportation system from national to district level will be redesigned, giving the authority and responsibility to regional SES to both collect vaccine from the national store and to distribute it centrally to each district. GAVI HSS project funds will be used to procure 7 refrigerated vehicles of various capacity to meet each region specific needs. This will allow reducing district inequities, standardize and monitor quality of the transported vaccines and using efficiently funds invested in vaccine transportation by optimizing transport routes, ensuring transport maintenance and having a better control over the budget allocation.</i></p> <p><i>Mechanisms will be explored (The World Bank project Results-based Financing) to identify and put in place institutional arrangements for vaccine transportation from district level to health facilities. Options could range from providing transportation means, exploring for opportunities to integrate transport of vaccines and other facility goods, or allocate funds to cover the costs encountered by staff to collect the vaccines.</i></p>
<p>Continuous improvement process</p> <p><i>Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.</i></p>	<p><i>Continuous improvement is subject to assessment of needs, multi-year strategic and annual operational planning and instituting quality assurance, supervision and monitoring mechanisms.</i></p> <p><i>Various assessments (EVMA-2015, cold chain inventory and needs assessment (2016), EPI review (2016) have generated evidence in regard to the strengths, weaknesses of the supply chain and areas for improvement. The Kyrgyzstan multi-year immunization plan scheduled for Q4 2016 will ensure incorporating those finding into a broader framework for EPI performance improvement..</i></p> <p><i>The existing GAVI HSS approved support and the CCEOP support will ensure sustainable funding for all immunization supply chain essentials. Additional opportunities, such as SWAp funding and new vaccine introduction grants (rotavirus, HPV vaccine) would be considered to address unmet needs.</i></p> <p><i>Provisions for gradual introduction of Quality assurance are reflected in legal/policy documents and some activities already are performed to support its implementation.</i></p> <p><i>The National Health Care Reform Program “Den Sooluk”, in its component financed through SWAp monitors quantitative and qualitative performance indicators, including immunization-related indicators.</i></p> <p><i>Kyrgyzstan had its last EVM assessment in 2015, an improvement plan is under the implementation and its provisions have been incorporated in the newly developed country multi-year plan for immunization along with recommendations from cold chain inventory assessment and recent EPI review. The</i></p>

	<p><i>GAVI HSS objectives aim to support continuous improvement through guidelines, capacity building, and data management.</i></p> <p><i>EVM Standard operating procedures have been developed for the activities related to the cold chain.</i></p> <p><i>The ministerial order on quality management was issued in December 2015 (Prikaz 454), according to which health facilities should set up quality assurance committees. It also formulate the national policy in regard to equipment maintenance.</i></p> <p><i>The WB Results-based financing project provides financial incentives, based on performance of health facilities against quality indicators.</i></p> <p><i>The Health Insurance Fund is considering as well to revisit its performance monitoring indicators and add immunization-related indicators and introduce financial incentives,.</i></p> <p><i>Another institutional tool for continuous improvement is accreditation of health facilities by the Medical Accreditation Commission of the Ministry of Health, conducted every three years. It covers indicators assessing vaccine storage conditions, maintenance and calibration of temperature monitoring equipment. The procedure of assessment starts with self-assessment against national standards followed by an external assessment, scoring of performance and follow up on recommended improvements.</i></p> <p><i>Above initiatives and mechanisms represent important opportunities to sensitize facility managers to continuously improve immunization and immunization supply chain.</i></p>
<p>Temperature monitoring</p> <p><i>Describe the temperature monitoring devices that are currently available in the country? E.g. central level (CTMS), sub-national, lowest distribution and service delivery levels (30 DTRs and RTM devices), and during transportation (freeze tags).</i></p> <p><i>Furthermore, describe which measures are in place to a) obtain temperature data from the various devices;</i></p> <p><i>b) act following temperature alarms (curative maintenance); and</i></p> <p><i>c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system.</i></p>	<p><i>Important steps have been undertaken in recent years to strengthen temperature monitoring in Kyrgyzstan: a remote temperature monitoring system (Berlinger SmartView) was installed at the national vaccine store and 2,800 units of 30DTR (Fridge Tag) have been supplied in 2012-2013 using JICA and GAVI funds. Temperature monitoring forms were updated and trainings conducted to regional and district staff on correct use of DTRs. Nevertheless, temperature monitoring was identified as a major problem. Most of 30DTRs came to the end of their battery life by mid-2016 (501 units found during 2016 cold chain inventory) and lack of continuous temperature monitoring has been documented both by EVM-2015 and the recent EPI review.</i></p> <p><i>86 30DTRs were in use at regional and district vaccine stores and 415 – at immunization delivery sites.</i></p> <p><i>In addition, the remote temperature system installed at the national vaccine store became dis-functional in October 2016.</i></p>

	<p><i>Although the country does use conditioned ice-packs to pack vaccines at all levels, no monitoring of freeze exposure during vaccine transport has been in place.</i></p> <p><i>There is no currently in place a formal mechanism to notify temperature alarms registered with DTRs. For the remote temperature monitoring system installed at the national vaccine store, temperature alarms are provided through SMS and e-mail messages. As mentioned above, the system became dis-functional.</i></p> <p><i>A systematic supply programme and stock management of 30-day electronic continuous temperature recording devices is required to timely replace devices which come to the end of their life. A 30DTR safety stock policy (as in case of vaccines) may be required to prevent further stock-outs and interruption of continuous temperature monitoring;</i></p> <p><i>In addition, a formal mechanism to notify alarms to higher level managers for corrective action shall be implemented.</i></p> <p><i>To strengthen temperature monitoring at national and sub-national stores, an integrated remote temperature system will be installed with CCEOP support. Based on the accumulated experience, at the end of the initial support phase, it will be decided whether it would be feasible and more effective to expand the use of remote temperature monitoring systems to district level vaccine stores as well (replacing use of DTRs at that level).</i></p>
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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.


Annual review of the CCEOP project implementation will be conducted, involving ICC and basing on the performance monitoring framework. It will be aligned with the immunization programme review and cMYP performance monitoring.

The review of initial support phase results will be aligned with broader health strategy - Den Souluk review.

PART E: SCALE-UP SUPPORT PHASE

This second phase of Gavi CCE Optimisation Platform support will be provided from approximately year 3 onwards.

	Budgets are not inclusive of operational cost. Operational costs must be financed by Ministry of Health or other partners.
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	Further information on CCE rehabilitation and expansion plan, equipment selection and strategic deployment plan requirements is provided in Annex 3 of the CCE Optimisation Platform Guidelines, available at www.gavi.org/support/apply/
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13. Prioritised (Additional) CCE needs (Maximum 3 pages)

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

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

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

Prioritised (Additional) CCE Need #1

The need	<p><i>During the scale up stage of the project focus will be on replacing inadequate CCE(ILRs older than 15 years of age and domestic refrigerators) in order to improve the reliability of the supply chain in facilities delivering immunization services.</i></p> <p><i>The first priority would include establishing safe storage capacity as well as to replace obsolete equipment and domestic refrigerators in largest facilities (to reduce the impact of potential damage to vaccines due to use of non-adequate equipment).</i></p> <ol style="list-style-type: none"> <i>a) 190 on-grid ILRs up to 60Lt (VLS 200A Green Line)</i> <i>b) 190 voltage regulators (for platform equipment for immunization delivery sites)</i> <i>c) 1,200 continuous temperature recorders (30DTR, Vax Tag)</i>
Justification	<p><i>Ice-lined refrigerators will replace domestic refrigerators in PHC facilities providing immunization services (facilities with power supply >16 hours a day having > 15 children under one);domestic refrigerators pose a serious risk for stored vaccines, in particular in case of power breaks.</i></p> <p><i>In addition, provided cold chain equipment will allow establishing surge capacity to meet further programme expansion needs as well as the need for potential storing of other life-saving pharmaceuticals requiring cold chain.</i></p> <p><i>Voltage regulators will support each unit of supplied ILRs to protect equipment from power fluctuations;</i></p> <p><i>30DTRs will be procured to replenish the stock of continuous temperature monitoring devices to replace equipment reaching end of battery life;</i></p>

Expected outcome	<i>Proportion of immunization delivery sides equipped with functional ILRs (less than 15 years old) to reach 80% Increased frequency of immunization sessions, improving timelines of immunization, reducing vaccine wastage and preventing vaccine stock-outs. Ensuring potency of administered vaccines Maintaining vaccine potency through continuous temperature monitoring and documenting temperature excursions/alarms, identifying equipment failures, guiding equipment maintenance or replacement</i>
Total CCE budget (incl 7%)	\$287,220
Prioritised (Additional) CCE Need #2	
The need	<i>The second priority includes further expansion of replacement of obsolete equipment and domestic refrigerators at immunization service delivery sites (to reduce the impact of potential damage to vaccines due to use of non-adequate equipment). It includes: a) 230 on-grid ILRs up to 60Lt (VLS 200A Green Line) to b) 405 voltage regulators c) 1,100 thirty-day continuous temperature monitoring devices</i>
Justification	<i>ILRs are intended to equip PHC facilities providing immunization services (facilities with power supply >16 hours a day having > 15 children under one); Voltage regulators will be provided to both platform equipment and existing functional ILRs in the country (230 for new equipment and 175 for the existing equipment) 30DTRs - to continue replenishing the stock of continuous temperature monitoring devices to replace equipment reaching end of battery life;</i>
Expected outcome	<i>Proportion of immunization delivery sides equipped with functional ILRs (less than 15 years old) to reach 91%. Continuous temperature monitoring ensured at all levels will allow improving documenting of temperature excursions, identify equipment failures, guide equipment maintenance or replacement and contribute significantly to maintaining vaccine potency. Procurement of voltage regulators will extend the life of existing, functional CCE as well as long term functioning of the newly supplied equipment.</i>
Total CCE budget (incl 7%)	\$371,782
Prioritised (Additional) CCE Need #3	
The need	<i>a) 61 on-grid freezers up to 300Lt (MF 314); b) 7 sets of spare parts for VLS 300A refrigerators; c) 11 sets of spare parts for VLS 350A refrigerators d) 15 sets of spare parts for MF 314 freezers.</i>
Justification	<i>On-grid freezers are intended to equip District and Regional vaccine stores – to replace obsolete equipment; Procurement of platform equipment spare parts aims establishing a minimum stock of spare parts for all supplied platform ILRs and freezers;</i>
Expected outcome	<i>All district/regional stores equipped with functional freezers. Corrective maintenance of platform equipment conducted timely, and supported by a national stock of spare parts for all categories of procured cold chain equipment;</i>
Total CCE budget (incl 7%)	\$71,705

Prioritised (Additional) CCE Need #4	
The need	
Justification	
Expected outcome	
Total CCE budget	
GRAND TOTAL CCE BUDGET: “Scale-up support” (Years 3 & 4) (incl 7%)	\$730,707

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

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

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

Supply chain managers

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

Supply chain managers will be exposed to all the trainings which will be performed in relation to CCEOP equipment instalment.

Training provided through the HSS project, improvements of data collection and reporting and planned investments in the cold chain will significantly improve performance of supply chain managers.

The ongoing Results-Based Financing (RBF) project which includes managers of health facilities empowers managers in quality control procedures. At the moment the project is focused on hospital care, but the extension of the project will include primary health facilities.

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.

Same as in the initial phase.

The existing HSS grant will support the installation of the software and linking the immunization registry to the newborn registry. The HSS grant will also support procurement of computers, training, the development of manuals and support during the first two years. This is a logical step given the support in previous GAVI HSS and will improve the functionality of the logistics management system. Visibility of up-to-date and accurate vaccine stock records will be improved by implementing revised stock recording records through the software which is at the moment in its pilot phase.

CCEM data base will be updated systematically, including the deployed equipment and will be used in assessing the needs, deciding on equipment allocation, monitoring deployment and installation of equipment, as well its functioning status.

<p>Optimised, efficient design of distribution system</p> <p><i>Describe all planned or ongoing activities related to distribution system design optimisation, their sources of funding, and partner support.</i></p>	<p><i>Same as in the initial phase.</i></p> <p><i>Through Gavi HSS funds numerous other activities related to the distribution system design optimisation will be conducted. It is anticipated to procure refrigerated vehicles, increase storage volumes at the central vaccine store, supply oblast vaccine stores with cold rooms and stand-by generators and invest into training of immunization staff with Gavi HSS funds.</i></p>
<p>Continuous improvement process</p> <p><i>Describe all planned or ongoing activities related to continuous improvement processes, their sources of funding, and partner support.</i></p>	<p><i>Same as in the initial phase.</i></p> <p><i>An EVM assessment will be conducted in 2019 to document improvements and identify areas of further action to strengthen immunization supply chain; This will further inform the country cMYP, HSS activities and other sector-wide policy and planning.</i></p>
<p>Temperature monitoring</p> <p><i>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;</i></p> <p><i>b) act following temperature alarms (curative maintenance); and</i></p> <p><i>c) in case of RTM devices, please elaborate on SOPs for each responder in the temperature monitoring system.</i></p>	<p><i>All regional vaccine stores will be provided with computerized web based temperature monitoring systems.</i></p> <p><i>All district stores will be provided with 30-day temperature recorders.</i></p> <p><i>At least 98% immunization providers providing fixed immunization services will be provided with 30-day temperature recorders.</i></p>

PART F: BUDGET TEMPLATES

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

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

Budgets must be completed in the 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).*

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.




2017 CCE OP
Budget Template.xls

PART G: PERFORMANCE FRAMEWORK

Countries must include **CCE Optimisation Platform indicators** into the Performance Framework for the current and/or proposed Gavi HSS support, after Platform proposal approval.

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

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

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

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

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

MANDATORY intermediate results indicators (must include baseline, data source, targets and frequency of reporting):

- 1) Number of equipped facilities replacing CCE with (any) platform-eligible ILR, SDD or long-term passive devices, and irrespective of their funding source;
- 2) Number of facilities previously without equipment, newly equipped with platform-eligible equipment (i.e. ILRs, SDDs or long-term passive devices); and
- 3) Well-defined indicator proposed by country to reflect appropriate maintenance of equipment; for example percentage of equipped facilities with functioning cold chain,⁵ such as

Provide list of planned mandatory intermediate results indicators:

- 1.
- 2.
- 3.
- 4.

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.

<p>demonstrated by remote temperature monitoring.</p> <p>4) Ratio of freeze-free cold boxes/carriers to non-freeze-free cold boxes/carriers in-country?</p>	
<p>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).</p> <p>Examples of additional intermediate results indicators options are:</p> <ol style="list-style-type: none"> 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; <ol style="list-style-type: none"> a. Stocked according to plan: Percentage of facilities/stores/districts that have stocks levels between set minimum and maximum stock levels; 5. Temperature alarms: Frequency and magnitude of heat and cold alarms per monitoring period (i.e., temperature excursion) and number of CCE devices with more than a certain level of temperature excursion; 6. Rate of health facilities dashboard use, timely analysis and use for decision making; 7. On-time and in-full (OTIF) delivery: Ratio of order completely delivered on time; or 8. Number of health managers trained and despatched for supply chain oversight function and rate of reported monitoring activities. 	<p>Provide list of planned additional intermediate results indicators:</p> <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7.

National Monitoring and Evaluation Plan for monitoring and evaluation of the Cold-chain Equipment Optimization Platform in the Republic of Kyrgyzstan

A set of indicators was defined to monitor the project implementation and its potential impact on vaccination coverage, reducing stock outs and ensuring vaccine potency. All activities related to this project and their impacts will be monitored using 3 CCEOP mandatory indicators, as well as 5 additionally defined indicators, as follows:

CCEOP monitoring indicators	Reporting frequency
1. Number of equipped facilities replacing CCE with platform-eligible ILR/SDD refrigerators	Twice a year
2. Number of facilities previously without equipment, newly equipped with platform-eligible equipment (refrigerators (IRL/SDD, voltage regulators, continuous temperature monitoring devices)	Twice a year
3. Percentage of equipped facilities with functioning cold chain, such as demonstrated by evidence collected from records of continuous temperature recording devices	Annually
4. Percentage of PHC facilities that experienced stock out of any vaccine in routine immunization calendar in reporting period	Quarterly
5. Geographic equity of DTP 3 coverage: - % of facilities with DTP3 coverage above 90% by district/region.	Quarterly
6. Percentage of vaccination points equipped with cold chain equipment meeting WHO prequalification requirements	Annually
7. Percentage of vaccination points using continuous temperature monitoring devices	Annually
8. Percentage of sub-national (district & regional) level vaccine stores with adequate cold chain capacity to meet the new (2017-2021) immunization schedule needs.	Annually

In addition to the project-specific indicators, routine reported data will be collected (vaccination coverage and vaccine wastage) as well as data obtained from various studies and assessments, such as EVM assessment, cold chain inventory, temperature monitoring study, supervision monitoring indicators.

Tools to collect and analyse data on project implementation will be developed and every effort will be made to integrate them into routine reporting and monitoring systems to sustain long term performance improvement.

A detailed breakdown of models, of cold-chain equipment, their destination in the country, the dynamics of procurement and shipments will be provided by the Detailed deployment plan, based on the existing Strategic deployment plan and supply plans received from equipment suppliers and UNICEF SD.

A database which will expand on the existing cold chain inventory will be operated by the Republican Center for Immunoprophylaxis and will be updated every six months in order to

monitor the first three indicators, related to procurement, installation and maintenance of CCE.

Indicators no 4 to 8 are integrated into the cMYP performance monitoring framework and will be subject to systematic monitoring of broader programme performance.

The indicators 4 and 5 will be monitored through routine stock recording and vaccination reports on a quarterly base, to allow prompt interventions.

Indicators no. 6 to 8 will be reviewed annually during the annual immunization programme review process.

In the context of this application, a reporting system will be implemented in order to monitor changes in the field activities. The MoH, through the Department of Public Health will monitor implementation based on reports delivered by RCI who is responsible for preparing reports a the national level.

The technical reports on how the work is progressing will be done on an annual basis. The various reports that are prepared will first be presented and discussed at a meeting with the Ministry of Health, RCI and the ICC before being shared with all partners and GAVI. Financial reports will be done according to GAVI's usual procedures.

The technical entity responsible for installing all cold chain equipment purchased in the context of the platform (the producer), will also provide quarterly reports detailing all of the activities conducted.

The table below provides more details in regard to how the indicators will be collected and reported to GAVI:

CCE platform indicator	Description of plan to report on indicator (incl., baseline, data source, data collection/validation, targets, reporting frequency)
<p>1. Number of equipped facilities replacing CCE with platform-eligible ILR/SDD refrigerators</p>	<p><u>Baseline:</u> None.</p> <p><u>Target:</u> To replace outdated and non-adequate CCE with platform eligible refrigerators and freezers in 666 health facilities providing immunization services, at 44 district/city stores and 7 oblast stores during the duration of the project.</p> <p><u>Reporting frequency:</u> Twice a year</p> <p><u>Data source:</u> This information will be collected from health facilities through equipment installation reports; twice a year, district level SES will summarize equipment installation reports and will update the CCEM database; The oblast level SES will review district installation reports, will monitor CCEM database updating, will analyse the data for their area, and send to the RCI. The RCI will analyse the data and prepare aggregated reports for the Department of Public Health at the MoH annually.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>
<p>2. Number of facilities previously without equipment, newly equipped with platform-eligible equipment</p>	<p><u>Baseline:</u> None</p> <p><u>Target:</u> To supply refrigerators to 240 health facilities which do not have refrigeration equipment, during the initial support phase of the CCEOP project; To supply 1,140 health facilities with voltage regulators during the CCEOP project.</p>

<p>(refrigerators (IRL/SDD, voltage regulators, continuous temperature monitoring devices)</p>	<p><u>Reporting frequency:</u> Twice a year</p> <p><u>Data source:</u> This information will be collected from health facilities through equipment installation reports; twice a year, district level SES will summarize equipment installation reports and will update the CCEM database; The oblast level SES will review district installation reports, will monitor CCEM database updating, will analyse the data for their area, and send to the RCI. The RCI will analyse the data and prepare aggregated reports for the Department of Public Health at the MoH annually.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>
<p>3. Percentage of equipped facilities with functioning cold chain, such as demonstrated by evidence collected from records of continuous temperature recording devices</p>	<p><u>Baseline:</u> At the moment, according to the cold chain inventory, only 7% facilities can demonstrate evidence of functional cold chain through records of continuous temperature recording devices.</p> <p><u>Target:</u> At the end of the CCEOP project 95% of health facilities should demonstrate functional cold chain equipment by records of continuous temperature recording devices.</p> <p><u>Reporting frequency:</u> Annually</p> <p><u>Data source:</u> health facilities will report immediately to district SES on each temperature alarm notified by continuous temperature recording devices in order to receive guidance on managing the exposed vaccines; This information will be collected and analysed annually, by districts SES, will be consolidated by oblast SES and submitted to RCI. The RCI will analyse the data and submit reports in an aggregated form to the Department of Public Health at the MoH.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>
<p>4. Percentage of PHC facilities that experienced stock out of any vaccine in routine immunization calendar in reporting period</p>	<p><u>Baseline:</u> According to the 2016 cold chain inventory, 56% facilities experienced stock-outs in the previous 3 months.</p> <p><u>Target:</u> At the end of the CCEOP project, less than 5% of health facilities should experience stock-outs during the last six months.</p> <p><u>Reporting frequency:</u> Quarterly</p> <p><u>Data source:</u> Indicator is integrated into the cMYP performance monitoring framework.</p> <p>This information will be collected through the routine stock management information system (initially Form 5., and later through the computerized stock management system) and analysed quarterly. The RCI will analyse the data and submit reports in an aggregated form to the Department of Public Health at the MoH.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p>

	Annual reports on this indicator will be submitted to Gavi.
<p>5. Geographic equity of DTP 3 coverage: - % of facilities with DTP3 coverage above 90% by district/region.</p>	<p><u>Baseline:</u> No data available currently.</p> <p>Facility based coverage data are currently collected at district level. They are not made available however to higher levels to allow assessing geographical inequities.</p> <p><u>Target:</u> At the end of the CCEOP project, more than 95% of health facilities will reach DTP3 coverage above 90%.</p> <p><u>Reporting frequency:</u> Quarterly</p> <p><u>Data source:</u> Indicator is integrated into the cMYP performance monitoring framework.</p> <p>This information will be collected at district level through the routine vaccination coverage reporting system (Form 5). Coverage geographic equity indicator will be computed at district level on quarterly base and will be submitted to Regional and National level. The RCI will analyse the data and submit reports in an aggregated form to the Department of Public Health at the MoH. Indicator will be included in cMYP monitoring framework.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>
<p>6. % of vaccination points equipped with cold chain equipment meeting WHO prequalification requirements</p>	<p><u>Baseline:</u> As of 31 Dec 2016, 43% facilities were equipped with cold chain equipment meeting WHO prequalification requirements.</p> <p><u>Target:</u> To equip 91% of vaccination points with cold chain equipment meeting WHO prequalification requirements.</p> <p><u>Reporting frequency:</u> Annually</p> <p><u>Data source:</u> Indicator is integrated into the cMYP performance monitoring framework.</p> <p>This information will be collected from health facilities through equipment installation reports; twice a year, district level SES will summarize equipment installation reports and will update the CCEM database; The oblast level SES will review district installation reports, will monitor CCEM database updating, will analyse the data for their area, and send to the RCI. The RCI will analyse the data and prepare aggregated reports for the Department of Public Health at the MoH annually.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>
<p>7. % of vaccination points using continuous temperature monitoring devices</p>	<p><u>Baseline:</u> According to the 2016 cold chain inventory, continuous temperature monitoring devices were found in 25% vaccine refrigerators at all levels.</p> <p><u>Target:</u> At the end of the CCEOP project 98% of vaccination points will be using continuous temperature monitoring devices in each vaccine refrigerator.</p> <p><u>Reporting frequency:</u> Annually</p>

	<p><u>Data source:</u> Indicator is integrated into the cMYP performance monitoring framework.</p> <p>Health facilities will report monthly to district SES on the working status of continuous temperature monitoring devices. In addition, each registered temperature alarm will be reported immediately to the district manager in order to receive guidance on managing the exposed vaccines; This information will be collected and analysed annually, by districts SES, will be consolidated by oblast SES and submitted to RCI. The RCI will analyse the data and submit reports in an aggregated form to the Department of Public Health at the MoH.</p> <p>Indicator will be validated through supervision visits and annual cold chain inventory updates.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>
<p>8. % of sub-national (district & regional) level vaccine stores with adequate cold chain capacity to meet the new (2017-2021) immunization schedule needs.</p>	<p><u>Baseline:</u> According to the 2016 cold chain inventory, 36% of sub-national (district & regional) level vaccine stores have adequate cold chain capacity to meet the 2017-2021 immunization schedule needs.</p> <p><u>Target:</u> At the end of the CCEOP project 100% of sub-national (district & regional) level vaccine stores have adequate cold chain capacity to meet the 2017-2021 immunization schedule needs.</p> <p><u>Reporting frequency:</u> Annually</p> <p><u>Data source:</u> Indicator is integrated into the cMYP performance monitoring framework.</p> <p>Information will be collected from health facilities through equipment installation reports; twice a year, district level SES will summarize equipment installation reports and will update the CCEM database; The oblast level SES will review district installation reports, will monitor CCEM database updating, will analyse the data for their area, and send to the RCI. The RCI will analyse the data and prepare aggregated reports for the Department of Public Health at the MoH annually.</p> <p>Supervised by and compared to plans by the Department of Public Health, MoH.</p> <p>Annual reports on this indicator will be submitted to Gavi.</p>

CCE platform indicator annual targets:

Indicators *	Reporting frequency	Baseline value	Target values (by years)			
			2017	2018	2019	2020
1 Number of equipped facilities replacing CCE with platform-eligible ILR/SDD refrigerators (cumulative)	Twice a year	0	116 +36	246 +36	436 +36	666 +51
2 Number of facilities previously without equipment, newly equipped with platform-eligible equipment (refrigerators (IRL/SDD, voltage regulators, continuous temperature monitoring devices) (cumulative)	Twice a year	0	120	240	240	240
3 % of equipped facilities with functioning cold chain, such as demonstrated by evidence collected from records of continuous temperature recording devices	Annually	7%	40	65	85	95
4 % of PHC facilities that experienced stock out of any vaccine in routine immunization calendar in reporting period	Quarterly	56% (2016)	20	15	10	5
5 Geographic equity of DTP 3 coverage - % of facilities with DTP3 coverage above 90% by district/region	Quarterly	n/a (2015)	80	85	90	95
6 % of vaccination points equipped with cold chain equipment meeting WHO prequalification requirements	Annually	43% (2016)	57	70	80	91
7 % of vaccination points using continuous temperature monitoring devices	Annually	25% (2016)	50	71	90	98
8 % of sub-national level facilities with cold chain capacities adequate to meet the new immunization schedule needs.	Annually	36% (2016)	85	95	100	100