Islamic Republic of Afghanistan

Ministry of Public Health

National Expanded Program on Immunization

(NEPI)

NATIONAL PLAN FOR COVID-19 VACCINATION IN AFGHANISTAN

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Contents

Acronyms

AEFI	Adverse Events Following Immunization
AFP	Acute Flaccid Paralysis
ARTF	Afghanistan Reconstruction Trust Fund
COVAX AMC	COVAX Advance Market Commitment
BHC	Basic Health Center
BPHS	Basic Package of Health Services
CBHC	Community Based Health Care
CCC	Control Command Center
CEPI	Coalition for Epidemic Preparedness Innovations
CHC	Comprehensive Health Center
CHS	Community Health Supervisor
CHW	Community Health Worker
COVAX	COVID-19 Vaccine
COVID-19	Coronavirus disease 2019
CRF	Case Reporting Form
DCO	District Communication Officer
DH	District Hospital
DHO	District Health Officer
DPO	District Polio Officer
EPHS	Essential Package of Hospital Services
EPI	Expanded Program on Immunization
EPR	Emergency Preparedness and Response
GAVI	Global Alliance for Vaccination and Immunization
GDPM	General Directorate of Disease Control and Prevention
HF	Health Facility
HLHPOC	High-Level Health Programme Oversight Committee
IDA	International Development Association
IDP	Internally Displaced People
MDB	Multilateral Development Banks
MHT	Mobile Health Team
MoF	Ministry of Finance
MoHE	Ministry of Higher Education
MoPH	Ministry of Public Health
NDSR	National Disease Surveillance and Response
NEOC	National Emergency Operation Center
NIP	National Immunization Program
NMHRA	National Medicine Health Regulatory Authority
NRA	National Regulatory Authority
PCO	Provincial Communication Officer
PEMT	Provincial EPI Management Team
PH	Provincial Hospital
PPHD	Provincial Public Health Director

PPO	Provincial Polio Officer
REMT	Regional EPI Management Team
RH	Regional Hospital
RRT	Rapid Response Team
SAGE	Strategic Advisory Group of Experts on Immunization
SHC	Sub Health Center
UN	United Nations
UNICEF	United Nations International Children Emergency Fund
WHO	World Health Organization

1. Background

COVID-19 is one of the worst outbreaks in the last 100 years which has quickly spread all over the world. Globally, as of 28th December 2020, more than 80 million people have been confirmed to be infected by the virus and over 1.7 million have lost their lives. Global output is projected to decline by 4.9 percent in 2020, with cumulative economic losses across 2020 and 2021 exceeding US$12 trillion. Afghanistan experienced the first wave of pandemic between February - July 2020 and is currently facing the second wave of the pandemic. As of 20 Dec 2020, the country has registered 50,677 cases and 2,110 of deaths due to COVID-19. It is anticipated that the given numbers could have been under-reported due to not having enough testing and tracing capacity across the country. A seroprevalence survey, conducted by the Ministry of Public Health (MOPH), shows that in total 31.5 % of population of Afghanistan have been infected. The infection rate differs among the provinces e.g. 53% in Kabul and 20-40% in the rest of the provinces. The disease is highly contagious and spreads very fast from infected persons to the others. The country has applied approaches for controlling the disease such as surveillance, case detection and isolation, hand washing, respiratory hygiene, use of face mask, and social distancing. However, due to the social and economic impacts, the proposed approaches are either not practiced widely or are observed only for a short period of time. With the current measures in place and the level of practice, it seems the disease is still spreading rapidly among the whole population. While all protective measures are important, introduction of the COVID-19 vaccine, particularly among the high risk/vulnerable groups, will help control the pandemic in Afghanistan.

The COVAX Facility is a global platform and risk-sharing mechanism for pooled procurement and equitable distribution of eventual COVID-19 vaccines. This is co-led by GAVI, the Coalition for Epidemic Preparedness Innovations (CEPI) and WHO. Its aim is to accelerate the development and manufacture of COVID-19 vaccines, and to guarantee fair and equitable access for every country in the world.

The Multilateral Development Banks (MDBs) are providing financing to top up through cost-sharing and by supporting the deployment of COVID-19 vaccines. The World Bank's Global COVID-19 MPA Additional Financing makes $12b available to IDA and IBRD eligible countries to support purchase (e.g., via GAVI COVAX AMC cost-sharing) and delivery of COVID-19 vaccines. Other MDBs (e.g., ADB, IADB) are also providing COVID-19 vaccine and delivery financing. GAVI has made aspirational commitment to finance vaccine doses for 20 percent of the population of Afghanistan, and is fully committed to also provide US$ 1.1 million in the form of technical assistance through country partners to help the government in the preparation, planning and deployment of vaccine. In addition, GAVI will provide around US$ 0.92 million for enhancing the cold chain capacity/system.

Country partners have reviewed the SAGE guideline made available by WHO for the development of NVDP. It is noted that the structure of Afghanistan's NVDP might not have followed the exact

sequence of the guideline but it fully captures the content and key information is well elaborated. The reason behind not following exact structure of WHO guideline is that the country tried to contextualize the content to be understandable for partners within the country an reviewers/readers out of the country.

2. Program Objectives

Taking into account the equity principle, the objectives of the National COVID-19 Vaccine Deployment are summarized as bellow:

1. Protect vulnerable groups from morbidity and mortality due to COVID-19 disease
2. Interrupt transmission and outbreaks of COVID-19
3. Protect critical social and routine health services

The program objectives are defined and agreed upon by key stakeholders at the national and sub-national levels, including representatives of target populations, community leaders, religious leaders, civil society organizations etc., and reflect the epidemiological situation and are adaptable to vaccine supply scenarios.

3. Regulatory and Standards

The vaccination in Afghanistan is regulated through the regulation number 15, dated June 28, 2010. According to this regulation, all vaccines in Afghanistan should be WHO prequalified. So far all vaccines are purchased and imported by UNICEF in the country which also ensures quality. Should a non-WHO prequalified vaccine be planned to be imported, MoPH will inform regulatory authorities of their review and concurrence/objection following access to all detailed technical documents of the concerned product/s. MoPH, in consultation with regulatory authorities, will put in place the vigilance plans to monitor at least the safety of COVID-19 vaccine(s) in use.

The National Medicine and Healthcare products Regulatory Authority (NMHRA) of MOPH is responsible for approval of medications and vaccines for use in the country. To do so regulatory authority needs the following documents for review to approve or reject the vaccine: Vaccine specifications, Clinical requirements for marketing authorization, Clinical efficacy and safety documents, and post-approval follow-up for safety and efficacy (if applicable).

Should be WHO prequalified or Emergency Use listing (EUL), the vaccine will be automatically approved by NMHRA and can be used in Afghanistan. The NMHRA letter stating this condition is attached in annex 2.1. Having said that, there is no need for local testing of the vaccine on arrival in the country.

UNICEF will handle procurement and import the vaccines. MOPH will provide the import permit and consume waiver to UNICEF and will make sure that there is no barriers and restrictions in importing the vaccines to the country.

Customs administration needs the following documents at the point of entry to the country: Certificate of Analysis, Certificate of Origin, Packing list (batch number and expiration date, free

sale certificate, proforma invoice, and airway bills). UNICEF regularly provides these documents along with the shipments. MoPH has already informed the customs department to waive products from border/local laboratory checking being imported by UNICEF and WHO trusting that their products are pre-qualified and good quality is already assured. In addition the above directive specifies that imported products sensitive to temperature will be released immediately while paper work will be handled later by an agent UNICEF has hired.

4. Planning, coordination and service delivery

To make the COVID-19 vaccination programme more sustainable, the Government of Afghanistan intends to use the existing health structure with deployment of a slightly increased health workforce instead of setting up a parallel system for implementation of this intervention. Moreover, the MoPH ensured to involve/engage key relevant stakeholders in all the processes of COVID-19 vaccine introduction. The stakeholders include, but not limited to, the Ministry of Public Health, Ministry of Finance, GAVI, World Bank, WHO, UNICEF, ADB, BPHS, EPHS, JHPIEGO, ACASUS, IFRC/ARCS, private sector, civil society organizations, community elders, and so on. These stakeholders are also members of the various committees established for the management of the COVID-19 vaccination programme.

The High-Level Health Programme Oversight Committee (HLHPOC) chaired by the Minister of Public Health has its oversight role for the implementation of this plan. HLHPOC operates in coordination with all development partners, UN agencies, relevant donors, and representatives from civil society, the private sector and the Ministry of Finance (MoF). This committee will act as the responsible body/committee for COVID-19 vaccine introduction for Afghanistan and will provide programmatic directions within the country at national level for the coordination of this plan among all involved partners (Please see annex 3. 1; ToR of the oversight committee). In addition, the President of the country has taken over the responsibility to have his oversight role for the control of the outbreak (emergency response and COVID-19 vaccine introduction).

As part of preparation for introduction of COVID-19 vaccine, the Afghanistan Ministry of Public Health (MoPH) has established a number of committees such as national technical, operations, cold chain, communication, surveillance, monitoring, and training committees. Since the preparation must progress faster, all committees meet at least once a week. Each of these committees has its own Terms of Reference (Please see annex 3. 2. ToR of the working committees). These committees are comprised of representatives from MoPH and relevant country partners who are working to assess the readiness of the country and plan for the enhancement of the system to enable the country to manage vaccination of 20 per cent of the population as part of an immediate response expected in 2021, and extend their collaboration once the target is increased to 40 and 60 percent of the population afterwards.

The above mentioned committees developed this National Deployment and Vaccination Plan (NDVP) which is in line with the Vaccine Introduction Readiness Assessment Tool (VIRAT) developed by WHO and UNICEF, and the Vaccine Readiness Assessment Framework (VRAF)

developed by the World Bank --- now VIRAT/F-2. Other relevant bodies such as the National COVID-19 Response Coordinating Committee, CNCC, CTWG, NITAG Members, National Immunization Programme, National Regulatory Authority, AEFI committee including the private sector have provided inputs into development of this plan. WHO guidance and SAGE recommendations have also been fully considered while developing this plan. A similar coordination mechanism is set up at the provincial and regional levels, led by the Provincial EPI Management Team (PEMTs) and Regional EPI Management Team (REMT), participated by all relevant partners on the ground.

The Ministry of Public Health leadership will coordinate with the national technical committee (NTC) members, stakeholders and partners about COVID-19 vaccine introduction and their expected roles, inform regularly & disseminate global and regional guidance (i.e. SAGE) with members of NTC and support the working groups on COVID-19 vaccines. Based on the emerging need the national technical committee, which is comprised of the relevant technical and humanitarian partners, plays the role of NITAG exceptionally for COVID-19 vaccine deployment in the country.

While the NITAG in Afghanistan is currently not fully function due to some reasons, the technical committee set up for COVID-19 vaccination programme is comprised of technical experts from different fields of medicine. In addition, the technical decisions proposed by the technical committee are reviewed by other specialized line technical departments within the health sector particularly MoPH. Furthermore, upon the request of MoPH a group of completely independent health experts has been set up to provide to MoPH and health sector the technical recommendations for management of COVID-19 including COVID-19 vaccination intervention in the country. This committee is called Science Epidemiology and Research (SER) and currently have more than 49 members from varieties of fields such as Epidemiology, pediatricians, public health practitioners, statisticians, internal medicine specialists, surgery, genetic studies, surveillance experts, pharmacology, health managers, communication, and so on. They are involved in all the technical discussions of COVID-19 and contribute in making recommendations. Technical content of this NVDP is in fact the result of joint efforts of above-mentioned technical bodies. Conclusions are reflected in the NVDP after thorough review processes. In emergency situation like COVID-19 pandemic, Afghanistan tried not to put off decisions required to prepare the country for introduction of COVID-19 vaccine.

In addition, the MoPH has informed regulatory authorities of the COVID-19 vaccine introduction for their review and concurrence. The Inter-Agency Coordination Committee (ICC), which is comprised of multiple partners and stakeholders, is another platform that is fully functional and chaired mostly by the Minister or Deputy Minister of Public Health. The latter body also plays a role in technical support, fund management and reporting.

4.1. Target population

As there will not be enough vaccine available for use due to global shortage of production and financing capacity limitations, the target groups for COVID-19 vaccination have been decided by the national technical committee taking into account the WHO guideline (SAGE Prioritization Roadmap), UN total population project (around 39 million) and consideration of the following criteria:

a) To protect those who are more vulnerable to high morbidity and mortality for COVID-19
b) To stop transmission by vaccinating those who are super spreaders
c) To maintain the essential services functional in the society

As mentioned earlier there is no active NITAG in the country, however the National Technical Committee (NTC) exceptionally plays a similar role in prioritizing the target groups. In addition to the WHO guidelines, the committee has considered contextual factors/need in prioritizing target groups for the first 20% of COVID vaccination.

As a result, the National Technical Committee has prioritized the target groups in order of priority: 1) health workers, 2) teachers, 3) security personnel, 4) prisoners, 5) people with co-morbidities 6), people aged above 50 years old, 7) nomadic people, 8) IDPs, 9) returnees from countries with high prevalence --- in current situation mainly from Iran and Pakistan, 10) government employees who are working with crowds, 11) People living in Urban Slums of big cities and the emergency uses.

Table 4. 1: Prioritization of the target groups and tentative vaccine shipments.

Vaccine shipment	**Target population**	**Number**	**(% of total population)***	**Tentative arrival time for shipment**	**Justification for group prioritization (in line with SAGE recommendation)**
1st shipment	All Health Workers (MoPH, NGOs, and Private sector) including Community Health Workers	128,000	0.33	Mar-21	No care homes to first target very older people. Health workers are at high risk of disease.
	Teachers in schools and universities (public and Private)	400,000	1.03		Weak infra-structure for mobile and internet services. Not possible to set up virtual education system. Vaccinating the teachers leads to opening the schools for children.
2nd shipment	Security Personnel	400,000	1.03	May-21	Big number live in shared rooms (indoor) in military bases
	Prisoners and residents of women's shelters	33,000	0.08		Very similar condition to that of security personnel
	People with co-morbidities (e.g. heart diseases, TB, Diabetes)	130,000	0.33		Co-morbidity puts individuals at high risk.
	People over 50 years	2,334,000	6	Jul-21	At high risk by default.

Vaccine shipment	Target population	Number	(% of total population)*	Tentative arrival time for shipment	Justification for group prioritization (in line with SAGE recommendation)
3rd shipment	Nomadic Population (all men and women aged 30 -50 years)	300,000	0.77		Nomads are population on the move increasing their risk of contracting the virus.
	People living in IDP camps age 30-50 years	300,000	0.77		Living either in camps or miserable situation.
4th shipment	Returnees from neighboring provinces (Iran & and Pakistan) over the age of 30	400,000	1.03	Sep-21	Risk of virus circulation and transmission of the virus to others
	Government and private employees working with crowd of people aged 18 years or above e.g. Passport department.	100,000	0.26		Some departments or institutions handle very big number of clients on daily basis e.g. passport department has more than 2,000 client/day.
5th shipment	People living in Urban Slums of big cities above 18-year-old, and emergency uses	3,258,000	8.38	Oct/Nov 2021	Poor hygiene practices, poor living conditions, living in shared facilities, miserable living situation. Emergency use means any eligible group who is not known/noticed now but will be identified during implementation
Total		7,780,000	20.01		

*This table describes prioritized groups for 20% of the population while the first three rows (health workers, teachers and the prisoners) explain 3% of the population to be vaccinated in the first stage.

As stated, the number of shipments per target group reflected in table 4.1 are very tentative. At this stage, the number of doses per shipment is not known at all therefore it is not possible to distribute target population groups exactly as per the shipments. Country partners still tried to make an estimate for planning purposes. Once shipments are received, the accurate distribution of vaccine doses will be done in accordance with the provincial micro-plans being developed for the target groups.

It is worth to indicate that the above number of people has been categorized into different groups based on the aspirational commitment made by GAVI providing the COVID-19 vaccine for 20% of total population. In order to create herd immunity, at least 60% of the total population will have to receive vaccine. The Government of Afghanistan has recommended to develop NDVP to meet the need of 60% population while specific content (like above table) at this stage is designed for the first 20% of the total population.

To vaccinate 60 percent of the population, the people with disabilities and those older than 18 who are not included in the above table will be the target groups for the additional vaccination.

Based on the NSIA estimations around 47% of Afghan population are under 15[1]. Having said that, with vaccinating 60% of the population all the eligible population will covered in Afghanistan.

4.2. Vaccine Procurement Plan

Procurement of the vaccines and necessary supplies i.e. syringes, safety boxes will be done by UNICEF. MoPH will rely on the WHO prequalification (or EUL) certificate and the quality assurance systems of UNICEF. This is the channel and means of procurement of other routine immunization vaccines and so far the system has been efficient and effective. Should the procurement be done through the Government, the MOPH will remain responsible for the quality assurance of vaccines and logistics.

The MoPH will register the quantity of vaccines arriving to the country with the lot numbers and track the distribution in the country. Should there be need for recalling of the whole shipment or a specific lot of the vaccine, this could be done quickly and effectively.

The cold chain committee will track the vaccine distribution while the surveillance committee, will seek the report of adverse events following immunization and follow up the cases properly.

The surveillance committee will document the investigation and report it back to WHO, UNICEF, COVAX Facility and the manufacturing company.

For procurement of additional vaccines to cover additional 20% of the population, Afghanistan will use the same channel of procurement, through UNICEF and the COVAX Facility. However, if this was not possible, the government will consider direct purchase of vaccines from manufacturers that are WHO prequalified. WHO pre-qualification includes full pre-qualification or Emergency Use listing (EUL). Either option is applicable in the context of Afghanistan as the regularity authority mostly relies on WHO's technical support.
Additional conditions will be applied, based on the source of financing of these additional purchases of vaccines. Vaccine distribution until its administration to beneficiaries is summarized in below Gantt chart.

Table 4.2. Tentative Gantt chart

Description of activities	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Remarks
Vaccine procurement notification to the country (offshore)								
Vaccine arrival to Kabul airport								
Non-vaccine arrival to the point of entry in Afghanistan								This may take longer. Routine EPI AD syringe stock can be

[1] National Statistics and Information Authorities (NSIA), Afghanistan Population Estimations for 2020-2021. Published: June 2020.

								used instead until stock is replenished.
Storage of vaccine and non-vaccine supplies at National stock								
Delivery of vaccine and non-vaccine to regions								
Delivery of vaccine and non-vaccine supplies from regions to provinces								
Delivery of vaccine and non-vaccine supplies from provincial stock to health facilities								
Administration of vaccine to target beneficiaries (both doses)								
Report of vaccination coverage to national level (DHIS2)								Once a month unless specified otherwise

The current assumption and expectation is that the COVID-19 vaccine will be provided through the COVAX facility (GAVI). Although not expected, failure to the latter option does not imply that the country will never start the COVID-19 vaccination programme. Alternative options would be sought e.g. explore options of government-to-government support or funding from donors to government. In both scenarios, the government of Afghanistan will manage the procurement through the National Procurement Authority (NPA) --- an independent body governing/managing bulk/costly procurements of line ministries including MoPH. In all the scenarios, WHO pre-qualification (full qualification package or EUL) of all the products is a MUST to ensure that quality product is imported, avoid expected AEFI cases, and establish stronger immunity among the Afghan population against the coronavirus disease. In addition, the selection of the type of COVID-19 vaccine will always remain at the discretion of the government of Afghanistan and cannot be imposed by supporting donors. The fund (either from government or donors) should not, at any case, result in compromising the quality of COVID-19 vaccination service delivery over the time and conditions of the donors.

4.3. Vaccine Delivery (Distribution plan) and Implementation Modality

Implementation modality

Current/ongoing approach for health service delivery in Afghanistan

Health service delivery in the country is run either by NGOs through contract-out mechanism or by the government through the contract in mechanism (SEHATMANDI). The former covers rural

and part of urban areas while the latter mainly focuses on urban areas. The share of government services in the health sector is very low (around 5%) and there are major donors like USAID, EU and WB who finance the health service delivery under SEHATMANDI project in the country. Health service delivery points are categorized as provincial hospital, district hospital, Comprehensive Health Center, Basic Health Center, Sub-center, family health house (FHH), mobile health team, transit team (at borders). In addition, there are also health facilities run by the private sector. Vaccination services are included in almost all the public health facilities and a number of private sector facilities. The MoPH plays a stewardship role through its technical department among which NEPI department which is responsible for the EPI programme in general.

Routine EPI service delivery

There are 2,227 EPI centers in the country, each equipped with a standard WHO pre-qualified cold chain equipment (refrigerator, cold box, vaccine carriers, etc.) and other necessities required to provide immunization service delivery to the population. Almost all EPI centers have two vaccinators --- dedicated staff trained for the purpose to only handle vaccination. The vaccination services are provided using mainly three strategies; fixed, outreach and mobile services.

Supplementary Immunization Activities (SIAs)

Afghanistan also has vast experience of implementing the SIA e.g. accelerated/multi-antigen interventions, Measles Mortality Reduction campaigns, small scale outbreak responses, TT campaigns, polio campaigns, catch-up activities, and so on. Each of the above requires slightly different implementation strategies for which additional human resources are trained and deployed to execute the interventions.

Specific approach for implementation of COVID-19 vaccination

The National Technical Committee, after thorough review of all inputs from partners and the field, concluded to select a combined approach --- using existing RI vaccinators and deployment of 2,000 additional new health workers (team of two persons; one male and female) after proper training. The committee has analyzed benefits and risks of other strategies. For example, using only the RI vaccinators will utilize their time which may negatively impact the RI coverage and this in turn leads to outbreaks of VPDs. Applying the campaign mode will unnecessarily increase the operational cost as total required amount of vaccine is not delivered to the country in one go and the big number of needed campaign teams will have to receive entitlements throughout the year. The latter does not seem sustainable within the health system in the long run.

All vaccinators (existing and additional) will receive proper standard training. Each EPI center (irrespective of whether public or private) will be used as a hub from which both the RI and COVID-19 vaccination service delivery (additional vaccinators) will operate. The RI vaccinators, in addition to their daily routine tasks, will administer COVID-19 vaccine to target groups (e.g. health personnel, teachers etc.) who are attending the EPI centers while the supportive/additional

vaccinators administer the vaccine to target population by applying/conducting different strategies such as outreach and mobile (for IDPs, crowds, prisoners etc.), transit teams at the borders (e.g. for returnees). Using the selection criteria, additional vaccinators will be identified and recruited who will receive monthly incentive for one year at this stage.

While the NDVP includes an operational plan, this will further broken down into detailed provincial micro-plans reflecting the needs of HR, supplies, cost, monitoring, communication, training, cold chain, etc. Provincial micro-plans will form the basis for scheduling of all activities in each province. Vaccinators will schedule their daily/monthly activities based on the provincial micro-plans.

Under the GAVI supported Health System Strengthening (HSS) project, a comprehensive EPI micro-planning exercise is progressing and to date a total of 9 out of 34 provinces have already completed the exercise and the rest will be done by mid-2021. Once the comprehensive EPI micro-planning is completed it will provide a complete set of data for EPI programme for the entire country which will further help operations/implementation of COVID-19 vaccination.

The above approach has been selected with an aim to strengthen the existing health system. Daily interactions and joint work between the RI and new (additional/supportive) vaccinators will enable the new teams to get first-hand knowledge on RI programme. The duration of immunity from COVID-19 vaccine is not yet known. Should the immunity conferred by COVID-19 vaccines end up lasting for only a short time, either repeated vaccination will be required or this vaccine will more likely be included into the routine EPI schedule. Thus, in the long run it will be the RI vaccinators (as part of the health system) who will have to accommodate the programme until the pandemic is over.

In addition to vaccinators, one additional staff will be deployed in each province as COVID-19 supervisors, with one person in each region supported by the national team. For details on operation micro plan refer to Annex 4.1. (COVID 19 vaccination micro-plan).

Additionally, there are SEHATMANDI and COVID project Service Providers (SPs) available in all 34 provinces who are also the BPHS implementers running the majority of the health facilities in the country. The EPI including COVID-19 vaccination are managed by the Regional and Provincial EPI Management Team (R/PEMT) comprised of government staff e.g. manager, supervisors, cold chain, data officers, and supportive staff. R/PEMTs are responsible for coordination of all vaccination programmes in their concerned province supervised by the provincial public health directors and technically supported by the NEPI, MoPH.

Although training guidelines will provide to vaccination teams the elaboration about implementation strategies, implementation modality arrangement for each prioritized target groups are summarized in below table.

Table 4. 3. Implementation modality for each prioritized target groups

No.	Prioritized target group	Implementation strategy for COVID-19 vaccination	Means of identification
1	All Health Workers (MoPH, NGOs, and Private sector) including Community Health Workers	By RI vaccinators through existing EPI fixed centers in public and private facilities.	MoPH, MOHE database , ID
2	Teachers in schools and universities (public and private)	Depends on access in terms of distance from health facility. By RI vaccinators on schedule if nearby to health facility, otherwise by additional vaccinators using outreach and mobile approach.	MoE and MoHE database, ID
3	Security Personnel	MoPH will provide technical and supply (vaccine and non-vaccine) supports while medical division within the security forces will implement.	Ricard of security forces
4	Prisoners	By additional vaccinators using mobile approach with advance consultation with prison authorities.	Database of prisoners
5	People with co-morbidities (e.g. heart diseases, TB, Diabetes)	By additional vaccinators who will conduct either mobile or outreach. Concerned departments of MoPH will provide the list or explore feasible options for identification to address the need.	Database/record of MoPH concerned departments e.g. NCD, TB, etc.
6	People over age of 50 years old	By additional vaccinators, using three strategies of fixed, outreach and mobile	Tazkera/ID, Event calendar
7	Nomadic population (all men and women aged 30 - 50 years)	By additional vaccinators using the existing health structure for nomads	Department of Nomad
8	People living in IDP camps age 30-50 years	By additional vaccinators using mobile strategy.	IOM, UNHCR, Ministry of Returnees and Repatriation
9	Returnees from neighboring countries (Iran & and Pakistan) over the age of 30	There are entry points at the borders in Herat, Nimroz and Farah provinces with Iran; Kandahar, Nangarhar, Paktika, Paktya provinces with Pakistan; Mazar with Uzbekistan; Badakhshan with Tajikistan; Faryab with Turkmenistan. Strategy 1: deployment of transit team (additional vaccinators) to the transit point to vaccinate; strategy 2: border authorities to issue a document referring target group to nearby vaccination center.	IOM, UNHCR, Ministry of Returnees and Repatriation

No.	Prioritized target group	Implementation strategy for COVID-19 vaccination	Means of identification
10	Government and private employees working with crowd* of people aged 18 years or above e.g. Passport department.	By additional vaccinators in mobile/outreach strategy.	Records of relevant provincial authorities/departments
11	People living in Urban Slums of big cities and emergency uses among above 18-year-old	By additional vaccinators using outreach and mobile strategies.	Record of municipalities, surveillance, ACASUS, etc.

* There are certain entities to which thousands of clients gather every day to get their official paper work/deals done. As per the SAGE guideline, the staff managing these crowds are at high risk of contracting the virus. Few examples, which are fully applicable in the context of Afghanistan but cannot be the case in other countries, include department of passport, exchange market centers located in few mega cities where thousands of staff attend for managing their business deals. These are few examples of crowds defined.

Provincial teams (R/PEMT, WHO, UNCEF, BPHS, etc.) will properly reflect all the requirements into the provincial micro-plan. In addition, provincial team under the technical supervision of the national technical and operation committees and in consultation with the relevant provincial partners will develop a roadmap to identify all prioritized target groups to avoid overlap and being missed from COVID-19 vaccination. Unnecessary crowds of target population at the vaccination center will be managed by advance communication. The vaccination of target groups will be scheduled according to the available stock of vaccine being delivered as per the micro-plan. Tentative arrival dates and number of expected number of vaccine shipments are detailed in table 4. 1. under “target population”.

There are many important and critical points that are not yet known such as fund availability for the entire target population to create herd immunity in the country; safety of COVID-19 vaccine among pregnant and breastfeeding women, children under age of 16/or18 years old, immunocompromised patients etc. Further clarity on these aspects will result in updating/re-vising the NDVP to accommodate the needs in immediate effect.

Although the implementation modalities in the NDVP are clearly articulated, it is worth to clarify the strategy on how the hard-to-reach populations/or locations will be covered.
In the context of Afghanistan, the population is distributed either as urban (fully accessible at all times) or rural (in-/or accessible on a case by case basis and different from time to time). There are reasons for making the population inaccessible e.g. conflict (not stable as the situation is subject to change), harsh weather (only during winter season), difficult geography such as mountains (does not change over time), or population on the move like IPDs, etc.
As stated above, the COVID-19 vaccine will be administered to beneficiaries by dedicated vaccinators (existing routine EPI programme and newly trained vaccinators). The country would not set up new COVID-19 vaccination sites, rather uses existing vaccination centers (more than

2,200 already operational across the country and each one already equipped with standard cold chain equipment --- solar and gas-based). The number of new vaccinators will be deployed based on the population of the area. Vaccinators (either existing or new) will operate from the existing EPI centers (embedded/attached/integrated within the existing health facilities and hospitals across the country). The number of EPI/health centers is enough for vaccinators to operate.

Each EPI/health facility will have catchment areas/villages. Catchment area in this modality does not mean only accessible, instead it means the population that the EPI/health facility is responsible for. In terms of health service delivery, catchment areas of EPI/health facilities are divided into: 1) fixed where population live in close proximity of the EPI/health facility (only by walking to get access to vaccination services), 2) outreach (walk for more than one or one and a half hour to get access to vaccination services), and 3) mobile (where population live too far from EPI centers and health team/vaccinators need to go there but are not able to return back the same day).

Irrespective of who controls the area, the vaccinators will apply these three strategies of fixed, outreach and mobile services and will cover the entire target population. The implementation of COVID-19 vaccination is going to be contracted out with the BPHS (NGO partners) who are already providing health services to the population all over the country under control of both the government and non-government elements. This means that there are already EPI/health facilities located either under control of the government or non-government elements. The NGO partners always try to negotiate among the entities for access. This approach has also given a non-political shape to health service delivery in the country.

The vaccination teams will cover all locations if sufficient support is provided. Sufficient support means enough vaccination teams (vaccinators), enough capacity building, cold chain equipment, enough vaccine, enough operation cost like per diem, transportation, etc. As indicated above, MoPH with support from partners have already provided all EPI centers with standard cold chain equipment (refrigerators, cold box, vaccine carriers, icepacks, LPG gas through BPHS or government). Proper calculations are completed for the deployment of the required number of vaccinators. Provincial EPI management teams and existing BPHS partners have sufficient experience of almost two decades in the field about these three strategies. No new strategy is proposed which could potentially put country partners in trouble. New strategies would require time, unnecessary resources, and will neither be sustainable nor to the benefit of the health system in the country. It is important to mention that introductions of vaccines into routine EPI programme are not new to this country. Afghanistan has already introduced many new vaccines --- at least four new vaccines were introduced since 2013 and all of them required large scale operations.

It is also noted that many developed nations still struggle with lots of challenges to handle COVID-19 vaccination programme for their population only because they have selected to implement the type of COVID-19 vaccine which requires ultra-cold chain e.g. minus 70°C . Ultra-cold chain requires new infrastructure which is costly and time consuming. Out of the all COVID-19 vaccines so far produced, only one of them requires ultra-cold chain system. Afghanistan does not want the vaccine requiring ultra-cold chain. Afghanistan has asked for vaccine which matches its

existing cold chain system that is +2 to +8°C. In addition, the country can store the vaccine up to -20°C in the national, regional and provincial levels.

MoPH leads all discussions around the COVID-19 vaccination programme. As stated in the NDVP, relevant committees have been established to better plan and coordinate this important intervention. Partners including humanitarian actors have been asked to participate all the discussions. The MoPH tried to keep the discussions open and free of any bias or political interest. Some humanitarian actors have already played an active role and are members of established committees. The BPHS NGOs with whom the COVID-19 vaccination implementation will be contracting out are part of humanitarian community. Other humanitarian actors are encouraged to participate in the discussions and play their roles as relevant to their organizations' vision and mission. Any new approach will be formulated within the developed implementation modality. With this strategy the country expects that no area will be left out of COVID vaccine intervention.

Supply/vaccine distribution

The MoPH always receives advance notification of shipment delivery from UNICEF Supply Division should the vaccine be procured through UNICEF. Supply of vaccine arrives by air to Kabul airport and dry supplies by sea. There is a contingency transit cold chain facility at the airport for emergency purposes. Vaccine is shipped to the national cold room from the airport immediately after the plane lands, and the customs paper work is handled afterwards. A UNICEF-hired customs clearing agent and NEPI of MoPH handle this task. Based on detailed micro-plan, NEPI distributes supplies of vaccine and non-vaccine materials to regional and provincial cold rooms using UNICEF's LTA which is in place with private transportation company. No issue has been reported about the latter arrangement. There is no administrative structure for the health sector at the district level. PEMTs distributes supplies from the provincial cold room directly to EPI centers/facilities with support of concerned BPHS partners. Each EPI center in Afghanistan is equipped with standard WHO-prequalified refrigerator and other required equipment including temperature monitoring devices. For details please refer to "regulatory and standards" and "cold chain".

The context in Afghanistan is evolving due to political tension. In addition to insecurity there are other issues that sometimes challenge smooth programme implementation. COVID-19 vaccination is not an exception. Below table summarizes anticipated challenges along with proposed mitigating measures which will be used to address the issues.

Table 4. 4. Anticipated challenges along with proposed mitigating measures

Expected challenges	**Proposed mitigating measures**
Ad-hoc ongoing conflict in a geography	Re-schedule vaccination programme
Vaccine hesitancy/ or low demand	Design and broadcast specific messages, communication plan

Expected challenges	Proposed mitigating measures
Risk of rumors following AEFI	MoPH leadership to inform public and correct the misunderstanding through media using risk communication techniques
Public rush on vaccine	All vaccine storage facilities are very safe and secure. Advance communication will be made by health workers to concerned communities/target groups of the schedule to get vaccine
Ban on vaccine by anti-government elements (AGEs)	Negotiation with AGEs through community elders and influencers; selection and deployment of additional vaccinators from local areas understanding the local context
Difficult geography	Alternative options e.g. use of animals for transportation of supplies instead of vehicle, deployment of additional teams from local areas, etc.
Cultural barriers e.g. women not ready to be vaccinated by male health workers	Already decided to deploy teams comprised of male and female (one male and one female)
Harsh weather during winter season e.g. snow, road blockade, etc.	Geographical prioritization to avoid this risk

Gender issue

It is aimed to vaccinate all women and men in the targeted groups. Gender related barriers will be identified in each target group and strategies to address those barriers will be adopted. Main activities to address gender disparity in the program are: 1) Using IEC material to raise awareness in the targeted groups about the importance of immunizing both males and females and for community mobilization; 2) Providing the required number of vaccination doses ; 3) inclusion of female front line health workers/ vaccinators; 4) close monitoring and surveillance to find gender disparities. Gender sensitive data analysis of the vaccination will be continuously done to highlight any possible inequalities in the vaccination process. This will also help the program to adopt specific strategies for addressing the highlighted inequalities.

Infection Prevention and Control Measures

The scheduled vaccination sessions are planned to be conducted to inhibit the crowds of clients. In order to prevent spread of infection in the health facilities, standard IPC principles will be considered in the each vaccination centers such as, spacing in the vaccination center or waiting area, hand sanitation (gloves) and use of masks by both clients and health worker who have direct close contact with clients.

The MoPH's National Policy on Infection Prevention and Control for Hospitals and Health Centers (annex 4.2.) provide the broad principles of Infection Prevention and Control (IPC) for all

Afghanistan healthcare facilities. The policy manual states the specific guidelines for implementation of effective IPC programs in hospitals and health centers. The objectives of the policy are two-fold (a) to facilitate effective implementation of the national IPC policy, and (b) to provide the technical guidance necessary for clinical managers of health facilities to be able to implement an effective IPC program. The IPC Program covers the Nosocomial Infection Surveillance System, Environmental Sampling, Occupation Health Programme and Safe Injection Practices. The IPC for housekeeping, waste disposal and pest control has also been provided in this policy document

The Government of the Islamic Republic of Afghanistan' has a Healthcare Waste Management Plan prepared in 2018 in local language (annex 4.3.). This plan is being updated and made fit for purpose and relevant for the COVID-19 Emergency Response and Health Systems Preparedness Project. Also an waste management protocol to be used in COVID situation prepared in local language (annex. 4.4.).

Staff Safety and Security measures

Afghanistan has the experience of introducing vaccines in the past where country partners and government have considered risk mitigating measures all the time to ensure security for resources including staff and supplies are maintained. We have selected the target priority groups and will establish vaccination centers all over the country to avoid crowds. So as soon as the vaccine arrives, it will be transferred to the regional, provincial cold storage sites and then to HFs without any delay. The storage and keeping the vaccines for long time will be avoided. Additionally, the provincial health directorates will be instructed officially to take all necessary precautions to protect staff and mitigate risks. The national and regional teams of the MOPH, and its partners will have regular field visits to ensure the smooth implementation of the program.

The MOPH will develop a set of rules and regulations protecting all personnel involved in the implementation of COVID-19 vaccine. These regulations will include requirements relating to chemical, physical and biological substances, not engaging in sexual exploitation and abuse and sexual harassment, participation in training, reporting and non-retaliation, etc.
For staff safety, adequate personal protection equipment (i.e. face mask, gloves) will be available and used appropriately during administration of COVID-19 vaccine. Furthermore, availability of allocated water, soap, and disposable paper/towels in an enclosed dispenser or an alcohol-based hand rub dispenser during administration of COVID-19 vaccine will be ensured. In addition, the health workers will ensure social distancing measures at the time of COVID-19 vaccine administration sessions.

Stakeholder Engagement plan

In order to meet best practice approaches, the project will apply the following principles for stakeholder engagement:

Openness and life-cycle approach: public consultations will be arranged during the whole life-cycle, and carried out in an open manner, free of external manipulation, interference, coercion or intimidation;

Informed participation and feedback: information will be provided to and widely distributed among all stakeholders in an appropriate format; opportunities are provided for communicating stakeholders' feedback, for analyzing and addressing comments and concerns;

Inclusiveness and sensitivity: stakeholder identification is undertaken to support better communications and build effective relationships. The participation process for the projects is inclusive.

All stakeholders at all times are encouraged to be involved in the consultation process. Equal access to information is provided to all stakeholders. Sensitivity to stakeholders' needs is the key principle underlying the selection of engagement methods. Special attention is given to vulnerable groups, in particular women, internally displaced persons (IDPs), returnees, pastoral nomads (Kuchis), drug addicts, persons with disabilities, youth, elderly and the cultural sensitivities of diverse ethnic groups and those living in remote or inaccessible areas.

In terms of methodology, it will be important that the different activities are inclusive and culturally sensitive, thereby ensuring that the vulnerable groups outlined above will have the chance to participate in the benefits of the vaccination program. This can include household-outreach and focus-group discussions in addition to village consultations, the usage of different languages, the use of verbal communication or pictures instead of text, etc. Detailed document on stockholder engagement is available in annex 4.5.

The roles of stakeholders can include but not limited to planning, funding, formulating strategies, directing the policy, facilitating the implementation, providing technical and operational assistance, increasing the demand, helping the health workers during vaccination, negotiating with anti-government for access, advocating for political commitment, protecting the health workers during conflict (if occurs), designing the guidelines and protocols, coordinating the activities, monitoring and evaluation, capacity building, administering the vaccine to target groups, reporting, and so on. Considering the context of Afghanistan and five stages of project life cycle, stakeholders' roles are specified in below table (* minor role, ***** major role):

Stakeholders	Role of stakeholders throughout the project life cycle				
	Initiating	**Planning**	**Executing**	**Monitoring**	**Closing**
Government (State leadership and all involved ministries)	*****	*****	*****	*****	*****
Implementing NGOs	**	***	*****	*****	***
Communities	*	**	*****	*****	***

Stakeholders	Role of stakeholders throughout the project life cycle				
	Initiating	Planning	Executing	Monitoring	Closing
Private sector	*	***	***	***	*
Politicians	****	*	*****	***	*
Local authorities/actors	*****	*****	*****	*****	*****
Other health actors e.g. pharmaceuticals, insurers, etc.	**	*****	*****	*****	***
Donors	*****	*****	*	*	***
UN agencies	*****	*****	****	***	***
Health workers	**	*****	*****	*****	***
End users	*	***	*****	*****	*

5. Costing and Funding

The High-Level Health Programme Oversight Committee (HLHPOC) led by Minister of Public Health is the coordination body that keeps the President up to date of all the progress, provides policy recommendations to the concerned committees and negotiates with donors to ensure funding. The health sector in the country mostly relies on external funding and therefore, MoPH initiated discussions with relevant donors to mobilize resources. Among others, GAVI has so far committed to the Government of Afghanistan a total of USD 1.1 million for technical assistance, aspirational commitment to finance COVID-19 vaccine (type to be specified) for up to 20% of total population, and around USD 0.92 million for cold chain. The Government of Afghanistan is in negotiation with other donors about their financial package. The World Bank (IDA) has promised 60 million, while ADB promised 50 million and ARTF also promised 50 million, yet to conclude the financial support. In addition to the vaccine procurement some of the funds will be used for vaccine deployment.

MoPH in consultation with supporting partners and donors has developed a cost estimate by applying different scenarios --- 20%, 40% and 60%. For details please refer to tables 5.1 and 5.2.

Table 5. 1. Summary budgeting for COVID-19 vaccine deployment

AFGHANISTAN: COVID-19 Vaccination Costing Scenarios			
Population Coverage	**20%**	**40%**	**60%**
Vaccine needed doses	**16,338,000**	**32,676,000**	**49,014,000**
Vaccination Cost Categories	**(000 $)**	**(000 $)**	**(000 $)**
1. Total Cost of Vaccines	81,690*	163,380*	245,070*
2. Operation (Distribution, Demand Side, etc.)	15,560	31,120	46,680
3. Cold chain equipment	6,599	6,599	6,599
4. Transportation to Provinces	646	1,292	1,938
5. Infrastructure (building cold rooms, warehouses)	7,200	7,200	7,200

6. TA + Provincial Level Capacity Cost	4,240	8,480	12,720
Total Cost for Vaccination Roll Out	**115,935**	**218,071**	**320,207**

*vaccine costing is based on USD 5/dose. The calculations for vaccine price are subject to change based on the vaccine's actual cost variations, if any.

As mentioned earlier COVAX had promised to fund for 20% of vaccine and dry supply procurement. To deploy 60 million will be provided by WB, while 50 million will be donated by ADB. In addition, a total 50 million USDs is promised by ARTF. Having said this, Afghanistan have financial commitment to vaccinate more than 20% of its population.

Considering all the donation, Afghanistan extend its vaccination for 60% of the population, for details refer to table 5.2. To fill the funding gap for covering 60% of the population, there are negotiations between government of Afghanistan and potential donors.

Table 5. 2. Summary funding for COVID-19 vaccine deployment

Financing Plan for covering 60% of the population						
Population Coverage 60%	**Financing (US$ 000)**					
Vaccination Cost Categories	**COVAX***	**IDA**	**ARTF**	**ADB****	**TOTAL cost**	**GAP**
1. Total Cost of Vaccines	81,690	20,561	46,260	48262	245,070	**48,297**
2. Operation (Distribution, Demand Side, etc.)		31,120			46,680	**15,560**
3. Cold chain equipment	920	5,679			6,599	**0**
4. Transportation to Provinces				738	1,938	**1,200**
5. Infrastructure (building cold rooms, warehouses)**					7,200	**7,200**
6. TA + Provincial Level Capacity Cost	1100	2,640	3,740	1000	12,720	**4,240**
Total	**83710**	**60000**	**50000**	**50000**	**320,207**	**76,497**

* The assumption is that COVAX will finance the total vaccines for 20% of the population, as it is their aspirational plan

** The World Bank is advocating that MOF contribute this cost

6. Supply Chain and Waste Management

The cold chain equipment from national to service delivery level are WHO prequalified. Recently conducted Temperature Monitoring Study covering the summer and winter seasons, concluded on the quality of cold chain system that temperature of vaccines are properly maintained between 97% to 99% of the times within the WHO-recommended range. Upon arrival of vaccine to the country, the necessary cold chain system are in place for storage, transportation and deployment of vaccines based on the standard conditions required for each vaccine. The National Expanded Program on Immunization (NEPI) department of the MoPH is responsible for handling the vaccine including distribution to subnational level. There are standard temperature

monitoring devices that are also in place and fully function such as real-time temperature monitoring devices installed in all walk-in cold rooms (sending message to concerned staff of any change in temperature), latest version of 30-day logger in each refrigerator at the service delivery points as well as used with vaccines during transportation. These are in addition to the VVM on the vaccine vials and the real-time GPS-based temperature monitoring system in the existing solar refrigerators.

The overall management responsibility for all immunization supply chain logistics is with the National Vaccine Logistics Working Group (NVLWG). The NVLWG of Afghanistan was officially established on 26 October 2019. See annexes 6.1. and 6.2. for terms and reference of NVLWG and the formal letter of establishment. The group resumes the responsibility for the following tasks related to Covid-19 vaccine:

- Planning and forecasting vaccine requirements: Planning the vaccine requirement for Covid-19 Vaccine (National estimates for COVID-19 vaccines and other supplies, in consultation with the operation subcommittee and national technical committee for COVID19 vaccine).
- Cold chain infrastructure needs: Calculate the cold chain needs and prepare a list of cold chain requirements for Covid-19 vaccine storage and supply requirements.
- Planning coordination and distribution of vaccine and supplies: Plan, in coordination with UNICEF, regions, provinces and BPHS-NGOs for vaccine distribution to Covid-19 service delivery health centers
- Monitoring and reporting: Monitoring of vaccine supplies, vaccine distribution and utilization reports and cold chain commissioning certification.

The NVLWG streamlined the key COVID-19 vaccine logistics related roles and responsibilities among National EPI and partners:

Key responsibility	**Responsible entity**
Forecasting the requirements	National Vaccine Logistics Working Group
Procurement and supply	NEPI and UNICEF
Storage and distribution	National EPI Department of MOPH
Monitoring and reporting	National EPI, BPHS-NGOs, UNICEF

Afghanistan has submitted vaccine request to the COVAX facility, in which the following vaccine characteristics are prioritized:

Vaccine characteristic grouping	Vaccine characteristic	Please rank all 12 vaccine characteristics (a to m) from most desirable at the top least desirable at the bottom
Vaccine Platform	a. mRNA	d. Vaccines that have been Prequalified by WHO
	b. Inactivated	m. Lower price
	c. Viral Vector	g. Vaccines with traditional cold chain requirements (2-8°C)
Regulatory process	d. Vaccines that have been Prequalified by WHO	l. Fewer doses per regimen
	e. Vaccines that have received approval from a Stringent Regulatory Authority so far	b. Inactivated
	f. Vaccines that have been granted only Emergency Use Listing so far	a. mRNA
Cold chain requirements	g. Vaccines with traditional cold chain requirements (2-8°C)	c. Viral Vector
	h. Vaccines with traditional cold chain requirements (-20°C)	e. Vaccines that have received approval from a Stringent Regulatory Authority so far
	j. Vaccines with ultra-cold chain requirements (-70°C)	h. Vaccines with traditional cold chain requirements (-20°C)
Doses per vial / presentation	j. Fewer doses per vial (less than 10)	j. Fewer doses per vial (less than 10)
Doses per regimen / course	l. Fewer doses per regimen	j. Vaccines with ultra-cold chain requirements (-70°C)
Price	m. Lower price	f. Vaccines that have been granted only Emergency Use Listing so far

As seen from the matrix above, the most likely availability of vaccine for the country would be falling under this category:

- Vaccine requiring the storage temperature of +2 and +8°C at service delivery points
- Multi-dose vial of 5 or 10 dose vaccine
- Optimum cold chain volume per dose[2]
- Lowest cost of vaccine

The cold chain system in Afghanistan can store vaccines up to -20°C at national, regional, and provincial levels, however in the HFs the vaccine can be stored only at +2 to +8°C.

Given these options of vaccine, the following assumptions were used for planning the introduction of COVID-19 vaccine to the country.

[2] Up to 6cm^3 per dose

Vaccine and supplies volume per dose and wastage estimates

Description	**Assumption as per vial volume of vaccine available currently[3]**	**Assumption for vial with lesser doses per vial [4]**
Vaccine volume per dose	3 cm^3	6 cm^3
Number of doses per vial	10	5
Doses per target	2 doses	
Wastage rate	5%	
Frequency of vaccine shipment (Number of doses per shipment)	5% of total population per shipment	
Syringe required per dose	0.5 ml syringe	
Volume of syringe	42.3 cm^3 syringe	
Number of safety boxes needed	1 box for 100 syringes (only at Vaccination sites)	

The estimated population of Afghanistan is 38.9 million. Following table lists the key population and vaccine doses estimates:

Description	**Value**
Total population	38,900,000 population
20% of population (as COVID vaccination target) of 2021	7,780,000 population
Additional 40% of population (to be included in the program subject to availability of vaccine and funding sources)	15,560,000 population
Total doses required for first 20% population including wastage of 5% (COVID)	16,338,000 doses
Maximum Vaccine shipment volume per frequency (5% of population)	4,084,500 doses

Given the assumptions of vaccine volumes of two sizes, following table shows the vaccine volume required at port of entry for each shipment of COVID-19 vaccine. For estimation purposes of cold chain needs, NVLWG used the vaccine volume of 6cm^3 per dose.

[3] Two of vaccines currently available as in December 2020 have vaccine volumes of 2.6 cm3 per dose. This is assuming the future supply of vaccine from other manufactures and for +2 and +8^oC, the similar volumes will be required. This is estimated vaccine volume for 10 dose vial

[4] The second estimate of vaccine volume is based on 5 dose vial of similar vial size as of 10 dose vial, hence doubling the vaccine volume per dose

Total vaccine volume required at all levels of supply chain

Description	Vaccine with volume of 3cm³ per dose	Vaccine with volume of 6cm³ per dose
Requirement at national vaccine store (Port of entry) per shipment	12,600 liters	25,200 liters
Average volume required for regional level stores	1,800 liters	3,600 liters
Average required for province level stores	370 liters per province	741 liters per province
Health facility (Urban)	13 liters per HF Up to 25% of refrigerator volume	26 Liters per HF Up to 50% of refrigerator volume
Health facility (Rural)	5 liters per HF Up to 25% of refrigerator volume	10 Liters per HF Up to 50% of refrigerator volume

6.2. National level storing and cold chain

Process of vaccine and dry supplies clearance and transfer from port of entry to National store

The COVID-19 vaccine will arrive by air shipment, like all other vaccines in the country. The port of entry for vaccines is Kabul (Hamid Karzai International Airport). Vaccine will be cleared by the custom clearing agent under contract with UNICEF. After the clearance of the vaccines is done with the custom administration, normally within four hours of vaccine arrival, vaccine is transferred to national vaccine store by road. The national vaccine store is less than 60 minutes away from airport in normal traffic circumstances, hence vaccine is normally transferred to the national store on the same day of vaccine arrival at the airport. In the National Vaccine Store, the vaccines are transferred to cold rooms immediately.

The syringes and other dry supplies will arrive by sea shipment at Karachi Port. While the vaccine is expected to arrive in maximum volume of 5% of population, syringes are expected to arrive in a single lot for 20% of population. The plan of receiving the vaccine and syringes at national level is as follows:

Port of entry	Vaccines	Syringes and safety boxes
Vaccines: Hamid Karzai International Airport (Kabul) **Dry supplies**: Karachi, Pakistan	Transportation of vaccine from Airport to National vaccine store is outsourced to a third party transport company under LTA with UNICEF; Transportation will be done with manufacturer supplied disposable cold boxes	Transport from Karachi to Kabul is arranged by UNICEF Supply Division (as part of procurement package)

Vaccine and dry storage volumes

The current National vaccine store and central regional vaccine stores are in same compound within Kabul city. A new national vaccine store building is under construction and the entire

building with three floors is expected to be ready for full occupancy by December 2021. The first floor of new building will operate as national cold store with provision of 20 cold rooms and freezer rooms and ice pack freezers. The central region cold store will be transferred to the present national store and the Central Region will use the cold rooms currently used by the national vaccine store.

The national vaccine store has a contingency storage extension at Kabul International Airport with three cold rooms of 40m^3 each size and capacity of storing 5 million COVID-19 vaccine doses[5] in emergency situations.

Given the plan of relocating national vaccine store to the new building, the following table shows the availability of cold chain at the current vaccine store building, the new national vaccine store building and additional space to accommodate COVID-19 vaccine and vaccine for the routine immunization program.

<table>
<tr><th>National vaccine store locations</th><th>Volumes available</th><th>Vaccine volume needed by Routine immunization program</th><th>Volumes required for COVID-19 vaccine[6]</th><th>Additional needs</th></tr>
<tr><td>Present vaccine store</td><td>9 cold rooms with total volume of 76,890 liters</td><td rowspan="2">137,490 liters[7]</td><td rowspan="3">25,200 liters

2.5 cold rooms</td><td>No additional requirements as this store has enough capacity to address central regional vaccine store needs</td></tr>
<tr><td>New vaccine store building</td><td>10 cold rooms[8] of 40m^3 size 100,000 liters</td><td>4 cold rooms[9] of 40m^3</td></tr>
<tr><td>Contingency storage at airport</td><td>3 cold rooms of size 40m^3 with 30,000 liters capacity</td><td>None</td><td>No additional requirements, contingency storage is enough to store 5 million doses of COVID-19 vaccine if needed</td></tr>
</table>

[5] Considering the vaccine volume of 6cm^3 per dose
[6] As per the larger estimated size of vaccine volume per dose of 6cm^3
[7] The present vaccine store has shortage of 6 cold rooms for routine vaccine supplies
[8] These cold rooms are kept in stock and ready to install when new vaccine store building is ready for occupancy
[9] These four cold rooms will suffice the needs for COVID-19 vaccine and routine immunization

6.3. Transport and storage in the provincial/ Regional cold rooms

To distribute the vaccines quickly, the vaccines will be transported to the regional and provincial cold rooms using the standard transportation, based on the number of target population estimated in the provincial micro-plan.

There are seven regional vaccine stores in Afghanistan and these regional stores are located in the largest cities of the country (Kabul (Central), Kandahar (South), Herat (West), Balkh (North), Kunduz (North East), Nangarhar (East) and Paktya (South East)). These regional vaccine stores supply vaccines to provinces within their region and store the vaccines for their host province cities. These regional vaccine stores will also store and supply vaccine for health centers of their respective provinces.

There are 27 provincial vaccine stores in the country (one provincial store in all other provinces, including one in Nooristan, where the building of the province vaccine store is currently under construction).

The vaccine storage volume needs for the regional and provincial vaccine stores is included in the table below.

Level of supply chain	Volumes available	Volumes required for COVID-19 vaccine[10]	Additional needs
Regional vaccine stores	Enough vaccine storage volumes for routine immunization[11] at regional stores. See annex 6.4. for details.	The average volume of 3,100 liters of vaccine volume needed per regional vaccine store. See annex 6.5. for details	**6 cold rooms of 40m^3 for 6 regional vaccine stores** Annex 6.5. for Additional needs for COVID-19 vaccine at regional level
Province vaccine stores	EVM assessment reflected the storage gaps at province vaccine stores. See annex 6.6. for details.	Each of the 27-province vaccine store require average of 741 liters	**20 cold rooms of 30m^3 and 42 ILRS.** **20 province vaccine stores also require upgrade to cold store building.** See annex 6.7. for details

The plan for transporting vaccine and dry supplies to regional and provincial vaccine stores is shown in the table below.

Level of supply chain	Vaccines	Syringes and safety boxes
National vaccine store to regions	Vaccine to be packed in RCW-25[12] cold box using outsourced to a third-party transport company under UNICEF LTA[13]	Third party transporter, shipment bundled with vaccine supplies

[10] As per the larger estimated size of vaccine volume per dose of 6cm^3

[11] Refer to EVM assessment 2020

[12] WHO PQS cold box with vaccine transport capacity of 20 liters and packed with 24 ice packs of 0.6 liters each

[13] With exception of few provinces that engage third party transporters outside of LTA rate agreements of UNICEF

The transportation of vaccines within the country using WHO prequalified cold boxes cannot be managed with the existing inventory of cold boxes at vaccine stores. The following table lists the requirement of additional cold boxes at supply chain levels.

Supply chain level	Transportation volume required	Cold boxes required	Ice packs required
National to regions	18,626 liters[14]	**931 cold boxes**	**50,000 ice packs for packing[15]**
Provinces to receive from region and distribute to health facilities	25,200 liters[16]	**1,260 cold boxes[17]**	**50,000 ice packs for packing**

6.4. Transport and storage at the point of delivery

The Provincial and Regional EPI Management Teams (REMT and PEMT) will coordinate with the SEHATMANDI Service Providers (SPs) to deliver the vaccines from the provincial cold room to the vaccination centers that are already established, based on the provincial micro plan. To enhance the capacity of vaccine storage at the point of delivery, an assessment has been done and the following table shows the available requirements of cold chain capacity at health facility level.

Level of supply chain	Description	Volumes available	Volumes required for COVID-19 vaccine[18]	Additional needs
Health facility (HF) level	A total of 2,227 health facilities are recognized as EPI fixed service center. These facilities are provided with one refrigerator each, initially a Gas based refrigerator (RCW 50 EG) and are being progressively	The present cold chain plan 2016-2021 which included funding from HSS and CCEOP would upgrade 1,986 health facilities with SDD or electric refrigerator by end of 2021.	SDD for every HF reporting immunization and additional SDD for facilities that require more space for COVID-19 vaccine	There are **241 health facilities**[19] that require upgrade from Gas based refrigerator to Solar Refrigerator. Additionally **173 facilities** require additional vaccine storage capacity to

[14] Shipment to all regions except central regional vaccine store which is located in same compound of national vaccine store

[15] While cold boxes are supplied with 24 ice packs each, additional ice packs are needed for advance freezing rotation and managing shipments to multiple regions

[16] Provinces collect the vaccines from regional vaccine stores and deliver the vaccines to health facilities through BPHS NGO.

[17] 1000 health facilities will be engaged for vaccination of COVID-19 as fixed vaccination centers. Provinces will at-least require one cold box per health facility to deliver the vaccine through BPHS-NGO.

[18] As per the larger estimated size of vaccine volume per dose of $6cm^3$

[19] These 241 health facilities are reporting immunization services using Gas based refrigerator

Level of supply chain	Description	Volumes available	Volumes required for COVID-19 vaccine[18]	Additional needs
	upgraded to solar refrigerator or electric refrigerator as a part of cold chain plan 2016-2021.			accommodate COVID-19 vaccine. See annex 7.7. for details of refrigerator needs.

The service delivery of COVID-19 vaccine will be done through the existing number of EPI centers by routine vaccinators and additional 1,000 teams (two vaccinator per team). This will require the following vaccine carriers at health facility level.

Supply chain level	Transportation volume required	Vaccine carrier required	Ice packs required
Health facilities	None, managed by BPHS-NGOs using cold box from provincial stores	**1,200**[20]	None

In addition, the new national vaccine store building, which is currently under construction, will be used to install the cold rooms for supply of the COVID-19 vaccine. This vaccine store requires electric supply through two generators of 200 KVA size. These generators will support the power supply to all the cold rooms installed at the new vaccine store in the near future.

The transportation of vaccines between supply chain levels need to be monitored using Freeze indicators and temperature recorders. An estimated 10,000 freeze indicators and 500 30 DTR would be required for temperature monitoring purposes. These devices would be recycled for a period of at-least two years.

Standard operating procedures for handling and supplying COVID-19 vaccine

The National EPI department is using an SOP for routine vaccine management. The NVLWG will be adopting the same SOP for the following important activities, in accordance with COVID-19 vaccine supplied to the country once the detailed specifications are known. In general, the SOP will include:

- Procedure of unpacking and packing of vaccine
- Procedure of storing the vaccine
- Temperature monitoring during shipment and storage
- Waste disposal for unopened vials

[20] Including contingency of 20% in case of additional vaccination teams are needed

- Waste disposal of sharps and vials at health facility level

The SOP for COVID-19 vaccine temperature monitoring is added in annex 6.8.

Stock management, tracking of vaccine supplies

The national, regional and provincial stores are using VSSM[21] software for routine immunization. The same platform will be used for stock management and stock tracking purposes of COVID-19 vaccine. Additionally, the country will use temperature loggers that will trace the temperature of vaccines right from point of arrival in country and a system of random samples of monitoring up to service delivery point.

Safety and security of each dose of COVID-19 vaccine is highly important. MoPH will undertake adequate safety and security measure at central vaccine stores and during vaccine transportation to the regional and provincial locations/storage. SPs will ensure adequate security arrangement for vaccines a at the service delivery sites. If needed, MoPH will get prompt police support for safe storage/transport of the vaccines. Any suspicious threats will be immediately reported, and prompt police action should be initiated with clear accountability.

The Government of the Islamic Republic of Afghanistan has a Healthcare Waste Management Plan prepared that describes safe waste management strategies in the health centers. The immunization waste will be sorted (e.g. sharp items, contaminated etc.) and disposed as per the waste management plan (annex 4.2. chapter 8 and annexes 4.3 and 4.4). If the there is an incinerator in the health facility, the sharps and contaminated items are burned in it. Otherwise, the wastes are transferred safely to the nearest center having incinerator for disposal.

NVLWG will establish monitoring cell with data division to monitor the vaccination process and make a detailed supervision plan for national, regional and province managers. National EPI is recruiting a provincial and regional level team of consultants to support the COVID-19 vaccination drive and team will provide weekly updates to NVLWG.

To manage the system throughout the county there are qualified trained cold chain officers in national, regional and provincial levels. In addition, vaccine safety and cold chain management at health is included in the vaccinators' initial and refresher training that make vaccinators able to ensure proper cold chain in health facilities.

As explained earlier, there are storage facilities for vaccine (cold rooms) and dry supplies (warehouse) at national, regional and provincial levels. At each level there are trained qualified cold chain staff available who are capable to manage the vaccine and non-vaccine supplies including the receipt, delivery and distribution. There is fully dedicated health workforce for vaccination at the service delivery point called vaccinator whose training package includes many components including cold chain management, vaccine management, infection prevention,

[21] WHO tool for recording stock transactions and key functions of stock management

communication, etc. In conclusion, the current cold chain system has the full capacity to introduce COVID-19 vaccine in the country especially for the first 20% of target population.

7. Capacity Building and Training Plan

As mentioned earlier, in addition to the existing RI vaccinators 2000 newly hired vaccinator will be deployed for COVID vaccine deployment. To supervise the process 34 provincial and coordinators and 7 regional coordinators will be hired. Successful introduction of COVID-19 vaccine will largely depends upon the quality of training conducted. Therefore, the training subcommittee was assigned to mapping out training plans and schedules, develop a budget plan, develop and adapt the training package, manage and monitor the training sessions at all levels.

Regional trainers and coordinators, regional/provincial management teams, additional vaccinators and all available vaccinators (who are already working to provide routine EPI services) are key groups targeted for the training. The training will be conducted in two phases:

1. **First Phase:** The newly hired vaccinators are planned to be trained over a two days period. The training will be conducted in three levels:
   i. National level, at which 24 regional trainers will be trained.
   ii. Regional level, at which 170 provincial EPI management staff will receive TOT. They will facilitate the cascading trainings at provincial level.
   iii. Provincial level, at which the vaccinators will be trained.

2. **Second phase:** To ensure the sustainability and to technically support the newly hired vaccinators, it is planned to conduct one day orientation/training for all available vaccinators who are providing the routine EPI services.

Training objectives:

- To train high quality service providers for implementation of COVID-19 vaccine to all eligible categories
- To ensure that the safe and potent vaccine is administered to the target groups
- To ensure that the injection safety regulation is observed during COVID-19 vaccine administration

Scope of activity:

i. Overall 1000 teams (each of two members) will be hired at provincial level using the proportion to size selection method. The selection of team members will done by a provincial selection committee (PHD, PEMT manager, Representative of BPHS implementer and provincial representative of WHO and UNICEF). The main criteria for selection are to have past experience in injection practice (preferably vaccinator, midwife, nurse, pharmacists, lab technician etc.).
ii. In the first phase the duration for training of newly hired vaccinators will be two days including theoretical and practical sessions.

Increasing the number of days for training is time consuming. Besides, for those who have no experience in the health field, even a whole week's training would be insufficient. Therefore, having past experience in injection practice is the main criteria for hiring the new vaccinators (preferably vaccinator, midwife, nurse, pharmacists, lab technician, etc.). Additionally, a pool of new vaccinators will graduate from initial vaccination training soon, who will be good candidates to be recruited for COVID vaccine deployment.

In exceptional cases, in areas where no desired candidates are available, the vaccinator/s will receive two days of training, and then will be introduced to a fixed center for practical work. The national TOT will be facilitated by national EPI and technical partners (WHO and UNICEF). There are around 24 regional trainers already available in the country who will facilitate the TOT sessions for provincial participants (5 from related provinces). At provincial level, the trained provincial staff (provincial trainer) are responsible to facilitate the cascading for the selected team members with support of at least one regional master trainer. The 2nd phase of training, for already existing vaccinators is planned for just one day.

iii. National EPI, MOPH, WHO and UNICEF will closely monitor all the training sessions at different levels.

iv. Considering the content of the training guideline, course outline including training materials will be developed.

v. The first day focus will be on brief information about COVID-19 disease and the vaccine, injection safety, cold chain management, probable AEFI case management and recording and reporting documents. The 2nd day will cover practical work on vaccine administration, vaccination session management, waste management and preparations for the next steps (only in the national and regional TOTs).

The training will be conducted in-person, as outlined in the training plan, using different training methodologies such as presentation, question-answer, discussion, group work, individual exercise, demonstration, and practical work. The detailed training plan can be found in annex 7.1.

Training materials and Topics:

1. The training materials and guidelines have been drafted in-line with the WHO guidelines that include following:
   - Briefing on COVID-19 disease,
   - Detailed information on COVID-19 Vaccine and the vaccine injection,
   - Vaccine cold chain,
   - Injection safety,
   - AEFI case management,
   - Registration and reporting.

Training guidelines were started to be developed and the above mentioned topics will be included but the information on COVID-19 vaccine will be completed only after identification and procurement of the specific vaccine type that is going to be utilized in the country.

Safe injection practices is an important topic in the trainings that includes how to inject vaccine using aseptic technique in a clean area, waste management including the recycle of safety boxes and other vestige of vaccination session.

2. Other training materials such as hard copy of training guideline, recording and reporting formats, models, flip chart, marker, vaccine syringes, safety boxes, vaccine carrier, stationary etc. will be provided in the training sessions. The detailed training guideline is attached as annex 7. 2.

8. Community Engagement and Communication Plan

As the country stands on the cusp of COVID 19 vaccine introduction and administration, certain challenges are foreseen that needs to be countered well in time, these may include the challenge of ensuring proper awareness and knowledge building and risk communication. Communication strategy based on the principles of Human Centered Design serves as an integral component of the NDVP for COVID-19 vaccination introduction in Afghanistan. The demand generation and communication activities aim to promote demand and uptake of COVID-19 vaccine and establish a pool of valid data and resources to address rumors and misinformation.

Specific objectives include:

1. Facilitate high uptake of safe and effective COVID-19 vaccines, while also reinforcing the value of vaccination:
    - Build public knowledge, awareness, and enhance confidence
    - Support evidence-informed national policy-making, planning, and implementation
    - Anticipate and manage risks through a strong crisis communication plan

2. Highlight the value of vaccination in all messaging; use the COVID-19 vaccine as an opportunity to build vaccine literacy and confidence

Communication and Demand Generation Priorities

1. Building trust and awareness on COVID-19 vaccine through use of different channels and social mobilization approaches
2. Establishing data and evidence systems on rumors and public perception on COVID-19 vaccine
3. Development and provision of context specific IEC materials to the target groups.
4. Training media/journalists about COVID-19 vaccine and its importance for safety and wellbeing of the public.
5. Vaccine promotion through social media and mass media campaigns

The communication and demand generation activities are prioritized and planned based on the target groups. The overall activities are summarized in table 8.1.

Table 8. 1. Communication and demand generation strategies/activities

NO.	Strategy	Description
1	Advocacy	Integration of policy makers, government authorities and influencers in the demand generation and risk communication activities. E.g., public statements and messages.
2	Community engagement and Mobilization	Provide prompt, simple and Focused communication to community members; and address eagerness and hesitancy concerns
3	Information, Education and Communication (IEC/BCC)	Develop, design, print and disseminate posters, brochures, video/audio spots and banners on the vaccine.
4	Media engagement and capacity Building	Mass media (TV/Radio) campaigns, media workshops and monitoring and social media. Developing IPC/I skills of frontline workers and media representative's knowledge of the vaccine.
5	Risk/Crisis Communication and AEFI Protocol	To be prepared for rapid response and managing any crisis situation arising from Vaccine Eagerness and Vaccine Hesitancy.

Data management and rumor tracking systems

Up to date and accurate data help in the development of to the point materials for addressing rumors and misconception which could interrupt uptake of the vaccine. A specific data management and collection system will be developed to manage and provide desirable reports and narratives of different aspects of the vaccine and manage risks/crisis communication.

Several approaches and sources will be used to track rumors and misinformation. They will be through surveys, informative researches, qualitative studies, existing surveillance mechanisms, and through the network of service providers.

A "risk/crisis", in the context of an AEFI, is a situation where there is actual or potential loss of confidence in vaccines or the vaccination service. Risk communication aims to provide information that help people, stakeholders and entire communities to make the best possible decisions for themselves and their loved ones. The following principles will be used for addressing the risk:

- Be First
- Be Right
- Be Credible
- Express Empathy

- Show Respect

Any media coverage or rumors becoming viral through media or social media and causing panic among beneficiaries and resulting into refusal of vaccination will constitute crisis communication.

The aim of AEFI surveillance program is to report, investigate and scientifically assess Adverse Events Following Immunization (AEFI) so as to build/restore confidence in vaccines.

Since the COVID-19 and its vaccine are new phenomena to the health systems around the world. Thus, it takes time to develop evidence-based communication activities which help us to create demand for its vaccine. There will be rumors and misconceptions among communities. People will question the health workers for their concerns and about the prioritized target groups for vaccination, information will leak from those who have taken the vaccine and everyone will be asking to be vaccinated, to which misinformation would lead to crisis. Therefore, an appropriate crisis communication strategy and plan would help us in controlling and responding to these crises. For a detailed communication and demand generation plan please refer to annex 8.1.

Messages and materials

Messages and materials based on national and international evidence/guide will be developed in stages for the general population and specific target groups. In addition, training and informative materials will also be developed for health workers and vaccinators.

9. Vaccine Safety and Surveillance

Complete data around safety of COVID-19 is not in hand yet. Therefore, it is important to monitor the safety of these vaccines when administered to a prioritized population. A robust AEFI surveillance system would enable us to monitor adverse events and better understand the safety profile of the vaccines. During COVID-19 vaccinations, AEFIs will be rapidly detected and promptly responded to or else it can undermine confidence in the vaccine and immunization programme. All AEFIs should be reported as per the National AEFI Guidelines. The main role and responsibility of safety surveillance during COVID-19 vaccine introduction is to facilitate the early, detection, investigation, causality assessment and analysis of adverse events following immunization (AEFIs) data at provincial and national level to ensure an appropriate risk communication and rapid response.

Qualification of vaccine

UNICEF will procure the WHO prequalified and approved COVAX facility vaccines of certified manufacture companies and these will be further certified by the country National Regulatory Authority. In addition, if the provincial and national AEFI committees receive any complaints from the field regarding adverse events following COVID-19 vaccine administration, the national AEFI committee will share the report with NMHRA, WHO and UNICEF. The vaccine safety data on efficacy, potency and thermostability will be shared through WHO and NMHRA with Manufacturer Company.

Quality assurance during service delivery

The National Medicine Health Regularity Authority (NMHRA) developed vaccines registration guidelines and it has the minimum requirement for vaccine importation for public and private sectors. Vaccine registration guideline can be found in annex 9.1.

Moreover, to ensure the security of the vaccine during storage, transportation and at the distribution points, the following measures will be applied:

At the national storage facility, the batch-number and quantity of vials, where designated storekeepers are assigned to maintain accountability and transparency during registration of COVID-19 vaccines in the stock-cards and Vaccine Supplies Stock Management (VSSM) system. The National EPI Cold Chain Manager will adhere to standard operational procedures at the time of vaccines distribution to regional and provincial storage facilities.

At the provincial storage facilities, the storekeepers will receive the vaccines as per the authorized documents and check the quantity, batch-numbers, expiry date and other specifications, to ensure that vaccines are not misused, damaged, destroyed, or lost during the transportation.

The provincial level under the leadership of R/PEMT will distribute vaccines as per the provincial micro-plan and request of SPs.

The service delivery point's vaccinators are responsible to store the vaccines in the health facilities for daily distribution, and keep the records accurately. The use of vaccine will be compared with the reported coverage of target populations and wastage reported. The Regional/provincial and National EPI team will ensure proper handling and use of vaccines and relevant other supplies will be closely monitored throughout the country.

Adverse event following immunization (AEFI)

An adverse event following immunization (AEFI) is any unwanted medical occurrence which follows immunization, and which does not necessarily have a causal relationship with the usage of the vaccine. The adverse event may be any unfavorable or unintended disease, symptom, sign, or abnormal laboratory finding. Reported adverse events can either be true adverse events, i.e., really a result of the vaccine or immunization process, or coincidental events that are not due to the vaccine or immunization process but are temporally associated with immunization. For purposes of reporting, AEFIs can be classified as mild, severe, and serious:

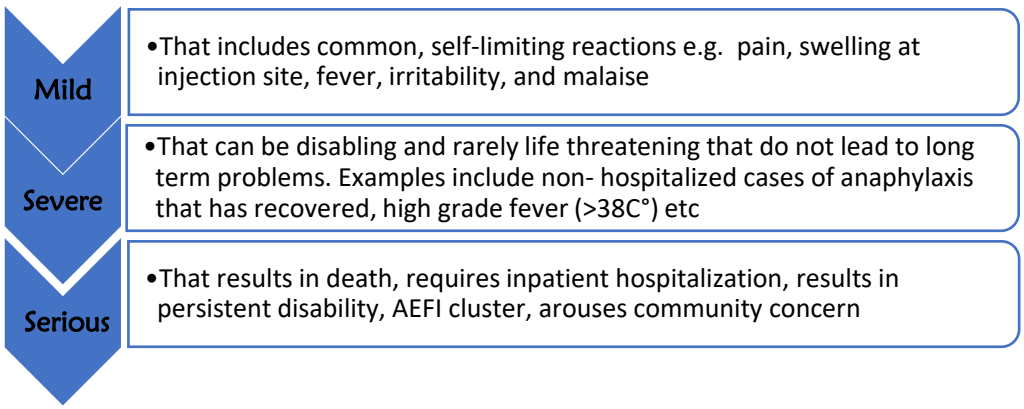

Figure 9.1.: AEFI grades

Vaccinators and supervisor at the vaccination site will provide primary treatment to mild AEFIs cases. If needed, moderate and severe cases should be immediately referred to the nearest health facility and reported to the provincial AEFI committee.

Reporting and recording

Any adverse event following COVID-19 vaccination must be reported. There is no time limit (between vaccination and onset of symptoms) for reporting AEFIs. If the health worker or the treating physician or anyone suspects the event to be due to vaccination, it should be reported.
The provincial AEFI committee will proactively reach out to all health care service delivery points and individual practitioners and sensitize them to report any adverse event following COVID-19 vaccine as per guidelines.
Heads of health facilities will have to properly record the history of AEFI linked to COVID-19 vaccination in OPD, casualty records, clinical treatment sheets, etc. The AEFI cases will be immediately reported to provincial level using the Case Reporting Format or telephonically without delay. The provincial AEFI team (with support of the national technical committee) will check for all relevant records during the investigation/casualty assessment.

The reporter should also know whom to report and how to report. Thereafter, the provincial AEFI committee should investigate the case as per national AEFI guidelines.

Immediate reporting of severe and serious AEFIs cases

A serious or severe AEFI case needs to be reported immediately to the concerned Medical Officer or the provincial AEFI committee. Soon after the identification / notification of a serious and severe AEFI, a two-step process must be initiated.

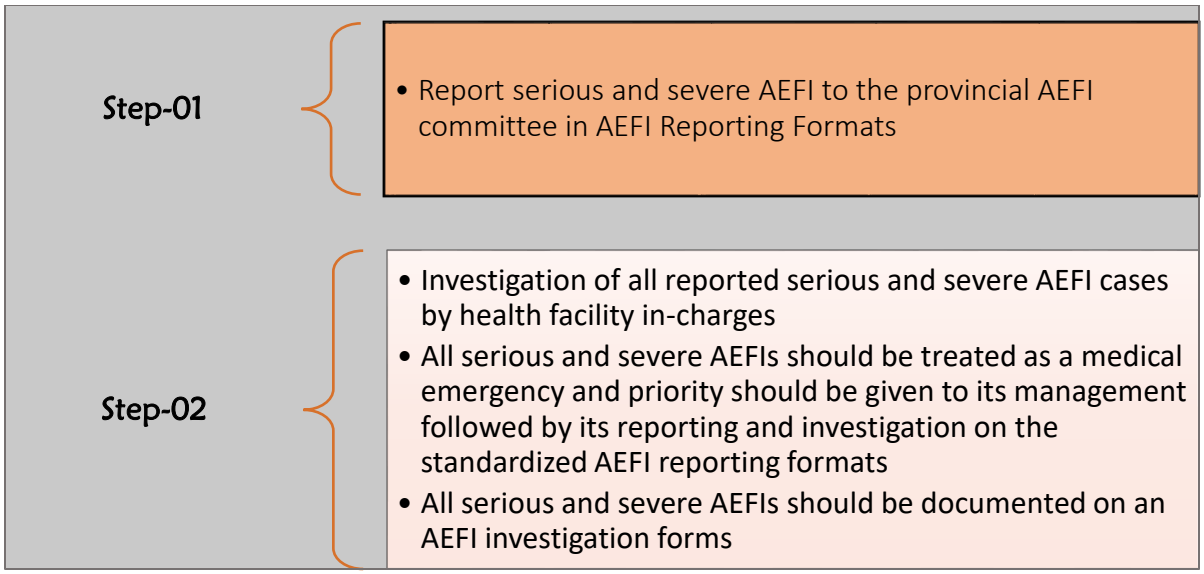

Figure 9.2. AEFI reporting steps

AEFI line listing

Health facilities' in-charges should notify all AEFIs (mild, severe, and serious) of their respective catchment areas on weekly basis and document them in the AEFI line list (Annex 9.2), which is being maintained at the health facility. Health facility's in-charge should analyze the information on regular basis to look for any pattern or preventable programme errors and inform to provincial AEFI committee.

Reporting and investigation of cluster AEFI cases

A cluster of AEFI cases is a specific condition, which warrants immediate investigation because of its nature and seriousness. Each case of an AEFI cluster should be separately reported and investigated as per national AEFI guideline and form (Annex 9. 3). This system will ensure patient confidentiality by aggregating non-identified data wherever possible, and limiting patient information to those with a clinical responsibility for care.

This system will also, under advice, ensure timely update to national and international stakeholders in COVID vaccination, including NMHRA, WHO and UNICEF, and relevant pharmaceutical companies.

Downward information sharing, through regular reports to provincial AEFI committees and vaccine providers will also be ensured. This will include reports that help assure providers that AEFIs are being tracked and investigated, so as to maintain confidence in the immunization programme.

Investigation of AEFI cases

All serious and severe AEFI cases after COVID-19 vaccines must be investigated as per the National AEFI Guidelines (Annex 9.4). The process of investigation must be expedited in order to collect accurate and complete clinical and epidemiological facts so that causality assessment can

be completed as soon as possible. Following actions are required in advance as preparation for investigation of cases:

- Provincial AEFI committee meetings must be held at least two weeks prior to the start of COVID-19 vaccination. All members of the committee must be sensitized, and their services should be utilized, if needed, to investigate the cases. The provincial AEFI committees must include provincial pharmacy officer and ensure their support in the investigations
- In-charges of public and private health facilities, where serious AEFI cases are expected to reach for treatment, must be informed and sensitized about AEFI surveillance for immediate reporting and cooperation in investigations. Their support is also crucial for ensuring availability of medical records and clinical details of the cases, which are required for causality assessment of the cases.

Following actions are proposed in case of serious event

- If a death following vaccination is reported, and the case was not hospitalized or clinical records are not available, relatives should be motivated to give consent for post mortem. Post mortems should be conducted to find the pathological cause of death.
- If consent for post mortem is refused, the AEFI verbal autopsy form should be administered as soon as possible. Any samples sent for laboratory tests should be followed up for obtaining results as soon as possible. The AEFI investigation form is available in annex. 9. 5.

Causality Assessment

Once investigations are complete for a serious/severe AEFI case and all supporting documents are available (hospital records, reporting, investigating and causality assessment forms), the trained experts of the provincial and national AEFI committees will assess the case as per national accepted causality assessment for COVID-19 vaccine adverse event following immunization guideline (Annex 9. 6).

Although COVID-19 vaccine administration would be a voluntary process, the national AEFI surveillance committee is proposing allocation of a reasonable amount of budget to families of Covid-19 vaccine administration related death cases. This will decrease the negative impact of these events on the health of individuals and the immunization programs and maintain the confidence of health care professionals and the general population. This amount could be 100,000- 150,000 AFS which is currently being paid to military staff when they are losing their lives. The death cases have to be thoroughly investigated and endorsed by the provincial and national AEFI surveillance committees. For further details please refer to National AEFI Guideline in annex 9.3. Neither the vaccine manufacturers nor the donors supporting the programme will cover indemnification should an AEFI leads to disability or death. Government of Afghanistan will try to compensate expenses (as indicated above) should resources become available for the purpose.

While system for AEFI is detailed above, country partners have also reviewed the Adverse Events of Special Interest. COVID-19 vaccine is new to the whole world, not only to Afghanistan. Like other nations, Afghanistan also remains with lots of concerns. MoPH has shared this concern with local regulatory body and WHO in series of official discussions. This is another reason the county very much relies on WHO preq-qualification vaccine (be it EUL or full preq-qualification). In addition, the system for tracing the AEFI cases is described in this document which will be strictly followed up during the course of programme implementation. Country will immediately inform WHO and other concerned global bodies including manufacturers through UNICEF of any issue that may arise/happen during programme implementation. On the demand side, the country has the plan to conduct a perception study on COVID-19 vaccine. Its result will be used to formulate the communication materials which will also help address the issues around risk communication.

10. Registration, Data collection, Monitoring and Evaluation

10.1. Registration, Data collection and Reporting

The program envisions to apply three strategies to collect data and disseminate the reports against the proposed indicators.

1. Utilizing the MoPH DHIS2: The EPI program will adapt the DHIS2 platform to collect data and disseminate the results during the Covid19 vaccine introduction. The required data collection forms are developed to accommodate this change in the DHIS2.
2. Launching the Smart Paper Technology (SPT): MoPH is negotiating with the Swedish committee for Afghanistan (SCA) and SHIFO (partner organizations) to launch the Smart Paper Technology (SPT) system. If agreed, the SPT system will be able to collect real time data from the health facilities. All beneficiaries must be counselled about adverse events, which may occur after COVID-19 vaccine. These are expected to be minor events such as local pain and swelling and mild to moderate fever, headache, or muscle aches. However, the list of expected events could be different based on the safety profile of the COVID19 vaccine(s) which finally gets approved for use.
3. Utilizing the Existing REMT/PEMT and Partner Supervisors: while we receive the health facility data through the DHIS2, we will also utilize the provincial EPI management teams (PEMTs), BPHS implementing NGOs, and partners (i.e. UNICEF, WHO, etc.) to monitor the implementation of the COVID-19 vaccine introduction.

We have adapted the existing data collection tools to accommodate the COVID-19 vaccine rollout. NEPI has developed seven data collection forms which will be used to monitor progress and coverage among the different at-risk categories and ensure timely reporting from the HFs. These tools are developed in line with the three strategies explained above.

1. Vaccination Card: includes the demographic and personal information of the client. Also in the vaccination card, there is a dedicated place to write date for the next dose of the vaccine.
2. Register/Tally Book: tallies the number of people vaccinated on a daily basis
3. Monthly Report: tallies the one-month information of the register
4. Vaccine Utilization Monthly Report: calculates the vaccine stock (i.e. administered, remaining, wastage)
5. COVID-19 Vaccines Information Form: registers the vaccines received at the national cold chain
6. COVID-19 Vaccine Batches Form: tracks the vaccine storage (i.e type of vaccine, quantity, batch number)
7. M&E (training and monitoring checklist): monitors the implementation process & quality of the program

Process at the point of delivery

Data will be collected by using already developed data collection tools (Vaccination Card, Register book, tally sheet and monthly report). The data will be transferred to provincial focal point at the end of each month. At the point of delivery, following tools will be used:

1. **Vaccination Card:** includes the demographic and personal information of the client
2. **Register/Tally Book:** tallies the number of people vaccinated on a daily basis
3. **Monthly Report:** tallies the one-month information of the register
4. **Vaccine Utilization Monthly Report:** calculates the vaccine stock (i.e. administered, remaining, wastage)

Process at the provincial/ regional levels

The DHIS2 platform will be further developed for data collection at provincial level. The data focal point at provincial/regional level will enter the data in DHIS2 from hard copies of monthly reports and this data will be aggregated in DHIS2 from all provinces.

Process at the national level

By using this database data from provincial level will be collected. The Key Performance Indicators (KPIs) will be set and data will be analyzed and visualize in dashboard at national, provincial and district level.

The data collection strategy at all three levels can be subject to change depending on the SPT system availability in the country.

Detailed information on the data collection tools, guidelines and samples are available in annex 10.1a and 10.1b COVID- 19 vaccination data collection tool and guidline.

Data protection

NEPI has measures in place to protect and keep the privacy of sensitive data (i.e. client information & official data) from corruption, compromise, loss, cyber-attacks, and device failures. As explained in our M&E strategy, data is collected, compiled, and analyzed at three levels (i.e. health facility at the district level, provincial level, and national level). We will ensure data privacy and protection in all three levels:

1. Health Facility: there are three data information forms (i.e. vaccine card, register book, and monthly report) available at the HFs. In order to protect data and ensure privacy, a limited number of people will have access to this information including the vaccinators, HF in charges, supervisors, PEMT managers, and data officers. Meanwhile, the data collected and compiled at the health facility will be stored in the archive room. The health facility in charge and janitors are responsible to maintain the safety of the premises.
2. Provincial Level: The supervisors will collect the monthly reports from the HFs and share it with the R/PEMTs. At the R/PEMT, only the PEMT manager, provincial COVID focal point and data officer will have access to the monthly reports. Data will be stored at the archive room which only the PEMT team will have access to and guarded by the janitors. The Data officers in the PEMTs will enter the data in the DHIS2 which has its own security protocol.
3. National Level: all the monthly reports are sent to the national level through the DHIS2 platform. The DHIS2 has a security protocol in place since it has been used for years at the MoPH. Meanwhile, only the authorized staff (i.e. HMIS, NEPI, etc.) will have access to DHIS2 to analyze and disseminate the reports. Please refer to annex 10.2. For more details.

10.2. Performance Management and Monitoring

The COVID-19 vaccine introduction program requires extensive data monitoring infrastructure to ensure the target population is vaccinated, implementation plans are progressed as designed, problems are identified, and regular feedback and support is provided to address the identified problems in a timely manner. To this end, data will need to be available both at the national and provincial level to ensure efficient management of the vaccination program.

The NEPI program will utilize the existing data monitoring mechanisms available at the MoPH to monitor the COVID-19 Vaccine Introduction. We have also developed new tools (i.e. register, card etc.) to accommodate the COVID-19 vaccine introduction indicators.

The EPI program has developed a set of process indicators (% of trained vaccinators, % trained supervisors, % on time vaccine delivery, etc.), input indicators (% vaccine availability, %vaccinator availability, etc.), and output indicators (% of health workers received COVID-19 1st and 2nd dose, % of vaccine wastage, etc.) to monitor implementation of the vaccine. Detailed information on the agreed indicators is available in table 10.1. for further details please refer to annex 10. 3. M&E Framework.

There will be regular performance reviews by the national and provincial coordination bodies (monthly and quarterly – to be determined) to measure the progress, identify and address the challenges, and align the coordination among the stakeholders. Technical and operation committees at national level and REMT/PEMTs at the sub-national level will lead the performance review process with support from relevant partners such as WHO, UNICEF, E/BPHS, IFRC based on the data reported by the service providers. Detailed information on the M&E strategy and performance management available in annex 10. 4. M&E Frame work description.

Distribution and Training:

The M&E has identified following groups who need to be trained on the M&E tools and framework. They include but are not limited to:

1. National Level: There will be an orientation session by the M&E team to entire NEPI staff and involved partners
2. PEMTs and BPHS: PEMT manager, supervisors, data officers, field staff of WHO and UNICEF, cold chain, etc.
3. New Recruitments: Vaccinators and supervisors

The data collection tools and M&E framework are developed as explained in the above sections. A training plan for the above stakeholders is developed by the training department. Having said that, the M&E and data team will test the data collection tools for improvement and further adaption if needed before launching the training session for the identified stakeholders. The protocol of "provision of monitoring tools to eligible service providers" is available in the annex 10. 5. The monitoring logic framework is provided in table 10.3.

Table 10.1: Monitoring Logic framework

Outcome		**Outcome indicators**			**Evaluation description**	
Morbidity and mortality is reduced as a result of COVID-19 vaccination		# of positive COVID-19 cases			Monitoring by using the standard tool, lab tests (PCR and rapid), coverage and post-vaccine introduction study.	
Setting		High risk groups, prioritized as per the WHO guideline, will get COVID-19 vaccine across the country in order or priority				
Objectives		1. Protect vulnerable groups from morbidity and mortality due to COVID-19 disease, 2. Interrupt transmission and outbreaks of COVID-19, 3. Protect critical social services.				
Target group		**Specific targets groups:** Using the WHO guideline, the target groups have been prioritized (please see table 5.1)				
Inputs	**Activities**	**Indicators**	**Baseline**	**Target**	**Monitoring description (verification)**	**Frequency**
HR	Identification, training and deployment of 6,454 vaccinators.	# of vaccinators on board (female/male)	Existing vaccinators: 4,454 additional vaccinator: Zero Ratio of female/male for additional is 50/50	Existing vaccinators: 4,454 additional vaccinator: 2,000 50% female and 50% male	Training report, staff contract, payroll, and list of vaccinators by province and district/Health Facility (HF)	Monthly
Cold Chain	Assessment of cold chain capacity and provision of equipment	Cold chain capacity in cubic m/or cm # of equipment available (WIC and fridge)	Negative: ( ) Positive: ( )	Negative: ( ) Positive: ( )	Cold chain assessment report	( )
Communication	Designing, development and provision of IECs and media spots.	# of IEC printed and distributed # of media spots broadcasted %age of population reached (female/male)	( )	( )	Media monitoring report Distribution report	Monthly

Outcome		**Outcome indicators**			**Evaluation description**	
Inputs	**Activities**	**Indicators**	**Baseline**	**Target**	**Monitoring description (verification)**	**Frequency**
Vaccine	Receiving and delivery/distribution of vaccine and non-vaccine supplies	# of doses of COVID-19 vaccines received and utilized (% of wastage). # of syringes and safety boxes received and utilized	zero	46,680,000 doses of vaccine 48,625,000 syringes 486,250 safety box	Vaccine Arrival Report and stock report	Per shipment
Service delivery	Vaccination of target groups	# of target groups received vaccine (first and booster doses) (Male/Female)	Zero	23,340,000 (60%)	Coverage report/DHIS2	Monthly
Monitoring and surveillance	Monitoring of vaccination sessions. Post vaccine introduction study.	# of monitoring visits conducted (by R/PEMTs, extenders, partners) # of post-vaccine introduction study conducted and report shared # of AEFI cases reported & managed (Male/Female)	Zero Zero Zero	BPHS (12x1x2,227 centers) =26,724 visits Extenders =12x34*5=2,040 visits R/PEMTs = 4Qx2,227=8,908 1 study Expected cases	Monitoring checklists DHIS2 Study report AEFI reports	When conducted After booster dose Monthly
Management	Coordinate COVID-19 vaccination at national and sub-national levels	# of coordination meetings conducted # of national and sub-national COVID-19 vaccine introduction committees established	Zero 7	48 7	Minutes of meeting	Weekly Monthly
Funds	Mobilize financial resource	# of proposals developed and submitted (operations, vaccines and non-vaccine supplies, communication, technical support, cold chain)	zero	5	Proposals including costing	When needed

It is worth to reflect that the NEPI in consultation with the national technical committee has already developed all reporting formats by which field data will be compiled and reported. This is a paper-based mechanism. NEPI has also developed for these formats the guidelines for use by the health workers which will be part of the training package to ensure the content is well understood. These formats will be field tested to ensure accuracy and quality check before being used widely.

MoPH develops/creates into DHIS2 an online data collection system so that the data, like routine EPI and other health reports, are compiled and uploaded on a monthly basis at the provincial level. The variables set out in the reporting formats will be captured. Data quality check will be completed by the concerned provincial partners (BPHD and R/PEMTs) before being uploaded in the DHIS2. In addition, MoPH is negotiating with supporting donors to secure resources for the use of digitalized real time technology for reporting of data including coverage (e.g. Smart Paper Technology, etc.). The digitalized system will be piloted at least in small scale if not possible to implement countrywide at this stage. Failure to this effort is not an indication of not having data reporting mechanism, rather a robust and timely reporting mechanism will be put in place should the required resources be secured. The digitalized reporting system, except DHIS2, does require lots of resources, skills and time. Any ideas about digitalized reporting system must be first contextualized to the country due to contextual factors mostly resulted in failure of the established system in the past.

ACASUS is an online M&E system that has been used to monitor supportive supervision of RI in the country. Currently there is ongoing funding negotiation with ACASUS. In case of reaching an agreement, this system can be used for real time monitoring of COVID vaccine implementation.

Any smart digital device will be banned under the control of anti-government elements. Any pressure for their use will pose health workers' lives at high risk. Paper based formats have no specific issue. Digitalized reporting system is possible to be implemented up to all provincial capitals and districts under control of government.

11. Grievance Redress Mechanisms

The NEPI program has measures in place to assist and resolve complaints and grievances in a timely and effective manner. We will apply three strategies to improve the client satisfaction and build trust with the communities.

1. Emergency COVID-19 Hot-line**:** The Health Promotion Department at MoPH has already a free hotline in place to receive the complaints and feedback of the people with regard to the health services they receive. We will utilize the same platform to receive the complaints and feedback regarding the COVID-19 vaccination. The166 Hotline which is already familiar to the people will be added to key messages of Covid19 vaccine.

2. Waiting Area**:** The people who receive the COVID-19 vaccine will be asked to stay at the waiting area for 30 minutes before they leave the premises. This measure is taken to avoid potential severe vaccine reactions. The HFs will have an emergency kit in place to address potential severe vaccine reactions.
3. Complaint Box**:** The HFs will have a complaint box in place to receive the community feedback. The provincial COVID-19 coordinators will collect the complaints on a monthly basis. They will provide feedback to the vaccinators to improve client satisfaction and community trust.

In the instance of the national plan for COVID 19 vaccine, existing grievance procedures should be used to encourage reporting complaints.
A complaint can also be registered through any of the following modes:

- By telephone (+93 02302335)
- By e-mail to health complaints office at MOPH hco@old.moph.gov.af
- By letter to the healthcare facility levels GRC (the existing health Shura (council) at each healthcare facility level)
- By letter directly at provincial health authority/ and provincial contracted NGOs for healthcare services.
- Walk-ins and registering a complaint on grievance logbook at healthcare facility or suggestion box at clinic/hospitals

Once a complaint has been received, it should be recorded in the complaints logbook or grievance excel-sheet- grievance database. Detailed information on the grievance redress mechanism is available in annex 17.1.