



**REPUBLIC OF LEBANON**  
**MINISTRY OF PUBLIC HEALTH**

**STRENGTHENING LEBANON'S  
COVID-19 RESPONSE PROJECT  
(SLCRP)  
(P178587)**

**ENVIRONMENTAL AND SOCIAL  
MANAGEMENT FRAMEWORK  
(ESMF)**

**BEIRUT**

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**Prepared by:**

Project Management Unit (PMU) in collaboration with the Preventive Medicine Department (PMD), Ministry of Public Health (MOPH).

## Abbreviations and Acronyms

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AEC	Arcenciel
AEFI	Adverse Event Following Immunization
AIIR	Airborne Infection Isolation Rooms
AQMN	Air Quality Monitoring Network
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
AUB	American University of Beirut
BSN	Bachelor of Science in Nursing
CAS	Central Administration of Statistics
CBRN	Chemical Biological Radio Nuclear Program
CDR	Council for Development and Reconstruction
C-ESMP	Contractor's Environmental & Social Management Plan
CEO	Chief Executive Officer
CNCC	COVID-19 National Coordination Committee
COR	Critical Organization Requirement
COVID-19	Coronavirus Disease
EDL	Electricité Du Liban (Electricity of Lebanon)
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
ELV	Environmental Limit Values
EMS	Emergency Medical Services
EPI	Extended Program on Immunization
ERA	Electricity Regulatory Authority
ERP	Emergency Response Plan
ERT	E Research Technology
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESM	Environmental and Social Management
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standard
ESSF	Environmental and Social Safeguard Framework
EVM	Effective Vaccine Management
FEFO	First to Expire First Out
GCFE	Global Concessional Financing Facility
GOL	Government Of Lebanon
GM	Grievance Mechanism
GSF	General Security Forces
HC	Health care
HCW	Health Care Worker
HCWMP	Health Care Waste Management Plan
HDF	Hotel Dieu de France (Hospital)
HCF	Health Care Facility
IBRD	International Bank for Reconstruction and Development
ICU	Intensive care Unit
ID	Identification Document
IEE	Initial Environmental Examination
IFRC	International Federation of Red Cross and Red Crescent Societies
IHR	International Health Regulations

ILO	International Labor Organization
IMC	International Medical Corps
IOM	International Organization for Migration
IPC	Infection Prevention and Control
IPF	Investment Policy Financing
IPP	Independent Power Producer
IRENA	International Renewable Energy Agency
IsDB	Islamic Development Bank
ISF	Internal Security Forces
IT	Information Technology
JMC	Joint Monitoring Committee
LAU	Lebanese American University
LCEC	Lebanese Center for Energy Conservation
LHRP	Lebanon Health Resilience Project
LMP	Labor Management Procedures
LNPVC	Lebanese National Pharmacovigilance Center
LT	Low Temperature
LU	Lebanese University
M&E	Monitoring and Evaluation
MERA	Mobile Expanded Programme for Immunization Registry Application
MEW	Ministry of Energy and Water
MOE	Ministry of Environment
MOEHE	Ministry of Education and Higher Education
MOFA	Ministry of Foreign Affairs
MOI	Ministry of Industry
MOInf	The Ministry of Information
MOIM	Ministry of Interior and Municipalities
MOPH	Ministry of Public Health
MPI	Multidimensional Poverty Index
MSF	Medecins Sans Frontieres
MSW	Municipal Solid Waste
NCVC	National COVID-19 Vaccine Committee
NCVDP	National COVID-19 Vaccination Deployment Plan
NEEAP	National Energy Efficiency Action Plan
NGO	Non-Governmental Organization
NSSF	National Social Security Fund
NVAP	National Vaccination Action Plan
OECD	Organisation for Economic Co-Operation and Development
OHS	Occupational Health and Safety
OOP	Out Of Pocket
PCR	Polymerase Chain Reaction
PDO	Project Development Objective
PHCC	Primary Health Care Centers
PM	Particulate Matters
PMT	Project Management Team
PMU	Project Management Unit
POB	Port of Beirut
POE	Point Of Entry
POP	Persistent Organic Pollutant
PPE	Personal Protective equipment

PV	Photo-Voltaic
Q&A	Questions and Answers
RCCE	Risk Communication and Community Engagement
RF	Results Framework
RHUH	Rafik Hariri University Hospital
SAFE	Sustainable Alternative For the Environment
SARS	Severe Acute Respiratory Syndrome
SEA/SH	Sexual Exploitation and Abuse / Sexual Harassment
SLCRP	Strengthening Lebanon's COVID-19 Response Project
SMS	Short Message Services
SOP	Standard Operating Procedure
SSF	State Security Forces
TPMA	Third Party Monitoring Agency
UHC	Universal Health Coverage
ULT	Ultra-Low Temperature
UN	United Nations
UNFCCC	The United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations International Children's Emergency Fund
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
UPS	Uninterruptible Power Supply
USJ	University Saint Joseph
UVGI	Ultraviolet Germicidal Irradiation
VAC	Vaccine Approval Criteria
VOC	Volatile Organic Compound
WASH	Water, Sanitation, and Hygiene
WB	World Bank
WHO	World Health Organization
WMP	Waste Management Plan
WWTP	Wastewater Treatment Plant

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## Executive Summary

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This Environmental and Social Management Framework describes the environmental and social impacts and risks associated with activities undertaken by Lebanon's COVID-19 Response Project (SLCRP) (P178587) and provides a framework for proportionate and commensurate social and environmental management.

The SLCRP will support the capacity of the GOL to respond to the COVID-19 outbreak by increasing the capacity of the health care system and the improvement of the prevention of COVID-19 infection by increasing the percentage of the vaccinated population. This project will allow for the purchase and deployment of COVID-19 vaccines and their respective accessories from sources that meet the World Bank's Vaccine Approval Criteria (VAC). The project will also support the COVID-19 case detection and management at the level of the treatment centers. SLCRP has a budget of 29 M \$ and encompasses the following three components: COVID-19 vaccines and supplies, COVID-19 detection and case management, and Project Management and Monitoring and Evaluation.

The World Bank Environmental and Social Framework (ESF) that became effective on October 1, 2018, applies also to the SLCRP. Five out of the ten Environmental and Social Standards (ESSs) of the ESF are relevant to the SLCRP and their requirements apply. These are: ESS1 (Assessment and Management of Environmental and Social Risks and Impacts), ESS2 (Labor and Working conditions), ESS3 (Resource Efficiency and Pollution Prevention and Management), ESS4 (Community Health and Safety), and ESS10 (Stakeholder Engagement and Information Disclosure). Consequently, the following E&S instruments were prepared for this Project: An Environmental and Social Commitment Plan (ESCP), a Stakeholders Engagement Plan (SEP),<sup>1</sup> an ESMF and Labor Management Procedures (LMP).

The Institutional Framework consists of the Ministry of Public Health (MOPH) who will be implementing the Project, The Ministry of the Environment (MOE), the Ministry of Information (MOInf), The Ministry of Interior and Municipalities (MOIM) and treatment and recycling companies. The UN Agencies have an indirect role in providing technical support for vaccine deployment. International and National NGOs play a role in implementing the project: For example WHO and UNICEF are supporting vaccination centers in many ways such as cold chain, PPE, ancillaries, while other International NGOs such as International Organization for Migration (IOM) is supporting in testing as borders, in vaccination marathons, vaccinations outreach specially for vulnerable populations... On the other hand, national NGOs are supporting in field testing, contact tracing and mobile vaccination clinics.

As of May 2022, Lebanon is at the community level 2 of COVID-19 transmission with all indicators matching level one of community transmission (such as hospitalization, ICU beds occupancy, mortality rate...) except for positivity rate which is still slightly higher than 2%. This latter indicator needs to be less than 2 % in order to move the country to level 1 of community transmission.

With the launching of the national COVID-19 vaccination campaign in February 2021, an inclusive approach was overtly declared to cover all individuals residing in its territories regardless of their nationalities or legal status in the country. As per the MOPH, this approach prioritizes some categories based on their age and health status. The current Vaccination Plan<sup>1</sup> targets the entire population living in Lebanon including refugees and vulnerable groups. The MOPH is set to vaccinate 80% of the population by the end of 2021. However, and as of March 2022, the percentage of 2 doses vaccinated persons in Lebanon is around 43%<sup>23</sup> and this number is much lower for vulnerable populations. The percentage of people who got their third dose is still very low compared to other countries (24.7%). According to a World Bank survey, many are hesitant to take the vaccine

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<sup>1</sup> <https://bit.ly/3sxc12G>

<sup>2</sup> <https://www.moph.gov.lb/userfiles/files/Prevention/COVID-19%20Vaccine/Lebanon%20NDVP-%20Feb%2016%202021.pdf>

<sup>3</sup> [https://ourworldindata.org/covid-vaccinations?country=OWID\\_WRL](https://ourworldindata.org/covid-vaccinations?country=OWID_WRL)

because they are either afraid of the side effects or do not trust the healthcare system in Lebanon to support and deliver the vaccine safely. With respect to age groups between 5-11 years, Pfizer Pediatric dose has just arrived at the MOPH on 29 April 2022. A training was done (by the Preventive Medicine Department in collaboration with Pfizer company), for all vaccination centers on 13 May 2022, about handling, preparing and administering pediatric vaccine (Annex C). Also, written guidelines were distributed to all vaccination centers in this regard. Accordingly, Pfizer pediatric vials are being distributed to the Vaccination Centers one after the other to start with the children vaccination process.

A third-party monitoring agency (TPMA), which was the International Federation of Red Cross and Red Crescent Societies (IFRC) in the old loan, was monitoring all vaccination activities in order to ensure equity, transparency and efficacy. These TPMA monitoring activities were done while respecting the safeguards policies and relevant instruments cleared and disclosed in this regard.

A TPMA will also conduct technical and financial verification of inpatient hospital bills both related to COVID-19 and non-COVID-19 admissions in both private and public hospitals, and to ensure that doctors working on hospitalization are being paid.

The Project has numerous positive impacts in particular on (i) Contribution to saving unnecessary health care costs and social care costs by preventing disease and supporting a healthy population, (ii) Increase in the productive labor force, (iii) Improvement of the health care service, (iv) Reduction of tension between local communities. It has also some negative environmental risks and impacts mainly due to (i) Wastewater discharges from hospitals treating COVID-19 cases, (ii) Medical waste management, (iii) Weak IPC and OHS measures in HCF particularly in hospitals that may lead to the spread of Infection, (iv) Emergency situations that could happen anytime while handling of hazardous materials or even during natural disaster situations such as floods or fire, (v) Risks on vaccines due to the poor maintenance of the cold chain, and the environmental and social impacts associated with the potential procurement and installation of Photo-Voltaic (PV) panels (vi) Risks due to the poor management of the vaccine stock, , (vii) Increase of water and energy use (viii) Fire and (vii) Traffic/road safety, and air pollution from vehicles.

The installation of Photo-Voltaic (PV) panels is associated with environmental impacts due to the associated civil works (such as excavation works for powerhouse foundation as well as earth works for protection of power generation) that can cause acoustic & air pollution from operating machinery and to the risk of improperly used or disposed paint, chemicals, sealants and unremoved construction materials. During operation of PV, (i) acid spillage can lead to water/ground pollution from spill overs, (ii) expulsion of toxic gas of improperly maintained or physically damaged lithium-ion batteries can increase air pollution and (iii) overheating of battery banks can also cause fire/explosion.

The project should follow the National Vaccination Plan for COVID-19 that adopts the principles of quality and equity. However, the project may result in some social risks such as labor risks issues such as COVID-19 Infection, Occupational Health and Safety (OHS) Risks, unfair and/or unclear contract terms and conditions, irregular payment of salaries, discrimination and non-equal opportunities, risk of perception of elite capture, gender-based violence (GBV) and associated potential risks of SEA/SH, hesitancy in getting vaccinated and concerns over vaccine safety and possible side effects, difficulty in pre-registration for COVID-19 vaccine, and. risks of using military and security forces.

Social impacts are predominantly associated with the risk of forced labor in the global supply chain for solar panels and solar components. The Bank's Environmental and Social Framework (ESF) prohibits use of Forced Labor in any Bank financed projects to which ESS2 Labor and Working Conditions applies. In the event of procurement of solar panels, and as needed, the MoPH will undertake the necessary assessment to identify and mitigate such risks as per the ESF requirements and will include enhanced language on forced labor in the procurement contract. The relevant proposed social mitigation measures include: (i) Inclusive stakeholder engagement including with vulnerable groups as per the ESCP, (ii) the design, implementation and maintenance of an efficient Grievance Mechanism (GM), widespread and effective dissemination strengthened with referral pathways, capacity building and awareness raising on the ESMF requirements including SEA/SH and

hiring of PMU E&S specialist to follow up on the requirements (ii) the adoption and implementation of Labor Management Procedures (LMP) and Stakeholder Engagement Plan (SEP), (iii) widespread and effective dissemination strengthened with referral pathways for potential GBV complaints, (iv) Capacity building and awareness raising on the ESMF requirements including SEA/SH, (v) Hiring of PMU E&S specialist to follow up on the environmental as well as social requirements, (vi) Ensuring that any HCF that will receive funds/supplies from the Project and implements an Environmental and Social Management Plan (ESMP) including a Health Care Waste Management Plan (HCWMP) and (vii) Communicate reliable sources of information, Annex I includes the outlines of site specific ESMP.

Due to the nature of the Project, the Project Management Unit (PMU) at MOPH shall ensure that all HCF benefiting from the SLCRP have proven capacities in managing E&S issues. In this regard, the eligible facilities and mobile units should have at minimum an ESMP to mitigate, avoid, and minimize the environmental and social risks associated with the project including a HCWMP.

To ensure proper implementation of the above-mentioned procedures and the ESMF in general, the MOPH will undertake environmental training and institutional capacity building.

The MOPH PMU's E&S officer shall, in collaboration with MOPH relevant department, train the staff of the HCF on the ESMF, ESMP and HCWMP and on how to develop implementing tools. The training will also be focused on the Codes of Conducts, Grievance Mechanism and Stakeholders' Engagement.

WB policies specifically ESS10 require that broad, inclusive, and open public consultations be held with Project stakeholders that are impacted or likely to be impacted directly or indirectly, positively, or adversely, by the Project and that may have an interest in the Project.

Also, a GM is essential in order to assist to resolve complaints and grievances in a timely, effective, and efficient manner that satisfies all parties involved. The SLCRP will rely on the existing GM at the MOPH. The team in place answered and addressed 92,669 calls out of 110,843 calls in September and October 2021 (accounting for 83.6% of the overall number of received call). The expected turnaround time for grievances to be resolved would be 48 hours from the time of receipt of the grievance. The GM provides an appeal process if the complainant is not satisfied with the proposed resolution of the complaint. Once all possible means to resolve the complaint has been proposed and if the complainant is still not satisfied then they should be advised of their right to legal recourse. Multiple and widely known ways to register grievances are provided. Anonymous grievances can be raised and addressed.

Furthermore, a Joint Monitoring Committee (JMC) chaired by the World Bank and composed of heads and technical staff from WHO, UNICEF, IOM, UNHCR, UNRWA was set up with the objective to enhance the quality of monitoring and effectiveness of the COVID-19 vaccination program implementation with respect to the NDVP, WHO standards and WB requirements. The JMC is active since the beginning of the vaccination campaign in February 2020. The JMC will be monitoring all vaccination rollout activities. The JMC convenes on a biweekly basis to provide high-level oversight of the progress in the NDVP implementation, to review findings of the TPMA and ensure timely action for proposed improvements, and to align advocacy efforts and recommendations to the GoL /MOPH to maintain high levels of quality and equity throughout the vaccination process.

The indicative estimated total budget for the implementation of the ESMF is 145,000 US\$

# 1- Background

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ESMF is an instrument that examines the broad E&S impacts of a project consisting of multiple interventions where site-specific impacts cannot be determined until sub-project details have been identified. In this context the ESMF could also draw on relevant experience and lessons learned from several closely related projects. Furthermore, subsequent ESMPs will build on this ESMF for future activities, actions and guidance.

The first cases of COVID-19 were reported in Lebanon on February 21, 2020. In response, the Government of Lebanon (GOL) has prepared a COVID-19 Health Sector Response Plan and developed a National Multi-Sectoral Plan. Progress has been made in risk communication to the population, Port of Entry (POE) screening, the setting up of one testing center and of one treatment center. However, the unmet needs are immense. The outbreak is coming at a time when Lebanon's economy is already going through the worst crisis in recent history and when the country is trying to recover from August 4, 2020, blast at Beirut Port. The GOL has limited resources to respond to COVID-19 pandemic.

The GOL has initiated preparedness activities for COVID-19 vaccine introduction. A COVID-19 National Coordinating Committee (CNCC) was established on November 6, 2020, for the successful planning, coordination and implementation of vaccination activities and National COVID-19 Vaccination Deployment Plan (NCVDP) was prepared.

The Lebanon Health Resilience Project (LHRP) (US\$120 million) funded by the World Bank (WB) was effective on November 14, 2018, The LHRP's original Project Development Objective (PDO) was to increase access to quality healthcare services to Lebanese living in poverty and displaced Syrians in Lebanon. Due the dire need for vaccines, the project was restructured on March 12, 2020, to reallocate US\$40 million to the procurement and deployment of COVID-19 vaccines and vaccine supplies and to Support COVID-19 detection and case management activities in addition to project Management and Monitoring and Evaluation (M&E). The PDO was revised as "to increase access to quality healthcare services to Lebanese living in poverty and displaced Syrians in Lebanon and to strengthen the Government's capacity to respond to COVID-19". A new component was added "Component 4: Strengthen capacity to respond to COVID-19". The Project was then restructured for the second time allowing LHRP to support additional purchase and deployment of COVID-19 vaccines for Lebanon.

1. Till End of May 2022, the vaccination target in Lebanon as stated in the NDVP, consisting of vaccinating 70% of the total population is not met and the GOL is facing severe impediments to meet the vaccination and the health care demand. The population in Lebanon was 6,825,442 in 2020<sup>4</sup>. As of March 11, 2022, 32.18% of the population only was fully vaccinated for COVID-19 and 4.81% partly vaccinated <sup>5</sup>. COVID-19 currently infected persons on March 22, 2022 was 90,256 and the daily new infected cases is around 932<sup>6</sup> The number of vaccines needed is still very high and the Intensive Care Unit (ICU) occupancy by COVID 19 patients is reaching 11% . Lebanon is facing multiple crises all at once: an economic and financial crisis; the COVID-19 pandemic and the aftermath of the Port of Beirut (POB) explosion on August 4, 2020, that severely impacted the economy.

Strengthening Lebanon's COVID-19 Response Project (SLCRP) was conceived to finance further purchase and deployment of equitable COVID-19 vaccines and needed supplies and activities to support the GOL's COVID-19 response. SLCRP has a budget of 29 M USD and a duration of two years.

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<sup>4</sup> <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=LB>

<sup>5</sup> <https://ourworldindata.org/covid-vaccinations?country=~LBN>

<sup>6</sup> <https://www.worldometers.info/coronavirus/country/lebanon/>

## 2- Project Description

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The SLCRP will support the capacity of the GOL to respond to the COVID-19 outbreak by increasing the capacity of the health care system and improving the prevention of COVID-19 infection by increasing the percentage of the vaccinated population. This project will allow for the purchase and deployment of COVID-19 vaccines and their respective accessories from sources that meet the World Bank's Vaccine Approval Criteria (VAC). The project will also support the COVID-19 case detection and management at the level of the treatment centers.

The SLCRP has a budget of 29M \$ and encompasses the following three components.

**Component 1 - COVID-19 vaccines and supplies (US\$ 11.5M):** This component will support the purchase of COVID-19 vaccines and related deployment activities.

*Subcomponent 1.1: Procurement of Vaccines: (US\$ 10.2M):* This subcomponent will support the procurement of (i) COVID-19 vaccine doses that meet the World Bank's VAC and (ii) relevant vaccination supplies (diluent, syringes, etc) to meet Lebanon's vaccination needs, in accordance with the prioritization and eligibility criteria of the NCVDP.

*Subcomponent 1.2: Vaccine deployment (US\$ 1.3M):* This subcomponent will support relevant deployment activities, including inter alia: (i) behavior change communications to increase vaccine awareness and reduce vaccine hesitancy; (ii) mobile vaccination units to vaccinate hard-to-reach populations (e.g. in remote areas); (iii) large-scale vaccination marathons to improve vaccine uptake; (iv) operational costs of vaccination sites; (v) support to cold chain and other vaccine-related logistics.

**Component 2- COVID-19 detection and case management (US\$ 11M):** This component will support COVID-19 detection and case management activities. This may include, inter alia: (i) payment of COVID-19 treatment bills to eligible hospitals, using provider payment methods as agreed with the World Bank; (ii) procurement of pharmaceuticals, equipment and supplies needed for the detection and case management of COVID-19; (iii) capacity building and technical assistance in COVID-19 detection and case management; (iv) equipment to support COVID-19 response in public hospitals.

**Component 3 - Project Management, Monitoring and Evaluation (M&E) and Additional Support (US\$ 6.5M\$):**

This component has 2 subcomponents:

*Subcomponent 3.1: Project Management and M&E (2.5M \$):* This component will finance project management activities, which include: (i) Financial Management, (ii) procurement and due diligences; (iii) environmental and social requirements; and (ii) monitoring and evaluation. This component will also finance the Third-Party Monitoring Agency (TPMA) required to ensure transparency, and fair and equitable vaccine deployment, with emphasis on the WB financed vaccines as well as the third-party monitoring of the COVID-19 treatment bills. TPMA's will be contracted by the Project Management Unit (PMU), under the MOPH, in accordance with WB's guidelines and procedures.

*Subcomponent 3.2: System Strengthening (4M \$):* This subcomponent will offer support and developments of activities aimed at strengthening the health system in critical areas such as health information systems, public health surveillance capacity, testing and laboratories, monitoring and evaluation, supply and logistics management capacity, and provision of equipment in public hospitals. "This subcomponent could also finance the procurement of energy-efficient solutions (e.g. cold-chain or solar panels) to help ensure continued clean energy supply for functioning of equipment critical for the management of COVID-19 in public hospitals.**Error! Bookmark not defined.**"



## 3- Legal and Institutional Framework

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Below are the national and international policy, legal and regulatory provisions directly relevant to the activities being carried out in the project.

### 3.1 National Legislation

The following is a summary of relevant national legislation.

#### *Environment*

##### *Lebanese law 444/2002*

The Code of the Environment forms the legal basis for environmental management in Lebanon, for the principles mentioned below and the Environmental Impact Assessment (EIA) system.

##### *Lebanese decree 8633/2012*

Decree 8633/2012 “The EIA decree”, requires projects mentioned in its annexes to either undergo an EIA or an Initial Environmental Examination (IEE). It describes the process required for preparing an EIA or an IEE and the timeline for responses and approvals from the Ministry of Environment (MOE). Annex 1 of this decree states that the establishment of a hospital requires an EIA.

##### *Decree 8471/2012 and Decision 189/1 - 2016*

Define the process and mechanism for environmental compliance audit report review at the MOE, which also covers the submission process and report contents.

#### *Solid and Hazardous Wastes*

##### *Lebanese decrees 8006-2002 and 13389-2004*

Decree 13389/2004, amends decree 8006/2002. 13389 regulates and defines healthcare wastes and their types. It requires proper waste segregation and minimization. It sets guidelines for the collection and storage of waste. Finally, it sets that the healthcare waste treatment facilities require an EIA to get a license from MOE. Primary Health Care Centers (PHCCs) and Hospitals are required to abide by decree 13389/2004.

##### *Circular 11/2011*

This circular defines the trimestral reporting template for Infectious Healthcare Waste Treatment facilities.

##### *Circular 7/1- 2017*

This decision provides a list of institutions for the disposal of material and equipment for potential recycling. PHCCs and hospitals can make use of this list to dispose of their recyclable waste.

##### *Decision 1/1294-2018 and 1/1295-2018*

These decisions regulate the transport of infectious healthcare waste (1/1294) and the construction and operation of facilities (1/1295) for the disinfection of hazardous and infectious waste. Decision 1/1295 specifies the process for the acquisition of an environmental license to operate such facilities. For the disposal of their waste, PHCCs and hospitals should make sure they contract companies that abide by these two decisions, and this should be specified in the bidding documents. Healthcare waste collection and disposal companies are requested to apply for a license from the Ministry of Industry (MOI) and are required to submit an EIA to the MOE to get an environmental license. The MOPH plays an indirect role as a member of licensing committees.

##### *Law 80 – 2018 Integrated Solid Waste Management Law*

Sets the framework for Integrated Solid Waste Management based on the principles of Law 444/2002.

##### *Decree 5606 - 2019*

The decree specifies the principles for sorting domestic solid waste at the source into three categories: organic waste, recyclables, and inert waste.

#### *Decision 59/1 - 2020*

The decision specifies the procedures and principles for hazardous waste storage facilities licensing in Lebanon.

#### *Decision 998/1 – 2020*

The decision specifies the procedures and principles for hazardous waste generators in Lebanon.

#### ***National Standards for Environmental Quality***

##### *Decision 6/1 – 2022 that supersedes Decision 8/1 2001 National Standards for Environmental Quality*

This decision provides Environmental Limit Values (ELV) for wastewater discharged into different receiving media (sewerage system, surface water, sea). PHCCs and hospitals are required to abide by this decision.

#### ***Renewable Energy***

*Policy Statement Setting Lebanon’s Electricity Sector on a Sustainable Growth Path approved by the Council of Ministers under decision no. 8 (dated March 16, 2022)*

##### *The Second National Energy Efficiency Action Plan (NEEAP 2016-2020)*

This Action Plan addresses energy efficiency in the power sector and targets end-users in the building sector, the industry and agricultural sectors, the transport, and the public sectors (such as governmental buildings, public hospitals and schools). It focuses on the development of decentralized solar photovoltaic plants.

##### *MEW facilitating mechanism to support and develop the solar energy market for electricity production (October 14, 2021)*

This mechanism considers the full concern for public safety in the implementation of projects to produce electricity from solar energy for private use and the quality of the devices being installed. Accordingly, developers wishing to install electricity production systems from solar energy, must register a written request in the Registry of the MEW.

##### *Law 462 (2002) on reforming the structure of the Lebanese energy sector.*

The law provided for the establishment of the Electricity Regulatory Authority (ERA) and allocated it the authority to grant electricity generation licenses to Independent Power Producers (IPPs) in order to feed the national grid. Although Law 462 has been in force since 2002, it has never been implemented. Therefore, there is no regulatory body to issue licenses for new generation.

#### ***Labor and Occupational Health and Safety (OHS)***

##### *Labor Law 1946 and its amendments*

This law sets basic labor rights in Lebanon. It governs different aspects of employment in the private and mixed sectors in Lebanon and defines all regulations related to work including working contracts, employment of specific groups such as women and children, working hours and holidays, salaries, dismissal from work, protection of employees and work organization.

##### ***Ministry of Labor Decree 136 -1983:***

work accidents and their regulations.

##### ***United Nations Convention on the Rights of the Child (CRC)1990)***

This historic commitment to the world's children's rights is the most widely ratified human rights treaty in history and has helped transform children's lives around the world. This convention was ratified by Lebanon in 1990<sup>7</sup>.

***Ministry of Labor Decision 1/94 1997:***

Prohibition of hiring or use of children and minors in non-industrial occupations

***Ministry of Labor Decree 3276- 2000:***

This decree allows governmental work inspection to ensure safety and security are respected in work environments to prevent and protect from any harm that might affect people and the work environment.

***Ministry of Labor Decree 8987 -2012:***

This decree forbids hiring minors in any labor that might affect their health, safety, or ethics.

*Decree 11802 – 2004*

This decree regulates occupational prevention, safety and health in all enterprises subject to the code of labor.

***Social Laws***

*Penal Code Decree 340 1943*

The text of Article 522 of the Lebanese Penal Code applies to cases of assault of women, by force, violence, and manipulations which are acts that affect a woman's dignity, physical health, psychological state, and moral integrity.

*Law 335 – 2001: Ratification of ILO convention No. 182:*

This text does not allow the employment of children and protects them from engaging in any work activities that could harm their health and safety.

*Law 400 – 2002: Ratification of ILO convention No. 138:*

This law defines age of the children at work which shall not be less than the age of completion of compulsory schooling and, in any case, shall not be less than 15 years. It also defines this age in the case of member whose economy and educational facilities are insufficiently developed who may, after consultation with the organisations of employers and workers concerned, where such exist, initially specify a minimum age of 14 years, Furthermore, this law specifies the minimum age of employment on tasks and works that pose risks or hazards to health and safety which should not be less than 18 years old.

*Decree 8987 – 2012*

Prohibits the employment of minors under the age of 18 in work that may harm their health, safety or morals.

*Law 205 – 2020*

This law criminalizes sexual harassment in the workplace.

*Law 28/2007 and Decree 6940/2020 (2007 and 2020)*

Pursuant to Decree 6940 of 2020 all public institutions were instructed to activate administrative self-monitoring and to enhance transparency and positivity in the communication between the administration and the citizens, within one month from the date of the circular.

According to Law 28/2007, the administration that receives a request for information must immediately acknowledge receipt and respond within 15 days, which can be extended for another 15 days if the request is complex. The administration should provide a written justification if it can't provide the requested information, and the citizen can appeal against this decision within two months

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<sup>7</sup> <https://www.unicef.org/lebanon/convention-rights-child>



### 3.2 Hospital Accreditation

In January 2019, The MOPH announced the official publication of the new accreditation standards manual for hospitals. But also mentioned that the present version will be updated soon<sup>8</sup>. Some of the standards were classified under Critical Organization Requirements (COR) and others were not.

“The COR standards are the minimum required standards that a hospital should meet to be accredited, the “make it or break it” standards. Those standards are essential to ensure patient safety and include the international patient safety goals. The COR standards are incorporated from different themes and were selected based on a risk assessment that involves identifying a numerical risk score based on the likelihood that the identified risk will actually happen or materialize and the consequences on the organization if the risk does materialize or happen”<sup>18</sup>.

All standards were revised by local experts, after conducting a thorough gap analysis: by reviewing the current accreditation system including the standards, reviewing international and regional accreditation frameworks/objectives/approaches, mapping out and identifying the cross-cutting themes and new themes / gaps and identifying priority themes for the Lebanese accreditation system. Experts targeted each chapter and identified standards, revision, validation and alignment of the standards according to ISQua (International Society for Quality in Health Care) standards. The finalization of the draft standards was done and a Pilot testing in hospitals and a full Mock survey was performed. They also used the risk score criteria ranging from 1 to 6, where 6 would be a COR standard which are the minimum required standards that a hospital should meet to be accredited, and essential to ensure patient safety and include the international patient safety goals.

It is important to note that the work done for the accreditation standards is not systematic for every standard, but instead follows a general, global, coordinated and integrated process to meet Patient’s expectations regarding comprehensive and safe care. All the standards are important to be met, and there is a specific way of scoring them. If a standard is not a COR does not mean that it is less important than a COR one.

Although the 3 IPC (19,20,23) standards noted in the text below are not necessarily a COR, their risk score is 5 and have a high likelihood and impact of risk in a hospital if they are not met.

The FMS 10, is mainly related to the inventory, but the FMS 11: A program for control and disposal of hazardous materials and wastes is in place, is a COR as it covers many other standards related to the MOPH into the controlling of the hazardous wastes.

The MM16 has a risk score of 5 and a high likelihood and impact of risk in a hospital if they are not met.

- FMS 10: The hospital has a program in place for the inventory, handling, storage, and use of hazardous materials.
- FMS 11: A program for control and disposal of hazardous materials and wastes is in place
- MM16: The hospital prepares and dispenses medications in a safe and appropriate environment.

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<sup>8</sup> <https://www.MOPHMOPH.gov.lb/en/Pages/3/20553/accreditation-standards-for-hospitals-in-lebanon-january2019#/en/view/20553/accreditation-standards-for-hospitals-in-lebanon-january-2019>

- IPC 19: The hospital establishes and implements a process for proper and safe disposal of infectious wastes to reduce infection.
- IPC 20: The hospital reduces the risk of infection through proper handling and disposal of sharps.
- IPC 23: The hospital ensures the correct usage and availability of Personal Protective Equipment (PPE), soap and hand antiseptics.

### **3.3 International Agreements and Principles**

*The Basel Convention (Ratified by law 387/1994, 29/2015)*

The Basel Convention on the control of transboundary movements of hazardous wastes and their disposal. The Basel Convention's main objectives are:

- to reduce the production of hazardous waste
- to treat and dispose of hazardous waste at the nearest possible place from the source and
- to reduce transboundary movements of hazardous waste.

In 2015 hazardous waste export to and from Organization for Economic Co-operation and Development (OECD) countries has been banned.

*The Stockholm Convention (Ratified by law 432/2002)*

The Stockholm Convention on Persistent Organic Pollutants (POPs) is "a global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of human and wildlife and have harmful impacts in human health or on the environment".

*Minamata Convention on mercury (Acceded by law 2/2017)*

The Minamata Convention on Mercury is "a global treaty to protect human health and the environment from the adverse effects of mercury".

*The Barcelona Convention Signature (Acceded by Decree Law No. 126 30/6/1977  
Amendments Adhesion Law No.34 16/10/2008)*

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, originally the Convention for Protection of the Mediterranean Sea against Pollution, known as the Barcelona Convention, is a regional convention that was adopted in 1976 and amended in 1995 to prevent and reduce pollution from land-based sources, ships and aircraft in the Mediterranean Sea.

*The UNFCCC (Ratified Law No.359 11/8/1994)*

The United Nations Framework Convention on Climate Change (UNFCCC) entered into force on 21 March 1994. From the handbook of the Convention (2006), according to Article 2, the Convention's ultimate objective is "to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system".

*Paris Agreement (Ratified by Law 115 in March 2019)*

Lebanon ratified the Paris agreement and committed itself to increase its share of renewable energy generation to 20% by 2030, this commitment was increased to 30% with international commitments in line with the national renewable energy action plan developed by the International Renewable Energy Agency (IRENA).

*The Polluter Pays Principle*

The polluter pays principle was adopted by the OECD in 1972. It stipulated that every waste producer is legally and financially responsible for the elimination of their waste in a safe way for both the environment and humans (even if certain jobs are outsourced).

### *Precautionary principle*

The precaution principle was formulated for the first time in 1972, in principle 15 of the Rio Declaration on Environment and Development. It stipulated that when there is a possibility of serious or irreversible damage to the environment, the lack of scientific proof doesn't have to be considered as a reason to delay economic measures which help to prevent environmental degradation.

### *Proximity principle*

The proximity principle recommended that the treatment and the elimination of hazardous waste are required to happen at the nearest place from their production location, in order to minimize risks related to transportation.

### *Diligence principle*

This principle stipulates that every individual who is involved in waste management must take necessary measures which help to maintain appropriate waste management from the production point to the final elimination. The main responsibilities of the waste producer, in the context of the diligence principle are: To identify precisely the waste which is produced to complete and sign monitoring sheets for hazardous waste before transferring it to another part, to condition the packaging in a safe way in appropriate packages, to ensure a safe storing of the waste, to select an appropriate treatment and elimination method

## **3.4 World Bank Environmental and Social Framework**

The Environmental and Social Framework (ESF) of the World Bank became effective on October 1, 2018 and applies to all Investment Policy Financing (IPF) projects initiated after this date<sup>9</sup>. It tackles among others, the issues of labor, non-discrimination, climate change mitigation and adaptation, biodiversity, community health and safety, and stakeholder engagement including public participation and grievance mechanisms. Five out of the ten Environmental and Social Standards (ESSs) of the ESF, are relevant to the SLCRP and their requirements apply.

**Table 1: ESS relevant to the SLCRP**

No.	Designation	Relevance to the SLCRP
ESS1	<b>Assessment and Management of Environmental and Social Risks and Impacts</b>	<b>Relevant</b>
ESS2	<b>Labor and Working Conditions</b>	<b>Relevant</b>
ESS3	<b>Resource Efficiency and Pollution Prevention and Management</b>	<b>Relevant</b>
ESS4	<b>Community Health and Safety</b>	<b>Relevant</b>
ESS5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Not Relevant
ESS6	<b>Biodiversity Conservation and Sustainable management of Living Natural Resources</b>	Not Relevant
ESS7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Relevant
ESS8	Cultural Heritage	Not Relevant
ESS9	Financial Intermediaries	Not Relevant

<sup>9</sup> <https://www.worldbank.org/en/projects-operations/environmental-and-social-framework>

### 3.5 World Bank Guidance

The following project is expected to abide by the following guidance and good practice notes:

#### *Environmental, Health, and Safety (EHS) General Guidelines and Health Care Facilities Guidelines*

The EHS Guidelines are technical reference documents with general and industry-specific guidelines. Healthcare facilities follow industry special EHS guidelines. It covers waste management, emissions to air and wastewater discharges.

#### *Policy of Access to Information*

This Policy governs the public accessibility to information in the WB's possession. The WB allows access to any information in its possession that is not on a list of exceptions.

This Policy is based on five principles:

- Maximizing access to information;
- Setting out a clear list of exceptions;
- Safeguarding the deliberative process;
- Providing clear procedures for making information available; and
- Recognizing requesters' right to an appeals process.

#### *Consultations and Disclosure Policy*

According to ESS10 consultations with stakeholders should be conducted throughout the life cycle of a project. The aim of the consultation is to present to the public the components of the proposed project along with potential environmental and social impacts and take their comments and concerns into consideration.

*Technical note: Use of Military Forces to Assist in COVID-19 Operations Suggestions on how to mitigate risks – Version 1- March 25, 2020 (Ref to [Annex F](#))*

### 3.6 World Health Organization Policies

#### *World Health Organization (WHO) Laboratory biosafety guidance related to coronavirus disease 2019 (COVID-19)*

It aimed to provide interim guidance on laboratory biosafety related to the testing of clinical specimens of patients that meet the case definition of COVID-19. The technical guide provides the basis for screening ES risks associated with medical laboratories and for assessing and managing the risks throughout the Emergency Response Plan (ERP) in compliance with ESS1, ESS2, ESS4 and WBG EHS Guidelines. Annex B houses the basic laboratories biosafety manual and guidelines.

*WHO Infection prevention and control during health care when COVID-19 is suspected Intended for Health Care Workers (HCWs), health care managers, and Infection Prevention and Control (IPC) teams at the facility level, national, provincial and district levels.* The technical guide provides a basis for screening ES Risks associated with COVID-19 treatment centers and for assessing and managing the risks throughout the ERP in compliance with ESS1, ESS2 and WBG EHS Guidelines.

*Key provisions Applicability to ERP WHO rights, roles & responsibilities of HCWs, including key considerations for OSH in COVID-19 Outbreak.* It provides specific measures to maintain the rights and responsibilities of HCWs and their OHS. The technical guide is aligned to ESS1, ESS2 and WBG EHS Guidelines to be complied with throughout the ERP.

*WHO Water, sanitation, hygiene, and waste management for the COVID-19 virus.* It was intended for water and sanitation practitioners and health care providers to ensure good and consistently applied Water, Sanitation, and Hygiene (WASH) and waste management practices in communities, homes, schools, marketplaces, and health care facilities to help prevent human-to-human transmission of the COVID-19 virus. The technical guide is aligned to ESS4, ESS10 and WBG EHS Guidelines to be complied with throughout the ERP.

*WHO Rational use of Personal Protective Equipment (PPE) for Coronavirus disease (COVID-19)* It is intended for those involved in distributing and managing PPE and its most appropriate use by public health authorities and individuals in health care and community settings. The technical guide is aligned to ESS2, ESS4, ESS10 and WBG EHS Guidelines to be complied with throughout the ERP.

*WHO Oxygen sources and distribution for COVID-19 treatment centers.* It is Intended for health facility administrators, clinical decision-makers, and procurement officers, planning officers, biomedical engineers, infrastructure engineers and policymakers. It describes how to: quantify oxygen demand, identify oxygen sources that are available, and select appropriate surge sources to best respond to COVID-19 patients' needs, especially in low-and-middle income countries. The technical guide is aligned to ESS1, ESS10 and WBG EHS Guidelines to be complied with throughout the ERP.

*WHO Considerations for quarantine of individuals in the context of containment for COVID-19.* It aimed to offer guidance to WHO Member States on implementing quarantine measures for individuals in the context of COVID-19 outbreak. The technical guide is aligned to ESS4 and ESS10 to be complied with throughout the ERP.

### **3.7 Institutional Framework for Environmental and Social Management**

This section describes the responsibilities of the institutions that will be involved in the implementation of the COVID-19 Operation Project.

#### **3.7.1 Public Institutions**

##### The Ministry of Public Health (MOPH)

The MOPH has the following responsibilities:

- Monitor the good implementation of the Project
- Carry out procurement
- Prepare for regulatory approval, market authorization and post-market surveillance of COVID-19-products (e.g., laboratory diagnostics, therapeutics, vaccines), when available
- Monitoring health personnel exposed to confirmed COVID-19 cases for respiratory illness and for reporting healthcare-associated infections
- Dedicate communication staff to raise awareness on the risk of contamination and community engagement and on vaccines and communicate changes when needed.
- Implement surveillance strategies to monitor and report disease trends, disease severity and impacts on health and other systems
- Maintain, monitor, and develop the call center that was established at MOPH
- Coordinate and follow up with the NVCC and the proper implementation of the NCVDP
- Monitor the good implementation of the vaccination
- Build the capacities of health workers in vaccination
- Maintain, monitor, and develop the grievance redress mechanisms and hotline dedicated to COVID-19 vaccine at MOPH

##### Ministry of Environment (MOE)

The Ministry of Environment (MOE) elaborates policies, strategies, plans and projects in all that relates to the safety of the environment and the sustainability of natural resources. It also prepares laws, standards and norms.

The MOE requires, reviews and approves or not EIA and IEE studies for specified types of projects. The Service of Environmental Technology at MOE is in charge of the EIA and IEE processes and also hazardous waste including medical waste.

The MOE specifies environmental conditions for the permitting of classified facilities including healthcare waste treatment. It also sets and monitors through inspection, the implementation of strategies related to the management of hazardous waste.

#### The Ministry of Information (MOInf)

The Ministry of Information (MOInf) plays a crucial role in being part of the COVID-19 Vaccination committee. The MoInf is working in close coordination with the NCVC and the MOPH to handle communication activities. The MoInf is being assisted by the United Nations International Children's Emergency Fund (UNICEF) to establish and launch communication strategy.

#### The Ministry of Interior and Municipalities (MOIM)

The NCVD under implementation is not using the armed forces. However, The Internal Security Forces (ISF), the General Security Forces (GSF) and the State Security Forces (SSF) may be needed for logistics or to provide security at the facilities where vaccines are being deployed, if and when required. They may also contribute to organize the citizens entrance and exit if necessary. All vaccination-related activities that might be carried out by the armed forces under the vaccination deployment of the MOPH will be done under the control and with coordination of MOPH. All related goods, works, services, operating costs and training will be used under the direction and coordination of MOPH and strictly in accordance with COVID-19 vaccine Standard Operating Procedures (SOPs, Annex D) and protocols. The Municipalities will be involved in selecting the elderly eligible to vaccination.

#### The Ministry of Energy and Water (MEW)

The MEW and optionally the Lebanese Center for Energy Conservation (LCEC), a subsidiary of MEW that works with the Ministry to set action plans and national strategies for energy efficiency and renewable energy deployment should be consulted in the implementation of projects to produce electricity from solar energy for private use.

### ***3.7.2 Treatment and recycling companies/organizations listed in circular No. 7/1***

Arcenciel (AEC) is a Lebanese based non-profit organization established in 1985. It was recognized as a public interest Non-Governmental Organization (NGO) in 1995 by Presidential Decree No. 7541. The NGO has taken over the management of around 80% of the medical waste in Lebanon in close collaboration with the MOE, the MOPH, the Syndicate of Hospitals and Healthcare Institutions, and municipalities.

### ***3.7.3 United Nations (UN) Agencies***

Considering the limitations in the supply chain of required medical goods, the global involvement of relevant UN Agencies in the procurement and distribution of these goods, the procurement plan will be agreed upon between the MOPH and the UN Agencies. They will also provide technical support to the MOPH and coordinate awareness raising activities. The WHO will be providing

technical support for vaccine introduction and deployment. UNICEF will continue to contract Arcenciel for infectious waste management. The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) will be supporting MOPH for the delivery of COVID-19 vaccines to displaced and refugee population. The United Nations High Commissioner for Refugees (UNHCR) will be supporting MOPH for the delivery of COVID-19 vaccines to displaced and refugee population



## 4- Environmental and Social Baselines

This chapter presents the description of the baselines relevant to SLCRP. It is divided into Environmental and Socio-economic baselines.

### 4.1 Health Care Baseline

#### 4.1.1 Status of COVID-19 Vaccination in Lebanon

The first case of COVID-19 was reported in Lebanon on February 21, 2020, and had devastating impacts on the population. On February 2021, the GOL launched the national COVID-19 vaccination campaign, an inclusive approach was overtly declared to cover all individuals residing in its territories regardless of their nationalities or legal status in the country. This approach prioritizes some categories based on their age and health status. In the context of multilayered crisis, and despite the availability of vaccines through public and private facilities in addition to the inclusivity of this declaration, several hindrances were revealed, particularly for vulnerable populations in Lebanon (both Lebanese and non-Lebanese including refugees and migrant workers<sup>10</sup>)

As per the NDVP, COVID-19 vaccines are to be administered to all eligible residents of Lebanon, regardless of their nationalities, including refugees. Only around 42% of eligible residents (ages 12 years and older) are fully vaccinated to date (with 2 doses). Under the SLCRP, the proposed procurement of 2.5 million doses of COVID-19 vaccine will cover approximately 18% of the population. Even with this contribution, it was difficult to reach the 80% coverage target set by the Lebanon NDVP and the 70% minimum target by mid-2022 set by WHO. As of end of May 2022, only 43% of registered persons got 2 doses of vaccines

As of May 2022, the number of people who are vaccinated for COVID-19 in Lebanon is as follows:

- First Dosage Vaccination: 2,690,579
- Second Dosage Vaccination: 2,366,797
- Third Dosage Vaccination: 589,435

As of May 2022, the number of available vials of vaccines are as follows:

- Number of vials available in total for Pfizer (Private Sector): 37,769 vials (Expiry Date June 2022)
- Number of vials available in total for Pfizer (Public Sector): 55,700 vials (Expiry Date July 2022)
- ~~Number of vials available in total for Moderna: 3,050 vials (Expiry Date mid-April 2022)~~

As of May 2022, and looking solely at the public sector, there are approximately 350,000 doses of Pfizer in stock with another 500,000 Pfizer doses pending to be delivered, which were financed by the LHRP. Considering the current vaccination rate (May 2022) of approximately 10,000 doses administered per week, The third dose (booster) and lowering of age group for vaccination to include younger children (5 to 11 years) has increased the need for vaccines. In order to cover all needs for adults and children, Lebanon would require approximately 6 million more doses. The SLCRP would cover the procurement of 2.5 million doses to help address this shortfall to a certain extent. These are enough to fully vaccinate (2 doses) to an additional 1.25 million individuals. It is difficult to rely on donations of vaccines as donations are unpredictable and usually come with short shelf life and may offer a vaccine that may not be the first choice for use in Lebanon (such as Sinopharm, Sputnik,...).

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<sup>10</sup> <https://www.worldbank.org/en/news/feature/2021/06/18/vaccinating-refugees-lessons-from-the-inclusive-lebanon-vaccine-roll-out-experience>



According to MOPH, as of March 2022, the vaccination supplies that are available at the MOPH warehouse are as follow:

- 3 ml syringes: 1,000,000
- 1 ml syringes: 1,100,000
- Diluents (vials): 150,000

An initial study was conducted by the MOPH in November 2020 prior to the reach of COVID-19 vaccines to Lebanon (the vaccines reached in February 2021) to assess the willingness to receive the COVID-19 vaccine, and the factors associated with this willingness among healthcare workers (HCWs) and non-HCWs in Lebanon. A web-based cross-sectional survey was conducted among Lebanese adults aged 18 years and above during November 2020 among Lebanese adults from all Lebanese provinces using a snowball sampling technique. Data were collected using an anonymous Arabic questionnaire that included sociodemographic, health-related variables, intention to receive COVID-19 vaccine, and the Health Belief Model covariates. Multivariable logistic regression analyses were performed to identify the factors associated with the COVID-19 vaccine acceptance among the 2 groups. A total number of 2,802 participants completed the survey. The overall intention to receive a COVID-19 vaccine among the Lebanese adult population was 51.5%. HCWs expressed a higher willingness of getting vaccinated against COVID-19 than non HCWs (65.8% vs. 47%,  $p < 0.001$ ). The factors that are positively associated with the willingness to vaccinate among the general population, non HCWs and HCWs were: older age, being married, living in urban areas, receiving influenza vaccine for this season, higher perception of susceptibility and benefits, concerns related to availability and accessibility of vaccines and recommendation of vaccine from health authorities. However, the previous refusal of any vaccine, concerns about vaccine safety, and side effects negatively impacted this intention. Female gender, importance accounted to religiosity, and concerns about the reliability of the manufacturer were negatively associated with vaccine acceptance among non HCWs. Conversely, good knowledge, vaccine intake by the public, and self-motivation were positively associated with this willingness. Of note, these factors were not significantly associated with such willingness among HCWs. The study concluded that considerable efforts were to be made to increase the acceptance of the vaccine among the Lebanese population. (Access to the full study can be found on:

<https://www.researchsquare.com/article/rs-960319/v1>

In an effort to collect and assess global information on COVID-19 vaccine attitudes and hesitancy, the World Bank conducted a study on the latter in the Lebanese context. The main trends are based on data collected from social media using stratification techniques that allow population weighing. The data includes information on respondents' current beliefs and attitudes towards COVID-19 vaccination. The sampling occurred between August 26 and November 15, 2021; it included 48 clusters based on age, gender and region. The recruitment was done via Facebook ads and the survey was conducted via Messenger Chabot. The Final sample included 6,147 completed surveys (31% completion rates). The intended reach was 1,631,461 with the baseline survey and 878,729 with the experiment. As mentioned above, the outcome of the survey intended to assess the vaccination status, intention, and perceptions on the COVID-19 vaccines. The baseline survey started with a number of 19,642 of people who opted to follow up with the survey; the actual number of individuals who followed up was 6,147. The results of the baseline survey are presented in Table 2 below.

**Table 2 - Baseline Results**

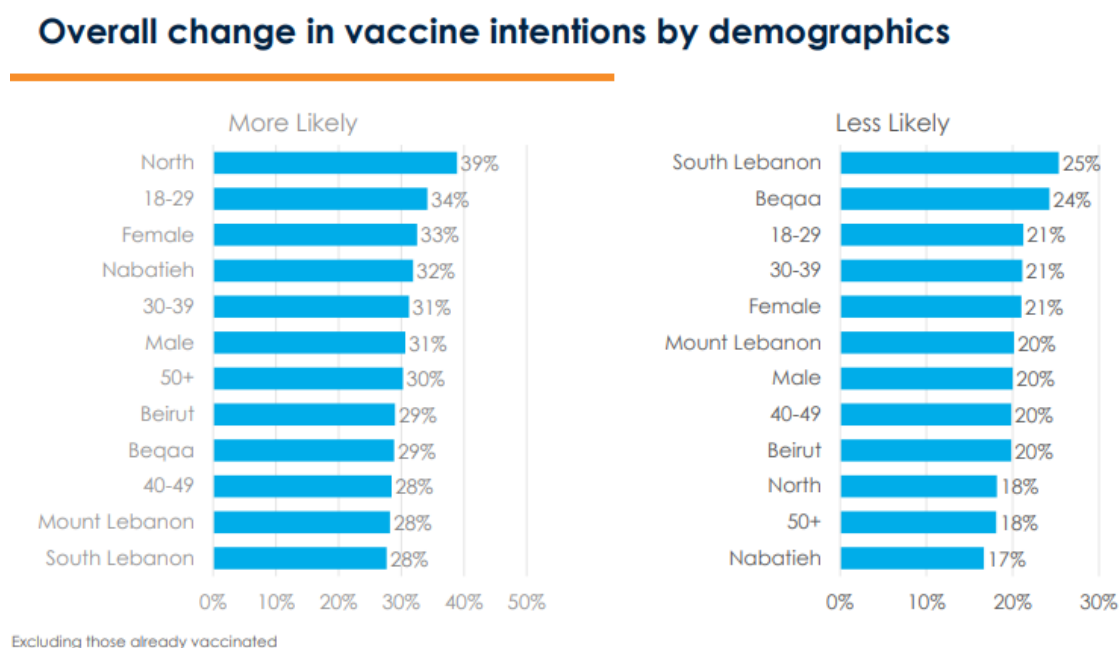
Baseline Results	Indicators	Percentage
Not vaccinated, do not intend or are unsure	Vaccine Resistant	4%
	Low Trust in Government	5%
	Uninformed/Had Covid-19	8%
	Safety Concerns	11%
Intend to vaccinate	Champions	37%
Early adopters	Early adopters	32%

The spectrum for the results went from the most hesitant (not vaccinated, do not intend) to the least hesitant (early adopters) who already took their vaccines. For the most hesitant individuals, messages were disseminated to address their concerns as follows:

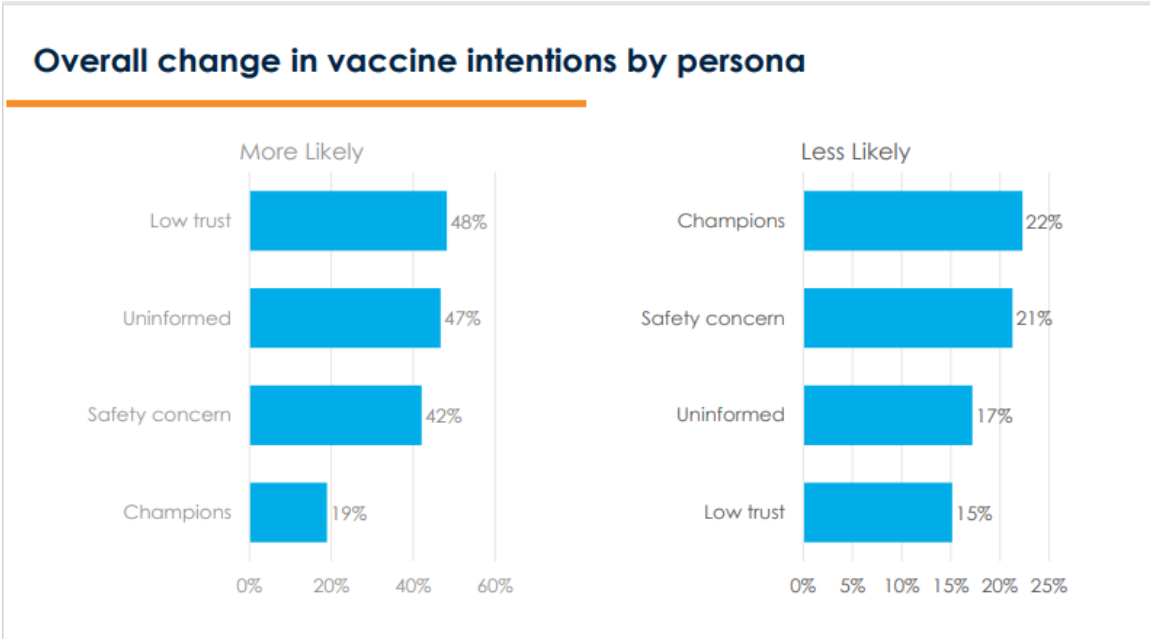
- Basic Safety (control) concern:* All Corona virus vaccines available in Lebanon are proven to be safe. Learn how to get your vaccine!
- Safety + Side Effects:* All Corona virus vaccines in Lebanon are proven to be safe. Muscle pain, low fever or tiredness are possible after vaccination and tell you your immune system is working. Learn how to get your vaccine.
- Trust:* You trust your doctor, and doctors trust the COVID-19 vaccine. All COVID-19 vaccines in Lebanon have proven to be safe. Learn how to get your vaccine!
- Uninformed:* Vaccination is important even if you’ve already had COVID-19. All COVID-19 vaccines in Lebanon are proven to be safe. Learn how to get your vaccine!

The overall change in vaccine intentions since the first World Bank study (February 2021) with a sample of 3,866 is depicted in the charts below.

**Figure 1- Overall change in vaccine intentions**



Source: WB study in Lebanon, February 2021



Source: WB study in Lebanon, February 2021

**4.1.2 Vaccination sites**

As per the MOPH, there are 72 Health Care Facilities (HCFs) that are mandated to provide COVID-19 vaccination. These are listed in the Table below. The new sites are marked with a \* and the mass vaccination sites are marked in red

**Table 3: Vaccination centers for all vaccines segregated by governorate**

Governorate	# Of sites	Vaccination sites <sup>1</sup>
Akkar	1	Halba Governmental Hospital
	2	Khalaf El Habtoor Hospital
	3	Notre Dame de la Paix Hospital Qoubayat
	4	Rahal Hospital
Baalbeck-Hermel	5	Baalback Hospital
	6	Coalition of Hermel Municipalities
	7	Dar Al Amal University Hospital
	8	<b>Federation of Municipalities center of Baalback</b>
	9	Hermel Governmental Hospital
Beirut	10	Al Rassoul Al Azam Hospital
	11	Al Zahraa Hospital University Medical Center – ZHUMC* <sup>2</sup>
	12	American University of Beirut Medical Center (AUBMC)
	13	<b>BCC - Saint George Hospital</b>
	14	<b>City Mall Dora</b>
	15	Hotel Dieu de France
	16	LAU Medical Center-Rizk Hospital
	17	Lebanese Hospital Geitaoui
	18	Makassed General Hospital
	19	Rafic Hariri University Hospital (RHUH)
	20	Saint George Hospital University Medical Center (Al Roum)
Bekaa	21	Bar Elias Hospital – MSF
	22	Bekaa Hospital
	23	Chtoura Hospital*
	24	Elias Hrawi Governmental Hospital (Zahle)
	25	Machghara Governmental Hospital
	26	Rachaya Governmental Hospital*
Mount Lebanon	27	Ain w Zein Hospital
	28	Al Bouar Governmental Hospital
	29	Al Iman Hospital*
	30	Al Jabal Hospital*

	31	Al Rida Medical Center-Hay El Selloum
	32	Baabda Governmental Hospital
	33	Bahman Hospital
	34	Bellevue Medical Center
	35	Bourj El Barajneh Health Center
	36	Dahr Al Bashek Governmental Hospital
	37	Keserwan Medical Center
	38	Middle East Institute of Health-University Hospital*
	39	Mount Lebanon Hospital
	40	Notre Dame Hospital Jounieh
	41	Sacre Coeur Hospital*
	42	Sahel General Hospital
	43	Saint Michel Hospital-Amchit
	44	Siblin Governmental Hospital
Nabatiyeh	45	Al Khyam Medical Center
	46	Bent Jbil Governmental Hospital
	47	Hasbaya Governmental Hospital
	48	Marjaayoun Governmental Hospital
	49	Meis El Jabal Governmental Hospital
	50	Nabih Berri Governmental University Hospital
	51	Ragheb Harb Hospital
	52	Tebnin Governmental Hospital
North	53	Al Koura Hospital
	54	<b>Balamand University – Koura</b>
	55	Batroun Hospital
	56	Bcharri Hospital
	57	Centre Hospitalier du Nord
	58	Hopital Notre Dame de Zgharta*
	59	Haikal Hospital
	60	Islamic Charitable Hospital-Tripoli
	61	Minieh Governmental Hospital
	62	Nini Hospital
	63	Sir Dennyye Governmental Hospital
	64	Tripoli Governmental Hospital
South	65	Hiram Hospital
	66	Jabal Amel Governmental Hospital
	67	Jezzine Governmental Hospital
	68	Jwaya Hospital
	69	Kharroubi Hospital
	70	Qana Hospital
	71	Saida Governmental Hospital
	72	<b>Turkish Trauma &amp; Emergency Hospital</b>

#### **4.1.3            *Hospitals treating COVID-19 patients***

One of the most important financing policies in different countries is to implement programs that do not deprive people of access to health services due to increased Out-Of-Pocket (OOP) payments. The MOPH, aims to reduce inequity in health by delivering COVID-19 treatment services to patients who are not covered by the National Social Security Fund (NSSF), and/or who do not own private insurance. The inpatient hospital claims are currently being financed by the current LHRP and are expected to continue with the SLCP through the component 2 “*COVID-19 prevention, detection and case management activities*”. The list of public and private hospitals that are treating COVID-19 patients is presented in Annex J.

#### **4.1.4            *Laboratories eligible to perform PCR tests***

The list of labs eligible to issue PCR results is attached below (Annex J). It is to be noted that many of these laboratories are located within the hospitals that are eligible to receive support within the SLCP.

#### **4.1.5            *TPMA and recent reported results***

A third-party monitoring agency (TPMA), which was the IFRC in the old loan, was monitoring vaccination activities in order to ensure equity, transparency and efficacy. IFRC might continue to be the TPMA in the new project. This third party monitors all the vaccination centers under the safeguards policies and the relevant instruments cleared and disclosed in this regard.

The TPMA monitors all the vaccination centers that were mentioned in the above “List of vaccination centers” in [Section 4.1.2](#), and monitors the (i) Vaccine transportation and distribution, handling, and storage, (ii) Vaccine stock monitoring, (iii) Vaccine temperature maintenance across key points of the supply chain, (iv) Service delivery at vaccination sites, (v) Eligibility of vaccine recipients, and (vi) Capturing client perspectives and feedback. The monitoring checklists include the following checklists:

- Checklist 1: COVID-19 Vaccine Arrival (*vaccine arrival, central storage*)
- Checklist 2: Vaccination Site Checklist (*site organization, cold chain and vaccine supply, immunization, waste management etc*)
- Checklist 3: Health Provider Checklist (*vaccinator interview*)
- Checklist 4: Vaccine Recipient Checklist (*accessibility, demographics, satisfaction*)
- Checklist 5: Environmental and Social Safeguards (*grievance redress mechanisms, occupational health, waste management, environmental training etc.*)

In addition, the vaccinations centers are evaluated from an Environmental and Social Safeguards perspective. This evaluation covers:

- Waste Segregation and collection: process of segregation of waste into waste bags to be ready for collection
- Waste Storage: Storage of waste into containers and sharps containers
- Documentation: Policy and procedures for medical waste management, SOPs (holding and storage) available in the waste management department or storage area.
- Training in medical waste management
- Inclusion and communication

- Grievance Mechanism (GM): Availability of a GM for both the vaccine recipients and the healthcare providers and that the complaint system is clearly communicated to all parties
- Prevention of Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH): Training for project actors on workplace violence policy and procedures and on how to deal with SEA/SH complaints<sup>11</sup>

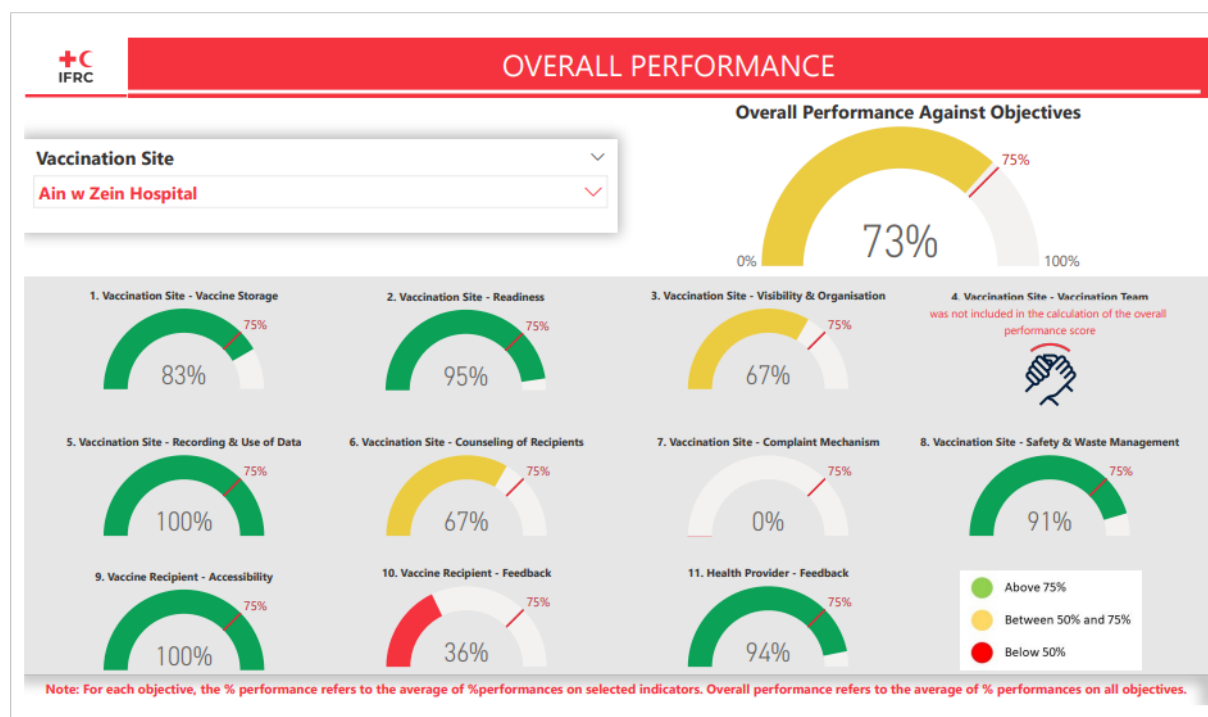
The TPMA monitoring takes place on a bi-weekly basis and the field coordinators effectively monitor all the vaccination centers. The TPMA issues a detailed report with monitoring checklists (sample of one hospital below as a figure). The monitoring checklists are the following:

1. Vaccination site: Vaccine storage
2. Vaccination site: Readiness
3. Vaccination site: Visibility and Organization
4. Vaccination Site: Vaccination Team
5. Vaccination Site: Recording and use of data
6. Vaccination Site: Counseling of recipients
7. Vaccination Site: Complaint Mechanism
8. Vaccination Site: Safety and Waste Management
9. Vaccination Recipient: Accessibility
10. Vaccination Recipient: Feedback
11. Health Provider: Feedback

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<sup>11</sup> It is to be noted that the labor and working conditions as per the MOPH Labor Management Procedures (LMP) will be monitored by the MOPH PMU and all updates will be documented as part of the PMU's regular quarterly progress reporting.

**Figure 2: Summary of monthly performance (performance scorecards) of a vaccination center**



The TPM also issues also reports covering serious and non-serious incidents that were being monitored in the vaccination centers. Key recommendation was specially to ensure that more organization is requested at vaccination centers specially after noting that many centers are vaccinating on specific days per week and not the whole working days of the week.

## 4.2 Environmental Baseline

### 4.2.1 Climate

Lebanon has a Mediterranean-type climate characterized by hot and dry summers (June to September) and cool and rainy winters (December to mid-March), with an average annual temperature of 15°C. Along the coast, summers are hot and humid with temperatures crossing 35°C in August. But due to the moderating effect of the sea, the daily temperature range is narrower than it is inland. January is the coldest month, with temperatures around 5 to 10°C. The mean annual rainfall on the coast ranges between 700 and 1,000 mm. About 70% of the average rainfall in the country falls between November and March and is concentrated during only a few days of the rainy season, falling in heavy cloudbursts or violent storms. Precipitation in inland Lebanon is higher than precipitation along the coast (1,600 mm), with snow in the mountains. The influence of the Mediterranean Sea, the topographic features, and the Syrian Desert in the north creates a variety of microclimates within the country with contrasting temperatures and rainfall distribution<sup>12</sup>.

### 4.2.2 Surface and Groundwater

While Lebanon is in a relatively favorable position as far as rainfall and water resources are concerned, constraints for development consist in the limited availability of water during the seven dry summer months due to the very low water storage capacity, the difficulty of capturing the water close to the sea, and the shortcomings of the existing water delivery systems and networks. The total length of streams in Lebanon is 730 km, mainly on the western side of the mountains, which have steep slopes. In total, there are about 40 major streams in Lebanon. The major replenishment of rivers

<sup>12</sup> <https://climateknowledgeportal.worldbank.org/country/lebanon/climate-data-historical#:~:text=Lebanon%20has%20a%20Mediterranean%2Dtype,35%C2%B0C%20in%20August.>



in Lebanon comes from precipitation, as well as from snowmelt and springs. However, a drastic decrease in the river flow has been recorded in the last three decades.

There are eight major aquifers, with a total estimated volume of 1,360 million m<sup>3</sup>. The presence of fissures and fractures encourages snowmelt and rainwater to percolate and infiltrate deep into the ground and feed these aquifers. Water may reappear at lower elevations as springs that flow into rivers. Springs are commonly found in Lebanon because of the highly fractured geologic rocks, and because of the existing inter-bed rock formation of differing permeability, which is a feature of the whole country. In total, there are about 2,000 major springs and many other minor springs in Lebanon, generating an estimated flow of 1 150 million m<sup>3</sup>/year. Other springs are commonly found along the coast or in submarine areas. They are also called “non-conventional” springs because it is more or less impossible to capture their water before it flows into the sea.

Annual internal renewable water resources are estimated at about 4.8 km<sup>3</sup>. Annual surface runoff is around 4.1 km<sup>3</sup> and groundwater recharges 3.2 km<sup>3</sup>, of which 2.5 km<sup>3</sup> constitutes the base flow of the rivers. About 1 km<sup>3</sup> of this flow comes from over 2,000 springs with an average unit yield of about 10–15 l/s, sustaining a perennial flow for 17 of the totals of 40 major streams in the country. The annual net exploitable surface water and groundwater resources, water that Lebanon can technically and economically recover during average rainfall years, are estimated at 2.080 km<sup>3</sup>, consisting of 1.580 km<sup>3</sup> of surface water and 0.500 km<sup>3</sup> of groundwater.

#### **4.2.3 Air quality**

The levels of various air pollutants in Lebanon have been reported intermittently through the national Air Quality Monitoring Network (AQMN) that was installed and operated by MOE and by researchers, through stations operated by their respective universities and short to medium term air quality measurement campaigns using portable instruments. Studies have shown that levels of gas pollutants, Particulate Matters (PMs) and their chemical contents, and Volatile Organic Compounds (VOCs) exceed the WHO recommended limits for yearly averages. Annual mean levels of O<sub>3</sub>, NO, NO<sub>2</sub> and SO<sub>2</sub> for the year 2005-2006 in a Beirut urban site were 31, 36, 40 and 11 µg/m<sup>3</sup>, respectively (Farah et al., 2014) with no exceedance of the means recommended by WHO. O<sub>3</sub> and NO<sub>2</sub> showed similar concentrations in 2017 as reported by the MOE monitoring network. Monthly average concentrations as collected by the AQMN, between June and December 2017 (the only continuous published record available) in urban and background locations across Lebanon, were between 12-123 µg/m<sup>3</sup> for O<sub>3</sub>, 9-79 µg/m<sup>3</sup> for NO<sub>2</sub>, 0-24 µg/m<sup>3</sup> for SO<sub>2</sub>, 7-50 µg/m<sup>3</sup> for PM<sub>2.5</sub> and 13-59 µg/m<sup>3</sup> for PM<sub>10</sub><sup>13</sup>.

#### **4.2.4 Waste Management**

The total generation of Municipal Solid Waste (MSW) in Lebanon approximated at 2,700,000 tonnes/year (t/yr), with the highest generation (at the governorate level) being in Mount Lebanon (35%), followed by North Lebanon (24%) and the Bekaa (10%).

The management of MSW in Lebanon has been unstable and is continuously changing. Currently, it follows four parallel schemes:

1. A national plan for the highly populated area surrounding the capital (Beirut, Mount Lebanon and the Caza of Keserwan) – representing about 50% of the total generated waste. The plan consists of collection of comingled waste followed by material recovery in Amrousieh and Karantina facilities.
2. Small-scale facilities in remote areas of the North, South and Bekaa regions, representing about 25% of the total generated waste. The capital cost is funded mostly by the European Union and operational costs are paid by the Lebanese government. These facilities consist

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<sup>13</sup> MoE, UNHCR, UNICEF, UNDP (2020), SOER Report, Lebanon State of the Environment and Future Outlook Turning the Crises into opportunities

mainly of 15 sorting and composting plants with, in few instances, an additional infrastructure that may support refuse derived fuel (RDF) production.

3. Community-run systems, scattered across the country (about 55 plants, 40% of which are estimated to be operational), that are either self-funded or funded through international donations. Most of those consist of basic sorting, composting and disposal; with few applications related to RDF (Ghosta not operational yet), anaerobic digestion (Saida and Bkessin) and thermal treatment (Qabb Elias) in private facilities.
23. Collection and dumping activities run by local authorities that do not own, or have access to, waste facilities<sup>13</sup>. In addition to a large number of relatively small MSW dumpsites, operated by small communities, major dumpsites are being adopted as final disposal sites in several locations. During the last decade, two major dumpsites (Saida and Burj Hammoud) were rehabilitated. Also, three main dumpsites (Ras El Ain-Tyre, Bar Elias-Zahle, and Tripoli), in addition to several local ones, were closed. Despite these efforts, the total number of MSW dumpsites increased from 504 in 2011 to 617 in 2016, out of which 55% remain operational. The highest number (127) of operational dumps fall in Nabatieh and South of Lebanon, followed by Beqaa and Baalbek-Hermel (96)<sup>13</sup>.

#### **4.2.5 Healthcare Waste Management and IPC within the Mobile units, mass vaccination center and Hospitals**

The Healthcare waste is treated by autoclaving in one of the 3 centers of AEC. As of March 2022<sup>14</sup>, the collection and treatment fee is as follows:

- i. Public Hospitals: 3200 LBP/Kg
- ii. Private Hospitals: 0.64 USD/Kg
- iii. Labs: 1.72 USD/Kg

With reference to AEC, as of March 2022, the total number of hospitals contracted with Arcenciel is 150 hospitals, out of which twenty-six (26) are in Bekaa, fifty-eight (58) in Beirut, forty (40) in North Lebanon, and twenty-six (26) in South Lebanon). Out of those hospitals, twenty-two (22) are governmental hospitals. The hospitals who have a contract with AEC are listed in [Annex A](#).

Based on data provided by AEC, there are around 54 tons of Infected health care wastes that are being collected and treated by AEC. The Tables below provide details of the amounts collected from different HCF. The HCF are segregated into public hospitals, private hospitals, and laboratories.

Arcenciel has four (4) Infectious HCW treatment centers spread throughout Lebanon as follows:

- Center 1: Beirut
- Center 2: Zgharta (North Lebanon)
- Center 3: Saida (South Lebanon)
- Center 4: Zahle (Beqaa)

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<sup>14</sup> Oral communication between MOPH and with AEC in march 2022

**Table 4: Amount of infected waste received by AEC treatment center in December 2021 and January 2022**

AEC TREATMENT CENTER	QUANTITES (Kg)	
	Dec-21	Jan-22
<b>Center 1</b>	<b>38,653.00</b>	<b>32,697.00</b>
AUH Total	2,940.00	2,670.00
BELLEVUE MEDICAL CENTER Total	376.00	816.00
CENTRE MEDICALE MODERNE Total	39.00	36.00
CLINIQUE DU LEVANT-SOCIETE MEDICALE Total		1,135.00
DOCTOR'S CENTER LABORATORY Total	278.00	504.00
EXPERT MEDICAL DIAGNOSTICS Total	64.00	71.00
HOPITAL BAABDA GOUVERNEMENTAL Total	451.00	1,114.00
HOPITAL BAKHAAZI Total		39.00
HOPITAL EL MAKASSED Total	1,603.00	1,345.00
HOPITAL HAROUN Total	63.00	93.00
HOPITAL LIBANAIS CENTRE HOSPITALIER UNIVERSITAIRE Total		107.00
HOPITAL MONT LIBAN Total	540.00	2,279.00
HOPITAL RIZK/LEB.AMER.UNIVERSITY MED.CENTER Total	7,519.00	6,526.00
HOPITAL ST. GEORGES ACHRAFIEH Total	1,207.00	1,090.00
HOPITAL ST. GEORGES HADATH Total	11,874.00	10,121.00
INOVIE LEBANON S.A.R.L Total	427.00	1,192.00
ISLAMIC HEALTH SOCIETY - DAR AL HAWRAA MEDICAL CENTER Total	76.00	98.00
LABORATOIRE SECURITE LIBANAISE Total	162.00	374.00
PROFESSIONAL HEALTHCARE DIAGNOSTICS (PHD) Total	98.00	120.00
RAFIC EL HARIRI UNIVERSITY HOSPITAL Total	8,034.00	
RASSOUL AAZAM HOSPITAL Total	476.00	779.00
SAHEL HEALTHCARE CO. S.A.R.L Total	2,100.00	1,812.00
SAINT MICHEL MEDICAL LABORATORIES Total	27.00	63.00
ST MARC MEDICAL & DIAGNOSTIC CENTER Total	293.00	290.00
TRANSMEDICAL FOR LIFE Total	6.00	23.00
<b>Center 2</b>	<b>2,131.00</b>	<b>4,291.00</b>
EL YOUSSEF MEDICAL CENTER	95.00	292.00
HOPITAL EL KOURA	114.00	224.00
HOPITAL GOUVERNEMENTAL BOIRE	1,922.00	1,820.00
HOPITAL GOUVERNEMENTAL TRIPOLI		1,448.00
HOPITAL NINI		203.00
HOPITAL NOTRE DAME DE LIBAN SAL		304.00
<b>Center 3</b>	<b>4,757.00</b>	<b>13,267.00</b>
HOPITAL BAHMAN	482.00	404.00
HOPITAL EL CHEIKH RAGHEB HARB	4,275.00	3,778.00
RAFIC EL HARIRI UNIVERSITY HOSPITAL Total		9,085.00
<b>Center 4</b>	<b>7,846.00</b>	<b>4,475.00</b>
ELIAS HRAOUI GOVERNMENTAL HOSPITAL	2,124.00	1,978.00
HERMEL GOVERNMENTAL HOSPITAL	847.00	708.00
HOPITAL GOUVERNEMENTAL DE BAALBECK	3,744.00	1,789.00
WEST BEKAA HOSPITAL	1,131.00	
<b>TOTAL GENERAL</b>	<b>53,387.00</b>	<b>54,730.00</b>

AEC receives funds from multiple donors and through the Project “Strengthening the waste management of vaccines and vaccines commodities at the MOPH and EPI points/facilities” funded by UNICEF. This project has a total amount of funding of USD 1,1 M and has been effective since March 2020.

#### **4.2.6 Biological environment**

Though small in size, occupying only 0.007% of the world's land surface area, Lebanon is home to 1.11% of the world's plant species and 2.63% of the reptile, bird and mammal species<sup>15</sup>. This unique biodiversity is generated mainly from the geology of its landscape, human practices over the centuries, along with the ecosystem transformation and adaptation to climate change. But the most influencing factors remains the country's location at the east shore of the Mediterranean basin, one of the most biologically rich and complex regions on Earth. The Lebanese natural landscape is rich, offering 9,119 species of which 4,633 are plants and 4,486 animals (NBSAP 1998). Floristic richness is estimated to include 2,600 vascular plant species of which 400 are endemic to Lebanon, Syria and Palestine (15%) and 92 are endemic to Lebanon (3.5%) (BCSR). When compared to neighboring countries, the faunal diversity of Lebanon is high relative to the country's surface area reaching 0.028 species/ km<sup>2</sup>. The changing climatic conditions along topographic gradients resulted in having two major climatic zones. These are the Mediterranean zone and the pre-steppe areas (Abi Saleh et al., 1996; Zohary, 973). Mount Lebanon chain facing the Mediterranean Sea can be differentiated into six vegetation zones (i.e. thermo-mediterranean, eu-mediterranean, supra-mediterranean, montane-Mediterranean and oro-mediterranean and montane zones). The Anti-Lebanon Mountain chain is differentiated into barren foothills supporting poor overgrazed rangelands, in addition to five vegetation zones (i.e. Batha, steppe Mediterranean, steppe supra-mediterranean, steppe montane-mediterranean, steppe oro-mediterranean). The riparian vegetation forms a fragile ecosystem playing a major role in the protection of the steep slopes from erosion and preventing watershed loss<sup>15</sup>).

Several protected areas are designated at the national level and their numbers are increasing. Lebanon has a robust protected area network, dating back to the 1930 and has significantly increased protected area coverage since the late '90s. Protected areas represent 2.60% of Lebanon land surface and 0.21% of marine and coastal surface. Nationally protected areas include Nature Reserves, Natural sites and monuments and Himas; Nature Reserves have the highest level of conservation. Amongst the current 18 Nature Reserves, there are 3 marine Nature Reserves and 15 inland Nature Reserves. The latest addition is the Abbassieh Coast Nature Reserve in 2020 (Law 170 dated 8/5/2020).

#### **4.2.7 Fire Emergency Preparedness**

All the Health Care Facilities (HCF) centers that will receive funds from the project have fire detectors, alarm systems and fire-fighting equipment adequately placed and sized, and all the Mobile vaccination units and ambulances are equipped with extinguishers. The equipment is maintained in good working order and readily accessible. The equipment is also adequate for the dimensions and use of the premises, physical and chemical properties of substances present, and the maximum number of people present.

~~However, the equipment may need to be assessed to ensure it is maintained in good working order and readily accessible and staff may need to be trained on how to behave in case of fire.~~

#### **4.2.8 Solar Energy Baseline**

The electricity sector in Lebanon is suffering from hours of supply shortages and this has been the case for decades. Renewable energy can contribute to solving some of the challenges of the deficient Lebanese electricity system. Lebanon benefits from around 300 sunny days in a year with 8 to 9 hours of sunshine during the day. Additionally, solar insolation levels are high across the country and range between 1,800 and 2,200 kWh/m<sup>2</sup>, where specific yield ranges between 1,400 and 2,000 kWh/kWp<sup>16</sup>.

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<sup>15</sup> Abi Saleh et al., 1996

<sup>16</sup> World Bank, DISTRIBUTED POWER GENERATION FOR LEBANON, Market Assessment and Policy Pathways, MAY 2020 accessed through <https://documents1.worldbank.org/curated/en/353531589865018948/pdf/Distributed-Power-Generation-for-Lebanon-Market-Assessment-and-Policy-Pathways.pdf>

Solar Photovoltaic is already an established sector in Lebanon with a decent number of competitive private companies. However, the sector still has large growth potential. It continues to witness an impressive growth: 22 MW of rooftop solar PV applications were installed in 2019<sup>17</sup>. This is the latest information provided by the LCEC. However, the signs of a major increase are unmistakable in view of the large increase in the number of PV suppliers and contractors in the last two years.

## 4.3 Social Baseline

### 4.3.1 Socio-economic environment

As of 1 January 2022, the population of Lebanon was estimated to be 7,677,569 people. This is an increase of 5.94 % (430,614 people) compared to a population of 7,246,955 the year before. In 2021 the natural increase was positive, as the number of births exceeded the number of deaths by 74,934. Due to external migration, the population increased by 355,681. The sex ratio of the total population was 0.954 (954 males per 1,000 females) which is lower than global sex ratio of approximately 1,016 males to 1,000 females as of 2021.<sup>18</sup>

Below are the key figures for Lebanon population in 2021<sup>6</sup>:

- 108,487 live births
- 33,553 deaths
- Natural increase: 74,934 people
- Net migration: 355,681 people
- 3,748,112 males as of 31 December 2021
- 3,929,457 females as of 31 December 2021

Due to the deteriorating economic and financial situation, weak and already overstretched public services in Lebanon face growing pressure. Insufficient funding and weak institutional capacity are exacerbated by growing fiscal debt. Yet, the demand for public services, including healthcare and education, continue to rise, especially as more families become unable to afford private services (Unemployment Rate in Lebanon increased to 6.60 percent in 2020 from 6 percent in 2019)<sup>19</sup>. The COVID-19 pandemic poses a continued, if not growing, risk to the national health system. More specifically, as the COVID-19 pandemic has led to multi-dimensional challenges to the country, both Lebanese and non-Lebanese vulnerable communities have been severely affected.

These pressures have been continuously increasing in 2021, possibly to the point of a partial or complete breakdown of essential public services. Diminished services have been compounding existing access constraints, especially for migrants, refugees, stateless individuals, and people living in poverty, homeless individuals, and people with comorbidities, elderly, and other vulnerable Lebanese. People in need located in rural and chronically under-served areas will have fewer alternatives as public services retreat. Socio-economically vulnerable groups will face more and more difficulties meeting their basic needs, including food, shelter and health, which will likely push an increasing number of people to resort to harmful coping mechanisms and expose them to increased protection risks.

Therefore, the associated risk factors are:

- a. Further breakdown of the banking sector, supply chains and basic services - healthcare, education, water and fuel shortages, electricity cuts etc.
- b. Shortage of basic commodities

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<sup>17</sup> MoEW- LCEC, The 2019 solar PV Status Report for Lebanon, 2021 available on <https://lcec.org.lb/sites/default/files/2021-04/LCEC1.pdf>

<sup>18</sup> <https://countrymeters.info/en/Lebanon>

<sup>19</sup> <https://tradingeconomics.com/lebanon/unemployment-rate>

More specifically, as the COVID-19 pandemic has led to multi-dimensional challenges to the country, both Lebanese and non-Lebanese vulnerable communities have been severely affected. When it comes to those communities, it is important to consider individuals residing in disadvantaged areas and other vulnerable groups. Despite the fact that Lebanon has adopted an inclusive approach and officially ensured that its vaccination national plan covers everyone living in its territory, regardless of their nationality or residency status; vulnerable groups are facing several barriers when it comes to vaccination campaigns that have been taking place ever since February 2021 (World Bank, 2021). Some of these major barriers include their knowledge about the vaccine, accessibility to vaccination centers, hesitancy and mistrust in vaccines based on their diverse backgrounds and cultures, and their literacy which also includes digital literacy as beneficiaries must register through online platforms (Reuters, 2021).

#### **4.3.2 Vulnerable groups including the Syrian refugees and other non-Syrian refugees**

According to UNRWA, the total number of Palestinian refugees in Lebanon is around 480,000 persons. About 45 per cent of them live in 12 refugee formal camps. Conditions in the camps are dire and characterized by overcrowding, poor housing conditions, unemployment, poverty and lack of access to justice<sup>20</sup>. As per the UNHCR, more than 1 million Syrian refugees are registered in Lebanon (2017). Thousands more Syrian are in the country but lack formal documentation. Until February 2020, it is estimated that about 1.5 million Syrian refugees have fled to Lebanon. Syrian refugees are dispersed all over the country in Informal Tented Settlements (ITS)<sup>21</sup>. More than one third of them live in the Beqaa Valley in eastern Lebanon<sup>21</sup>. Another WB Funded project entitled “Supporting Lebanon’s COVID-19 Vaccination and response for Vulnerable Groups” - (P176778) is focusing on the refugees and vulnerable groups specifically.

#### **4.3.3 Multidimensional Poverty Index**

The Lebanon Multidimensional Poverty Index (MPI) was developed by the Central Administration of Statistics (CAS) and the WB and published in 2022. It is based on the notion that poverty is not simply about a person or household having low income but encompasses a broader set of factors such as lack of clean water or electricity, poor quality of work or limited schooling. Multidimensional poverty measures help to provide a more comprehensive portrayal of the poor in a country. The index is derived from 19 indicators across five dimensions which are education, health, financial security/well-being, basic infrastructure and living standards. The 2019 MPI for Lebanon reveals that 53.1 percent of residents in Lebanon were multi-dimensionally poor. The extreme poor, where residents are deprived in more than 50 percent of the indicators, amount to 16.2 percent of the population, with an average intensity of 59.3 percent and an MPI of 0.096.<sup>22</sup>

Across the eight governorates, Akkar and Bekaa are the poorest while the greatest intensity of poverty among the MPI-poor, is experienced in Beirut. In other words, while one is less likely to be MPI-poor in Beirut, those that are poor are more likely to experience greater deprivation than in other governorates. The MPI-poor are not distributed in the same manner as the population of Lebanon. Approximately, a third of Lebanon’s MPI-poor live in Mount Lebanon where about 41 percent of the population reside. The composition of multidimensional poverty is fairly similar across the governorates. The largest share – corresponding to the absence of health insurance - contributes anywhere from 23 percent to 27.4 percent to overall poverty. At the district level, Minieh-Danniyeh and Hermel have the highest incidence of MPI-poverty, whereas Keserwan and Batroun have the lowest incidence. The poorest districts tend to be associated with lower net enrolment rates at secondary level and a lower share of students attending private education, higher illiteracy rates, lower reported income levels and a higher share of self-reported poor/very poor, and larger

<sup>20</sup> <https://www.unrwa.org/where-we-work/lebanon>

<sup>21</sup> <https://www.dandc.eu/en/article/syrians-living-lebanons-informal-refugee-settlements-lack-proper-infrastructure> and <https://www.unhcr.org/lb/wp-content/uploads/sites/16/2018/01/VASyR-2017.pdf> and <https://www.unrwa.org/where-we-work/lebanon>

<sup>22</sup> CAS and the World Bank (2022), Lebanon Multidimensional Poverty Index 2019 available on <http://www.cas.gov.lb/images/PDFs/Poverty/Lebanon%20MPI%202019%20Report%20%20EN.pdf>



informality rates. However, the poorest districts do not always host the largest shares of the MPI poor - Baabda and Akkar have the largest share of multi-dimensionally poor (10.7 and 9 percent respectively) and Bcharre has the lowest share (0.4 percent). Across age-groups, the highest incidence of multidimensional poverty occurs among 66.8 percent of children, ages 0-4 years. This is a common finding in other countries, highlighting the vulnerability of households with young children. Particular to Lebanon, the absence of health insurance contributes the largest to MPI-poverty across the age groups followed by low school attainment. Female-headed households tend to have higher incidences of multidimensional poverty (56.7 percent) relative to male-headed households (52.6 percent). Approximately, 11.6 percent of individuals live in female-headed households while the rest (88.4 percent) reside in male-headed households. Households whose head have higher level of educational attainment are associated with lower rates of multidimensional poverty. For instance, less than 22 percent of households are MPI-poor among heads with tertiary education compared to 78.4 for those with no schooling. Larger households are found to have higher levels of poverty, consistent with MPI findings in other countries<sup>22</sup>.

#### **4.3.4 Sexual Harassment, Sexual Exploitation and Abuse**

Following the multiple crises that Lebanon has been facing for the past few years, the amount of violence against children and women might have significantly increased<sup>23</sup>, as violence usually follows crisis. With increased socioeconomic needs and vulnerabilities in addition to pre-existing societal norms and differences attributed to males and females, women have become more susceptible to domestic violence, sexual harassment, sexual exploitation and abuse with increased barriers to access services and opportunities. During COVID 19, stress, the disruption of social and protective networks, loss of income and decreased access to services all can exacerbate the risk of violence for women. In the first quarter of 2020, Lebanon indicated a 4% increase of intimate partner violence compared to the same time period in 2019<sup>23</sup>

In this regard, the MOPH has also developed a Grievance Mechanism (GM) through the establishment of a call centre with the purpose of receiving feedback from beneficiaries and participants as well as reporting any provided complaints. This GM was established within the LHRP and has referral pathway for calls related to SEA/SH. The call centre operators were trained accordingly. (Refer to Section 8).

#### **4.3.5 Labour and working conditions**

The Lebanese labour law issued in 1946 and its amendments set basic labor rights in Lebanon. It governs different aspects of employment in the private and mixed sectors in Lebanon and defines all regulations related to work including working contracts, employment of specific groups such as women and children, working hours and holidays, salaries, dismissal from work, protection of employees and work organization. As for Ministry of Labor Decree 136 -198 which identifies work accidents and their regulations. Furthermore, Ministry of Labor Decree 3276- 2000 allows governmental work inspection to ensure safety and security are respected in work environments to prevent and protect from any harm that might affect people and the work environment. As for Decree 11802 – 2004 which regulates occupational prevention, safety and health in all enterprises subject to the code of labor. Also, An important law to mention is the Law 205 – 2020 which criminalizes sexual harassment at workplaces.

Subcomponent 3.2 of the project could also finance the procurement of energy efficient solutions (e.g. cold chain or solar panels) to help ensure continued clean energy supply for functioning of equipment critical for the management of COVID19 in public hospitals. As such, and due to the significant risk of forced labour in the global supply chain for solar panels and solar components, it is crucial for the MOPH to assess the social risks associated with this potential activity. The WB's Environmental and Social Framework (ESF) prohibits the use of Forced Labour in any Bank financed projects to which

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<sup>23</sup> [Lebanon, with the economic crisis, gender-based violence increases \(intersos.org\)](https://www.intersos.org/)

ESS2 Labour and Working Conditions applies. The ESF states that “any work or service not voluntarily performed that is exacted from an individual under threat of force or penalty, will not be used in connection with the project. This prohibition covers any kind of involuntary or compulsory labour, such as indentured labour, bonded labour, or similar labour-contracting arrangements. No trafficked persons will be employed in connection with the project.”

In the case of procurement of solar panels, as part of the environmental and social assessment and as relevant, the ESF instruments should be updated. The MOPH will identify potential risks of child labor, forced labor and serious safety issues which may arise in relation to primary suppliers. Where there is a significant risk of child labor or forced labor related to primary supply workers, the MOPH will require the primary supplier to identify those risks consistent with the requirements of ESS2. In addition, specific procurement requirements need to be consistent with the WB IPF Solar procurement bidder declaration- Forced labor. In the event of procurement of solar panels, and as needed, the MoPH will undertake the necessary actions to identify and mitigate labor risks as per the ESF requirements and will include enhanced language on forced labor in the procurement contract.



## 5- Potential Environmental and Social Risks and Mitigation

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The following section outlines the environmental and social risks associated with the SLCRP and recommends the respective mitigation measures that might be required to avoid negative impacts. Given the nature of COVID-19, exposure to infection should be given special attention. IPC strategies should be enhanced to prevent or limit transmission inside and outside of the healthcare. Social risks associated with the administration of vaccines and treatment of COVID-19 infected patients should also be identified and mitigated. The project should ensure fair, equitable and inclusive access and allocation of the COVID-19 vaccine and treatment, reaching disadvantaged and vulnerable groups, and creating accountability against misallocation, discrimination and corruption.

### 5.1 Potential Positive Impacts of the Project

The following positive impacts are expected by the Project:

- Contribution to saving unnecessary health care costs and social care costs by preventing disease and supporting a healthy population.
- Increase in the productive labor force. The overall impact on the economy is positive.
  1. Improvement of the health care service by enhancing its overall capacity and allow the procurement of needed equipment
- Reduction of inter-communal tension and rebuilding trust in the Government.
- The project focuses on outreach and awareness-raising, which will allow reaching out to those most in need who are currently not aware of these services and strengthening communication channels between beneficiaries and service providers.
- Improvement of the access to health services for vulnerable individuals living in Lebanon and provision of services to the uninsured and underserved poor and reduction of out of pocket payments for the poor
- Engaging with stakeholders including vulnerable groups and seeking their feedback for successful implementation of the project
- Contribution to saving energy costs and provision of reliable source of electricity to HCF by the procurement of energy-efficient solutions (e.g. cold-chain or solar panels)". The Energy-Efficient solutions help also in the reduction in CO<sub>2</sub>eq emissions. This subcomponent could have a positive economic impact as it has the potential to employ local labor during the construction phase.

### 5.2 Environmental risks and impacts and mitigation measures

Environmental risks and potential impacts arising from operational activities of the SLCRP are presented below:

#### 5.2.1 Wastewater discharges from hospitals treating COVID-19 cases

Hospitals treating COVID-19 infected patients are associated with increased volume of wastewater and excreta. Liquid contaminated waste (e.g., pathological sample, blood, feces, urine, other body fluids and contaminated fluids) requires special handling, as it may pose an infectious risk to HCWs and communities if not well disposed. However, according to MOPH the hospitals that will receive funds from SLCRP used to receive funds from LHRP WB-funded Project and due diligence regarding wastewater discharges was already done during the implementation of LHRP. In fact, all hospitals are connected to a municipal wastewater network as a pre-requisite condition to get their construction permit. As part of an integrated public health policy, wastewater carried in sewerage systems should be treated in well-designed and well-managed centralized wastewater treatment plants. Each stage of treatment (as well as retention time and dilution) results in a further reduction of the potential risk. Regarding WWTPs workers, there is no evidence to suggest that additional, COVID 19-specific protections are needed. Furthermore, there is no evidence that sewage or wastewater treatment workers contracted severe acute respiratory syndrome (SARS), which is caused by another type of

coronavirus that caused a large outbreak of acute respiratory illness in 2003. Wastewater treatment plant operations should continue to follow routine practices that prevent exposure to viruses.

### **Mitigation measures**

- Disinfection of the liquid waste originating from the hospitals, HCC and laboratories should be done before directing to the general sewer line according to WHO-Laboratory biosafety guidance related to COVID-19 available at <https://apps.who.int/iris/handle/10665/332076>.
- Ensuring the availability and good conditions of the connection from the hospitals to the public sewer network or individual wastewater treatment plant. This process was done during the implementation of the LHRP.

#### ***5.1.2 Health care waste management***

Improper disposal of medical waste would have environmental and public health impacts. During their operation, several diagnostic and therapeutic activities performed at hospitals, laboratories and vaccination centers, such as sample collection from COVID-19 suspected patients, vaccination activities, laboratory practices and procedures (performing and handling of specimens and chemicals), and activities in vaccination centers and isolation health care facilities, generate medical waste, which must be disposed of in an appropriate medical waste disposal facility.

According to the MOPH, all the hospitals and HCC that will receive funds under SLCRP have already a Health Care Waste Management Plan and have contracted Arcenciel to handle their medical waste or a neighboring hospital that is taking their wastes and that has a waste management contract with Arcenciel. Arcenciel confirmed its capacity to continue to collect and handle the quantities that will be generated by the HC institutions under SLCRP.

The waste in the vaccination centers and mobile vaccination units is not expected to contain or to be contaminated with COVID-19 and does not require special precautions beyond those already used to protect workers from the hazards they encounter during their routine job tasks in medical solid waste. Workers and employers should manage solid waste generated from vaccination as they would manage other hazard medical waste. The waste generated from vaccination centers and mobile vaccination units will be collected and treated by AEC.

In 2003, with help from LIFE (EU financial instrument) and AECID (Spanish Agency for International Cooperation and Development), Arcenciel developed a network for Infectious Healthcare Waste (IHCW) to better address the untreated combustion and disposal of infectious hospital waste. Since then, Arcenciel has developed a hospital waste management guide (to access the guide please follow the hyperlink in the footnote) in collaboration with the French Development Agency (AFD)<sup>24</sup>.

There are two types of contracts that HCF can do with AEC:

- Contractual type: Hospitals sign annual contracts with AEC to collect and treat their medical waste
- Call based: Small HCF have the option to contact AEC to collect a certain amount of waste (when the daily/weekly amount of waste generated is not very significant).

### **Mitigation Measures**

- Refer to WHO Interim guidance for WASH waste management for the COVID-19 virus.

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<sup>24</sup> <https://www.arcenciel.org/wp-content/uploads/2017/05/DEHO-english-Manual.pdf>

- Prior to the initiation of different operations under this project, MOPH needs to check that each health care facility, laboratory and vaccination center has appropriate Health Care Waste Management Plan (HWMP) (refer to [Annex H](#)) suitable for the quantities, type of activities and nature of identified hazards and is implementing it. It is to be noted that all the hospitals and HCC that will be supported under SLCRP were supported by the LHRP and the support was conditional to the implementation of a proper HCWMP. The HCWMP shall ensure:
  - Integrating systems and practices to avoid the creation of waste into facility design and management and equipment and consumables purchasing and rigorous applicability of good management practices to purchase and control of chemicals and pharmaceuticals.
  - Source reduction measures such as purchasing restrictions to ensure the selection of methods or supplies that are less wasteful or generate less waste (for example use of materials that may be recycled either on- or off-site);
  - Identification and segregation of waste at the point of generation. Collection of Non-hazardous waste separately, such as paper, glass and plastic for recycling. Based on its feasibility, reuse or recycling of waste is recommended. Identification and segregation of Infectious and / or hazardous wastes according to its category using a color-coded system is a must. In terms of disposal for infectious waste, the container should have an inner, watertight layer of metal or plastic with a leak-proof seal and an outer packaging with adequate strength and capacity for the specific type and volume of waste. For sharps, the containers must be puncture-proof.
  - Identification specific points at strategic location to place collection bins for dumping the medical waste and other waste types, hence segregating the medical waste from other wastes.
  - Emptying the bins regularly to avoid contamination. Sealing and replacement of bags and containers when they are approximately three quarters full and immediate replacement of full bags. Identification and labelling waste bags and containers properly prior to removal.
  - Ensuring the availability of waste storage areas able to seize the scale of waste generated. Some requirements should be taken into consideration in terms of storage areas. It should have a hard, impermeable floor with drainage as well as an available water supply enabling cleaning. These areas should also be secured by locks with restricted access; and accessible only by authorized environmental staff (cleaning staff) and vehicles for regular cleaning. In addition, these places should be ventilated, equipped with appropriate lighting, protected from the sun, and inaccessible to animals /rodents. Appropriate supplies of protective clothing, and spare bags / containers should be available in these areas. In general, storage time between generation and treatment of waste should not exceed 48 hours during cool season, 24 hours during hot season unless refrigerated storage is possible.
  - Ensure transportation of waste to storage areas on designated trolleys which should be cleaned and disinfected regularly and safe waste transportation to designated off-site facilities according to the guidelines for transport of hazardous wastes / dangerous goods.
  - Provision of appropriate PPEs, required vaccination as well as provision of post-exposure prophylaxis (PEP) for HC waste handlers to ensure their health safety
- Health care waste generated in the management of COVID-19 patients is considered infectious waste. The HCF shall ensure availability of instructions on how to handle the infectious waste to the waste handlers in all health facilities, laboratories and vaccination centers. Staff handling and managing healthcare waste contaminated with COVID-19 should receive regular and customized training which includes the following:
  - The use of appropriate / full PPEs

- Hand hygiene practices;
- Waste segregation strategies and clean up procedures;
- On-site Handling,
- Collection, Transport and Storage;
- Exposure to COVID-19 infections and diseases transmission;
- Ensuring proper training on safe handling and appropriate use of PPEs for HCWs who handle specimens (collection, testing...), in particular for laboratory procedures generating aerosol.
- Leaking-proof specimen bags (i.e., secondary containers) that have a separate sealable pocket for the specimen (i.e., a plastic biohazard specimen bag), with the patient's label on the specimen container (i.e., the primary container), and a clearly written laboratory request form in case there is need to transport the specimen
- Continual building of the capacity of laboratory staff to meet necessary standards through regular training on COVID-19 diagnosis, proper medical waste management in accordance with facility own plan and existing WHO SOPs is needed.

### ***5.2.3 Weak IPC measures in HC facilities particularly in hospitals that may lead to the spread of Infection***

The ineffective IPC including inadequate cleaning and WASH measures may spread the infection in the hospital and lead to community transmission of COVID-19.

#### **Mitigation measures**

- Establishing and applying standard precaution by HCF including hand hygiene, respiratory hygiene, use of PPE, environmental cleaning and prevention of needle stick and sharp injuries.
- Adoption of “WHO technical guideline for COVID-19 Key considerations for occupational safety” is needed as well as developing and adopting safety standards. In addition, an occupational health surveillance of HCWs within the health facility should be in place to monitor medical services, COVID-19 infection and immunization services including vaccination against COVID-19 among HCWs. Regular necessary training on health and safety should be provided.
- Implementation of empiric additional precautions (droplet and contact and, whenever applicable, airborne precautions) for suspected cases of COVID-19;
- Performing regular training activities for HCWs on IPC issues related to COVID-19
- Ensuring provision of safe water, sanitation and hygienic conditions by HCF
- Developing IPC plan at HCF based on national guidelines and international guidelines for IPC of health facilities.
- Implementation of administrative controls;
- Developing and implementation of SOPs
- Training supervision with corrective actions
- Establishment of a quality assurance system in close collaboration with the independent monitoring and evaluation team.
- Ensure the decontamination of health facilities that have received confirmed COVID-19 cases.
- Provision of psychosocial support to medical staff and team and any health care workers reporting COVID-19 symptoms should stop work immediately
- In addition to the above, in hospitals:
  - Triage, early recognition, and isolating patients with suspected COVID-19
  - Ensuring an adequate patient-to-staff ratio
  - Establishing a surveillance process for acute respiratory infections potentially caused by COVID-19 among HCW,
  - Performing assessment to strengthen the IPC / WASH support system,

- Promote preventive medicine; no pregnant women, staff older than 65 or staff with underlying health conditions, should be working in isolation areas
- Adequate cleaning of equipment and materials:
  - Ensure that cleaning chemicals do not introduce a product safety hazard.
  - Ensure the provision of cleaning staff with adequate cleaning equipment, materials and recommended disinfectants.
  - Storage and use of disinfectants in a responsible and appropriate manner according to the label.
  - Do not mix bleach or other cleaning and disinfection products. This can cause fumes that could be very dangerous to breathe in.
  - Review general cleaning systems, training cleaning staff on appropriate cleaning procedures and appropriate frequency in high use or high-risk areas.
  - Enhanced and regular cleaning of touch points is recommended.
  - Where cleaners will be required to clean areas that have been or are suspected to have been contaminated with COVID-19, provide appropriate PPE.
  - Train cleaners in proper hand hygiene, appropriate and safe use of PPEs prior to, during and after conducting cleaning activities as well as waste control

#### ***5.2.4 Transmission risk of COVID-19 virus due to aerosol and organic solvent particularly in laboratories***

Improper methods of transportation and delivery of specimen (and other infectious material), samples, reagents, pharmaceuticals and medical supplies as well as improper storage and handling may result in aerosol and organic solvent transmission risk of COVID-19 virus.

#### **Mitigations measures:**

- Ensuring compliance with WHO Laboratory biosafety guidance related to COVID-19 for proper handling and storage of infectious materials including specimen and samples.
- Using standard laboratory practice to avoid/minimize release of aerosols and organic solvents to atmosphere
- Adequate ventilation in laboratories and treatment areas
- Use of fume hoods if necessary for chemical processing.

#### ***5.2.5 Emergency Situations***

It is important to develop procedures and practices for the handling of hazardous materials that allow for quick and efficient responses to accidents that may result in injury or environmental damage.

#### **Mitigation measures**

HCFs should prepare an Emergency Preparedness and Response Plan that should cover:

- All potential hazards including but not limited to man-made (spills, accidental releases, loss of energy supply) and flood / storm.
- Planning Coordination: This should include procedures for:
  - Informing the public and emergency response agencies
  - Documenting first aid and emergency medical treatment
  - Taking emergency response actions
  - Reviewing and updating the emergency response plan to reflect changes and ensuring that the employees are informed of such changes

- **Emergency Equipment:** The plan should include procedures for using, inspecting, testing, and maintaining emergency response equipment.
- **Training:** Employees should be trained in any relevant procedures
- Undertake regular emergency drills at healthcare facility, to test on emergency response and use the results to improve on the response mechanism.

Without provisions for fire safety, there is a risk of fire outbreak at healthcare facilities (quarantine, isolation, laboratories) with disastrous life and financial impact. Fires can start from ignitable materials in laboratories, cigarette smoking in non-designated places or old electrical connections. The specific mitigation measures for fire should cover:

- The HCF and laboratories should be equipped with fire detectors, alarm systems, and fire-fighting equipment.
- The equipment should be maintained in good working order and be readily accessible. It should also be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present, and the maximum number of people present.
- The hospital shall be provided with manual firefighting equipment that is easily accessible and simple to use.
- Key healthcare staff shall have basic training in fire control.
- Fire emergency telephone numbers should be displayed in communal areas.
- Healthcare facilities and hospitals in particular shall prepare a fire emergency management plan that features a “safe area of gathering” in each health care facility in the event of a fire outbreak for which an evacuation is required.
- Undertake regular fire drills at healthcare facility, to test on emergency response and use the results to improve on the response mechanism.

According to the MOPH, all the hospitals that received funds from LHRP have fire detectors, alarm systems and fire-fighting equipment adequately placed and sized. This is a pre-requisite for the acquisition of construction and other relevant permits. These same hospitals will be receiving funds under the SLCRP.

### ***5.2.6 Risks on vaccines due to the poor maintenance of the cold chain***

A cold chain is a temperature-controlled supply chain that includes all vaccine-related equipment and procedures. It begins with vaccine manufacturing and ends with vaccine administration. Vaccines must be stored properly from the time they are manufactured until they are administered. Potency is reduced every time a vaccine is exposed to an improper condition. This includes overexposure to heat, cold, or light at any step in the cold chain. Shortcomings in the cold chain system could compromise the potency of the vaccines. Once lost, potency cannot be restored.

#### **Mitigations measures:**

An effective cold chain relies on three main elements: a well-trained staff, reliable storage and temperature monitoring equipment and accurate vaccine inventory management. In this context, to mitigate this risk of losing vaccines due to deficiency in the cold chain, PMU in MOPH in coordination with administrations of selected HCFs for vaccine roll out and under supervision of IFRC and UNICEF were and will be handling the proper functioning of the cold chain including monitoring the freezers temperature, out-of-range storage or out-of-range transport temperatures ensuring the good international industry practices are being followed. To ensure the proper use of vaccination and the fair access to the vaccine the WB signed an agreement with IFRC February 12, 2021 which is expected to terminate around July 2022. Under the SLCRP the MOPH will contract a new TPM for vaccination to independently monitor the compliance with standards/ guidelines and agreed deployment plan in terms of supply chain management and administration of COVID-19 vaccines at (i) the key points in the supply chain and (ii) all vaccination sites from the technical, environmental, and social safeguards perspectives.



The following actions and procedures shall be ensured:

- Follow up and assurance of the conditions that must be met in the cold chain before storing the vaccine. The cold chain equipment must be calibrated, clean, and operating with high efficiency and need to be fully functional at least 48 hours before the expected vaccine arrival date.
- Ensure that cold chain temperatures are monitored periodically and daily; where possible, by electronic data loggers. Temperature monitoring devices and a mechanism for continuous temperature monitoring throughout the supply chain from receipt, during storage and delivery to the vaccination point;
- Perform effective and routine maintenance of the Ultra-Low Temperature (ULT) and Low-Temperature (LT) equipment
- Identify the location and availability of dry ice for emergency purposes or in case there is a need for transporting the vaccine;
- Ensure the presence of an additional back-up generator in case of power cut or UPS in order to maintain the temperature for a period of not less than 24 hours until the electrical current is restored or repaired.
- Estimate the storage capacity of each unit of cold chain equipment and matching it to the expected quantity to be received.

It is to be noted that the above-mentioned actions and procedures are already followed by the national vaccination campaign against COVID-19 that is being implemented by the MOPH.

#### ***5.2.7 Risks of loss of vaccines availability due to the poor management of the vaccine stock***

The stock of vaccine should be well managed in order to prevent the potential loss of vaccines due to bad stock management.

#### **Mitigations measures:**

The MOPH PMU in coordinating with the selected hospitals administrations and vaccination centers shall work to ensure the following measures are being implemented:

- Ensure all vaccines are carried in specialized vaccine carriers with temperatures according to the manufacturers' instruction and transported only by authorized refrigerated vehicles specially equipped for this purpose.
- Conduct a physical examination of the received vaccines for quality control purposes, ensuring the absence of damages, a leakage and presence of a sticker with basic information (such as the type of vaccine, expiry date, manufacturing batch number) and other quality control parameters.
- Make sure the vaccine is stored in the appropriate cold chain condition and according to the appropriate temperature, as soon as it is received.
- Arrange the vaccines inside the cold chains according to First to Expire First Out (FEFO). Put the vaccines in the correct vaccine refrigerator without delay with the shortest dated foremost to ensure adequate stock rotation.
- Make sure Pfizer-BioNTech COVID-19 Vaccine (BNT162b2) vials remain upright at all times.
- Report the volumes, doses and ancillary items received and used on an information system to facilitate managing, tracking and reporting on the vaccine stocks and consumption effectively and follow up on expiry dates.
- Perform a daily count post vaccination
- Prepare a clear vaccination schedule and back up to avoid extended periods of storage at the vaccination point;
- Estimating the need to request additional vaccine doses.
- Develop a procedure for spillages on skin/eyes and provide handwashing facilities and eyewash kits
- Develop a procedure for spillage on surfaces and provide gloves, paper towels and all material needed as per the local chemical disinfection policy.



### **5.2.8 Increase in water and energy use**

Most COVID-19 vaccines must be kept at a cold temperature to remain effective. Transporting vaccines from labs to everyone who needs them across country requires a system of refrigeration that works every step of the journey. The maintenance of this cold-chain requires large amounts of energy. In addition, the effective IPC measures at the vaccination centers and HDF include adequate cleaning that require large amounts of water.

#### **Mitigations measures:**

MOPH shall work to ensure the following mitigation measures are being implemented:

- Provide renewable energy sources for the cold-chain whenever possible
- Implement water conservation measures and prevent overuse

### **5.2.9 Fire**

HCF and vaccination centers may be subject to fire that may endanger the patients' lives especially if the HCFs are not well equipped with firefighting equipment and if proper fire prevention measures are not taken.

#### **Mitigations measures:**

- In accordance with WBG EHS guidelines, the HCF should be equipped with fire detectors, alarm systems, and fire-fighting equipment.
- The equipment should be maintained in good working order and be readily accessible. It should also be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present, and the maximum number of people present.
- The HCF and MVUs shall be provided with manual firefighting equipment that is easily accessible and simple to use.
- Fire and emergency alarm systems shall be installed and shall be both audible and visible.
- Personnel should be trained in how to behave in case of fire.

### **5.2.10 Potential Car accident during and air pollution during transportation**

The MOPH will be using mobile vaccination units to vaccinate hard-to-reach populations (e.g., in remote areas); using Emergency Medical Services (EMS) ambulances, Medico- Social Services (MSS) mobile medical units in addition to cars and vans. The use of these vehicles could contribute to air pollution. Transportation could also lead to car accidents, especially if vehicles are not well maintained, as clearly mentioned in the ESCP.

#### **Mitigation measures**

- All ambulances and vehicles shall be well maintained: All MOPH vehicles and ambulances shall be thoroughly checked once every 3 months for general maintenance and safety. Exhaust filters are also checked to prevent the release of polluting gases.
- The wheels are also changed on a needs basis to prevent car accidents during rainy seasons. The fleet department will be responsible for the proper implementation of all maintenance and safety procedures and regular check-ups for all fleet and equipment used in the project.

### 5.2.10 *Risk and impacts from the installation of solar panels and its waste management*<sup>25</sup>

The installation of Solar Panel (mainly on the roofs of existing HCF) may have some negative environmental impacts.

1. During construction, if needed and although low probable and very limited, the excavation works for power house foundation as well as earth works for protection of power generation could in rare cases cause acoustic & air pollution from operating machinery and soil erosion & sedimentation. The risk of improperly used or disposed paint, chemicals, sealants and unremoved construction materials (spare cables, connectors, etc.). Packaging materials of PV panels and batteries could generate some solid waste.

During operation, acid spillage (applicable for lead-acid battery banks relying on liquid sulphuric acid as electrolyte) can lead to water/ground pollution from spill overs. Expulsion of toxic gas (thermal runaway) of improperly maintained or physically damaged lithium-ion batteries can increase air pollution. Overheating of battery banks can also cause fire/explosion.

#### **Mitigation measures**

- Impose the use of Silicon-based panels and not thin-film PV modules that use Cadmium Telluride (CdTe). Cadmium is a dangerous and highly poisonous heavy metal when inhaled or ingested, both for animals and humans,
- If lead-acid batteries are used, during construction, special precaution in the transport and filling of the sulphuric acid serving as battery electrolyte must be taken, given its highly corrosive nature. Personnel dealing with batteries should always wear PPEs such as protective eyewear and gloves. During operation, battery banks should always be kept in an anti-corrosive container or sheltered in a well-ventilated room, protected from rain, water and heat. To avoid acid spillage, a basin should be placed underneath the battery cells. During operation, Lead-acid batteries must be periodically refilled with distilled water (a process which should take place only when the batteries are charged and cooled). For this purpose, personal protective equipment (PPE) such as eyewear and gloves should always be worn. When disposed of, Lead-acid batteries should be transported to specialized collecting points, given the highly pollutant nature of Lead and as per the directives of the MOE
- If Lithium-ion batteries are used, and if improperly maintained (not kept cooled and regularly exposed to complete discharging) or are physically damaged, Lithium-ion batteries can be subject to thermal runaway risk, which involves the rapid expulsion of a toxic gas that can eventually explode if ignited. It is thus of fundamental importance to keep the battery banks cool and operational as per the manufacturer's guidelines.
- If Nickel-based batteries are used. No major mitigation measures are required during construction and operation. The mitigation strategies for the disposal of Nickel-based batteries will ultimately depend on the specific compounds present in the battery cells. The Cadmium present in NiCd batteries is highly poisonous and requires a careful disposal plan. Alternatively, NiMH batteries can be disposed of as per the directives of the MOE.
- Fire alarm systems must be set in place in case of an outbreak of fire due to the battery banks.
- During construction, mitigation measures for the limited and very minor civil works that may be needed to install the connections and the powerhouse include:
  - Dug plots/holes must be re-filled after excavation.
  - Hazardous substances used during construction (such as paint and other chemicals) must be properly disposed.
  - Construction works must be undertaken in a way to minimize generation of unnecessary amounts of dust, and noise levels as per the National Standards for Environmental Quality.

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<sup>25</sup> UNIDO-ARE-AMDA-ADF, Environmental and Social Management Plan (ESMP) for Clean Energy Mini-Grid Projects – Template.

- Adequate litter bins must be provided on-site

### **5.3 Social Risks and impacts and mitigation measures**

The project should follow the National Vaccination Plan for COVID-19<sup>26</sup> that adopts the principles of quality and equity. Some social risks from operational activities of the SLCRP are presented below:

#### **5.3.1 Labor risks issues**

Given the nature of the Project intervention, the key labor risks which may be associated with the project include:

- Risks on Project workers related to labor and working conditions that are not compliant with either the Lebanese Labor Law or ESS2. For example, wages that are not proportionate with tasks performed or industry standards, irregular payment of salaries or non-payment, disparity in wages and/or denial of benefits (compensation, bonus, maternity benefits, etc.), discrimination towards women and workers with disabilities or other vulnerabilities, unlawful termination, withholding of benefit, including abrupt termination of employment, and Potential Sexual Exploitation and Abuse/Harassment (SEA/SH) risks and Gender-Based Violence (GBV) among the Project workers.
- Lack of understanding and implementation of Occupational Health and Safety (OHS) requirements for the workers including the special requirements in the context of COVID-19 outbreak that may lead to transmission of diseases and infections to the workers,
- “In case of procurement of solar panels, there are allegations of forced labor risks associated with the polysilicon suppliers.

#### **Mitigation Measures**

- Design, implement and maintain an efficient grievance mechanism (GM) to handle complaints and concerns for all the Project Workers including referral pathways for SEA/SH with a survivor centric approach and principles of confidentiality and anonymity following the WB Good Practice Note.
- Sign Codes of Conducts by all the workers on the project in culturally appropriate languages.
- Training and awareness raising of all the workers on the Project on SEA/SH and GBV
- Develop and implement Labor Management Procedures in compliance with the Lebanese Labor Law and ESS2 developed under SLCRP
- Proper Implementation of Labor Management Procedures (LMP)
- Proper implementation of OHS safety measures including training, PPEs, IPC measures specially for HCW.
- Subcomponent 3 could finance the procurement of energy-efficient solutions such as the procurement of solar panels, which will be essential for the core function of the project. As the need arises, the ESMF, SEP and LMP instruments might need to be updated, and specific procurement requirements should be completed. Due to the risk of forced labour in the global supply chain for solar panels and solar equipment and as per the requirements of ESS2, the MOPH will require bidders to provide two declarations: a Forced Labor Performance Declaration (which covers past performance), and a Forced Labor Declaration (which covers future commitments to prevent, monitor and report on any forced labor, cascading the requirements to their own sub-contractors and suppliers). In addition, the MOPH will include enhanced language on forced labor in the procurement contracts. Regarding the risk of forced labor, under Environmental and Social Standard 2 (ESS2), where there is a significant risk of forced labor related to primary supply workers, the MOPH will require the primary supplier to identify those risks and if forced labor cases are identified, it will require the primary supplier to take

<sup>26</sup> <https://www.moph.gov.lb/userfiles/files/Prevention/COVID-19%20Vaccine/Lebanon%20NDVP-%20Feb%2016%202021.pdf>

appropriate steps to remedy them. Ultimately, where remedy is not possible, the MOPH will, within a reasonable period, shift the project's primary suppliers to suppliers that can demonstrate that they are meeting the relevant requirements of ESS2. Prior to beginning the procurement process, the MOPH will undertake market analysis to identify the possible sellers of solar panels to the project. The bidding documents will emphasize forced labor risks in solar panels and components and will require that sellers of solar panels to the project will not engage or employ any forced labor among their work force.<sup>27</sup>

### **5.3.2 Risk of Elite Capture**

The project may have potential elite capture in vaccination and treatment in addition to lack of considerations for differentiated treatment for vulnerable groups such as elderly, people with pre-existing conditions, the very young and people with disabilities. This may lead to put them in high risk of not getting vaccinated or treated properly if infected by COVID-19.

#### **Mitigation Measures**

- TPMA shall follow up closely on the categories of people receiving vaccine/treatment through the IT platform and through hospitals field visits and on the proper implementation of the National Vaccination Plan for COVID-19 and take corrective actions where and when as necessary.
- MOPH to adequately and widely disseminate information on the GM, then follow up on the grievances in a timely manner and take proper measures in case of grievances related to elite capture.
- Adopt and implement the Stakeholder Engagement Plan (SEP) that was prepared within the framework of this Project and disclosed on the MOPH website. (link).<sup>28</sup>
- Engaging in inclusive consultations with all identified stakeholders including vulnerable groups like refugees and coordinating with the relevant NGOs representing such vulnerable groups and to ensure better outreach

### **5.3.3 Occupational Health and Safety (OHS) Risks**

COVID-19 is highly infectious and the risk of contraction by healthcare workers and the general public is high, if requisite training, sensitization and protective gear are not provided. Medical facilities are a potential source of infectious waste, and these could pose unsafe conditions for healthcare staff. Of particular concern are health workers handling infectious waste (including sharps) without adequate protective gear, storage of sharps in containers that are not puncture-proof. Some OHS risks exist (hence cumulative) and would only be exacerbated by increased use of healthcare services as a result of COVID-19 cases.

#### **Mitigation measures**

- Ensure that any PHCC, Hospital or laboratory, that will receive funds/supplies from SLCRP has an Environmental and Social Management Plan (ESMP) including a Health Care Waste Management Plan (HCWMP). The HCWMP shall include a section on Personnel Protection.
- Update if needed and implement HCF OHS plan and/or emergency response plan,
- The healthcare workers have been trained on the potential OHS risks in relation to COVID, under SLCRP, organize refresher training on this same subject,

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<sup>27</sup> Project Appraisal Document on a Proposed Loan with the Global Concessional Financing Facility Support and a Grant from the IBRD Fund For Innovative Global Public Goods Solutions To The Lebanese Republic For A COVID-19 Response Project Under The COVID-19 Strategic Preparedness And Response Program, 16 May, 2022.

<sup>28</sup> <https://documents1.worldbank.org/curated/en/995131593094877061/pdf/Stakeholder-Engagement-Plan-SEP-LEBANON-EMERGENCY-CRISIS-AND-COVID-19-RESPONSE-SOCIAL-SAFETY-NET-PROJECT-PI73367.pdf>

- Provide adequate and required PPEs to health workers and enforce on their use. Implementation of systemic risk management plan comprising risk prevention, evacuation of accident victims, evaluation and improvement measures.
- Ensure availing of Material Safety Data Sheet (MSDS) for all chemical use in the lab to the lab technicians.

#### **5.3.4 Gender-based violence (GBV) and sexual harassment, exploitation and abuse (SEA)**

Gender inequalities and norms can play an important role for access to critical health services such as vaccinations. Moreover, pandemics can create or exacerbate the conditions that especially put women and girls at greater risk of SEA/SH. For instance, women and girls may be forced into exchanging sexual favors for access to testing, treatment, vaccines or even supplies.

#### **Mitigation measures**

- PMU and TPMA to make sure the NCVDP is well followed during implementation to avoid the risk of gender inequalities and potential SEA/SH. This should be done in close collaboration with the relevant department at the MOPH which can disseminate any rules, guidelines... to centers and ensure they are following these rules.
- Ensure the people at the vaccination centers have access to the GM which should be strengthened with referral pathways in the event of SEA/SH complaints
- Train staff handling the GM on how to handle GBV related complaints
- All workers should sign the code of conduct (CoC) to hold them accountable as detailed in the LMP. They will also receive training on GBV prevention and control and will be made aware of the consequences in the event of violating the CoC.
- Publicly post or otherwise disseminate messages clearly prohibiting SEA/SH during the provision of health care, whether healthcare providers are perpetrators or survivors.
- Make information available to health service providers on where GBV psychosocial support and emergency medical services can be accessed within the health system.

#### **5.3.5 Hesitancy in getting vaccinated and concerns over vaccine safety and possible side effects**

I. A study assessing vaccine acceptance among Lebanese health care workers showed that concerns related to the area of residence, the novelty of vaccine, side effects/vaccine safety, reliability of the manufacturer, and the number of required doses were negatively associated with the willingness to get vaccinated against COVID-19<sup>29</sup>. Another study integrating the health belief model conducted among the Lebanese population to assess determinants of their acceptance highlighted the need for reliable information in combatting vaccine hesitancy<sup>30</sup>.

According to a recent survey conducted by International Medical Corps (IMC) at MOPH<sup>31</sup>, nearly 37% non-Lebanese respondents considered that the COVID-19 vaccine is unsafe, while more than 30% of them exhibited a lack of sufficient information about the COVID-19 vaccine and how it works. Only 23% of non-Lebanese respondents were willing to get vaccinated when the vaccine becomes available. As for Syrian refugees, the extremely low vaccine registration highlights the need for registration awareness, as well as technical support while doing so.. In fact, as of June 17, 2021, only 3 % of the total Syrian refugee population has so far pre-registered for vaccination<sup>32</sup>. The

<sup>29</sup> <https://pubmed.ncbi.nlm.nih.gov/35192664/>

<sup>30</sup> <https://www.researchsquare.com/article/rs-960319/v1>

<sup>31</sup> <https://reliefweb.int/report/lebanon/vaccinating-refugees-lessons-inclusive-lebanon-vaccine-roll-out-experience-enar>

<sup>32</sup> <https://impact.cib.gov.lb/home?dashboardName=vaccine>

LRC is trying to help address this challenge especially by doing more advertisement and awareness campaigns among refugees. LRC will be implementing the “Supporting Lebanon’s COVID-19 Vaccination and Response for Vulnerable Groups Project (P176778)” project funded by the World Bank that aims at contributing to the roll out of Lebanon’s National Deployment and Vaccination Plan for COVID-19 vaccines, through the support for COVID-19 vaccination and response for vulnerable groups in Lebanon. P176778 has a total budget of US\$ 3 M and a duration of 16 months (start date: May 1st, 2022). Of note, similar concerns in terms of safety and effectiveness were shared by the Lebanese population residing in the same regions. However, the acceptance rate was higher among Lebanese citizens compared to the refugees

#### **Mitigation measures**

- Stop the spread of misinformation and rumors about the vaccines
- Communicate reliable sources of information which are easily and simply understood

#### ***5.3.6 Difficulty in pre-registration for COVID-19 vaccine***

The low level of digital literacy among Lebanese citizens, refugees, and migrants may continue to hamper the ability of these individuals to register online. The requirement of an identity, or official paper may also be a major difficulty in the pre-registration as many of the country’s migrant workers coming from Nigeria, Sudan, Sri Lanka, the Philippines remain undocumented. They also have security concerns over a requirement of formal documentation for online registration fear of arrest, deportation, or detention.

#### **Mitigation measures**

- Disseminate the information of the alternative methods of registration (such as calling the national call centers) through municipalities. Circulars addressed to municipalities through the ministry of Interior can be done in collaboration with the MOPH and using both International Health Regulations (IHR) umbrella and the National Covid Committee.

#### ***5.3.7 Risks of using military and security forces***

The Internal Security Forces (ISF), the General Security Forces (GSF) and the State Security Forces (SSF), in coordination with the Ministry of Public Health (MoPH), will be responsible for assuring the safety of personnel and patients and provide security at the facilities where vaccines will be deployed. They will also contribute to organizing the citizens' entrance and exit if necessary. Within the Lebanese context, the main risk associated with this use is the SEA/SH.

#### **Mitigation measures**

- Implement the measures detailed under 5.3.4
- Set an Agreement between the Military/Security Forces and the MOPH on the structure under which the military will be operating under IHR.



## 6- Procedures to Address Environmental a Social Issues

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Due to the nature of the Project, The PMU shall ensure that all HCF benefiting from the SLCRP have proven capacities in managing E&S issues. In this regard, the eligible facilities should have at minimum an ESMP to mitigate, avoid, and minimize the environmental and social risks associated with the project including a HCWMP.

The first step in the implementation of the ESMF by MOPH shall be the recruitment of an E&S officer as indicated by the ESCP and using same approach agreed upon.

### 6.1 Procedures

The procedure that shall be followed by the MOPH vis-a-vis the vaccination centers (Mobile units or located in a HCCs or a hospital)/laboratory/hospital is as follows:

1. The PMU at MOPH will be trained by E &S officer in cooperation with MOE.
2. An assessment will be undertaken by the MOPH Team. The team shall start by checking if an ESMP including a full Health Care Waste Management Plan (HCWMP) is in place at the vaccination center/laboratory/hospital. In case an ESMP is not in place, then a simple ESMP including a full Health Care Waste Management Plan (HCWMP) should be prepared. In case PV panels are to be installed by a contractor, MOPH shall ensure that the contractors prepare a Contractor's Environmental & Social Management Plan (C-ESMP).
3. Following review and approval, the MOPH will then send the ESMP/ C-ESMP to the MOE for information.
4. The MOPH will make sure the ESMP/C-ESMP is being implemented by the vaccination center/laboratory/hospital/Contractor.
5. The MOPH can then support the vaccination center/laboratory/hospital.

The MOPH in cooperation with MOE will check on the implementation of the ESMP/C-ESMP annually.

### 6.2 Capacity building program

As emphasized in the ESCP: Capacity Support (training), the capacity building program is crucial in order to ensure proper implementation of the above-mentioned procedure and the ESMF in general, the MOPH will undertake environmental training and institutional capacity building. Environmental training and sensitization will be required for the implementing stakeholders and health workers.

1. A capacity building program should accompany the ESMF, the ESMP/C-ESMP and the HCWMP,
2. The staff of vaccination centers, laboratories and hospitals should be trained to develop an ESMP (including an HCWMP) and on the proper implementation of the plan
3. The staff of vaccination centers, laboratories and hospitals should be trained to develop implementing works and the relevant personnel should be made aware of the requirements of the ESMP by the PMU.



## 7- Stakeholders Consultations relevant to the project and Information Disclosure

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### 7.1 Objectives of the Consultations

WB policies require that broad, open and inclusive public consultations be held with Project stakeholders with vulnerable and disadvantaged groups that are impacted or likely to be impacted directly or indirectly, positively or adversely, by the Project and that may have an interest in the Project. These consultations are to ensure that the stakeholders are provided with the opportunity to engage in the planning process, to raise questions and receive input and responses to their concerns. Stakeholders' consultation helps to identify opportunities and risks, it improves project design / implementation and increases project ownership and sustainability. Consultations took place before and during the preparation of the ESMF.

### 7.2 Consultation Process

Following are the main steps of the consultations:

- Invitations to stakeholder's consultation were sent on Thursday, February 3, 2022 via email with the draft presentation attached about LHRP and ESMF. MOPH extended the invite to fifty (50) identified stakeholders such as governmental organizations, relevant NGOs, and academic people.
- The stakeholders' consultation meeting was conducted virtually on Tuesday February 8, 2022, at 14:00 local time. In line with available resources for carrying out stakeholder engagement in the context of COVID-19, the meeting followed the guidance of the WB's "Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings, Annex E" dated March 20, 2020. Twenty-three (23) persons participated presenting different institutions/organizations as listed in section 7.2 below. More than 50% of the participants were women.
- The Project components associated environmental and social risks, impacts and mitigation measures were explained in a Power Point Presentation in addition to the purpose of the ESMF document. The attendees were also informed about the GM and invited to share their thoughts, questions and concerns on the project and given the opportunity to give their feedback or send it later to the following email: [lhr.covid19@gmail.com](mailto:lhr.covid19@gmail.com).

### 7.2 Stakeholders Consulted

Below is a list of the stakeholders consulted and the main topics discussed.

- MOPH
- WHO
- United Nations International Children's Emergency Fund - Middle East and North Africa Regional Office (UNICEF - MENARO)
- Lebanese American University (LAU)
- Lebanese Army Forces (LAF)
- World Bank (WB) representatives (as Observers)
- Order of Nurses

Stakeholders were informed that there will be additional follow-up consultations throughout the project life cycle and implementation as per the cleared and disclosed SEP.

The main topics discussed are as follows:

- A question was raised by WHO about the management of the medical waste management plans at the vaccination center. It was explained that the Project will be reimbursing the vaccine centers for their services and will be monitoring the implementation of their Infection Control and Waste Management Plan (ICWMP) that is a condition for the disbursement of

funds. This issue was committed in the Environmental and Social Commitment Plan (ESCP) prepared under this Project and explained in the ESMF prepared under this Project.

- The representative of the Lebanese American University (LAU) and the former Head of Order of Nurses asked if the Project will be allocating funds to reimburse the nurses. It was explained that the project will be increasing the support to the Health Institutions and that will certainly be reflected in the increase of the nurses' fees. Full information on consulted stakeholders, list of participants, issues discussed, feedback etc., is detailed in the disclosed SEP<sup>33</sup>.

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<sup>33</sup> <https://bit.ly/3sxcl2G>

## 8- Grievance Mechanism

The main objective of a GM is to assist to resolve complaints and grievances in a timely, effective and efficient manner that satisfies all parties involved. Specifically, it provides a transparent and credible process for fair, effective and lasting outcomes. It also builds trust and cooperation as an integral component of broader community consultation that facilitates corrective actions. Specifically, the GM:

- Provides Project beneficiaries with avenues for making a complaint or resolving any dispute that may arise during the course of the implementation of projects;
- Ensures that appropriate and mutually acceptable redress actions are identified and implemented to the satisfaction of complainants; and
- Avoids the need to resort to judicial proceedings.
- Ensures application of principles of confidentiality and anonymity and referral pathways for SEA/SH and to address complaints in a specified timeframe

The SLCRP will rely on the existing GM consisting of the following:

### 8.1 Description of the Existing GM at MOPH

With the launching of the vaccination process, the establishment of a mechanism that helps in preventing social exclusion of marginalized stakeholders proved to be a necessity. For that aim, the MOPH decided to maintain a line of communication through the **national hotline 1214**.

While the vaccination Process was launched on February 19, 2021, the 1214 hotline was put into action one week before on February 12, 2021. The hotline team consisted of 24 operators and 4 supervisors operating in separate shifts all week long as follows:

**Table 5: Schedule of operation of 1214 Hotline**

Monday till Thursday		Friday till Sunday	
AM Shift 7:00 am – 3:00 pm	PM Shift 3:00 pm – 11:00 pm	AM Shift 7:00 am – 3:00 pm	PM Shift 3:00 pm – 11:00 pm

In the period ranging from March 19, 2021, and April 19, 2021, the number of operators increased to reach 12 operators and 2 supervisors per shift, thus, 24 operators and 4 supervisors per day. This increase in the number of operators was clearly reflected in the percentage of calls that were answered, for the percentage of calls augmented to reach 76% (59,441 answered and addressed calls) of the total received calls (77,986 calls), with a turnaround time ranging from 24 to 48 hours. As of August 2021, the contact center human resources included the following employees:

**Table 6: Human resources and schedule of operation of 1214 Hotlines between March 19, 2021 and April 19, 2021**

Monday till Friday		Saturday		Sunday	
AM Shift 7:00 am – 3:00 pm	PM Shift 3:00 pm – 11:00 pm	AM Shift 7:00 am – 3:00 pm	PM Shift 3:00 pm – 11:00 pm	AM Shift 7:00 am – 3:00 pm	PM Shift 3:00 pm – 11:00 pm

The team in place answered and addressed 92,669 calls out of 110,843 calls in September and October 2021 (accounting for 83.6% of the overall number of received call).

It is important to note that the establishment of this GM helped optimize the implementation of the national vaccination campaign. Several points can be highlighted in that regard as follows:

- Encouraging vulnerable groups to raise concerns without fear of reprisal
- Providing fair and timely means of dealing with complaints
- Preventing minor incidents developing into more serious disputes
- Paving the road for modifications in the vaccine deployment plan.

In addition to the above, all healthcare workers who underwent training on vaccination received clear messages that prohibit SEA/SH during the vaccination process. These messages are disseminated during the provision of any healthcare service. To further put in place measures that prevent sexual exploitation and abuse, the 1214 hotline operators are well trained in how to deal with SEA/SH complaints within the existing GRM. The principles of anonymity and confidentiality and survivor centered approach apply when required.

The expected turnaround time for grievances to be resolved would be 48 hours from the time of receipt of the grievance.

The capacity of the hotline has been extended to receive and respond to additional calls. The numbers have been publicly disclosed throughout the country in the broadcast, print and social media. A MOPH mobile application with hotline information is also available. The GM also includes an appeal process for unresolved grievances that was established before the first project restructuring. The GM will be equipped to handle cases of SEA/SH following a survivor-centered approach and guidance on how to respond to these cases will be developed and shared with operators. One implemented the updates to the GM will be documented in the progress reporting and communicated during the stakeholder consultations. The GM will continue to be publicized by the MOPH. Furthermore, to facilitate the communication between the PMU and the affected stakeholders, the former dedicated an email<sup>34</sup> to receive grievances related to the implementation of the project.

## 8.2 GM Process

The GM includes the following steps:

- Step 1: Receipt of grievances in writing
- Step 2: Recording of grievance and providing the receipt notice within 24 hours
- Step 3: Investigating the grievance and Communication of the Response within 7 days
- Step 4: Complainant Response: either grievance closure or taking further steps if the grievance remains open. If grievance remains open, complainant will be given opportunity to appeal to the MOPH.

## 8.3 Appeals Process

The GM provides an appeal process if the complainant is not satisfied with the proposed resolution of the complaint. Once all possible means to resolve the complaint have been proposed and if the complainant is still not satisfied then they should be advised of their right to legal recourse. Multiple and widely known ways to register grievances are provided. Anonymous grievances can be raised and addressed. Several uptake channels under consideration by the project include:

- By telephone on the following hotlines: 1214 and 1787 (24 operators and 4 supervisors per day).
- By E-mail addressed to the MOPH: [info@MOPH.gov.lb](mailto:info@MOPH.gov.lb) (in full coordination with MOPH relevant department and PMU)
- By e-mail addressed directly to the PMU that will be managing the project: [lhr.covid19@gmail.com](mailto:lhr.covid19@gmail.com)

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<sup>6</sup> On December 21, 2020, Lebanon passed the “Law to Criminalize Sexual Harassment and Rehabilitation of Its Victims.” This law is the first in Lebanon to criminalize any form of sexual harassment and abuse and to tackle some of the many gender equality barriers that women in Lebanon face under the law, it also outlines whistleblower protections. However, the law has not yet been implemented, and to date, there is no establishment of a clear referral pathway that resolves the aforementioned matters.

- Letter to Grievance focal points at local health facilities and vaccination sites
- Complaint computerized form to be lodged via any of the above channels
- Walk-ins may register a complaint on a grievance logbook at healthcare facility or suggestion box at clinic/hospitals. HCF have their own system (phone number given to vaccinees) to receive any complain and to report any adverse event following immunization, Annex G.
- People who do not know how to read or write are advised to reach out via the hotline: 1214 or 1787 as deemed necessary. These 2 hotlines are being disseminated regularly during consultations, vaccination marathons, awareness messages and communication campaigns.
- Contact via designated NGOs that will collect grievances from vulnerable groups and for SEA/SH related grievances; Abaad has shown willingness to play this role in previous World Bank Projects and will be contacted for this end.

Once a complaint has been received, by any channel, it should be recorded in the complaints logbook or grievance excel-sheet/grievance computerized database.

The project will have other measures in place to handle sensitive and confidential complaints, including those related to Sexual Exploitation and Abuse/Harassment (SEA/SH) in line with the WB ESF Good Practice Note on SEA/SH. ~~There will be~~ Referral pathways that will be used for SEA/SH will be established prior to project implementation activities. Such SEA/SH referral pathways are detailed in the chart 1 below, noting that info collected will be treated with survivor centric approach, confidentiality and data privacy.

### **SEA/SH Referral Pathways at the MOPH**

*To be done no longer than 48 hours from the time the complaint is received.*

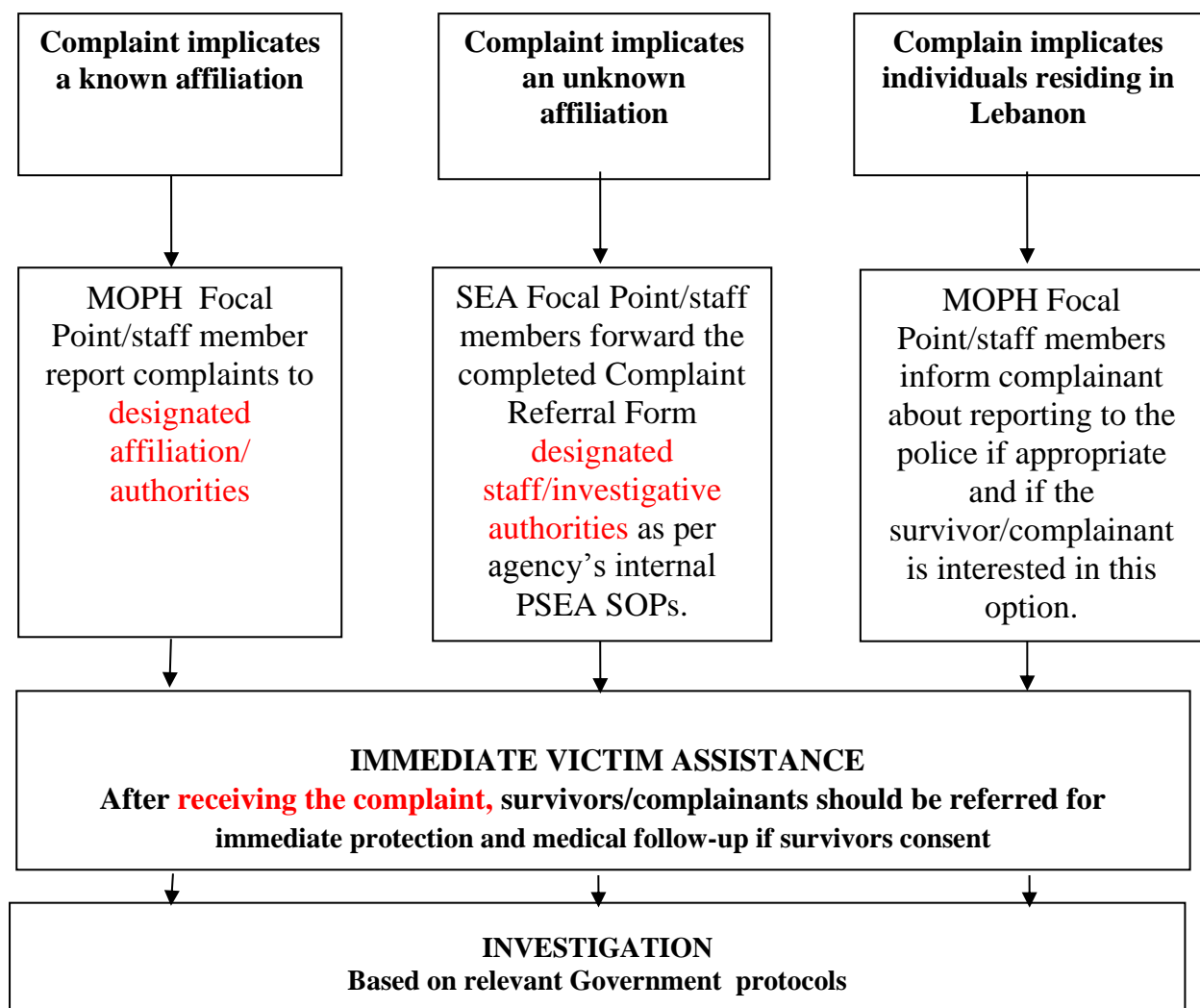


Chart 1: SEA/SH Referral Pathways (Source: Preventive Medicine Department, MOPH)



## 9 Monitoring, Institutional Arrangement and Budget

### 9.1 Monitoring

#### 9.1.1 *Joint Monitoring Committee for enhancing monitoring and effectiveness of the COVID-19 vaccination program*

A Joint Monitoring Committee (JMC) chaired by the World Bank and composed of heads and technical staff from WHO, UNICEF, IOM, UNHCR, UNRWA was set up with the objective to enhance the quality of monitoring and effectiveness of the COVID-19 vaccination program implementation with respect to the NDVP, WHO standards and WB requirements. The JMC has been active since the beginning of the vaccination campaign in February 2020. The JMC will be monitoring all vaccination rollout activities. The JMC convenes on a biweekly basis to provide high-level oversight of the progress in the NDVP implementation, to review findings of the TPMA and ensure timely action for proposed improvements, and to align advocacy efforts and recommendations to the GoL /MOPH to maintain high levels of quality and equity throughout the vaccination process.

#### 9.1.2 *Third- Party Monitoring of vaccination services*

In the current Lebanon Health Resilience Project (LHRP), the MOPH is continuously providing IFRC with (i) vaccine shipment arrival schedules, (ii) updated list of vaccination sites with operating schedules and (iii) schedule of mobile medical units. This will facilitate the assessment of the delivery of vaccination services at all vaccination sites, in terms of processes, site requirements, eligibility of recipients as per NDVP, adherence to vaccination protocols (including protocols related to eligibility), infection prevention, waste management, record keeping and reporting. The agreement between the World Bank and IFRC signed in February 2021 came as a necessity to ensure the proper use of vaccination and promotion of the fair access to the vaccine. This will also be maintained throughout the Strengthening Lebanon's Response to COVID-19 project, whereby the MOPH PMU will contract an independent Third-Party Monitoring Agency (TPM).

The TPM will be independently monitoring the compliance with standards/ guidelines and agreed deployment plan in terms of supply chain management and administration of COVID-19 vaccines at (i) the key points in the supply chain and (ii) all vaccination sites from the technical, environmental and social perspectives. In detail, the consultants will be:

- a) Assessing the storage and handling of vaccine supplies in line with WHO guidelines at the key points of the supply chain (including but not limited to arrival point in Lebanon prior to custom clearance, centralized storage prior to distribution and vaccination sites).
- b) Assessing the temperature and stock maintenance of vaccine supplies at the key points of the supply chain
- c) Assessing the delivery of vaccination services at all vaccination sites in terms of processes, site requirements, eligibility of recipients as per NDVP, adherence to vaccination protocols (including protocols related to eligibility), infection prevention, record keeping and reporting, waste management.
- d) Assessing the perspectives and feedback of vaccine recipients and service providers at all vaccination sites, and through GM reporting mechanisms and on social media sites.
- e) Sharing the findings and suggested recommendations for action with the relevant parties

The activity of the TPM will fall under subcomponent 1.2 of the project. The estimated cost for this activity will be agreed upon at a later stage.

#### 9.1.3 *Third-Party Agent for monitoring hospitalization*

A TPMA will be contracted under the project; to conduct technical and financial verification of inpatient hospital bills both related to COVID-19 and non-COVID-19 admissions in both private and public hospitals. In detail, the independent agent will be:



- a) Validating the hospitals identified by MOPH for the services rendered for COVID-19 and non-COVID-19 treatment;
- b) Validating the compliance with the admission process adopted for admitting patients covered by MOPH;
- c) Verifying the delivery of medical services to patients; and
- d) Reviewing and substantiating the bills that are charged according to the MOPH price list.

In addition, and to ensure that doctors working on hospitalization are being paid, the TPMA will be verifying those hospitals that are being reimbursed for COVID-19 admissions are transferring the eligible payments to doctors as per the MOPH payment schedule and in a timely manner.

#### **9.1.4 PMU to monitor implementation of the ESMF**

The PMU E&S specialist will check on the proper implementation of the ESMP and the HCWMP in the HCF. The following table presents the main tasks to be undertaken to monitor the proper implementation of the environmental and social requirements of the project as per this ESMF and the ESHS guidelines and requirements. It is also the role of the PMU E&S specialist to monitor implementation of the material measures and actions as per the ESCP in collaboration with relevant MOPH department.

**Table 7: Monitoring Plan for the ESMF**

Task	Indicator	Frequency	Responsibility	Phase
Review the HCWMP	HCWMP prepared and approved by PMU/E&S specialist in collaboration with MOPH relevant department	Once	PMU with relevant MOPH department	Before implementation of the activities in the HCF
Monitor the implementation of the HCWMP	- Visit and compliance report by PMU/E&S specialist in collaboration with MOPH relevant department	Once	PMU with relevant MOPH department	Before implementation of the activities in the HCF
	- Observations during site visits	Twice yearly during implementation	PMU with relevant MOPH department	During project lifetime
Check the implementation of the ESMP	Visit and compliance report by PMU/E&S specialist in collaboration with MOPH relevant department	Twice yearly during implementation	PMU with relevant MOPH department	During project lifetime

## **9.2 Institutional Arrangements for the implementation of the ESMF**

The MOPH will manage the World Bank funds. The PMU which manages the implementation of the Project, consists of five full-time external consultants hired under the LHRP project: Project Manager, Financial Manager, Operations Assistant, Administrative Assistant and Financial Assistant;. An **Environmental and**

**Social Safeguards Specialist and GRM officer** will be recruited before the beginning of the project implementation and will be in charge of day-to-day tasks including preparing, updating, and implementing relevant E&S standards throughout project implementation as set out in the ESCP of the project in close collaboration with MOPH relevant department.

### 9.3 Cost Estimate

The indicative estimated total budget for the implementation of the ESMF is 145,000 US\$ and is indicatively detailed in the table below.

**Table 8: ESMF Budget**

Elements	Responsibility	Number	Unit Price US\$	Total Cost US\$
Training for the preparation and implementation of an ESMP and an HCWMP	PMU/E&S Specialist in collaboration with MOPH relevant department	2 (Comprising representatives of HCF including hospitals)	3,000	6,000
Trainings on the Codes of Conducts, Grievance Mechanism and Stakeholders' Engagement.	PMU/E&S Specialist in collaboration with MOPH relevant department	2 (Comprising representatives of HCF including hospitals)	3,000	6,000
Financial Support and Contribution for the Implementation of ESMP and HCWMP	PMU/E&S specialist in collaboration with MOPH relevant department	25 Governmental Hospitals	5,000	125,000
Contingencies <sup>35</sup>				8,000
<b>Total Cost</b>				<b>145,000</b>

The GM and E&S officer that will be appointed by the PMU MOPH, under the supervision of the project manager, will be in charge of preparing, updating, and implementing relevant E&S standards throughout project implementation as set out in the ESCP.

<sup>35</sup> Such as extra trainings, extra financial contribution

## Annexes

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**Annex A: List of Hospitals that contracted AEC to handle their HCW**

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## **Annex A: List of Hospitals that contracted AEC to handle their HCW**

With reference to AEC, as of March 2022, the total number of hospitals contracted with Arcenciel is 150 hospitals, out of which twenty-six (26) are in Bekaa, fifty-eight (58) in Beirut, forty (40) in North Lebanon, and twenty-six (26) in South Lebanon). Out of those hospitals, twenty-two (22) are governmental hospitals. The hospitals who have a contract with AEC are listed below

### **List of Hospitals contracted with AEC by governorate**

#### **BEKAA**

- 1 AL ASSI HOSPITAL
- 2 BATOUL HOSPITAL
- 3 ELIAS HRAOUI GOVERNMENTAL HOSPITAL
- 4 HERMEL GOVERNMENTAL HOSPITAL
- 5 HOPITAL BEKAA
- 6 HOPITAL CHTAURA
- 7 HOPITAL DAR EL HEKME
- 8 HOPITAL DES MEDECINS EL MANARA
- 9 HOPITAL DR. BAHMAD & AL FAKIH
- 10 HOPITAL GOUVERNEMENTAL DE BAALBECK
- 11 HOPITAL HAMED FARHAT
- 12 HOPITAL IBIN SINA
- 13 HOPITAL KHOURY GENERAL
- 14 HOPITAL LIBANO-FRANCAIS
- 15 HOPITAL NASRA BAR ELIAS
- 16 HOPITAL RACHAYA GOUVERNEMENTAL
- 17 HOPITAL RAYAN
- 18 HOPITAL RAYYAK
- 19 HOPITAL TAANAEL GENERAL
- 20 HOPITAL TALL CHIHA
- 21 HOPITAL TATARY
- 22 HOPITAL UNIVERSITAIRE DAR AL AMAL
- 23 ISLAMIC MEDICAL CARE CENTER - KAB ELIAS
- 24 KHERBET KANAFAR GOVERNMENTAL HOSPITAL
- 25 UNIVERSAL HOSPITAL - RAS BAALBECK
- 26 WEST BEKAA HOSPITAL

#### **BEIRUT**

- 27 AL BORJ HOSPITAL - SINCERE MEDICAL SERVICES
- 28 AUH
- 29 BEIRUT EYE & ENT SPECIALIST HOSPITAL-BEESH
- 30 BELLEVUE MEDICAL CENTER
- 31 CENTRE HOSPITALIER DE BHANNES
- 32 CHRONIC CARE CENTER
- 33 CLEMENCEAU MEDICAL CENTER

- 34 CLINIQUE DU LEVANT-SOCIETE MEDICALE
- 35 COMPAGNIE HOPITAL DR. SAMIR SERHAL S.A.L.
- 36 DR. ISMAT EL DADA
- 37 DR ELIAS WARRAK EYE HOSPITAL - ADVANCED EYE CARE
  
- 38 HAZMIEH INTERNATIONAL MEDICAL CENTER- HIMC
- 39 HOPITAL ABOUJAOUDE
- 40 HOPITAL AL IMAN
- 41 HOPITAL AL JABAL
- 42 HOPITAL BAABDA GOUVERNEMENTAL
- 43 HOPITAL BAKHAAZI
- 44 HOPITAL BEIT CHABAB
- 45 HOPITAL BITAR
- 46 HOPITAL CHEHAR EL GHARBI
- 47 HOPITAL DAHR-EL-BACHEK
- 48 HOPITAL DE CAMPAGNE MILITAIRE ITALIEN
- 49 HOPITAL DR. NASSAR
- 50 HOPITAL EL HAYAT
- 51 HOPITAL EL MAKASSED
- 52 HOPITAL EL WATANI
- 53 HOPITAL EYE AND EAR
- 54 HOPITAL FOUAD KHOURY
- 55 HOPITAL GOUVERNEMENTAL QUARANTAINE
- 56 HOPITAL HAIFA
- 57 HOPITAL HAROUN
- 58 HOPITAL HAYEK
- 59 HOPITAL LIBANAIS CENTRE HOSPITALIER UNIVERSITAIRE
  
- 60 HOPITAL LIBANO-CANADIEN
- 61 HOPITAL MILITAIRE BADARO
- 62 HOPITAL MONT LIBAN
- 63 HOPITAL NAJJAR
- 64 HOPITAL PSYCHIATRIQUE DE LA CROIX
- 65 HOPITAL RIZK/LEB.AMER.UNIVERSITY MED.CENTER
- 66 HOPITAL SACRE COEUR
- 67 HOPITAL ST. CHARLES
- 68 HOPITAL ST. GEORGES ACHRAFIEH
- 69 HOPITAL ST. GEORGES HADATH
- 70 HOPITAL ST. JOSEPH
- 71 HOPITAL STE. THERESE HADATH
- 72 HOPITAL TRAD
- 73 HOPITAL ZAHRAA
- 74 HOTEL DIEU DE FRANCE
- 75 LABORATOIRE MEDICAL SPECIALISE SAL
- 76 LEBANESE OPHTALMIC HOSPITAL
- 77 MEDEX MEDICAL CENTER
- 78 MEDICAL 2000 - HOPITAL KAMAL JOUMBLATT
- 79 MIDDLE EAST INSTITUTE OF HEALTH

- 80 RASSOUL AAZAM HOSPITAL
- 81 RAFIC EL HARIRI UNIVERSITY HOSPITAL
- 82 SAHEL HEALTHCARE CO. S.A.R.L
- 83 SOCIETE HOPITAL AREZ S.A.L
- 84 THE EGYPTIAN LEBANESE HOSPITAL MEDICAL CENTER

**NORTH LEBANON**

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- 85 BISSAR HOSPITAL
  - 86 BESHARY GOVERNMENTAL HOSPITAL
  - 87 DAR EL ZAHRAA HOSPITAL
  - 88 EL YOUSSEF MEDICAL CENTER
  - 89 HOPITAL ALBERT HEYKAL (EL)
  - 90 HOPITAL CARDIOLOGIQUE DU LIBAN
  - 91 HOPITAL CHAHINE
  - 92 HOPITAL DAR EL CHIFA
  - 93 HOPITAL EL BATROUN
  - 94 HOPITAL EL BORG AMIOUN
  - 95 HOPITAL EL HANANE EL KHAYRIYAH
  - 96 HOPITAL EL KHEIR
  - 97 HOPITAL EL KOURA
  - 98 HOPITAL EL MOUNLA
  - 99 HOPITAL EL SALAM
  - 100 HOPITAL GOUVERNEMENTAL BOIRE
  - 101 HOPITAL GOUVERNEMENTAL EHDEN
  - 102 HOPITAL GOUVERNEMENTAL HALBA
  - 103 HOPITAL GOUVERNEMENTAL KARTABA
  - 104 HOPITAL GOUVERNEMENTAL TRIPOLI
  - 105 HOPITAL GOUVERNEMENTAL DE TANNOURINE
  - 106 HOPITAL ISLAMIQUE DE BIENFAISANCE
  - 107 HOPITAL MAZLOUM
  - 108 HOPITAL MONSEIGNEUR CORTBAWI
  - 109 HOPITAL NINI
  - 110 HOPITAL NOTRE DAME DE LA PAIX DES SOEURS ANTONINES
  
  - 111 HOPITAL NOTRE DAME DE LIBAN SAL
  - 112 HOPITAL NOTRE DAME DE SECOURS JBEIL
  - 113 HOPITAL NOTRE DAME ZGHORTA
  - 114 HOPITAL ORANGE NASSAU GOUVERNEMENTAL
  - 115 HOPITAL RAHAL
  - 116 HOPITAL SAFAD
  - 117 HOPITAL SAFAD DIALYSM
  - 118 HOPITAL SIR EL DENNIEH
  - 119 HOPITAL ST MARITIME
  - 120 HOPITAL ST MICHEL AMCHIT
  - 121 HOPITAL ST. GEORGES AJALTOUN
  - 122 HOPITAL ST. LOUIS
  - 123 KESRWANE MEDICAL CENTER SAL

124 LAUMC ST.JOHN'S HOSPITAL  
**SOUTH LEBANON**

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125 AL IKLIM HEALTH FOUNDATION - CENTRAL HOSPITAL  
126 ASSOCIATION DAR EL AAJAZA EL ISLAMIYA  
127 BCHAMOUN SPECIALITY HOSPITAL  
128 BEIRUT ARAB UNIVERSITY  
129 HAMMOUD HOSPITAL UNIVERSITY MEDICAL CENTER  
130 HOPITAL BAHMAN  
131 HOPITAL BALSAM  
132 HOPITAL BEYROUTH  
133 HOPITAL GOUVERNEMENTAL BINT JBEIL  
134 HOPITAL CHEAIB  
135 HOPITAL DALLAA  
136 HOPITAL DU CONSEIL ISLAMIQUE DE LA SANTE  
137 HOPITAL EIN WA ZEIN  
138 HOPITAL EL CHEIKH RAGHEB HARB  
139 HOPITAL GHANDOUR  
140 HOPITAL GOUVERNEMENTAL SAIDA  
141 HOPITAL HAMSHARY  
142 HOPITAL KASSAB SAL  
143 HOPITAL KHAROUBI  
144 HOPITAL NAJDA EL CHAABIYA  
145 HOPITAL RAHI  
146 HOPITAL SEBLINE  
147 LABIB MEDICAL CENTER SAL  
148 MAYS EL JABAL GOVERNMENTAL HOSPITAL  
149 NAKIB HOSPITAL  
150 SPECIALIZED MEDICAL REHABILITATION HOSPITAL



## **Annex B: Basic Laboratories – Biosafety Levels 1 and 2**

Extracts from “WHO Laboratory biosafety manual - Third edition- 2004” available online through <https://www.who.int/csr/resources/publications/biosafety/Biosafety7.pdf>

### **3. Basic laboratories-**

#### **Biosafety Levels 1 and 2**

For the purposes of this manual, the guidance and recommendations given as minimum requirements pertaining to laboratories of all biosafety levels are directed at microorganisms in Risk Groups 1–4. Although some of the precautions may appear to be unnecessary for some organisms in Risk Group 1, they are desirable for training purposes to promote good (i.e. safe) microbiological techniques (GMT).

Diagnostic and health-care laboratories (public health, clinical or hospital-based) must all be designed for Biosafety Level 2 or above. As no laboratory has complete control over the specimens it receives, laboratory workers may be exposed to organisms in higher risk groups than anticipated. This possibility must be recognized in the development of safety plans and policies. In some countries, accreditation of clinical laboratories is required. Globally, standard precautions (2) should always be adopted and practiced.

The guidelines for basic laboratories – Biosafety Levels 1 and 2 presented here are comprehensive and detailed, as they are fundamental to laboratories of all biosafety levels. The guidelines for containment Laboratories-Biosafety Level 3 and maximum containment laboratories- Biosafety Level 4 that follow (Chapters 4 and 5) are modifications of and additions to these guidelines, designed for work with the more dangerous (hazardous) pathogens.

#### **Code of practice**

This code is a listing of the most essential laboratory practices and procedures that are basic to GMT. In many laboratories and national laboratory programmes, this code may be used to develop written practices and procedures for safe laboratory operations.

Each laboratory should adopt a safety or operations manual that identifies known and potential hazards, and specifies practices and procedures to eliminate or minimize such hazards. GMT are fundamental to laboratory safety. Specialized laboratory equipment is a supplement to but can never replace appropriate procedures. The most important concepts are listed below.

#### **Access**

1. The international biohazard warning symbol and sign (Figure 1) must be displayed on the doors of the rooms where microorganisms of Risk Group 2 or higher risk groups are handled.

Figure 1. Biohazard warning sign for laboratory doors



BIOHAZARD  
ADMITTANCE TO AUTHORIZED PERSONNEL ONLY  
Biosafety \_\_\_\_\_ Level: \_\_\_\_\_  
Responsible investigator: \_\_\_\_\_ In  
case of emergency call: -----  
Daytime phone: \_\_\_\_\_ Home phone: \_\_\_\_\_

2. Only authorized persons should be allowed to enter the laboratory working areas.
3. Laboratory doors should be kept closed.
4. Children should not be authorized or allowed to enter laboratory working areas.
5. Access to animal houses should be specially authorized.
6. No animals should be admitted other than those involved in the work of the laboratory.

*Personal protection*

1. Laboratory coveralls, gowns or uniforms must be worn at all times for work in the laboratory.
  2. Appropriate gloves must be worn for all procedures that may involve direct or accidental contact with blood, body fluids and other potentially infectious materials or infected animals. After use, gloves should be removed aseptically and hands must then be washed.
3. Personnel must wash their hands after handling infectious materials and animals, and before they leave the laboratory working areas.

4. Safety glasses, face shields (visors) or other protective devices must be worn when it is necessary to protect the eyes and face from splashes, impacting objects and sources of artificial ultraviolet radiation.
5. It is prohibited to wear protective laboratory clothing outside the laboratory, e.g. in canteens, coffee rooms, offices, libraries, staff rooms and toilets.
6. Open-toed footwear must not be worn in laboratories.
7. Eating, drinking, smoking, applying cosmetics and handling contact lenses is prohibited in the laboratory working areas.
8. Storing human foods or drinks anywhere in the laboratory working areas is prohibited.
9. Protective laboratory clothing that has been used in the laboratory must not be stored in the same lockers or cupboards as street clothing.

#### *Procedures*

1. Pipetting by mouth must be strictly forbidden.
2. Materials must not be placed in the mouth. Labels must not be licked.
3. All technical procedures should be performed in a way that minimizes the formation of aerosols and droplets.
4. The use of hypodermic needles and syringes should be limited. They must not be used as substitutes for pipetting devices or for any purpose other than parenteral injection or aspiration of fluids from laboratory animals.
5. All spills, accidents and overt or potential exposures to infectious materials must be reported to the laboratory supervisor. A written record of such accidents and incidents should be maintained.
6. A written procedure for the clean-up of all spills must be developed and followed.
7. Contaminated liquids must be decontaminated (chemically or physically) before discharge to the sanitary sewer. An effluent treatment system may be required, depending on the risk assessment for the agent(s) being handled.
8. Written documents that are expected to be removed from the laboratory need to be protected from contamination while in the laboratory.

#### *Laboratory working areas*

1. The laboratory should be kept neat, clean and free of materials that are not pertinent to the work.
2. Work surfaces must be decontaminated after any spill of potentially dangerous material and at the end of the working day.
3. All contaminated materials, specimens and cultures must be decontaminated before disposal or cleaning for reuse.
4. Packing and transportation must follow applicable national and/or international regulations.
5. When windows can be opened, they should be fitted with arthropod-proof screens.

***Biosafety management***

1. It is the responsibility of the laboratory director (the person who has immediate responsibility for the laboratory) to ensure the development and adoption of a biosafety management plan and a safety or operations manual.
2. The laboratory supervisor (reporting to the laboratory director) should ensure that regular training in laboratory safety is provided.
3. Personnel should be advised of special hazards, and required to read the safety or operations manual and follow standard practices and procedures. The laboratory supervisor should make sure that all personnel understand these. A copy of the safety or operations manual should be available in the laboratory.
4. There should be an arthropod and rodent control programme.
5. Appropriate medical evaluation, surveillance and treatment should be provided for all personnel in case of need, and adequate medical records should be maintained.

**Laboratory design and facilities**

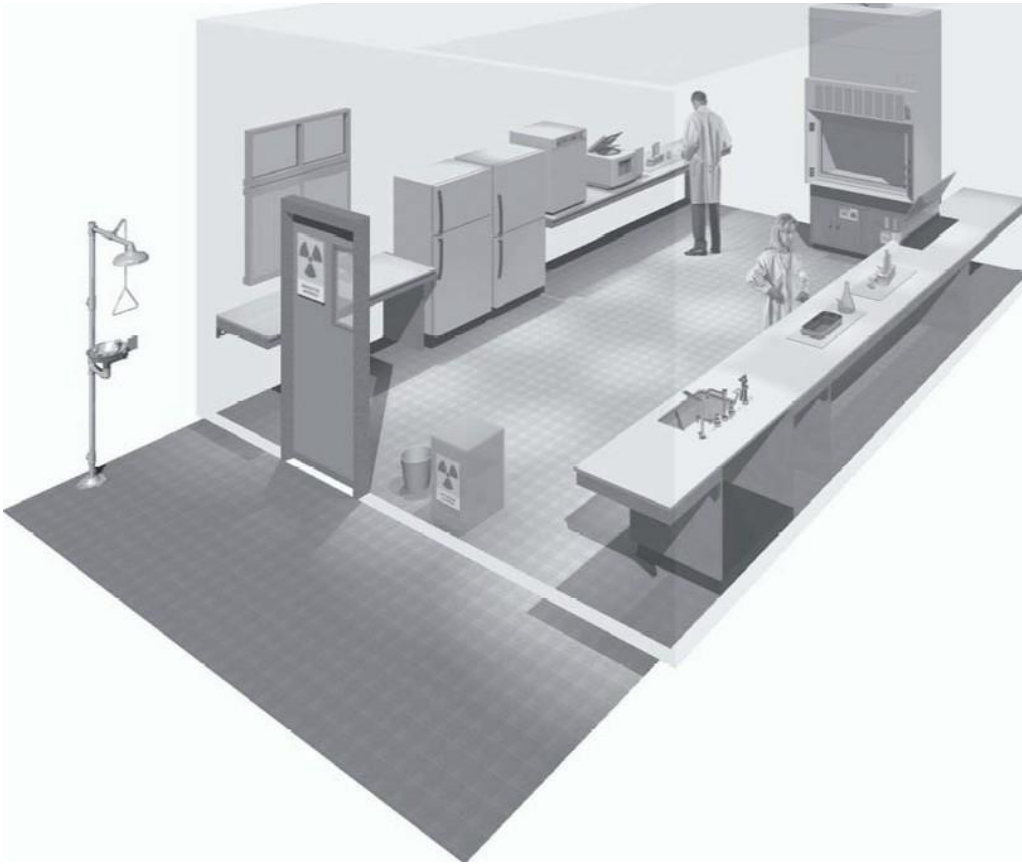
In designing a laboratory and assigning certain types of work to it, special attention should be paid to conditions that are known to pose safety problems. These include:

1. Formation of aerosols
2. Work with large volumes and/or high concentrations of microorganisms
3. Overcrowding and too much equipment
4. Infestation with rodents and arthropods
5. Unauthorized entrance
6. Workflow: use of specific samples and reagents.

Examples of laboratory designs for Biosafety Levels 1 and 2 are shown in Figures 2 and 3, respectively.

***Design features***

1. Ample space must be provided for the safe conduct of laboratory work and for cleaning and maintenance.
2. Walls, ceilings and floors should be smooth, easy to clean, impermeable to liquids and resistant to the chemicals and disinfectants normally used in the laboratory. Floors should be slip-resistant.
3. Bench tops should be impervious to water and resistant to disinfectants, acids, alkalis, organic solvents and moderate heat.
4. Illumination should be adequate for all activities. Undesirable reflections and glare should be avoided.
5. Laboratory furniture should be sturdy. Open spaces between and under benches, cabinets and equipment should be accessible for cleaning.
6. Storage space must be adequate to hold supplies for immediate use and thus prevent clutter on bench tops and in aisles. Additional long-term storage space, conveniently located outside the laboratory working areas, should also be provided.



*Figure 2. A typical Biosafety Level 1 Laboratory  
(graphics kindly provided by CUH2A, Princeton, NJ, USA)*

7. Space and facilities should be provided for the safe handling and storage of solvents, radioactive materials, and compressed and liquefied gases.
8. Facilities for storing outer garments and personal items should be provided outside the laboratory working areas.
9. Facilities for eating and drinking and for rest should be provided outside the laboratory working areas.
10. Hand-washing basins, with running water if possible, should be provided in each laboratory room, preferably near the exit door.
11. Doors should have vision panels, appropriate fire ratings, and preferably be self-closing.
12. At Biosafety Level 2, an autoclave or other means of decontamination should be available in appropriate proximity to the laboratory.
13. Safety systems should cover fire, electrical emergencies, emergency shower and eyewash facilities.
14. First-aid areas or rooms suitably equipped and readily accessible should be available

15. In the planning of new facilities, consideration should be given to the provision of mechanical ventilation systems that provide an inward flow of air without recirculation. If there is no mechanical ventilation, windows should be able to be opened and should be fitted with arthropod-proof screens.
16. A dependable supply of good quality water is essential. There should be no cross-connections between sources of laboratory and drinking-water supplies. An anti-backflow device should be fitted to protect the public water system.
17. There should be a reliable and adequate electricity supply and emergency lighting to permit safe exit. A stand-by generator is desirable for the support of essential equipment, such as incubators, biological safety cabinets, freezers, etc., and for the ventilation of animal cages.
18. There should be a reliable and adequate supply of gas. Good maintenance of the installation is mandatory.
19. Laboratories and animal houses are occasionally the targets of vandals. Physical and fire security must be considered. Strong doors, screened windows and restricted issue of keys are compulsory. Other measures should be considered and applied, as appropriate, to augment security (see Chapter 9).

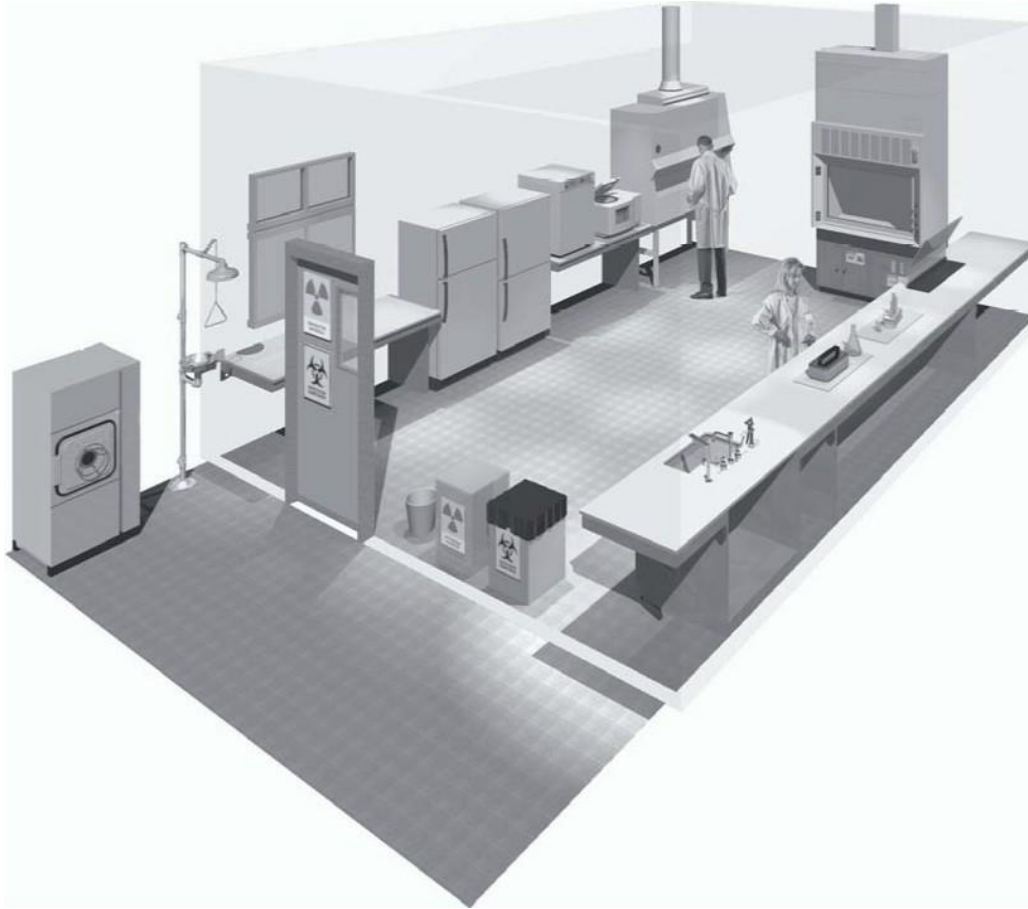
#### **Laboratory equipment**

Together with good procedures and practices, the use of safety equipment will help to reduce risks when dealing with biosafety hazards. This section deals with basic principles related to equipment suitable for laboratories of all biosafety levels. Requirements for laboratory equipment pertinent to higher biosafety levels are dealt with in the relevant chapters.

The laboratory director should, after consultation with the biosafety officer and safety committee (if designated), ensure that adequate equipment is provided and that it is used properly. Equipment should be selected to take account of certain general principles, i.e. it should be:

1. Designed to prevent or limit contact between the operator and the infectious material
2. Constructed of materials that are impermeable to liquids, resistant to corrosion and meet structural requirements
3. Fabricated to be free of burrs, sharp edges and unguarded moving parts
4. Designed, constructed and installed to facilitate simple operation and provide for ease of maintenance, cleaning, decontamination and certification testing; glassware and other breakable materials should be avoided, whenever possible.

Detailed performance and construction specifications may need to be consulted to ensure that the equipment possesses the necessary safety features (see also Chapters 10 and 11).



*Figure 3. A typical Biosafety Level 2 laboratory (graphics kindly provided by CUH2A, Princeton, NJ USA). Procedures likely to generate aerosols are performed within a biological safety cabinet. Doors are kept closed and are posted with appropriate hazard signs. Potentially contaminated wastes are separated from the general waste stream.*

### **Essential biosafety equipment**

1. Pipetting aids –to avoid mouth pipetting. Many different designs are available.
2. Biological safety cabinets, to be used whenever:
  - infectious materials are handled; such materials may be centrifuged in the open laboratory if sealed centrifuge safety cups are used and if they are loaded and unloaded in a biological safety cabinet
  - there is an increased risk of airborne infection
  - procedures with a high potential for producing aerosols are used; these may include centrifugation, grinding, blending, vigorous shaking or mixing, sonic disruption, opening of containers of infectious materials whose internal pressure may be different from the ambient pressure, intranasal inoculation of animals, and harvesting of infectious tissues from animals and eggs.
3. Plastic disposable transfer loops. Alternatively, electric transfer loop incinerators may be used inside the biological safety cabinet to reduce aerosol production.



4. Screw-capped tubes and bottles.
5. Autoclaves or other appropriate means to decontaminate infectious materials.
6. Plastic disposable Pasteur pipettes, whenever available, to avoid glass.
7. Equipment such as autoclaves and biological safety cabinets must be validated with appropriate methods before being taken into use. Recertification should take place at regular intervals, according to the manufacturer's instructions (see Chapter 7).

#### **Health and medical surveillance**

The employing authority, through the laboratory director, is responsible for ensuring that there is adequate surveillance of the health of laboratory personnel. The objective of such surveillance is to monitor for occupationally acquired diseases. Appropriate activities to achieve these objectives are:

1. Provision of active or passive immunization where indicated
2. Facilitation of the early detection of laboratory-acquired infections
3. Exclusion of highly susceptible individuals (e.g. pregnant women or immune compromised individuals) from highly hazardous laboratory work
4. Provision of effective personal protective equipment and procedures.

#### ***Guidelines for the surveillance of laboratory workers handling microorganisms at Biosafety Level 1***

Historical evidence indicates that the microorganisms handled at this level are unlikely to cause human disease or animal disease of veterinary importance. Ideally, however, all laboratory workers should undergo a pre-employment health check at which their medical history is recorded. Prompt reporting of illnesses or laboratory accidents is desirable and all staff members should be made aware of the importance of maintaining GMT.

#### ***Guidelines for the surveillance of laboratory workers handling microorganisms at Biosafety Level 2***

1. A pre-employment or preplacement health check is necessary. The person's medical history should be recorded and a targeted occupational health assessment performed.
2. Records of illness and absence should be kept by the laboratory management.
3. Women of childbearing age should be made aware of the risk to an unborn child of occupational exposure to certain microorganisms, e.g. rubella virus. The precise steps taken to protect the fetus will vary, depending on the microorganisms to which the women may be exposed.

#### **Training**

Human error and poor technique can compromise the best of safeguards to protect the laboratory worker. Thus, a safety-conscious staff, well informed about the recognition and control of laboratory hazards, is key to the prevention of laboratory-

acquired infections, incidents and accidents. For this reason, continuous in-service training in safety measures is essential. An effective safety programmer begins with the laboratory managers, who should ensure that safe laboratory practices and procedures are integrated into the basic training of employees. Training in safety measures should be an integral part of new employees' introduction to the laboratory. Employees should be introduced to the code of practice and to local guidelines, including the safety or operations manual. Measures to assure that employees have read and understood the guidelines, such as signature pages, should be adopted. Laboratory supervisors play the key role in training their immediate staff in good laboratory techniques. The biosafety officer can assist in training and with the development of training aids and documentation (see also Chapter 21).

Staff training should always include information on safe methods for highly hazardous procedures that are commonly encountered by all laboratory personnel and which involve:

1. Inhalation risks (i.e. Aerosol production) when using loops, streaking agar plates, pipetting, making smears, opening cultures, taking blood/serum samples, centrifuging, etc.
2. Ingestion risks when handling specimens, smears and cultures
3. Risks of percutaneous exposures when using syringes and needles
4. Bites and scratches when handling animals
5. Handling of blood and other potentially hazardous pathological materials
6. Decontamination and disposal of infectious material.

### **Waste handling**

Waste is anything that is to be discarded.

In laboratories, decontamination of wastes and their ultimate disposal are closely interrelated. In terms of daily use, few if any contaminated materials will require actual removal from the laboratory or destruction. Most glassware, instruments and laboratory clothing will be reused or recycled. The overriding principle is that all infectious materials should be decontaminated, autoclaved or incinerated within the laboratory.

The principal questions to be asked before discharge of any objects or materials from laboratories that deal with potentially infectious microorganisms or animal tissues are:

1. Have the objects or materials been effectively decontaminated or disinfected by an approved procedure?
2. If not, have they been packaged in an approved manner for immediate on-site incineration or transfer to another facility with incineration capacity?
3. Does the disposal of the decontaminated objects or materials involve any additional potential hazards, biological or otherwise, to those who carry out the immediate disposal procedures or who might come into contact with discarded items outside the facility?

***Decontamination***

Steam autoclaving is the preferred method for all decontamination processes. Materials for decontamination and disposal should be placed in containers, e.g. autoclavable plastic bags, that are colour-coded according to whether the contents are to be autoclaved and/or incinerated. Alternative methods may be envisaged only if they remove and/or kill microorganisms (for more details see Chapter 14).

***Handling and disposal procedures for contaminated materials and wastes***

An identification and separation system for infectious materials and their containers should be adopted. National and international regulations must be followed. Categories should include:

1. Non-contaminated (non-infectious) waste that can be reused or recycled or disposed of as general, "household" waste
2. Contaminated (infectious) "sharps"- hypodermic needles, scalpels, knives and broken glass; these should always be collected in puncture-proof containers fitted with covers and treated as infectious
3. Contaminated material for decontamination by autoclaving and thereafter washing and reuse or recycling
4. Contaminated material for autoclaving and disposal
5. Contaminated material for direct incineration.

***Sharps***

After use, hypodermic needles should not be recapped, clipped or removed from disposable syringes. The complete assembly should be placed in a sharps disposal container. Disposable syringes, used alone or with needles, should be placed in sharps disposal containers and incinerated, with prior autoclaving if required.

Sharps disposal containers must be puncture-proof/-resistant and must not be filled to capacity. When they are three-quarters full they should be placed in "infectious waste" containers and incinerated, with prior autoclaving if laboratory practice requires it. Sharps disposal containers must not be discarded in landfills.

***Contaminated (potentially infectious) materials for autoclaving and reuse***

No preclearing should be attempted of any contaminated (potentially infectious) materials to be autoclaved and reused. Any necessary cleaning or repair must be done only after autoclaving or disinfection.

***Contaminated (potentially infectious) materials for disposal***

Apart from sharps, which are dealt with above, all contaminated (potentially infectious) materials should be autoclaved in leak-proof containers, e.g. autoclavable, colour-coded plastic bags, before disposal. After autoclaving, the material may be placed in transfer containers for transport to the incinerator. If possible, materials deriving from health-care activities should not be discarded in landfills even after decontamination. If an

incinerator is available on the laboratory site, autoclaving may be omitted: the contaminated waste should be placed in designated containers (e.g. colour-coded bags) and transported directly to the incinerator. Reusable transfer containers should be leak-proof and have tight-fitting covers. They should be disinfected and cleaned before they are returned to the laboratory for further use.

Discard containers, pans or jars, preferably unbreakable (e.g. plastic), should be placed at every work station. When disinfectants are used, waste materials should remain in intimate contact with the disinfectant (i.e. not protected by air bubbles) for the appropriate time, according to the disinfectant used (see Chapter 14). The discard containers should be decontaminated and washed before reuse.

Incineration of contaminated waste must meet with the approval of the public health and air pollution authorities, as well as that of the laboratory biosafety officer (see section on Incineration in Chapter 14).

#### **Chemical, fire, electrical, radiation and equipment safety**

A breakdown in the containment of pathogenic organisms may be the indirect result of chemical, fire, electrical or radiation accidents. It is therefore essential to maintain high standards of safety in these fields in any microbiological laboratory. Statutory rules and regulations for each of these will normally be laid down by the competent national or local authority, whose assistance should be sought if necessary. Chemical, fire, electrical and radiation hazards are considered in greater detail in Part VI of this manual (Chapters 17 and 18).

Additional information regarding safety equipment is presented in Chapter 11.

## **Annex C: COVID-19 vaccination training Report by MOPH**

### **Background and Rational**

In December 2019, Wuhan city, the capital of Hubei province in China, became the center of an outbreak of pneumonia of unknown cause. By January 2020, Chinese scientists had isolated a novel coronavirus, severe acute respiratory syndrome coronavirus from patients infected with viral pneumonia, which was later designated coronavirus disease 2019 (COVID-19) by the WHO (Zhou et al, 2020)

Older adults, persons with certain coexisting conditions and front-line workers are at highest risk for the disease and its complications (Polack et al, 2020).

and

Due to the urgent need to combat COVID-19, diverse SARS-CoV-2 several vaccine types are currently under development, including inactivated vaccines, nucleic acid vaccines, adenovirus-based vector vaccines, and recombinant subunits vaccines (Dong et al. 2020). The development of Pfizer-BioNTechBNT162b2 mRNA COVID-19 vaccine was initiated on January 2020 when the SARS-CoV-2 genetic sequence was released by the Chinese Center for Disease Control (Polack et al, 2020). The vaccine received emergency use authorization from FDA and EMA in December 2020 and by mid-January 2021 the Ministry of Public Health in Lebanon had signed a contract with Pfizer to deliver the BNT162b2 mRNA COVID-19 vaccine to the country.

### **Training Objectives**

Educate healthcare professionals, responsible for the storage, handling, preparation and administration of Pfizer-BioNTech COVID-19 mRNA vaccine of its stringent quality requirements for safe handling and use. Training objectives include:

- Literature Evidence on Pfizer-BioNTechCOVID-19 mRNA Vaccine
- Safe Receipt, Handling and Unpacking of Vaccine Thermal Shipping Containers at Site of Storage
- Utilization of Shipment Data Loggers and Quality Clearance of Vaccines Vials for Use
- Appropriate Storage and Transportation Conditions of Vaccine Vials
- Preparation of Vials for Administration
- Understanding Personal Protective Equipment and Ancillary Supply Requirements

### **Methods and Materials**

#### **Target Audience**

Healthcare professionals including physicians, hospital pharmacists, nurses and administrative staff who are responsible for receiving, handling, storing, preparing and administering Pfizer-BioNTechCOVID-19 mRNA vaccines in both public and private hospitals and points of vaccination and storage in Lebanon.

#### **Number of Sessions:**

- 35 Sessions

## Training Methodology

- Interactive sessions with power point presentation
- Awareness pamphlets, leaflets and instructional material
- Participants to share experience, concerns and inquiries with trainer

## Training Organization

The training session will be conducted by Pfizer in coordination with Ministry of Public Health

## Draft Training Agenda

Time	Details
9:00AM–9:10AM	Registration
9:10AM–9:30AM	Medical Training
9:30AM–10:30AM	Supply and Quality Training
10:30AM–11:00AM	Q&A Session

## Financial Costs

None Identified

## Training Calendar, Preparation and Execution

COVID 19 Vaccine Training Schedule					
Date	Day	Hospital	Location (Training)	Number of Sessions	Expected Number of Participants
20-1-2021	Wednesday	MOPH	1PM	1	75
21-1-2021	Thursday	SGHUMC	11AM	1	25
22-1-2021	Friday	HDF	9AM	1	25
22-1-2021	Friday	RHUH	12:30PM	1	25
25-1-2021	Monday	AUBMC	10AM	1	25
25-1-2021	Monday	LAUMCRH	1PM	1	25
26-1-2021	Tuesday	Rassoul el Aazam	1PM	1	25

## References:

1. Zhou et al. Clinical Course and Risk Factors for Mortality of Adult Inpatients with COVID-19 in Wuhan, China: A Retrospective Cohort Study. *Lancet*. 2020; 395:1054-62.
2. Li et al. Early transmission dynamics in Wuhan, China, of Novel Coronavirus-infected pneumonia, *The New England Journal of Medicine*. 2020; 382:1199–1207.
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4. Center of Disease Control and Prevention. COVID-19 information page (<https://www.cdc.gov/coronavirus/2019-ncov/index.html>).
5. Cascella M, Rajnik M, Cuomo A, et al. Features, Evaluation, and Treatment of Coronavirus. StatPearls Publishing. 2020.
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7. Huang et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020; 395:497–506.
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## Annex D: Standard Operating Procedure for COVID-19 Immunization prepared by the Primary Healthcare Department at the MOPH

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# Standard Operating Procedure for COVID 19 Immunization

## 1 Scope

This document outlines the standard operating procedure for COVID 19 immunization services provided to all eligible residents of Lebanon, including Lebanese and non-Lebanese citizens. **Abidance by this SOP is mandatory to every provider delivering COVID 19 immunization services both in the public and private sectors.** Considering the rapidly changing situation of the pandemic and recommendations regarding immunization for COVID 19, updated versions of this guidance will be developed as updates arise.

### 1.1. Leadership and governance:

The national COVID 19 immunization initiative is led by the MOPH of Lebanon with technical and operational support from the Parliamentarian Health Committee, the National COVID 19 Technical Committee and UN agencies, mainly the WHO and UNICEF. All vaccines to be procured and made available on the Lebanese territories are certified, licensed and cleared by the MOPH and the technical committees.

### 1.2. Implementation:

Public immunization services will be provided free of charge for all eligible beneficiaries registered on the national COVID 19 vaccine registry at the identified public immunization sites. Prioritization based on clinical vulnerability criteria will be implemented.

The private sector will utilize the same eligibility criteria to provide immunization services for individuals who prefer immunization in the identified private outlets.

All recipients of the vaccine, in the public and private sector have to be registered in the National COVID 19 Vaccine registry.

### 1.3. Vaccination sites:

**Public sector:** In the public sector the immunization sites will be hosted in public and private hospitals that are equipped with appropriate cold chain. A total of 40 vaccination sites will be functional in the first phase.

**Private sector:**

COVID 19 immunization will also take place in the private sector and all vaccination data and information will be included on the national COVID-19 vaccination registry.

## 2- Preparation for vaccination sites

### 2.1 Physical setting and supplies

#### **Physical setting**

In the public sector the vaccination unit will consist of a waiting, vaccination and observation room.

The area of the setting needs to allow for physical distancing measures (1.5m between each individual), especially in the waiting room, although crowding is not expected since all vaccine recipients will be admitted based on pre scheduled appointments.

The waiting room will have a waiting/ registration area, the vaccination room will be appropriately equipped for the provision of immunization services including the required furniture, cold chain, hand washing stations and consumables whereas the observation room will consist of a resting area for vaccine recipients.

In the private sector, the vaccination patient flow will follow the vaccination site's regular flow while respecting physical distancing measures.

#### **Supplies required**

All Infection Prevention Measures have to be respected at all times to ensure the safety of healthcare providers and vaccine recipients during the COVID 19 pandemic.

The below list of consumables are mandatory at all vaccination sites:

- Personal Protective Equipment:
  - i. Surgical masks: 4 masks per health care provider per day
  - ii. Face shields: 1 face shield per health care provider per day
  - iii. Surgical gloves (non-sterile): one pair for each healthcare provider per vaccinate recipient
  - iv. Disposable gowns: 1 gown per health care provider per day
- Infection Prevention and Control supplies essential for ensuring the disinfection of surfaces and hand sanitation in the COVID-19 immunization clinic:
  - i. The recommended product for surface disinfection is 70% alcohol or sodium hypochlorite solution 0.1 %
  - ii. The recommended product for hand sanitization is alcohol based hand sanitizing solution (60% alcohol), with one in the waiting room and one in the vaccination clinic.

- Vaccination consumables, all items needed to safely provide immunization to the beneficiaries including the below:
  - i. Syringes procured for dilution (2 or 3mL) to withdraw the diluent and 1 ml low dead-volume syringe for administration
  - ii. Alcohol swabs to the skin at the injection site
  - iii. Adhesive bandage to cover the injection site
  - iv. Diluents to reconstitute the COVID 19 vaccine
  
- Miscellaneous
  - i. Plastic waste bags (yellow for infectious medical waste, black for regular and noninfectious medical waste)
  - ii. Sharps containers (one dedicated for syringes, one for used/empty vials)

### **Waste management**

Waste resulting from the immunization process will be segregated and considered as medical waste (infectious and noninfectious) and handled according to national policies on the management of medical waste.

Types of medical waste:

- **Medical waste/ Non-Infectious:** includes waste which does not come in contact with the beneficiary or any bodily fluids such as syringe wraps and plastic covers, packaging of the alcohol swabs...etc. This type of waste is discarded in black plastic bags.
  
- **Medical waste/ Infectious:** any item or consumable used in immunization that comes in contact with the patient and his/her bodily fluids such as alcohol swabs, adhesive bandage. In addition to PPEs worn by the healthcare provider, including gloves, masks, disposable gowns.... This type of waste is discarded in yellow plastic bags.
  
- **Sharps' containers:** syringes used for dilution and vaccine administration will be discarded in one sharps' container. Used vials empty or with traces of the vaccine will be discarded in a separate sharps container.

The waste will be collected at the vaccination site in color coded waste bags in dedicated clearly marked containers. Non-infectious medical waste will be discarded with regular waste. Infectious medical waste will be collected on a daily basis and stored in a dedicated cold chain.

In the public sector, the contracted NGO, specialized and licensed to manage infectious waste.

Private providers need to abide by the waste segregation and storage guidelines and make their own arrangements by contracting a licensed medical waste management organization.

## 2.2 Human Resources in Public COVID-19 Vaccination Clinic

Vaccination services in the public sector will be provided by a team of trained healthcare providers composed of one physician and 8 or more vaccinator nurses, who will be supported by non-clinical staff including the center director or senior administrator, two administrative clerks, and one non-clinical observer/security officer. All staff will abide by primary preventive measures for COVID-19 by wearing appropriate PPEs.

Table 1 provides a brief description of team members qualifications and duties.

*Job description and ToRs of HR in the COVID-19 vaccination clinic will be developed.*

*Table 1. Team composition, qualifications and duties*

<b>Role</b>	<b>Qualifications</b>	<b>Duties</b>
<b>Administrative clerk/data operator</b>	Non- clinical, admin	Ensures paperwork/electronic data is complete, validates name on schedule, reminds recipient on future dose, enters data from vaccine administration and handling of certification
<b>Center Director (senior administrator or physician)</b>	Clinical and/or admin	Monitors all activities, communicate with MOPH, collaborates with NCVC
<b>Physician</b>	Attending or resident physician (ACLS trained)	Physical assessment of vaccine candidates, administers screening checklist, responds to emergencies (ie: anaphylaxis shock) and oversees vaccination processes.

<b>Vaccinator Nurse</b>	Clinical nurse (meets Order of Nurses vaccinator criteria) (Annex 1)	Physical assessment of vaccine candidates, administers screening checklists, removes vaccine from cold storage, dilutes, draws up doses from multi dose vials, labels vaccine, administers vaccine and responds to emergencies (i.e.: anaphylaxis shock) and provides education on AEFI, signs off on 15 minutes well assessment
<b>Non-clinical Observer/ security officer</b>	Security officer	Monitors and secures vaccination storage and administration area and flow of individuals

### 2.3 COVID 19 Vaccine Recipient Journey in the Public Sector

#### Pre-vaccination

- Patient fills pre-registration form via the designated online application OR via phone call submitted to MOPH call center
- Patient stratified by risk according to national prioritization scheme
- Patient contacted either by phone call or SMS to schedule date, time and place of vaccination (place to be fixed by MOPH to reduce traffic on certain centers)
- Patient alerted of booking date few days beforehand with designated ID number

#### Arrival at Vaccination Site

- Patient arrives during specified time-slot (5min capacity for early/late arrivals)
- Traffic flow managed by administrator clerk
- Patient directed to hand sanitizing station by entrance
- Administrator clerk verifies patient information data, registers patient and directs him/her to designated seat in the waiting area

#### Vaccination

- Patient called in the immunization clinic
- Patient confirms details with personnel (triple verification: Full name, individual ID and ID provided by SMS from the MOPH) while vaccinator prepares the vaccine
- Patient undergoes physical assessment and screening
- Patient vaccinated

- Patient is provided with a vaccination card
- Patient instructed to move to observation area

### Post- Vaccination

- Patient is counseled by nurse on expected side effects
- Once patient passes the 15 minutes waiting time, he/she is cleared to depart vaccination center
- Follow up alerts from application OR follow up phone call from MOPH to be conducted daily for 7 days after vaccination (AEFI follow up)
- Follow up text or call to confirm date of subsequent injection

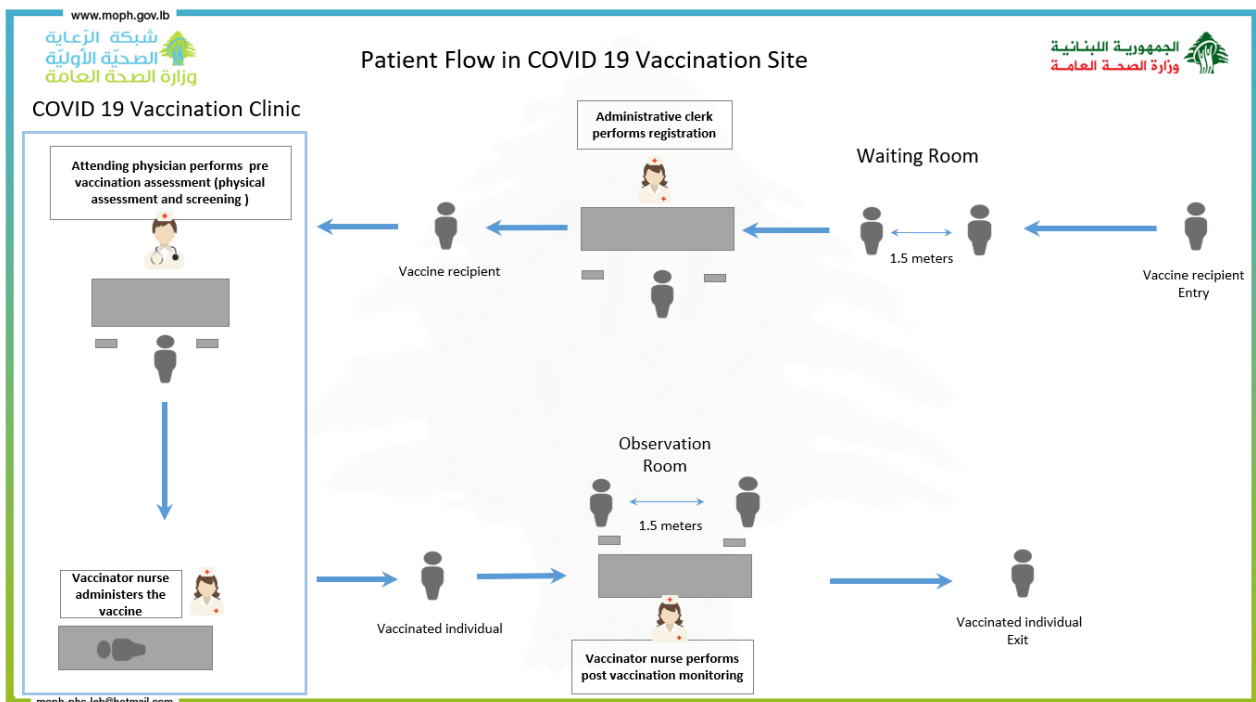


Figure 1. Patient Flow in COVID-19 Vaccination Site

### 3 Patient Eligibility to receive the COVID-19 vaccine

The National Prioritization Scheme will be adopted at the MOPH level through a risk and age-based approach for prioritization of COVID-19 vaccine target groups according to international guidelines in 5 stages (the WHO SAGE values framework, WHO SAGE prioritization roadmap and the fair allocation mechanism for COVID-19 vaccines through the COVAX Facility).



**Eligibility criteria:**

- Name of patient and appointed registered in the system
- Patient registered on the backup list
- Patient present both individual ID and system-based ID (ID number)

**Exclusion criteria for COVID-19 vaccination:**

- Individuals who had a severe allergic reaction after a previous dose of this vaccine
- Individuals who had a severe allergic reaction to any ingredient of this vaccine.
- Pregnant/breastfeeding females
- Individuals between the age of 16-17 without parental consent
- Children under the age of 16

## 4 COVID-19 Vaccines and Supplies Inventory

### 4.1 COVID-19 Vaccines Dosing Schedule

Vaccines that will be deployed will be accompanied by the pertinent information regarding storage, dosage and administration, this document will be updated to include all vaccines which receive import license from the MOPH. Below is a table with some of the COVID-19 vaccines that are either currently being marketed under the FDA’s emergency authorization or are under final clinical stages.

COVID-19 Vaccine Manufacturer	COVAX R&D Candidate	Platform	Type	Number of doses	Dosing Interval	Route of administration	Storage Consideration	Clinical Phases
University of Oxford/ Astrazeneca	Yes	Non-replicating viral vector	ChAdO X1-S	2	28 days	IM	2-8 degree	UK approval
Moderna	Yes	mRNA	LNP-encapsulated mRNA	2	28 days	IM	-20 degrees	FDA emergency approval
Pfizer/BioNtech		mRNA	3 NLP-mRNAs	2	28 days	IM	-70 degrees	FDA emergency approval

Novavax	Yes	Matric M Adjuvant	Recombinant protein nanoparticle	2	21 days	IM	2-8 degrees	Phase 3
Curevac	Yes	mRNA	mRNA	2	28 days	IM	2-8 degrees	Phase 2

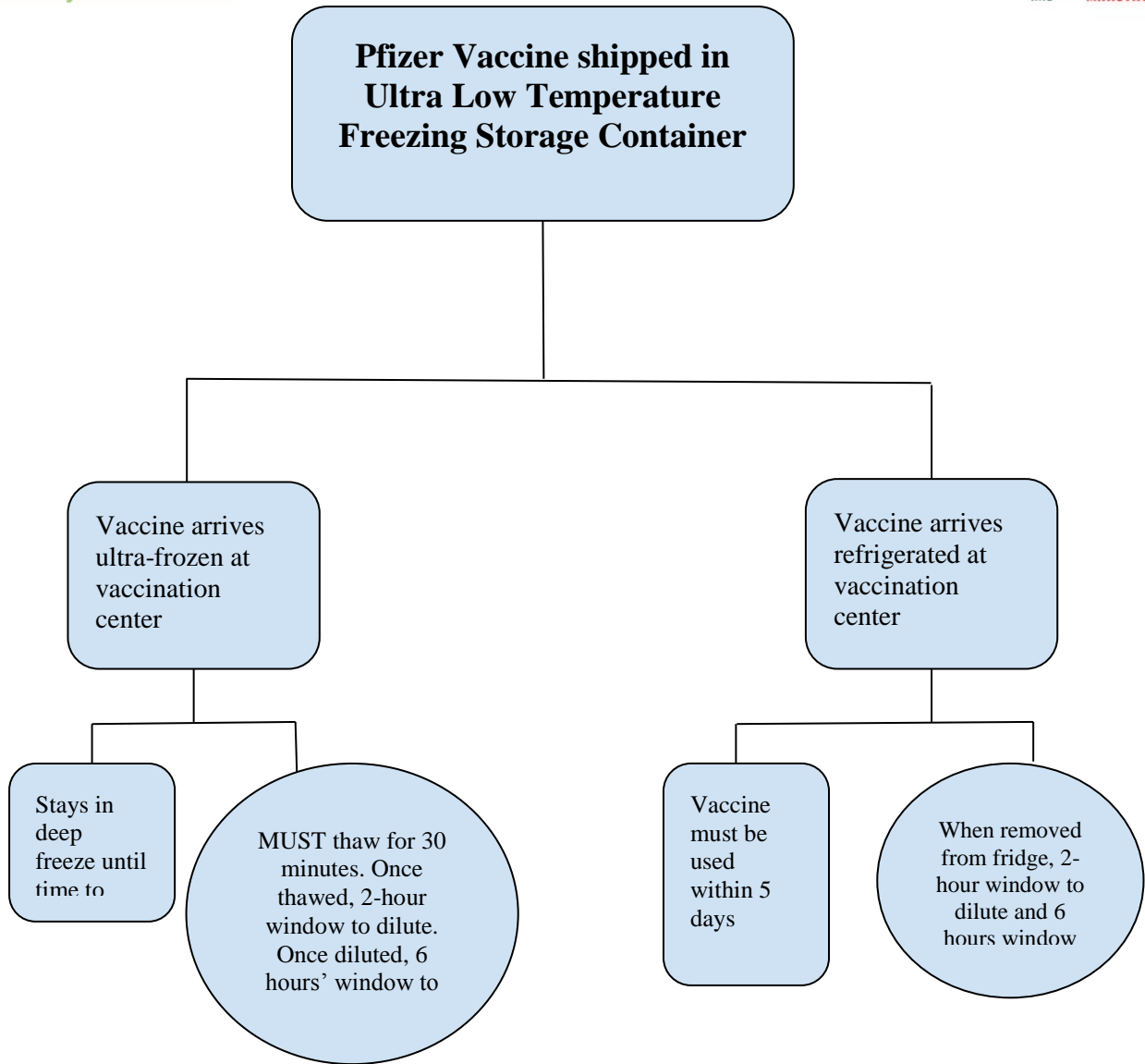
## 4.2 Vaccine Specific Information

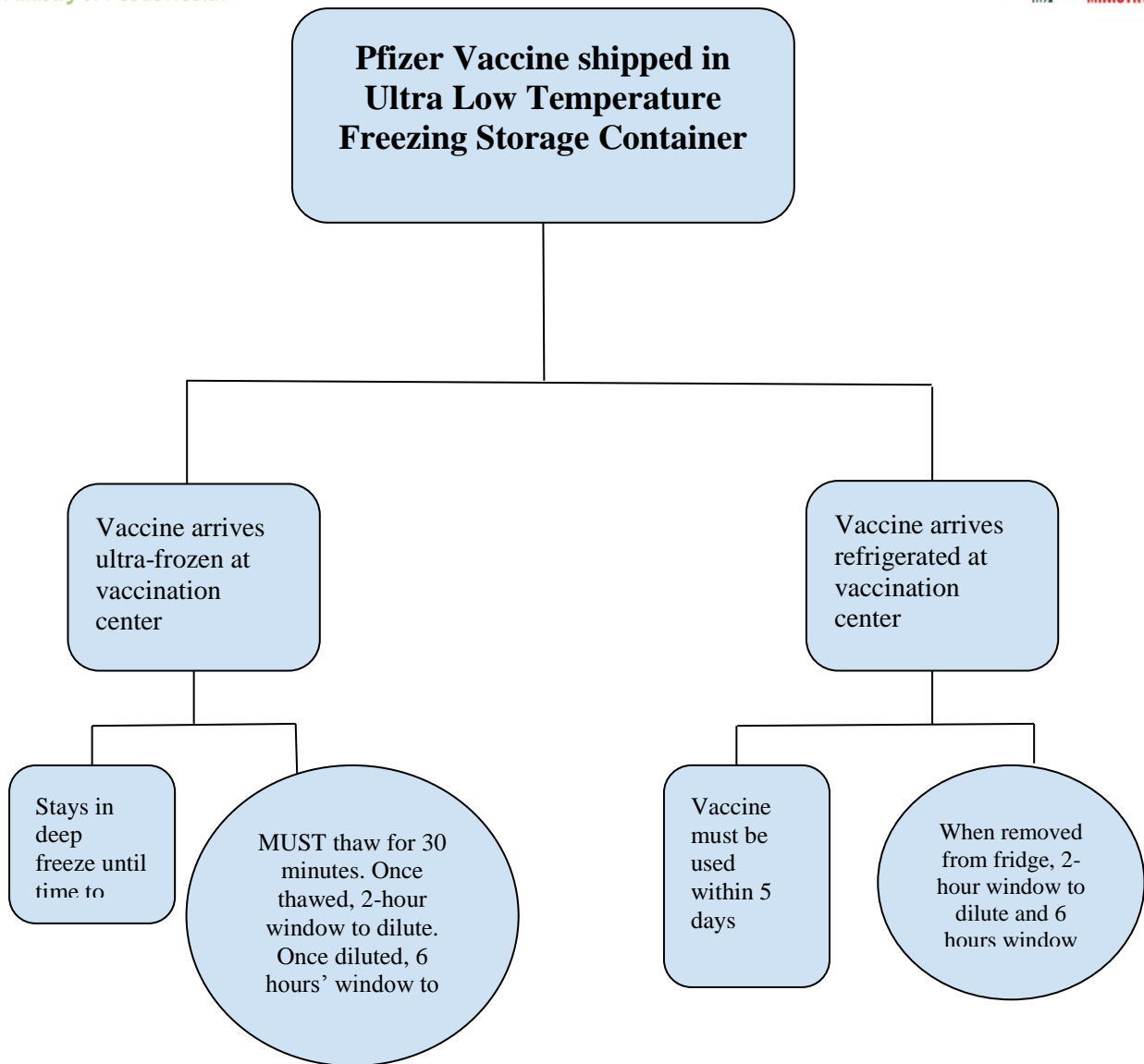
### 4.2.1 Pfizer/BioNTech Vaccine BNT162b2

On December 11, 2020, the U.S. Food and Drug Administration issued the first emergency use authorization (EUA) for a vaccine for the prevention of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in individuals 16 years of age and older. The emergency use authorization allows the Pfizer-BioNTech COVID-19 Vaccine to be distributed.

The following information has been extracted from the BNT162b2 FDA approved leaflet for providers administering the vaccine.

#### **A- Storage and handling:**





During storage, minimize exposure to room light, and avoid exposure to direct sunlight and ultraviolet light.

**Do not refreeze thawed vials.**

### **Frozen Vials**

Prior to Use Cartons of Pfizer-BioNTech COVID-19 Vaccine Multiple Dose Vials arrive in thermal containers with dry ice.

Once received, remove the vial cartons immediately from the thermal container and store in an ultra-low temperature freezer between  $-80^{\circ}\text{C}$  to  $-60^{\circ}\text{C}$  ( $-112^{\circ}\text{F}$  to  $-76^{\circ}\text{F}$ ).

Vials must be kept frozen between  $-80^{\circ}\text{C}$  to  $-60^{\circ}\text{C}$  ( $-112^{\circ}\text{F}$  to  $-76^{\circ}\text{F}$ ) and protected from light until ready to use.

### **Thawed Vials Before Dilution**

- ***Thawed Under Refrigeration***

Thaw and then store undiluted vials in the refrigerator [2°C to 8°C (35°F to 46°F)] for up to 5 days (120 hours).

A carton of 25 vials or 195 vials may take up to 2 or 3 hours, respectively, to thaw in the refrigerator, whereas a fewer number of vials will thaw in less time.

- ***Thawed at Room Temperature***

For immediate use, thaw undiluted vials at room temperature [up to 25°C (77°F)] for 30 minutes. Thawed vials can be handled in room light conditions.

Vials must reach room temperature before dilution.

Undiluted vials may be stored at room temperature for no more than 2 hours.

### **Vials After Dilution**

- After dilution, store vials between 2°C to 25°C (35°F to 77°F) and with a 6 hours' window for usage from the time of dilution.
- During storage, minimize exposure to room light, and avoid exposure to direct sunlight and ultraviolet light.
- Any vaccine remaining in vials must be discarded after 6 hours
- Do not refreeze vials

### **B- Dosing and Schedule**



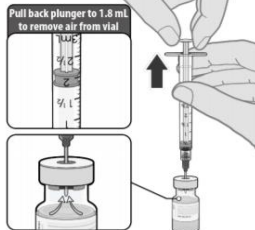
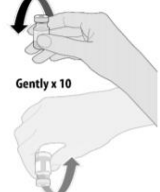

The Pfizer-BioNTech COVID-19 Vaccine is administered intramuscularly as a series of two doses (0.3 mL each) 3 weeks apart.

There is no data available on the interchangeability of the Pfizer-BioNTech COVID-19 Vaccine with other COVID-19 vaccines to complete the vaccination series.

Individuals who have received one dose of Pfizer-BioNTech COVID-19 Vaccine should receive a second dose of Pfizer-BioNTech COVID-19 Vaccine to complete the vaccination series.

#### ***Dose Preparation Prior to Dilution***

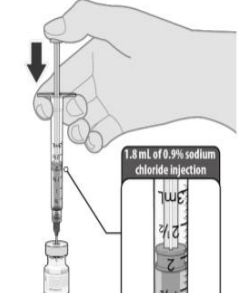
- The Pfizer-BioNTech COVID-19 Vaccine Multiple Dose Vial contains a volume of 0.45 mL, supplied as a frozen suspension that does not contain preservative.
- Each vial must be thawed and diluted prior to administration.
- Vials may be thawed in the refrigerator [2°C to 8°C (35°F to 46°F)] or at room temperature [up to 25°C (77°F)] (see Storage and Handling).
- Refer to thawing instructions in the panels below.

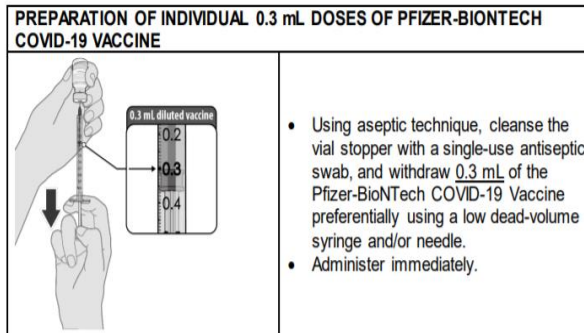
THAWING PRIOR TO DILUTION	
 <p><b>No more than 2 hours at room temperature (up to 25°C / 77°F)</b></p>	<ul style="list-style-type: none"> <li>Thaw vial(s) of Pfizer-BioNTech COVID-19 Vaccine before use either by: <ul style="list-style-type: none"> <li>Allowing vial(s) to thaw in the refrigerator [2°C to 8°C (35°F to 46°F)]. A carton of vials may take up to 3 hours to thaw, and thawed vials can be stored in the refrigerator for up to five days (120 hours).</li> <li>Allowing vial(s) to sit at room temperature [up to 25°C (77°F)] for 30 minutes.</li> </ul> </li> <li>Using either thawing method, vials must reach room temperature before dilution and must be diluted within 2 hours.</li> </ul>
 <p>Gently x 10</p>	<ul style="list-style-type: none"> <li>Before dilution invert vaccine vial gently 10 times.</li> <li><b>Do not shake.</b></li> <li>Inspect the liquid in the vial prior to dilution. The liquid is a white to off-white suspension and may contain white to off-white opaque amorphous particles.</li> <li>Do not use if liquid is discolored or if other particles are observed.</li> </ul>
 <p>Pull back plunger to 1.8 mL to remove air from vial.</p>	<ul style="list-style-type: none"> <li>Equalize vial pressure before removing the needle from the vial by withdrawing 1.8 mL air into the empty diluent syringe.</li> </ul>
 <p>Gently x 10</p>	<ul style="list-style-type: none"> <li>Gently invert the vial containing the Pfizer-BioNTech COVID-19 Vaccine 10 times to mix.</li> <li><b>Do not shake.</b></li> <li>Inspect the vaccine in the vial.</li> <li>The vaccine will be an off-white suspension. Do not use if vaccine is discolored or contains particulate matter.</li> </ul>
 <p>Record date and time of dilution. Discard 6 hours after dilution. Dilution date and time:</p>	<ul style="list-style-type: none"> <li>Record the date and time of dilution on the Pfizer-BioNTech COVID-19 Vaccine vial label.</li> <li>Store between 2°C to 25°C (35°F to 77°F).</li> <li>Discard any unused vaccine 6 hours after dilution.</li> </ul>

## C- Dilution

- Dilute the vial contents using 1.8 mL of 0.9% Sodium Chloride Injection, USP (**not provided**) to dilute the Pfizer-BioNTech COVID-19 Vaccine.
- ONLY** use 0.9% Sodium Chloride Injection, USP as the diluent, as it is the only approved diluent per the vaccine leaflet
- Do not use bacteriostatic 0.9% Sodium Chloride Injection or any other diluent.
- Do not add more than 1.8 mL of diluent.
- After dilution, one vial produces only 6 doses of 0.3 mL single doses of the vaccine.
- Gently invert the vaccine vial 10 times. **Do not shake.**
- Vial labels and cartons may state that after dilution, a vial contains 5 doses of 0.3 mL.
- The information in this Fact Sheet regarding the number of doses per vial after dilution supersedes the number of doses stated on vial labels and cartons.

- Refer to dilution and dose preparation instructions in the panels below.

DILUTION	
 <p>1.8 mL of 0.9% sodium chloride injection</p>	<ul style="list-style-type: none"> <li>Obtain sterile 0.9% Sodium Chloride Injection, USP. Use only this as the diluent.</li> <li>Using aseptic technique, withdraw 1.8 mL of diluent into a transfer syringe (21-gauge or narrower needle).</li> <li>Cleanse the vaccine vial stopper with a single-use antiseptic swab.</li> <li>Add 1.8 mL of 0.9% Sodium Chloride Injection, USP into the vaccine vial.</li> </ul>



## D- Administration

- Visually inspect each dose in the dosing syringe prior to administration. The vaccine will be an off-white suspension.
- During the visual inspection, monitor the following:
  - Verify the final dosing volume of 0.3 mL.
  - Confirm there are no particles and that no discoloration is observed.
  - Do not administer if the vaccine is discolored or contains particulate matter.
- Administer the Pfizer-BioNTech COVID-19 Vaccine intramuscularly.
- After dilution, vials of Pfizer-BioNTech COVID-19 Vaccine contain up to six doses of 0.3mL.
- Low dead-volume syringes and/or needles can be used to extract up to six doses from a single vial.
- If standard syringes and needles are used, there may not be sufficient volume to extract a sixth dose from a single vial.
- Irrespective of the type of syringe and needle:
  - Each dose must contain 0.3 mL of vaccine.
  - If the amount of vaccine remaining in the vial cannot provide a full dose of 0.3 mL, discard the vial and content.
  - Do not pool excess vaccines from multiple vials.

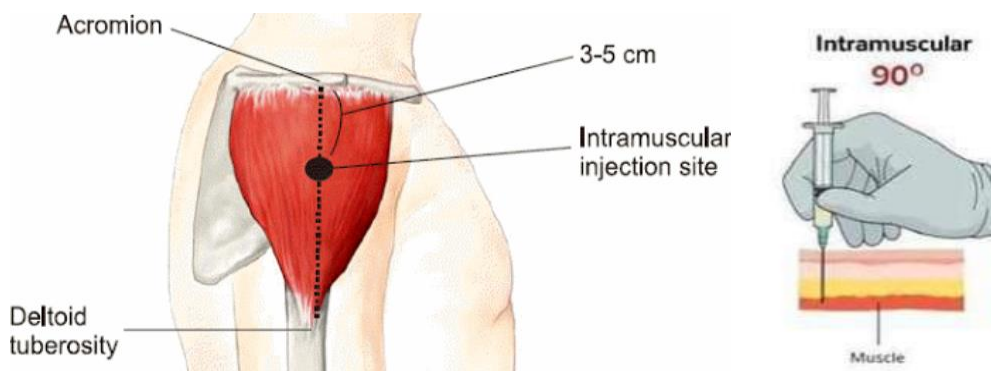
## 5 Vaccine administration

Both the vaccinator nurse in the public sector and the pharmacist in the private sector, will follow the below steps to ensure proper and safe administration of the COVID 19 Vaccine as administration of lipid containing vaccines are directly correlated to their efficacy.



### 5.1 Administration of IM vaccine in the Deltoid muscle:

1. Prepare all the needed supplies for vaccination.
2. Sanitize hands according to ICP (hand washing is preferable in settings where it is not possible to use alcohol based hand sanitizer).
3. Put on gloves.
4. Explain the procedure to the vaccine recipient and ask about preferred arms for vaccine administration since the site might be sore.
5. Ask the vaccine recipient to sit with both feet on the ground in order to avoid falls in case of syncope (in recipients has fear of injections)
6. Make sure the Deltoid muscle is relaxed
7. Find the injection site by first locating the acromion process, once found measure about 2 fingers widths below this area, this will be the injection site.
8. Clean the site with an alcohol swab in a clockwise motion and then wait for the site to dry completely
9. Quickly insert the needle at a 90-degree angle into the skin.
  - Steady the needle by using the thumb and forefinger of the non-dominant hand. This prevents potential damage to the muscle or surrounding tissues along with accidental displacement of medication.
  - Use the dominant hand to inject the solution at a rate of 10 seconds per mL.
  - Once the solution is injected completely, wait 10 seconds before removing the needle. Remove the needle at the same angle it was inserted (90° degrees).
10. Discard the syringe and needle it in the sharps container.
11. Apply light pressure if bleeding occurs.
12. Place adhesive bandage on the vaccination site.
13. Remove gloves
14. Sanitize hands
15. Document vaccination details on the MERA and the recipient immunization card
16. Provide patient with immunization card and mark a follow up vaccination date
17. Guide the patient to the monitoring area for observation and education



## 5.2 Anaphylaxis management

In case of Anaphylactic shock post COVID 19 immunization, the following steps need to be taken by the attending physician:

- Rapidly assess airway, breathing, circulation, and mentation (mental activity).
- Call for emergency support from the ER department at the hospital.
- Place the patient in a supine position (face up), with feet elevated, unless upper airway obstruction is present or the patient is vomiting.
- Epinephrine<sup>36</sup> (1 mg/ml aqueous solution [1:1000 dilutions]) should be administered immediately.
  - In adults, administer a 0.3 mg intramuscular dose using a premeasured or prefilled syringe
  - The maximum adult dose is 0.5 mg per dose.
  - Epinephrine dose may be repeated every 5-15 minutes (or more often) as needed to control symptoms while waiting for emergency medical services.
  - Because of the acute, life-threatening nature of anaphylaxis, there are no contraindications to epinephrine administration

The following supplies should be made available at the vaccination site for cases of anaphylactic shock<sup>2</sup>:

Mandatory supplies available at all vaccination sites	Supplies available only if feasible (not mandatory)
Epinephrine prefilled syringe or auto injector	Pulse oximeter
H1 Antihistamine (diphenhydramine)	Oxygen
Blood pressure cuff	Bronchodilator (albuterol)
Stethoscope	H2 Antihistamine (famotidine, cimetidine)
Timing device to assess pulse	IV fluids (normal saline)
	Rapid intubation kit
	Adult-sized pocket mask with one-way valve (also known as cardiopulmonary resuscitation (CPR) mask)

## 6 Vaccine recipient education

<sup>36</sup> Or any pharmacologic alternative

The vaccinator nurse will provide each vaccine recipient with education regarding any possible AEFI, how to manage them, when and where to seek care and the way to report any adverse event on the National COVID-19 Registry including the importance of zero reporting.

## **7 Appointment, arrival, check-in and informed consent if available**

### **8 Post vaccination observation:**

Every vaccine recipient will be asked to wait for 15 minutes in the waiting room post vaccination. During this time the registered nurse will monitor the patient for any symptoms of AEFI especially anaphylaxis symptoms and will provide post vaccination education. In case any symptoms appear, the registered nurse will inform the attending physician.

### **9 Record management:**

All patient records will be documented on the National COVID-19 Registry including the consent form (if available), documentation of pre vaccination screening and assessment, post vaccination monitoring. All vaccine recipients will receive a hard copy vaccination card, filled and signed by the vaccinator nurse.

### **10 Vaccination in special settings**

Vaccinator teams deployed for provision of immunization services out of the vaccination sites, in long term healthcare facilities (elderly homes, Rehab centers) and prisons, will abide by the vaccine administration protocol, Infection Prevention and Control measures, and waste management processes detailed in this document.

## Annex 1. Qualifications requirements for vaccinator nurses

نقابة الممرضات والممرضين في لبنان  
Order of Nurses in Lebanon  
Ordre des Infirmier/es au Liban



بيروت في ٢٠١٩/٠٦/١٢

المرجع: ٢٠١٩/٢١٦

معالي وزير الصحة العامة الدكتور جميل جيق المحترم

بعد التحية

الموضوع: التطعيم في المراكز الصحية والمستوصفات

المرجع: - التعميم رقم ٢٠١٩/٢١

- التعميم رقم ٣٨ تاريخ ٢٠١٤/٠٥/٠٨

- كتاب الجمعية اللبنانية لطب الاطفال

- كتاب النقابة رقم ٢٠١٧/٨٦ تاريخ ٢٠١٧/٠٣/٠٢

بالإشارة الى الموضوع والمرجع أعلاه

وإستناداً الى مراسلاتنا السابقة بموضوع التطعيم

وتأكيداً على صحة ما ورد في التعميم رقم ٣٨ تاريخ ٢٠١٤/٠٥/٠٨

والتعميم رقم ٢٠١٩/ ٢١

وحيث انه عملاً بالتعليمات المشار إليها أعلاه فإن الممرض/ة المجاز/ة/ الحائز/ة على إجازة جامعية مؤهل/ة لإعطاء اللقاح في مراكز الرعاية الصحية الأولية والمستوصفات لعدم حرمان أي طفل من اللقاح في حال عدم وجود طبيب في المراكز المشار إليها.

وحيث أن النقابة قد سبق لها أن أكدت في كتابها تاريخ ٢٠١٧/٠٧/٠٧ رقم ٢٠١٧/٢٣٩ على الإلتزام بتعليمات وزارة الصحة وعمدت الى وضع السياسات والإجراءات المتعلقة بالموضوع لتأهيل التدريب، دور ومهام الممرضات والممرضين للقيام بالتطعيم.

يتضمن برنامج التدريب:

- الفحص السريري

- تدريب خاص على آلية التطعيم وفقاً للتعميم

- تدريب على الإنعاش القلبي الرئوي (BLS) من مركز محتمد علمياً

- تدريب على التصرف في حالات الصدمة (Anaphylactic Choc)

- اعادة التدريبات كل سنتين

وحيث انه من مراجعة رأي نقابة الأطباء - الجمعية اللبنانية لطب الأطفال تبين أن سبب طلب الإبقاء على البرنامج الحالي هو المخاوف من نوعية وطريقة حفظ المواد المستعملة من جهة وإعطاء اللقاح المناسب بعد إعتقاد الفحص السريري من جهة أخرى.

وحيث أن الممرضات والممرضين الجامعيين يتولون أصلاً حفظ المواد والأدوية واللقاحات المستعملة وهي من صلب مهامهم ويدخل في برنامج ومناهج تعليمهم كيفية إجراء الفحص السريري قبل إعطاء الدواء أو اللقاح.

## Annex 2. Audit tools

The following audit tools will be used to guide and develop the electronic software to be used:

- Temperature Humidity Monitoring Checklist
- Receiving Checklist
- Inventory sheet
- Censor Calibration Log
- Adverse reaction form
- Audit Checklist
- Quarantine log
- Pest Rodent Control log
- Cleaning checklist

## **Annex E: Technical Note: Public Consultations and Stakeholder Engagement in WB-supported operations when there are constraints on conducting public meetings**

With the outbreak and spread of COVID-19, people have been advised, or may be mandated by national or local law, to exercise social distancing, and specifically to avoid public gatherings to prevent and reduce the risk of the virus transmission. Countries have taken various restrictive measures, some imposing strict restrictions on public gatherings, meetings and people's movement, and others advising against public group events. At the same time, the general public has become increasingly aware and concerned about the risks of transmission, particularly through social interactions at large gatherings.

These restrictions have implications for World Bank-supported operations. In particular, they will affect Bank requirements for public consultation and stakeholder engagement in projects, both under implementation and preparation. WHO has issued technical guidance in dealing with COVID-19, including: (i) Risk Communication and Community Engagement (RCCE) Action Plan Guidance Preparedness and Response; (ii) Risk Communication and Community engagement (RCCE) readiness and response; (iii) COVID-19 risk communication package for healthcare facilities; (iv) Getting your workplace ready for COVID-19; and (v) a guide to preventing and addressing social stigma associated with COVID-19. All these documents are available on the WHO website through the following link: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>.

This Note offers suggestions to World Bank task teams for advising counterpart agencies on managing public consultation and stakeholder engagement in their projects, with the recognition that the situation is developing rapidly and careful regard needs to be given to national requirements and any updated guidance issued by WHO. It is important that the alternative ways of managing consultation and stakeholder engagement discussed with clients are in accordance with the local applicable laws and policies, especially those related to media and communication. The suggestions set out below are subject to confirmation that they are in accordance with existing laws and regulations applying to the project.

**Investment projects under implementation.** All projects under implementation are likely to have public consultation and stakeholder engagement activities planned and committed as part of project design. These activities may be described in different project documents, and will involve a variety of stakeholders. Commonly planned avenues of such engagement are public hearings, community meetings, focus group discussions, field surveys and individual interviews. With growing concern about the risk of virus spread, there is an urgent need to adjust the approach and methodology for continuing stakeholder consultation and engagement. Taking into account the importance of confirming compliance with national law requirements, below are some suggestions for task teams' consideration while advising their clients:

Task teams will need to review their project, jointly with the PMUs, and should:

- Identify and review planned activities under the project requiring stakeholder engagement and public consultations.
- Assess the level of proposed direct engagement with stakeholders, including location and size of proposed gatherings, frequency of engagement, categories of stakeholders (international, national, local) etc.
- Assess the level of risks of the virus transmission for these engagements, and how restrictions that are in effect in the country / project area would affect these engagements.

- Identify project activities for which consultation/engagement is critical and cannot be postponed without having significant impact on project timelines. For example, selection of resettlement options by affected people during project implementation. Reflecting the specific activity, consider viable means of achieving the necessary input from stakeholders (see further below).
- Assess the level of ICT penetration among key stakeholder groups, to identify the type of communication channels that can be effectively used in the project context.

Based on the above, task teams should discuss and agree with PMUs the specific channels of communication that should be used while conducting stakeholder consultation and engagement activities. The following are some considerations while selecting channels of communication, in light of the current COVID-19 situation:

- Avoid public gatherings (taking into account national restrictions), including public hearings, workshops and community meetings;
- If smaller meetings are permitted, conduct consultations in small-group sessions, such as focus group meetings. If not permitted, make all reasonable efforts to conduct meetings through online channels, including WebEx, zoom and skype;
- Diversify means of communication and rely more on social media and online channels. Where possible and appropriate, create dedicated online platforms and chat groups appropriate for the purpose, based on the type and category of stakeholders;
- Employ traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, and mail) when stakeholders do not have access to online channels or do not use them frequently. Traditional channels can also be highly effective in conveying relevant information to stakeholders, and allow them to provide their feedback and suggestions;
- Where direct engagement with project affected people or beneficiaries is necessary, such as would be the case for Resettlement Action Plans or Indigenous Peoples Plans preparation and implementation, identify channels for direct communication with each affected household via a context specific combination of email messages, mail, online platforms, dedicated phone lines with knowledgeable operators;
- Each of the proposed channels of engagement should clearly specify how feedback and suggestions can be provided by stakeholders;
- An appropriate approach to conducting stakeholder engagement can be developed in most contexts and situations. However, in situations where none of the above means of communication are considered adequate for required consultations with stakeholders, the team should discuss with the PMU whether the project activity can be rescheduled to a later time, when meaningful stakeholder engagement is possible. Where it is not possible to postpone the activity (such as in the case of ongoing resettlement) or where the postponement is likely to be for more than a few weeks, the task team should consult with the OESRC to obtain advice and guidance.

**Investment projects under preparation.** Where projects are under preparation and stakeholder engagement is about to commence or is ongoing, such as in the project E&S planning process, stakeholder consultation and engagement activities should not be deferred, but rather designed to be fit for purpose to ensure effective and meaningful consultations to meet project and stakeholder needs. Some suggestions for advising clients on stakeholder engagement in such situations are given below. These suggestions are subject to the coronavirus situation in country, and restrictions put in place by governments. The task team and the PMU should:

- Review the country COVID-19 spread situation in the project area, and the restrictions put in place by the government to contain virus spread;
- Review the draft Stakeholder Engagement Plan (SEP, if it exists) or other agreed stakeholder engagement arrangements, particularly the approach, methods and forms of engagement



proposed, and assess the associated potential risks of virus transmission in conducting various engagement activities;

- Be sure that all task team and PIU members articulate and express their understandings on social behavior and good hygiene practices, and that any stakeholder engagement events be preceded with the procedure of articulating such hygienic practices.
- Avoid public gatherings (taking into account national restrictions), including public hearings, workshops and community meetings, and minimize direct interaction between project agencies and beneficiaries / affected people;
- If smaller meetings are permitted, conduct consultations in small-group sessions, such as focus group meetings. If not permitted, make all reasonable efforts to conduct meetings through online channels, including WebEx, zoom and skype meetings;
- Diversify means of communication and rely more on social media and online channels. Where possible and appropriate, create dedicated online platforms and chat groups appropriate for the purpose, based on the type and category of stakeholders;
- Employ traditional channels of communications (TV, newspaper, radio, dedicated phone-lines, public announcements and mail) when stakeholders do not have access to online channels or do not use them frequently. Such channels can also be highly effective in conveying relevant information to stakeholders, and allow them to provide their feedback and suggestions;
- Employ online communication tools to design virtual workshops in situations where large meetings and workshops are essential, given the preparatory stage of the project. WebEx, Skype, and in low ICT capacity situations, audio meetings, can be effective tools to design virtual workshops. The format of such workshops could include the following steps:
  - *Virtual registration of participants:* Participants can register online through a dedicated platform.
  - *Distribution of workshop materials to participants, including agenda, project documents, presentations, questionnaires and discussion topics:* These can be distributed online to participants.
  - *Review of distributed information materials:* Participants are given a scheduled duration for this, prior to scheduling a discussion on the information provided.
  - *Discussion, feedback collection and sharing:*
    - ✓ Participants can be organized and assigned to different topic groups, teams or virtual “tables” provided they agree to this.
    - ✓ Group, team and table discussions can be organized through social media means, such as WebEx, skype or zoom, or through written feedback in the form of an electronic questionnaire or feedback forms that can be emailed back.
  - *Conclusion and summary:* The chair of the workshop will summarize the virtual workshop discussion, formulate conclusions and share electronically with all participants.
- In situations where online interaction is challenging, information can be disseminated through digital platform (where available) like Facebook, Twitter, WhatsApp groups, Project web links/ websites, and traditional means of communications (TV, newspaper, radio, phone calls and mails with clear description of mechanisms for providing feedback via mail and / or dedicated telephone lines. All channels of communication need to clearly specify how stakeholders can provide their feedback and suggestions.
- *Engagement with direct stakeholders for household surveys:* There may be planning activities that require direct stakeholder engagement, particularly in the field. One example is resettlement planning where surveys need to be conducted to ascertain socioeconomic status of affected people, take inventory of their affected assets, and facilitate discussions related to relocation and livelihood planning. Such survey activities require active participation of local stakeholders, particularly the potentially adversely affected communities. However, there may be situations involving indigenous communities, or other communities that may not have access to the digital platforms or means of communication, teams should develop specially tailored stakeholder engagement approaches that will be appropriate in the specific setting. The teams

should reach out to the regional PMs for ENB and Social Development or to the ESSA for the respective region, in case they need additional support to develop such tailored approaches.

- In situations where it is determined that meaningful consultations that are critical to the conduct of a specific project activity cannot be conducted in spite of all reasonable efforts on the part of the client supported by the Bank, the task team should discuss with the client whether the proposed project activities can be postponed by a few weeks in view of the virus spread risks. This would depend on the COVID-19 situation in the country, and the government policy requirements to contain the virus spread. Where it is not possible to postpone the activity (such as in the case of ongoing resettlement) or where the postponement is likely to be for more than a few weeks, the task team should consult with the OESRC to obtain advice and guidance.

## Annex F: Technical note: Use of Military Forces to Assist in COVID-19 Operations Suggestions on how to mitigate risks – Version 1- March 25, 2020

It is common practice for Governments to utilize military or security personnel during public health emergencies. The ability to do this, and the requirements relating to such mobilization, are often set out in executive orders or instructions. A ‘public health emergency’ will usually be defined under national law. For example, the US Department of Defence (DoD Instruction 6200.03, March 28, 2019) defines a public health emergency to include “the occurrence or imminent threat of an illness or health condition that poses a high probability of a significant number of deaths, serious or long term disabilities, widespread exposure to an infectious or toxic agent, overwhelmed health care resources, or severe degradation of mission capabilities”.

For the reasons set out in section 1 below, it is expected that military or security forces will be utilized in different ways in response to COVID-19. They may be used directly to carry out activities in a World Bank supported project. Or they may be mobilized more generally to implement Government programs, which are also supported by the Bank. Where military/security forces are utilized, either directly or indirectly, in connection with Bank supported operations, questions will arise about the risk of the operation. Is it automatically high or are there effective ways of mitigating the risk? This guidance sets out suggestions for due diligence and mitigation measures to address the risk.

### 1. WHAT ARE THE POSITIVE ASPECTS ABOUT USING THE MILITARY?

Where relevant, consider the following and document relevant details:

- **Human rights:** Depending on the country, military personnel may be aware of the need to respect human rights and received relevant training.
- **“NBC” capabilities:** Many military forces have nuclear, biological and chemical capabilities. They may have existing biological defense capabilities e.g. ability to deploy with personal protective equipment (PPE); training in decontamination; procedures or advice on how to carry out relevant activities.
- **Medical expertise:** Medical and other professionals within the military are likely to be trained to deal with medical emergencies, and therefore may be better able to cope in situations in which there may be mass casualties.
- **Disciplined response:** Generally, military personnel are expected to respond in a disciplined manner to commands and will have capabilities which will be useful in these types of emergencies (medical, engineering, construction).
- **Civic action programs:** Military may also have specific civic action programs and infrastructure to support these (e.g. mobile clinics/communication procedures).

### 2. WHAT ARE THE THINGS TO WATCH FOR?

- (a) **Diversion of materials, aid and assistance:** Diversion can take the form of confiscations and re-use, misappropriation and theft. While a certain level of diversion may be inevitable in certain circumstances, this issue is likely to present reputational issues (especially when the crisis dissipates).

- ~~(b) **Allegations of human rights violations:** This will be a risk, including as it relates to Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), and the Bank needs to be clear and transparent about what measures are being adopted to minimize these risks. Tools that should be considered include the ESF Good Practice Note (GPN) on Use of Security Forces, on SEA/SH, and the IFC Good Practice Handbook on the Use of Security Forces: Assessing and Managing Risks and Impacts.~~
- ~~(c) **Putting World Bank staff at risk:** This is particularly a concern where military/security forces are likely to be undisciplined. The risk may be heightened when Bank staff are trying to address the risk of diversion referred to above. While staff may try to address this risk by avoiding direct interaction with the military, this is not likely to be feasible in a project setting.~~
- ~~(d) **International media comment and reaction:** This will be a challenge, and it may not be possible to avoid negative comment entirely. It is important to be transparent about the activities the World Bank is supporting and the mitigation measures that are being implemented to address risks.~~

### ~~3. WHAT ARE THE WAYS TO ADDRESS THE RISKS?~~

- ~~(a) **Get a view of the reputation and capability of the military:** Talk to those who might have up to date and accurate information: e.g. the Defense Attaché at the relevant Embassy; the US or UK Government; refer to Jane's Defence Weekly.~~
- ~~(b) **Identify the structure under which the military will be operating:** While they will continue to abide by their own rules and procedures, it is likely that the military will also be subject to relevant national requirements relating to the public health emergency and the specific activities that they are required to carry out e.g. instructions issued by public health officials. In the context of a Bank-supported operation, it is good practice to document (as far as possible) the structure under which the military are operating, including the chain of command, with specific reference to the activities they will or are likely to carry out (see paragraph (i) below).~~
- ~~(c) **Clarify who is responsible for human rights issues nationally:** Many countries have a Human Rights Commission. If such commissions do not exist, there is usually an Ombudsman, Human Rights office or inspector general at the national level with jurisdiction to deal with such issues. Identify the relevant parties and consider whether it would be appropriate to consult them for advice.~~
- ~~(d) **Identify other specialized parties and ask for advice:** There are both national and international NGOs which follow and support these issues (e.g. Human Rights Watch (HRW), Amnesty). There is also the International Committee of the Red Cross (ICRC) and the International Crisis Group. Identify relevant parties, with reference to the context and nature of the operations, who may be in a position to provide valuable advice.~~
- ~~(e) **As required under the ESF, cooperate with relevant stakeholders on a risk assessment:** Carry out a risk assessment to identify the specific risks associated with the proposed use of military. This assessment needs to be conducted with those that are involved in the operation, including Government counterparts, to ensure that an accurate picture of the risks emerge, that appropriate mitigation measures are identified and that both the risk assessment and the mitigation measures are owned by the project and the Government.~~

~~(f) **Be transparent about what the World Bank is requiring to mitigate the risks:**~~

~~Document this, setting out key aspects in the ESRS and other project documentation. Consider the following:~~

- ~~• procedures relating to: e.g. risk assessment; how allegations of HR/SEA/SH violations will be dealt with, including through the project Grievance Mechanism (GM); preventing diversion of materials, aid and assistance (build on existing requirements)~~
- ~~• presence of World Bank representatives/third party monitors on the ground~~
- ~~• cooperation with specialist institutions/NGOs/Government agencies~~
- ~~• specific obligations set out in the legal agreement and (if possible and appropriate) a~~
- ~~• Memorandum of Understanding (see paragraph (k) below)~~
- ~~• monitoring and reporting~~

~~(g) **Consider asking a credible party to act as an observer/third party monitor:** This can be considered under the ESF provisions for third party monitoring as noted in ESS1 and ESS10, as well as the ESF Good Practice Note on Third Party Monitoring. Relevant groups with experience in this field will depend on the context, and may include the parties referred to in paragraph (d) above.~~

~~(h) **Establish a procedure to be followed in cases of allegations of HR/SEA/SH violations or misbehavior:** This should reflect the ESF Good Practice Note on SEA/SH and may include reference to the institutions referred to in paragraph (c) above. Include a specific HR and SEA/SH procedure in the project GM to address these allegations and identify specific individuals who have the expertise to address such allegations credibly. Understanding relevant Code of Conduct (CoC) requirements pertaining to such behavior is important, and, where necessary, improving the form and substance of such CoC.~~

~~(i) **Be clear on what the military will do: Identify the activities and set them out clearly in the legal agreement:** e.g. construction, enforcing quarantine restrictions, distribution of medical supplies or vaccines, distribution of other supplies. This will support a more accurate risk assessment. Note that in some circumstances, what could otherwise be viewed as inappropriate behavior by the military (or at an extreme, a possible abuse of rights) may be authorized and necessary in situations of a public health emergency. This will depend on the activities that the military is required to carry out and will be particularly relevant where they are required to enforce public order or quarantine restrictions.~~

~~(j) **Set out specific requirements as covenants in the legal agreement and in the Environmental and Social Commitment Plan (ESCP) as appropriate:** The provisions should set out the ‘ground rules’ for military engagement, including: (i) requirements to comply with ESS4 (see Annex attached); (ii) reporting obligations (specify on what, how often, to whom); (iii) specific prohibitions e.g. no child labor, no forced labor, restrictions on what military personnel under the age of 18 can do (if anything); (iv) health and safety requirements; (v) Code of Conduct (CoC) type obligations; (vi) requirements for the GM; (vii) training required and how often (specify on what — e.g. Voluntary Principles on Security and Human Rights, interactions with the community, operation of the GM, use of personal protective equipment (PPE), CoC).~~

~~(k) **Where possible, and if not already covered by applicable law/regulation, the Government should consider executing a Memorandum of Understanding (MoU) with the military:** This should reflect the ‘ground rules’ set out in the legal agreement (see paragraph (j) above). An example of a MoU is available in the IFC Good Practice Handbook on the Use of Security Forces: Assessing and Managing Risks and Impacts. Even where it is not possible for individual military~~

~~personnel to sign a CoC, the requirements should be set out in the MoU, and training should cover these obligations (amongst others).~~

## ANNEX

### ~~Set out below is suggested wording on HR/SEA/SB:~~

~~1. Prior to deploying military or security personnel, the [Borrower/Recipient] shall take measures to ensure that such personnel are:~~

- ~~i. screened to confirm that they have not engaged in past unlawful or abusive behavior, including sexual exploitation and abuse (SEA), sexual harassment (SH) or excessive use of force;~~
- ~~ii. adequately instructed and trained, on a regular basis, on the use of force and appropriate behavior and conduct (including in relation to SEA and SH), as set out in the [Training Procedure, Project Operational Manual, ESMF, Security Management Plan, MoU]; and~~
- ~~iii. deployed in a manner consistent with applicable national law.~~

~~2. The [Borrower/Recipient] shall promptly review all allegations of unlawful or abusive acts of any military/security personnel, take action (or request appropriate parties to take action) to prevent recurrence and, where necessary, report unlawful and abusive acts to the relevant authorities.~~



~~**Set out below is suggested wording on reporting:** Frequency of reporting will depend on the context and the risks associated with the activities the military is carrying out, and may be required monthly, weekly or even daily. Requirements should include:~~

- ~~• Immediate reporting (within 24 hours) of any serious incident~~
- ~~• A written weekly or monthly report (depending on the risk) covering —~~
  - ~~○ status of activities being conducted by the military~~
  - ~~○ training conducted (specifying subject matter)~~
  - ~~○ current status of review of serious incidents (if any) and any relevant reporting~~
  - ~~○ a summary of any minor (but reportable) issues, suspected incidents or potential issues~~
  - ~~○ details of any incidents involving use of force or weapons~~
  - ~~○ details of upcoming activities which may pose a risk (e.g. distribution of supplies) and measures being put in place to reduce such risk~~
  - ~~○ lessons learnt, to inform conduct of future activities~~

~~**Other reference documentation:** The International Code of Conduct under the Montreux Document. While this relates to private security, it contains useful material.~~



# Annex G: Form on Adverse Event Following Immunization Reporting Form for COVID-19 Vaccine(s)

	<i>Quality Management System</i>		<b>QMS-PV-F-06</b>	
	<b>Adverse Event Following Immunization Reporting Form for COVID-19 Vaccine(s)</b>		<b>Edition 1</b>	
			<b>Date of reception at PV Center</b> ... / ... / ...	
			<b>LNPVC2021 ...</b>	
			<b>Page 1 / 4</b>	

*Reporter, beneficiary & institution identities will remain confidential / Questions with an asterisk(\*) sign are mandatory*

<input type="checkbox"/> <b>First Report</b>	<input type="checkbox"/> <b>Follow Up Report</b>
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**1) Beneficiary Details \***

<b>Name (or initials)</b>					
<b>Gender</b>		<input type="checkbox"/> Male		<input type="checkbox"/> Female	
				<input type="checkbox"/> Pregnant	
				<input type="checkbox"/> Lactating	
<b>Date of birth</b>		<b>Weight (kg)</b>		<b>Height (cm)</b>	
<b>Age at onset</b>					

**2) Risk Factors \***

<input type="checkbox"/> Renal disease		<input type="checkbox"/> Hepatic disease		<input type="checkbox"/> Cardiac disease	
<input type="checkbox"/> Smoker		<input type="checkbox"/> Supplement use/ Specify:		<input type="checkbox"/> Other medical condition/ Specify:	
<input type="checkbox"/> Occasional		<input type="checkbox"/> Frequent			
<input type="checkbox"/> Alcohol intake		<input type="checkbox"/> Allergy/ Specify:			
<input type="checkbox"/> Occasional		<input type="checkbox"/> Frequent			

**3) Vaccine(s)**

<b>Health Facility / Vaccination Center Name &amp; Address *</b>								
Name of Vaccine	Manufacturer Name	Expiry Date	Batch Number	Dose (1 <sup>st</sup> , 2 <sup>nd</sup> , etc.)	Date of Vaccination	Time of Vaccination	Route of Administration	Site of Injection



**Diluent(s) (if applicable)**

Name of Diluent	Expiry Date	Batch Number	Date & Time of Reconstitution

**Concomitant medicine(s) (if applicable)**



Medicine Brand Name + Active Ingredient	Indication	Off Label Use	Batch Number	Expiry Date	Dose, Frequency, Dosage Form & Route of Administration	Started on	Stopped on

						Day	Month	Year	Day	Month	Year
						Day	Month	Year	Day	Month	Year

	<i>Quality Management System</i>		<b>QMS-PV-F-06</b>
	<b>Adverse Event Following Immunization Reporting Form for COVID-19 Vaccine(s)</b>		Edition 1
			Date of reception at PV Center ... / ... / ...
			LNPVC2021 ...
			Page 2 / 4

						Day	Month	Year	Day	Month	Year

4) Adverse Event Following Immunization									
Country of occurrence									
Suspected Adverse Event Following Immunization	Onset Date				Recovery Date (if applicable)				
	Time (Hr and Min)	Day	Month	Year	Time (Hr and Min)	Day	Month	Year	
Local Reaction (Redness, Swelling) <input type="checkbox"/>									
Fever $\geq$ 38 C <input type="checkbox"/>									
Allergy <input type="checkbox"/>									
Fatigue <input type="checkbox"/>									
Headache <input type="checkbox"/>									
Pain at the injection site <input type="checkbox"/>									
Febrile Seizure <input type="checkbox"/>									
Afebrile Seizure <input type="checkbox"/>									
Abscess <input type="checkbox"/>									
Sepsis <input type="checkbox"/>									
Encephalopathy <input type="checkbox"/>									
Toxic Shock Syndrome <input type="checkbox"/>									
Thrombocytopenia <input type="checkbox"/>									
Anaphylaxis <input type="checkbox"/>									
Other/ Specify:									
Adverse Event Following Immunization Description / Case Narrative (Development, Symptoms, Management, etc.)									
Relevant Laboratory and Diagnostic Test Performed	Date			Result					
	Day	Month	Year						

	<i>Quality Management System</i>		<b>QMS-PV-F-06</b>
	<b>Adverse Event Following Immunization Reporting Form for COVID-19 Vaccine(s)</b>		<b>Edition 1</b>
			<b>Date of reception at PV Center</b> ... / ... / ...
			<b>LNPVC2021 ...</b>
			<b>Page 3 / 4</b>



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<b>5) Seriousness of Adverse Event Following Immunization *</b>							
<b>Serious</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>If yes, please indicate why</b>					
		<b>The Adverse Event led to:</b>					
		<input type="checkbox"/> Death	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Date of Death</b></td> <td></td> </tr> <tr> <td><b>Cause of Death</b></td> <td></td> </tr> </table>	<b>Date of Death</b>		<b>Cause of Death</b>	
		<b>Date of Death</b>					
		<b>Cause of Death</b>					
		<input type="checkbox"/> Life Threatening Situation					
		<input type="checkbox"/> Hospitalization					
		<input type="checkbox"/> Prolongation of Hospitalization	<table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Specify Additional Duration</b></td> <td></td> </tr> </table>	<b>Specify Additional Duration</b>			
		<b>Specify Additional Duration</b>					
		<input type="checkbox"/> Surgical Intervention					
<input type="checkbox"/> Congenital Anomaly							
<input type="checkbox"/> Persistent or Significant Disability or Incapacity							
<input type="checkbox"/> Other Serious Consequences							

<b>6) Outcome of Adverse Event Following Immunization*</b>			
<b>Actual Status of Beneficiary</b>	<input type="checkbox"/> Recovered		
	<input type="checkbox"/> Recovered with Sequelea		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 20%;"><b>Specify Sequelea</b></td> <td></td> </tr> </table>	<b>Specify Sequelea</b>	
	<b>Specify Sequelea</b>		
	<input type="checkbox"/> Is Recovering		
	<input type="checkbox"/> No Improvement		
	<input type="checkbox"/> Fatal		
<input type="checkbox"/> Unknown			

<b>7) Possible Cause(s) of Adverse Event Following Immunization</b>		
<b>Questions</b>	<b>Yes</b>	<b>No</b>
<b>Can the Adverse Event Following Immunization be due to:</b>		

<input type="radio"/> Vaccine Product-Related Reaction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
--	------------------------------	-----------------------------

	<i>Quality Management System</i>		<b>QMS-PV-F-06</b>
	<b>Adverse Event Following Immunization Reporting Form for COVID-19 Vaccine(s)</b>		<b>Edition 1</b>
			<b>Date of reception at PV Center</b> ... / ... / ...
			<b>LNPVC2021 ...</b>
			<b>Page 4 / 4</b>

<input type="radio"/> Vaccine Quality Defect-Related Reaction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="radio"/> Immunization Error-Related Reaction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="radio"/> Immunization Anxiety-Related Reaction	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="radio"/> Coincidental Event	<input type="checkbox"/> Yes	<input type="checkbox"/> No

<b>Additional Note</b>
<i>Tell us more about any extra relevant information/complementary investigation not mentioned in the previous questions</i>

<b>8) Reporter *</b>					
<b>Who are you?</b>					
<b>Beneficiary</b> <input type="checkbox"/>	<b>Vaccinator</b> <input type="checkbox"/>	<b>Other Healthcare Professional</b> <input type="checkbox"/>	<b>Responsible Party for Pharmaceutical Products</b> <input type="checkbox"/>	<b>Drug Distributor</b> <input type="checkbox"/>	<b>Others (Beneficiary's Relatives, Neighbors, etc.)</b> <input type="checkbox"/>
Name (or initials)					
Profession or Specialty					
Professional Address					
Email Address					
Phone Number					
Signature					
Date					
<p>Please send the completed form filled electronically or manually to the following email: <a href="mailto:pv@MOPH.gov.lb">pv@MOPH.gov.lb</a> or <a href="mailto:phvg.phar@ul.edu.lb">phvg.phar@ul.edu.lb</a></p> <p>For any additional information, you may contact <b>01/830255</b> or <b>01/830254</b></p>					

## **Annex H: Information to be included in a Health Care Waste Management Plan**

### **1.1 Rational for the WMP**

The information that should be included in a health care waste management plan is provided in section 10.3 below in order to identify requirements for the safe management of HCW and comply with national health and environmental regulations.

Facilities selected for support by LHRP will need to have a complete waste management plan in place or take necessary actions to be able to implement a waste management plan.

The HCWMP below can be used by the PMU to identify gaps in health care management and needed mitigation measures at each hospital and PHCC<sup>37</sup>. The different steps/actions in this plan should be implemented by the hospital in order to ensure safe disposal of IHCMW

### **1.2 Introduction**

Healthcare waste can cause health and environmental hazards. Consequently, health care facilities are required to have and should be implementing a health care waste management plan (HCWMP). The HCWMP should consider waste from production, to handling and finally treatment.

Adequate financial and human resources should be allocated to the WMP in addition to the comprehensive training of relevant staff on its implementation.

### **1.3 The Development of the Healthcare Waste Management Plan**

The development of the HCWMP starts with the allocation of responsibilities for its management to a person or group of person, understanding the waste generated at the facility, taking necessary steps to properly segregate waste, determining safe waste conveyance routing, properly storing the waste, and finally making sure waste is treated properly or disposed of, to operators who can safely treat it. The plan must comply with national legislation.

#### **1.3.1 Allocate responsibilities**

The first step in a HCWMP is putting a person or a group of persons in charge of the plan.

- In PHCCs, assign a senior staff member to oversee the implementation of the WMP.
- In hospitals, form a waste-management committee.

Suggestively, the waste management committee can comprise the following key personnel. In small hospitals, one person can fulfill more than one set of responsibilities.<sup>38</sup>

- The Head of the Hospital
- Heads of Departments
- Chief Pharmacist
- Senior Nursing Officer
- Hospital Manager
- Hospital Bio-Medical Engineer
- Financial Manager

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<sup>37</sup> Starting Health Care Waste Management in Medical Institutions-A Practical Approach, Health Care Waste Practical Information Serie, No.1, WHO 2000

<sup>38</sup> Safe management of wastes from health-care activities, edited by Y. Chartier et al., 2<sup>nd</sup> edition, WHO 2014

- Environmental and Health Officer or Waste Management Officer (if not assigned, then assign)

The following Table summarizes the responsibilities of each key personnel.

Key Personnel	Responsibilities in Waste Management
Head of the Hospital	<ul style="list-style-type: none"> <li>▪ Assigns the waste management committee and define responsibilities of each member of the team</li> <li>▪ Steers and approves the WMP</li> <li>▪ Calls for recurrent meetings to evaluate and improve the WMP</li> <li>▪ Allocates funds and resources as necessary</li> <li>▪ Supervises the implementation of the WMP</li> <li>▪ Ensures staff are trained regularly</li> </ul>
Heads of Departments	<ul style="list-style-type: none"> <li>▪ Ensure all staff in the department are aware of the waste handling procedures and implement them.</li> <li>▪ Respond to requests and claims made by the E&amp;H / Waste officer</li> <li>▪ Ensure staff in the department are well trained in waste handling procedures</li> </ul>
Chief Pharmacist	<ul style="list-style-type: none"> <li>▪ Safe management of pharmaceutical store in order to minimize waste</li> <li>▪ Advises and monitors the appropriate treatment and disposal of Pharmaceutical waste</li> <li>▪ Ensures personnel involved in waste handling, treatment and disposal is well trained</li> </ul>
Senior Nursing Officer and Hospital Manager	<ul style="list-style-type: none"> <li>▪ Responsible for training (induction, training and refresher training), nursing staff (medical assistants, hospital attendants and ancillary staff) in the correct procedures for segregation, sealing, storage, transport and disposal of waste.</li> <li>▪ Advises on and monitors high standards of infection control</li> </ul>
Hospital Bio-medical Engineer	<ul style="list-style-type: none"> <li>▪ Responsible for installing and maintaining waste-storage facilities and handling equipment that comply with the national laws and regulations</li> <li>▪ Ensures adequate operation and maintenance on waste treatment equipment</li> <li>▪ Trains staff operating the waste treatment facilities</li> </ul>
Financial Manager	<ul style="list-style-type: none"> <li>▪ Makes sure funds are available for the continuous supply of items needed in the waste management.</li> </ul>
Waste Management Officer	<ul style="list-style-type: none"> <li>▪ Responsible for the daily operation and monitoring of the waste-management system</li> <li>▪ Has direct access to all members of the hospital staff, reporting to the head of the hospital</li> <li>▪ Controls and supervises collection, transport, storage of the waste on daily basis</li> <li>▪ Makes sure supplies of bags, containers for HC solid waste, protective clothing and trolleys are convenient and available</li> </ul>

- Ensures that staff replace bags and HC containers when ¾ full, adequately
- Coordinates waste disposal operations
- Ensures that waste is not stored for longer time than acceptable and collected at required frequency
- Organizes staff training and refresher trainings for nursing staff, medical assistant, hospital attendants, ancillary staff, doctors, clinical staff , waste handlers to make sure each member is aware of his own responsibilities
- Ensures compliance with occupational health and safety measures
- Prepares emergency plan and procedures for HC waste management
- Investigates and reports incidents concerning HC waste

### 1.3.2 Survey and evaluate existing waste management practices

The survey should include site observations and interviews at all the levels from front-line workers, support staff, physicians and managers. The survey should result in the creation of a status report. The report will help in identifying the different departments that are producing wastes and will lead to the categorization and the quantification of the different types of wastes generated. This information will facilitate the estimation of the number and the capacity of waste containers and the storage rooms, the collection and transportation frequency.

The survey can make use of the Individualized Rapid Assessment Tool (I-RAT) that was developed in 2009 as part of the UNDP GEF Global Project on Healthcare Waste. The I-RAT is based on WHO's Rapid Assessment Tool (RAT), which is part of WHO's overall strategy to reduce the disease burden caused by poor healthcare waste management (HCWM) through the promotion of best practices and the development of safety standards. Unlike the RAT which evaluates the HCWM situation on a national level, the UNDP GEF Project's I-RAT is intended for use at the individual healthcare facility level<sup>39</sup>. A pdf version of the excel tool can be found in Annex D. The survey comprises the following information:

→ **Collect information about existing waste-management arrangements**

- ✓ General Information:
  - Medical services provided
  - Number of patients treated
  - Total number of beds
  - Average rate of occupation
- ✓ Waste management practices in HC premises (written policy for healthcare waste management)
- ✓ Types and Quantities of waste generated per department (or practice in case of PHCC) per category and per day (in volume and weight) and systems for waste separation and containers type. Sample of checklist to be filled in each department is provided below.

Waste type	Volume/week (m3) and/or weight (kg)	Collection system/frequency	Transport	Final disposal
Infectious waste				

<sup>39</sup> [www.undp.org.lb/announcement/Application\\_form](http://www.undp.org.lb/announcement/Application_form) accessed on 31-08-2018



Sharps & cutting				
Bottles / glass				
Anatomical parts of the body				
Waste assimilated to household waste				
Perforated, sharp or cutting cytotoxic waste				
Soft cytotoxic waste				
Pharmaceutical and chemical waste				
Radioactive waste				
Other waste				

- ✓ Any available documentation that could help in tracking the wastes
- ✓ Practices for reducing wastes
- ✓ Practices of reuse and possibilities of recycling
- ✓ Practices of transportation of wastes within the HC premises
- ✓ Storage practices, location, volume and equipment of the storage rooms (wastewater disposal, temperature control)
- ✓ Waste disposal: onsite or offsite (contract with waste management companies)
- ✓ Waste related equipment available and needed (no, status)
  - Care trolleys
  - Waste bins for wastes assimilated to household waste
  - Waste bins for IHCW
  - Waste trolleys for “General waste” or “Non-hazardous waste” (black), clearly labelled
  - Waste trolleys for “Infectious waste” (Yellow), clearly labelled
  - Boxes for “other hazardous waste” such as chemical and pharmaceutical wastes
- ✓ Personnel involved
  - Number and qualifications (physicians, nurses, cleaning staff, etc.)
  - Skills
  - Person/Committee in charge of waste management
- ✓ Training of staff, and identification of the need for training
- ✓ Level of health protection of staff during segregation, collection, transportation, storage and disposal.
- ✓ Cost of waste management (capital, operation and maintenance costs)
- ✓ Monitoring practices and identification of the need for additional monitoring

→ **Evaluate waste management arrangements vis-a-vis the national legislations**

The results of the waste management survey and recommendations of each member of the Health committee will be evaluated by the waste management officer in the light of existing legislations.

The findings shall be summarized in a status report and major gaps and deviations from regulations and good practice identified. Based on the status report, the PMU will determine the needs of the facility for a full implementation of the HCWMP. The need could be for a complete HCWP or for filling gaps in a partial existing plan.

Based on the assessment of the facility, a draft waste management plan will be prepared by the waste management officer and discussed with the Health Committee members. The draft plan will be submitted to the PMU for approval.

### 1.3.3 The health care waste management plan.

#### The key elements

- Allocate resources and assign responsibilities;
- Promote the reduction of the wastes generated
- Ensure proper waste segregation;
- Select safe and environmentally-friendly management options, to protect people from hazards when collecting, handling, storing, transporting, treating or disposing of waste.
- Secure an environmentally safe treatment of hazardous health care wastes; and
- Raise awareness of the risks related to health-care waste and of safe practices;

At minimum, the waste management plan shall comprise the following information:

#### Introduction

Describe the planned services of the hospitals/PHCCs and the types of medical waste expected to incur.

#### Regulatory Framework and Technical Standards

Refer to the Lebanese regulatory framework on medical waste management (MWM) and existing technical standards/accreditation by MOPH/MOE, guidelines and operational procedures.

#### Compliance and Operational Management Plan

Preparation of a plan that:

- (i) Establishes compliance in current MWM system, including repairs, upgrading, replacement and new construction / procurement of equipment and facilities;
- (ii) Creates and operates systems and procedures for handling additional medical waste quantities generated by project activities,
- (iii) Ensures staff is aware, trained, disciplined and diligent in operating MWMS;
- (iv) Implements a monitoring plan for the generated quantities of the various waste types, their treatment and final disposal; includes basic quality criteria such as: state of repair of system components, cleanliness around MWM facilities, disposal options.

Following are details to include in a waste-management plan:

→ **Establish an effective Segregation of Waste (as recommended by MOE)**

Segregate waste in designated color coded bags/containers and duly symbol-coded as provided in the following table.

Waste category	Color of container and marking	Container type
----------------	--------------------------------	----------------

Healthcare waste assimilated to household waste: Non-hazardous or general waste: waste that does not pose any particular hazard such as paper, packaging, food residues, dried flowers, tissues, materials not contaminated with body fluids	Black	Plastic bags	✓ A assign specific disinfected bins for potentially infectious wastes ✓ I include drawings of the establishment showing designated bag (health-care waste or
IHCW, sharp or cutting: Syringes, needles, disposable cutting instruments, razor blades, scalpel blades	Yellow with appropriate symbol	Plastic containers for sharp and cutting waste	
IHCW Soft (no sharp , no cutting): waste contaminated with blood, bodily fluids, cultures and stocks of infectious agents from laboratory work, waste from patients with infections	Yellow with appropriate symbol	Plastic bag	
Anatomical parts of the body: human tissues, organs or fluids and body parts;	Grey with appropriate symbol	Plastic bags or boxes	
Perforated, sharp or cutting cytotoxic waste: waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment;	Purple with appropriate symbol	Sharp containers	
Soft cytotoxic waste: waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment;	Purple with appropriate symbol	Plastic bag	
Pharmaceutical and chemical waste: expired, unused and contaminated drugs and vaccines	Red with appropriate symbol	Plastic bag	
Radioactive waste	Red with appropriate symbol	Plastic bag	

- other waste) or disposal container for every department in the hospital or section of the PHCC;
- ✓ Include drawings showing the type of bag holder to be used in the departments or section.
- ✓ Include drawings of sharps containers, with their specification.

→ **Collection**

- ✓ Establish routes for infected waste capable of reducing transmission of infections, including elevators.
- ✓ Include drawings showing the paths of waste-collection trolleys through the hospital or PHCC, with clearly marked individual collection routes.
- ✓ Include drawings showing the type of trolley or wheeled container to be used for bags collection. Internal transport to a central storage area should be done in separate trolleys. For instance, yellow and black bags should not be carried in the same trolley. The trolley should be closed with a lid. Bags should not be hand-carried around the Health facility.

- ✓ Establish a fixed collection schedule. The collection shall be in a separate schedule, route and collection time for each type of waste to prevent any mishandling and timely collection. The minimum frequency is once a day. The schedule shall include a collection timetable for each trolley route, the type of waste to be collected, and the number of departments or sections to be visited on one round. The central storage point in the facility for that particular waste should be identified.
- ✓ Set a procedure to make sure all bags leaving are sealed and labelled to allow people in charge to trace any waste bag to its source if a problem is found. It also allows to quantify the waste produced in each department.

→ **Temporary storage**

- ✓ Establish the use of rigid 2-wheeled containers for temporary storage. This is to avoid filled waste bags being piled on the floor. The temporary storage should be located away from patient's areas.

→ **Central Storage**

- ✓ Establish drawings showing the central storage site for health-care waste and the separate site for other waste (the 2 types of central storages should be geographically separate). Make sure the central storage containers for black bags are clearly marked "for general waste only" and similarly, for yellow bags marked "for infectious waste only".
- ✓ Provide details of the type of containers, security equipment, and arrangements for washing and disinfecting waste-collection trolleys (or other transport devices).
- ✓ Address eventual needs for refrigerated storage facilities and drainage. The storage time should be short. All waste should be disposed of within 24 hours in hot season and maximum in 48 hours in cool season

→ **Disposal**

- ✓ Establish clear plans for the disposal of different types of wastes.

→ **Personnel Protection**

- ✓ Ensure personnel is well informed
- ✓ Ensure personnel (including healthcare, medical, paramedical, cleaning, collection) wear protective equipment
- ✓ Ensure waste workers are duly immunized
- ✓ Establish a training for personnel protection
- ✓ Establish a plan for the provision of protective equipment (gloves, masks, safety shoes, ...)

→ **Responsibilities**

- ✓ Define the responsibilities, duties and codes of practice for each of the different categories of personnel of the hospital who, through their daily work, will generate waste and be involved in the segregation, storage and handling of the waste.
- ✓ Define the responsibilities of hospital attendants and ancillary staff in collecting and handling wastes, for each area and department; where special practices are required (e.g. for radioactive waste or hazardous chemical waste), the stage at which attendants or ancillary staff become involved in waste handling shall be clearly defined.
- ✓ Set diagrams of the waste management structure and the connection between different managers and staff include their names and their telephone numbers.
- ✓ Provide names and phone numbers of persons to be contacted in case of emergency.

→ **Procedures and practices**

- ✓ Produce simple diagram (flowchart) showing procedure for waste segregation.
- ✓ Outline of monitoring procedures for waste categories and their destination.

→ **Training**

- ✓ Describe the training courses and programs to be set up and the personnel who should participate in each.
  - Training on healthcare management (managers, health professionals, waste workers)
  - Training on relevant national laws and regulations
  - Training on segregation
  - Training on collection
  - Training on the use of personal protection equipment
- ✓ Establish that new members of staff should be trained
- ✓ Establish a training program that includes reminder training, short refresher courses, workshops, ...

→ **Emergency Response**

- ✓ Contingency plan, containing instructions on storage or evacuation of health-care waste in case of breakdown of the treatment unit or during closure for planned maintenance, in the event of a natural disaster, spill, treatment system break down, power failure, etc. This plan is to be followed to ensure the proper disposal of medical waste.

→ **Monitoring and Evaluation**

- ✓ Establish record keeping, tracking and traceability
- ✓ Establish a schedule for the implementation of the tasks showing dates and resources and the date when the waste management plan is officially put into practice.
- ✓ Establish an implementation strategy
- ✓ Set follow up and weekly auditing plans with corrective measures in case of non-conformity.

→ **Cost for required material and human resources**

- ✓ Estimate the number and cost of bag holders and collection trolleys.
- ✓ Estimate the number of sharps containers and health-care waste drum containers required annually, categorized into different sizes, if appropriate.
- ✓ Estimate the number and cost of color-coded bags or bins to be used annually.
- ✓ Estimate the number of personnel required for waste collection and the relevant cost.
- ✓ Estimate the cost for the implementation of the waste management Plan including investment cost (containers, storage location) and operational cost (fuel, electricity, maintenance, salaries of staff in charge of the healthcare waste management and collection, sharp boxes, ...)

#### 1.3.4 Revisions and updated of the WMP

When full agreement is reached between all members of the waste management committee, the revised WMP document is signed and designated as the official HC Institution WMP. The allocated person for implementation of WMP/ the waste management committee shall review, at least on yearly basis, the WMP and suggest its revision if needed especially if new legislation is in place.

## **Annex I: General Outline of an ESMP**

- **Executive summary**
- **Table of content**
- **Introduction.** Includes a project description, name of owner, name of expert or firm, doing the EIA and a brief description of the project toe, location and size
- **Policy and legal framework** relevant to the project
- **Description of the proposed HC establishment.** The description should include drawings, maps and pictures. It should also include the size, operations schedule, services and period of operation of the project.
- **Description of the environmental and social baseline conditions including the surrounding physical, chemical, biological, social and economic environment** and expected changes before the beginning of the project and in the future.
- **Environmental and social impacts** of the project positive or negative, direct and indirect, short or long term.
- **Environmental and social management plan** to include mitigation measures, monitoring tools, institutional measures to be undertaken all over the different phases of the project to remove or reduce environmental impacts to acceptable levels and finally the cost of the ESMP
- **Description of mitigation measures:** Each measure should be briefly described in relation to the impact(s) and conditions under which it is required. These should be accompanied by, or referenced to, designs, development activities (including equipment descriptions) and operating procedures and implementation responsibilities. Public consultation should be clearly described and justified.
- **Description of monitoring program:** The ESMP identifies monitoring objectives and specifies the type of monitoring required; it also describes environmental and social performance indicators, parameters to be measured, methods to be used, sampling location and frequency of measurements, detection limits (as appropriate) and definition of thresholds to signal the need for corrective actions. Monitoring and supervision arrangements should ensure timely detection of conditions requiring remedial measures in keeping with good practice; furnish information and the progress and results of mitigation and institutional strengthening measures; and, assess compliance with national and Bank ESF policies. Such arrangements should be clearly specified in the project implementation/operations manual to reinforce project supervision.
- For projects involving rehabilitation, upgrading, expansion, or privatization of existing facilities, remediation of existing environmental problems may be more important than mitigation and monitoring of expected impacts. For such projects, the management plan focuses on cost-effective measures to remediate and manage these problems.
- **Legal requirements and bidding and contract documents:** The incorporation of detailed mitigation, monitoring and supervision arrangements into legal conditions and covenants is essential. It is good practice to ensure that implementation of major environmental requirements is linked to disbursement conditions. It is important to translate ESMP requirements into bidding and contract documents to ensure that obligations are clearly communicated to contractors.

- **Institutional arrangements:** Responsibilities for mitigation and monitoring should be defined along with arrangements for information flow, especially for coordination between agencies responsible for mitigation. In particular, the ESMP specifies who is responsible for undertaking the mitigating and monitoring measures, e.g., for enforcement of remedial actions, monitoring of implementation, training, financing, and reporting. Institutional arrangements should also be crafted to maintain support for agreed enforcement measures for environmental protection. Where necessary, the ESMP should propose strengthening the relevant agencies through such actions as: establishment of appropriate organizational arrangements; training; appointment of key staff and consultants; and, arrangements for counterpart funding and on-lending. For projects having significant environmental implications, it is particularly important that there be in the implementing ministry or agency an in-house environmental unit with adequate budget and professional staffing strong in expertise relevant to the project.
- **Implementation schedule:** The timing, frequency and duration of mitigation measures and monitoring should be included in an implementation schedule, showing phasing and coordination with procedures in the overall project implementation/operations manual. Linkages should be specified where implementation of mitigation measures is tied to institutional strengthening and to the project legal agreements, e.g., as conditions for loan effectiveness or disbursement.
- **Reporting:** Procedures for providing information on the progress and results of mitigation and monitoring measures should also be clearly stated. Recipients of such information should include those with responsibility for ensuring timely implementation of mitigation measures and for undertaking remedial actions. In addition, the structure, content and timing of reporting to the Bank should be designed to facilitate supervision and should establish arrangements for the timely receipt of monitoring reports and their forwarding to the Bank's environment specialists for review and comment.
- **Cost estimates:** These should be specified for both the initial investment and recurring expenses for implementing all measures defined in the ESMP, integrated into the total project costs and factored into financing negotiations. As mitigating costs may occur at points during project implementation or operations, indications of cash flow should be provided. It is important to capture all costs – including administrative, consultancy, and



## ANNEX J:: List of public and private hospitals treating COVID-19 patients

(Source: MOPH/Department of Hospitals and Dispensaries)

### **PUBLIC HOSPITALS**

- 1 RHUH BEIRUT GOVERNMENTAL
- 2 TRIPOLI GOVERNMENTAL
- 3 BAABDA GOVERNMENTAL
- 4 BOUAR GOVERNMENTAL
- 5 BAALBAK GOVERNMENTAL
- 6 DAHER AL BACHEK GOVERNMENTAL
- 7 NABATIEH GOVERNMENTAL
- 8 TEBNIN GOVERNMENTAL
- 9 BINT JBEIL GOVERNMENTAL
- 10 MASHGARA GOVERNMENTAL
- 11 HALBA GOVERNMENTAL (ABDULLAH AL RASSI)
- 12 SIBLINE GOVERNMENTAL
- 13 SAIDA GOVERNMENTAL
- 14 HERMEL GOVERNMENTAL
- 15 RACHAYA GOVERNMENTAL
- 16 JEZZINE GOVERNMENTAL
- 17 MENYEH GOVERNMENTAL
- 18 ZAHLE GOVERNMENTAL ( PRESIDENT ELIAS HRAOUI )
- 19 BSHARRI GOVERNMENTAL
- 20 HASBAYA GOVERNMENTAL
- 21 SHAHAR GHARBI GOVERNMENTAL
- 22 KHOURY GENERAL
- 23 KANA GOVERNMENTAL
- 24 MARJAYOUN GOVERNMENTAL

### **PRIVATE HOSPITALS**

- 25 AIN WAZEIN
- 26 DAR AL AMAL UNIVERSITY
- 27 JABAL AMEL
- 28 ALBERT HAYKEL
- 29 NINI
- 30 BEKAA
- 31 MAKASSED SOLIFAC SAL
- 32 ST.GEORGE UMC (AL ROUM)
- 33 ST. JOSEPH -SR CROIX CT MD R&A NAJJAR.
- 34 AL MAYASS
- 35 RAYAK
- 36 NOTRE DAME DE SECOURS NDS-JBIEL
- 37 FMC FAMILY MEDICAL CENTER
- 38 BAHMAN
- 39 LEBANON ITALIAN
- 40 AMERICAN UNIVERSITY AUBMC
- 41 SAHEL HEALTH CARE CORP.HOSPITAL (SHCCH)

42 GEITAOUI SOEURS MARONITES DE ST.FAMILLE  
43 AL YOUSSEF HOSPITALIER  
44 DAR AL CHIFAA  
45 CHTOURA MEDICAL CENTER  
46 HIRAM  
47 SAYDET ZGHARTA  
48 MONLA  
49 AL-ZAHRAA HOSPITAL UNIVERSITY CENTER (ZHUMC)  
50 NEW MAZLOUM HOSP.  
51 HAMMOUD HOSPITAL UNIVERSITY MEDICAL CENTER  
52 BHANNES  
53 LAUMC RIZK  
54 AL KOURA HOSP.  
55 HOPITAL DU SACRE-COEUR  
56 ISLAMIC HOSPITAL TRIPOLI  
57 ST. GEORGE AJLTOUN  
58 LABIB MC HOSP.  
59 CENTER HOSPITALIER DU NORD SAL  
60 ALAEDDDINE HOSPITAL SNC  
61 TAMNINE GENERAL HOSPITAL  
62 HAROUN  
63 DOCTORS HOSP.E: MANARA  
64 AL IKLIM  
65 BCHAMOUN SPECIALTY  
66 AL JABAL  
67 IBN SINA  
68 NOTRE DAME'S MARITIME  
69 LIBANO-FRANCAIS  
70 BATROUN  
71 AL KHEIR  
72 BORJ SINCERE MEDICAL SEVICES  
73 TEL CHIHA  
74 AKKAR (RAHAL FRS)  
75 AL RAYAN  
76 DR. HAMED FARHAT SCS.  
77 AL MUSHRAK  
78 KESRWAN MEDICAL CENTER  
79 RAEI  
80 AL HAYAT  
81 AL NAJDEH AL CHAABIYEH  
82 OSSEIRAN  
83 TAANAYEL AL AAM SARL  
84 BAAKLINE MC  
85 HOTEL DE DIEU

86 HOPITAL BORGHI  
87 K. HABTOUR  
88 DALLAA  
89 BELLEVUE MEDICAL CENTER SAL  
90 ALIMAN ALEY  
91 NOTRE DAME DE LA PAIX  
92 HOPITAL DOCTEUR SAMIR SERHAL SAL  
93 MIDDLE EAST INSTITUE OF HEALTH (M.E.I.H)  
94 SAINTES THERESE  
95 HOPITAL SAINT LOUIS - JOUHNIEH  
96 CSS JESUS ET MARIE HOSP ST. CHARLES  
97 UNIVERSAL HOSPITAL  
98 AL ASSI HOSP  
99 B H C SARL OTHMAN  
100 DALAA HOSP.  
101 SOCIETE EXPLOITATION HOSPITAL  
102 ARZ  
103 AL FAKIH  
104 HAYEK  
105 DIOCESE MARONITE CM  
106 MEDICAL 2000  
107 ABOU JAOUDE  
108 DR. MOHAMED KHALED SOCIAL FOUNDATION  
109 AL BISSAR  
110 NOTRE DAME DU LIBAN  
111 NAKIB HOSP.HEALTH CARE INVEST SARL

List of labs eligible to conduct PCR tests <sup>40</sup>



الجمهورية اللبنانية  
وزارة الصحة العامة



المختبرات الحكومية المؤهلة لإجراء التشخيص المخبري لفيروس كورونا بطريقة الـ RT-PCR

مختبر مركز دار الحوراء	حارة حريك
Medical Diagnostic Center	المرجعة
مختبر الدكتور محمود عثمان - مركز التحاليل الطبية	الجناح
American Diagnostic Center (ADC)	بعيدا
مختبر أمير يكن دياغنوستيك سنتر	بعيدا
Mount Lebanon Hospital	بعيدا
مستشفى جبل لبنان	بعيدا
Hôpital Saint-Georges – Hadath	بعيدا
مستشفى سان جورج الحدث	بعيدا
Al Hadi Laboratory	بعيدا
مختبر الهادي	بعيدا
INOVIÉ-Liban	الحدث
مختبر علم الأحياء الجزيئية في الجامعة اللبنانية	ضبية
Molecular Biology and Cancer Immunology Laboratory in Lebanese University	الحازمية
مختبر علم الأحياء الجزيئية في الجامعة اللبنانية	الحازمية
Immunology Laboratory in Lebanese University	المتن
مختبر سان ميشال للتحاليل الطبية	المتن
Saint-Michel Lab	المتن
مختبر سان ميشال للتحاليل الطبية	المتن
Hôpital du Sacré- Coeur	الزلفا
مستشفى قلب يسوع	الزلفا
Hôpital du Sacré- Coeur	المنصورية
مختبر كلينيجان	بصاليه
Clinigene	الكورة
مختبر سرحال	الكورة
Hôpital Dr.Samir Serhal	زغرنا
مختبر ترانسيميديكال فور ليف	زغرنا
Transmedical for Life	زغرنا
مختبر ماز يوسف - الذرة	زغرنا
Hôpital St. Joseph – Dora	زغرنا
مستشفى ماز يوسف - الذرة	زغرنا
Hôpital St. Joseph – Dora	زغرنا
مستشفى مركز بحث طبي - ضمير الصوّان	زغرنا
Centre Hospitalier de Bhannes	زغرنا
مستشفى هارون	زغرنا
Haroun Hospital	زغرنا
مستشفى أبو جودة	زغرنا
Hôpital Abou Jawdeh	زغرنا
مستشفى بلقو	زغرنا
Bellevue Medical Center (BMC)	زغرنا
مختبر مركز الشرق الأوسط الصحي	زغرنا
Middle East Institute of Health (MEIH)	زغرنا
مختبر هيكل	زغرنا
Hôpital Albert Haykal	زغرنا
مختبر جامعة البلمند	زغرنا
University of Balamand	زغرنا
مركز الشمال الإستشفائي	زغرنا
Centre Hospitalier du Nord (CHN)	زغرنا
مركز الشمال الإستشفائي	زغرنا
Centre Hospitalier du Nord (CHN)	زغرنا
سيدة زغرنا المركز الجامعي الطبي	زغرنا
Saydet Zghorta University Medical Center	زغرنا
سيدة زغرنا المركز الجامعي الطبي	زغرنا
Saydet Zghorta University Medical Center	زغرنا
المركز العائلي الطبي	زغرنا
Family Medical Center- Zgharta	زغرنا
مستشفى دار السلام	زغرنا
مستشفى المظلوم	زغرنا
Mazloun Hospital	زغرنا
مستشفى المتلا	زغرنا
Al Mounla Hospital	زغرنا
مستشفى النبي	زغرنا
Nini Hospital	زغرنا
مختبر ميكروبيولوجيا الصحة والبيئة LMSE - المعهد العالي للدكتوراه، الجامعة اللبنانية	زغرنا
مختبر ميكروبيولوجيا الصحة والبيئة LMSE - المعهد العالي للدكتوراه، الجامعة اللبنانية	زغرنا
مختبر المستشفى الإسلامي الخيري - طرابلس	زغرنا
مختبر المستشفى الإسلامي الخيري - طرابلس	زغرنا
Dar El Chifaa Hospital	زغرنا
مختبر مستشفى دار الشفاء	زغرنا
Dar El Chifaa Hospital	زغرنا
مستشفى سيدة المعونات الجامعي	زغرنا
CHU - Notre-Dame des Secours	زغرنا
مختبر عقيلي وبولس	زغرنا
Laboratoires Akiki & Boulos	زغرنا
مختبر عقيلي وبولس	زغرنا
Laboratoires Akiki & Boulos	زغرنا
مختبرات الدكتور شلالا	زغرنا
Laboratoire Dr. Chelala	زغرنا
مختبر واكيم	زغرنا
Centre Médical Wakim	زغرنا
مختبر واكيم	زغرنا
Centre Médical Wakim	زغرنا
مختبر إيليت الطبي - جعيتا	زغرنا
Elite Medical Center - Jeita	زغرنا
مختبر إيليت الطبي - جعيتا	زغرنا
Elite Medical Center - Jeita	زغرنا
مستشفى عين وزين	زغرنا
Ain Wazein Hospital	زغرنا
مختبر إيفا لاب	زغرنا
Eva Lab	زغرنا
مختبر إيفا لاب	زغرنا
Eva Lab	زغرنا
مستشفى حمود الجامعي	زغرنا
Hammoud Hospital UMC	زغرنا
مختبر الكريم	زغرنا
Al Karim Medical Laboratory (KML)	زغرنا
مختبر مركز لبيب الطبي	زغرنا
Labib Medical Center	زغرنا
مختبر الـ (LDC)	زغرنا
Lebanese Diagnostic Center (LDC)	زغرنا
مختبر العائلة	زغرنا
Family Medical Laboratories	زغرنا
مختبر الشيخ راغب حرب	زغرنا
Sheikh Ragheb Harb Hospital	زغرنا
مختبر ات الصياح	زغرنا
Laboratoires Sabbah d'Analyses Médicales	زغرنا
مختبر ات الصياح	زغرنا
Laboratoires Sabbah d'Analyses Médicales	زغرنا
مختبر السلام	زغرنا
Laboratoires Al Salam	زغرنا
مختبر مستشفى النجدة الشعبية - النبطية	زغرنا
Hôpital du Secours Populaire	زغرنا
مختبر مستشفى النجدة الشعبية - النبطية	زغرنا
Hôpital du Secours Populaire	زغرنا
مختبر مستشفى جبل عامل	زغرنا
Jabal Amel Hospital	زغرنا
مختبر المشرق للتشخيص الطبي	زغرنا
Mashrek Diagnostic Center (MDC)	زغرنا
مختبر المشرق للتشخيص الطبي	زغرنا
Mashrek Diagnostic Center (MDC)	زغرنا

<sup>40</sup> <https://www.moph.gov.lb/en/Pages/17744872/List-of-the-laboratories-authorized-by-the-ministry-of-public-health>

