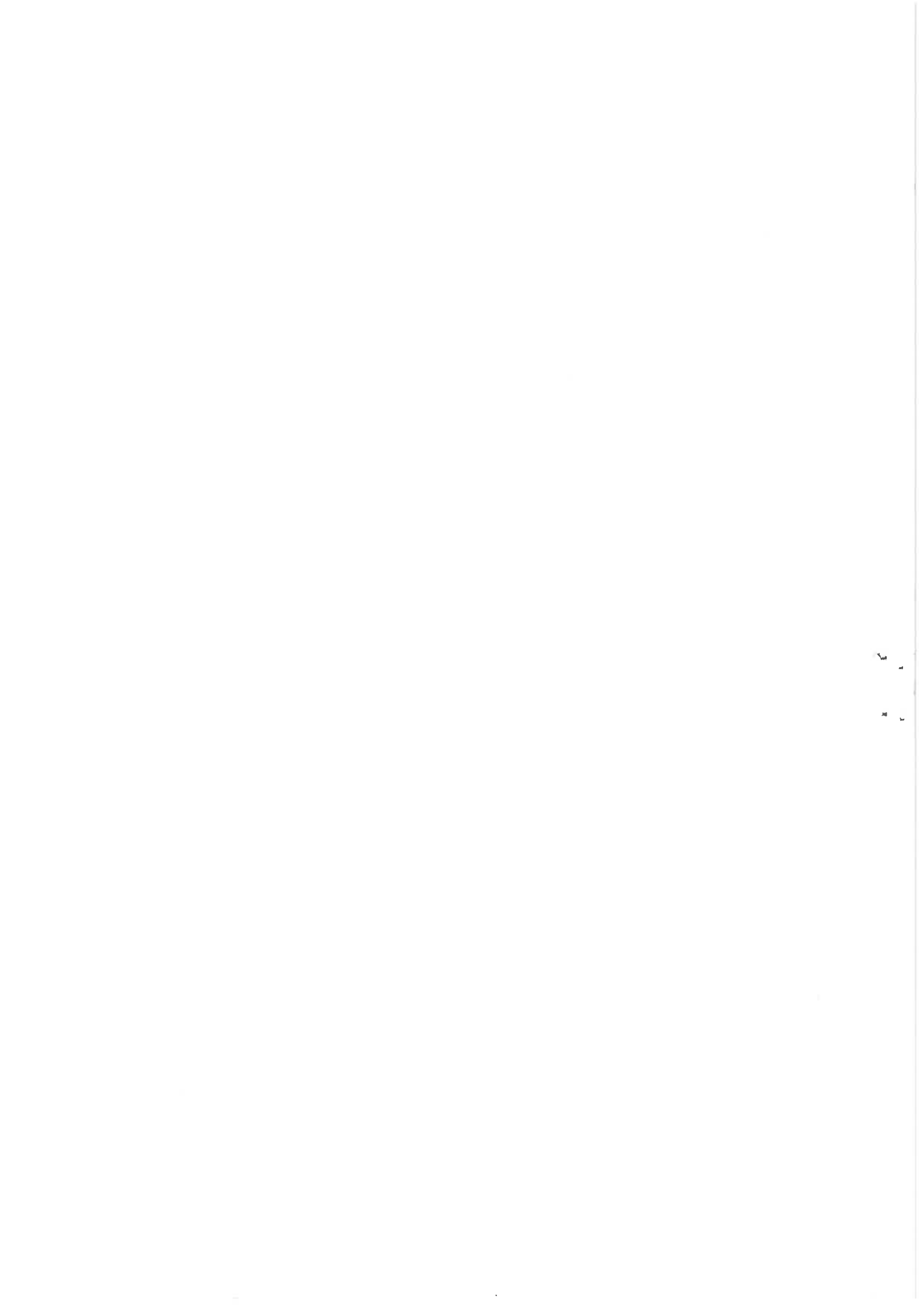


Republic of Namibia

**NATIONAL  
DEPLOYMENT AND  
VACCINATION PLAN  
FOR COVID-19  
VACCINES**

February 2021, Version 1.



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## Foreword



The index case of COVID-19 in Namibia was recorded on 13 March 2020. This was followed by robust preparedness and response measures. President Hage G. Geingob declared a State of Emergency due to the COVID-19 pandemic from 17th of March to 17 September 2020. Since then, the country adapted global approaches, including the Incident Management System and health measures to control potential community transmission and to curb further transmission of infection from local areas that were considered as epicenters to the rest of the country. By 25 January 2021, the country had tested 256,330 COVID-19 samples and recorded a cumulative 32,650 confirmed cases. Currently, there are 2,055 active cases and 319 deaths have been recorded. While the epi-curve had plateaued from August 2020 to November 2020, a new wave developed from December 2020 and evidence demonstrates that the second wave has now far exceeded and eclipsed the first wave. Many state and private hospitals in Namibia had reached near full or full capacity at some point and some were struggling to admit patients due to lack of space, especially in terms of intensive care beds and facilities in most regions. Together with the growing number of cases, health care workers are being infected with COVID-19, leading to the demobilization of such health care workers. Namibia has so far recorded a total number of 1,350 healthcare workers who have been infected with COVID-19, including six (6) who lost their lives as a result.

The National Deployment and Vaccination Plan (NDVP) is built on a foundation of a well-established public-sector immunization program, hence vaccination for COVID-19 will be implemented through the Expanded Programme on Immunization (EPI) under the Directorate of Primary Health Care. Trained nurses and doctors immunize children in public and private health facilities, including mobile /outreach clinics, through this programme. The EPI Programme is fully incorporated into the training curriculum of the nursing training institutions.

Introduction of vaccination for COVID-19 for free to targeted populations demonstrate Namibia commitment to ensure health and wellbeing of citizens as clearly outlined in the National Development Plan 5 (2017 – 2022) commitments, Harambee Prosperity Plan (2016 – 2020) Sustainable Development Goals (SDGs), Universal Health Coverage and in the Ministry's Strategic Plan. In the last twelve (12) months, Namibia invested in emergency preparedness and response; health systems strengthening, including recruitment of over 4000 health care workers, community health workers, social workers, allied and support staff. Infrastructure development for isolation facilities and expansion of ICU bed capacity and provision of Personal Protective Equipment and other medical equipment were fast-tracked country wide.

This document is informed by the country context, latest global evidence, and the World Health Organisation recommendations. Therefore, the Ministry has confidence that this well-crafted plan will highly assist Namibia in successful implementation of the vaccination for COVID-19 to reduce incidences of COVID-19, mortality and achieve herd immunity.





I applaud various thematic pillars of Namibia's COVID-19 response, advisory bodies; clinical scientists, researchers, health workers, support staff, technical experts, and developmental partners, and health managers for their unwavering commitment and dedication displayed in the work that has gone into formulation of this document. Special gratitude goes to the National Taskforce for COVID-19 Vaccine, all staff members of the Ministry of Health and Social Services for their continued and courageous dedication to fight the pandemic, and the Directorate of Primary Health Care for spearheading the development of this national plan.

I therefore urge all line Ministries, development partners, traditional leaders, non-governmental organizations, faith-based organizations, and academia to support the nation-wide implementation of the Vaccination Plan. I urge all medical, nursing, other allied health professionals, and other professionals and institutions to make use of this plan to ensure efficient deployment and provision of COVID-19 Vaccine in Namibia.



**DR KALUMBI SHANGULA (MP)**  
**MINISTER OF HEALTH AND SOCIAL SERVICES**



## Acknowledgement



The rapid pace at which the scientific community has advanced and continues to advance in developing vaccines for COVID-19 has never been seen before. These fast-paced interventions also translated to swift actions in developing country specific vaccination plans. The work on the National Deployment and Vaccination Plan for the introduction of COVID-19 vaccines in Namibia would not have been possible without the immense support and commitment of various individuals and institutions.

The development of this plan was indeed approached in a participatory manner, by a multi-sectoral, multidisciplinary team with key partners, line Ministries and other stakeholders who are all members of the National COVID-19 Vaccine Taskforce. It is the expertise of these institutions and individuals in mass vaccination planning and coordination; vaccine cold chain and logistics management; medicine regulatory approval and safety monitoring and reporting of Adverse Event Following Immunization; training; service delivery, supervision, monitoring and evaluation; that made this plan a reality. Scientific evidence and advancements on COVID-19 and COVID 19 Vaccines continues to evolve, hence revision and refinement of this plan is anticipated.

On behalf of the Ministry of Health and Social Services, I would like to thank all our partners and stakeholders for their immense contribution and dedication in having the National Deployment Vaccination Plan finalized. Finally, I wish to thank all staff members of the Ministry of Health and Social Services for their participation, and contributions to the process of formulating this NDVP for COVID-19 vaccination in Namibia.

  
**BEN MANKOMBE**  
**EXECUTIVE DIRECTOR**





# Acronyms

ACT	Access to COVID-19 Tools Accelerator
AEFI	Adverse Events Following Immunization
AESI	Adverse Events of Special Interest
ART	Antiretroviral Therapy
AZ	AstraZeneca
CEPI	Coalition for Epidemic Preparedness Innovation
CHPO	Chief Health Programme Officer
CMS	Central Medical Store
CoV	Coronavirus
cGMP	Current Good Manufacturing Practice
COVAX	COVID-19 Vaccine Global Access
COVID-19	Coronavirus Disease
COVID-19 NCC	COVID-19 National Coordination Committee
DCC	District Coordinating Committee
DHIS2	District Health Information System II
DNA	Deoxyribonucleic acid
DPHCS	District Primary Health Care Supervisor
EMA	European Medicine Agency
EMIS	Education Management Information System
EPI	Expanded Programme on Immunization
EU	Emergency Use
EUA	Emergency Use Authorisation
EUL	Emergency Use Listing
FDA	Food and Drug Administration
FESC	Facility Electronic Stock Card
GAVI	Global Alliance for Vaccines and Immunization
GRN	Government Republic of Namibia
HCW	Health Care Workers
HIA	Health Impact Assessment
HIV	Human Immunodeficiency Virus
HPCNA	Health Professions Council of Namibia
HPN	Health Profession of Namibia
HR	Human Resource
ICC	Inter-Agency Co-ordinating Committee
IEC	Information Education Communication
IFMS	Information Financial Management System
IPC	Infection Prevention and Control
ISIC	International Standard Industrial Classification of All Economic Activities
KAPs	Knowledge Attitude Practices Survey
LMIC	Lower Middle-Income Country
M&E	Monitoring and Evaluation
MERS	Middle East Respiratory Syndrome
MoF	Ministry of Finance
MoHSS	Ministry of Health and Social Services
MPs	Members of Parliament
MTC	Mobile Telecommunication Company
NAD	Namibian Dollars
NAMPHIA	Namibia Population-based HIV Impact Assessment

NCD	Non-Communicable Diseases
NDVP	National Deployment and Vaccination Plan
NGO	Non-Governmental Organization
NHTC	National Health Training Centre
NITAG	National Immunization Technical Advisory Group
NMRC	Namibia Medicines Regulatory Council
TN	Telecom Namibia mobile telecommunication
PCM	Phase Change Materials
PFM	Public Finance Management
PHC	Primary Health Care
PLHIV	People Living with HIV
PPE	Personal Protective Equipment
QIS	Quality Information Summary
RCCE	Risk Communication and Community Engagement
RHMT	Regional Health Management Team
RITAG	Regional Immunization Technical Advisory Group
RMP	Risk Management Plan
RNA	Ribonucleic Acid
S&T	Subsistence and Travelling Allowance
SADC	Southern Africa Development Community
SAGE	Strategic Advisory Group of Experts
SARS	Severe Acute Respiratory Syndrome
SARS-Cov-2	Severe Acute Respiratory Syndrome- Coronavirus
SMS	Short Text Message
SOP	Standard Operating Procedures
SRA	Stringent Regulatory Authority
TB	Tuberculosis
TIPC	Therapeutic Information Pharmaceutical Centre
TORs	Terms of References
TV	Television
TWG	Technical Working Group
UCC	Ultra - Cold Chain
UHC	Universal Health Coverage
UNAM	University of Namibia
UNICEF	United Nations Children's Fund
VE	Vaccine Effectiveness
VVM	Vaccine Vial Monitor
WHO	World Health Organization

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## **Executive Summary**

Namibian's robust emergency response to COVID -19 commenced just before the country recorded its first COVID-19 confirmed case on 13th March 2020. As of 8 February 2021, the country had tested 275 684 samples for COVID-19 and recorded a cumulative 35,070 confirmed COVID 19 cases. Following the global efforts to develop COVID-19 vaccines in record time, Namibia submitted a non-binding intention to participate in the COVAX Facility as a Self-Financing Country on 18th September 2020. The government made a down payment of 15% of the total cost of vaccine doses from the COVAX facility, sufficient to vaccinate 20% of the population. In addition, the government signed a Financial Purchase Agreement and Financial Guarantee for settling of outstanding balance to the COVAX Facility. Namibia appointed UNICEF as the Procurement Coordinator capitalizing on an existing expertise and relationship through a Memorandum of Understanding (MOU) with UNICEF for procurement of childhood vaccines.

In preparation for COVID -19 deployment and vaccine rollout, Namibia developed a National Deployment and Vaccination Plan (NDVP) for COVID 19 Vaccine guided by global and national guiding instruments coupled with the latest evidence available. The overall goal for the NDVP is to save lives and mitigate the effects of the COVID-19 pandemic. In addition, the NDVP intends to guide health workers, individuals, health service providers, manufacturers and various stakeholders including private sectors and business community on country expectations around COVID-19 vaccination plans at all levels.

Namibia considered and fully applied the World Health Organization Strategic Advisory Group of Experts (SAGE) guiding principles to ensure the COVID-19 NDVP builds on and strengthens the overall immunization programme and the related health system for the COVID -19 vaccine to be deployed safely, effectively and fairly and bolster public trust in health services.

COVID-19 national deployment and vaccine plan is coordinated by Primary Health Care (PHC) Directorate in the Ministry of Health and Social Services with strong liaison with other Directorates within the Ministry. This coordination benefits from strong linkages between other PHC services, immunization programme and infectious disease surveillance systems which are critical in monitoring the introduction of the vaccine and the impact vaccines are having, as well as for preparedness for possible future outbreaks. Through the multisectoral National COVID-19 Vaccine Task Force, wide consultations are held with various stakeholders, private sectors and other national bodies to ensure a robust, accountable, and transparent decision-making process at country level to assure the public that deployment of the COVID-19 vaccine in the country is based on epidemiological needs, assessed through stringent scientific review and that population safety is of highest priority.

Successful deployment of COVID-19 vaccines is largely dependent on an effectively managed supply chain. Current information shared by the manufacturers indicates some vaccines can be stored at +2 °C to +8 °C, while others have to be stored at freezing temperatures (-20°C) and in ultra-cold chain (UCC) equipment (-70 °C) and either frozen phase change material (PCM) or dry



ice in lieu of traditional cold packs during transportation. Prior to vaccine introduction, Namibia conducted careful assessments of the existing supply chain system and identify gaps such as lack of Ultra-Cold Chain (UCC) storage and insufficient refrigerated trucks for transportation of vaccines to sub-national levels.

Given the strength of the private sector in Namibia, MOHSS is already engaging them to hire or acquire or outsource for additional appropriate storage space, and refrigerated trucks for transportation of vaccines. In case of outsourcing, strict, independent monitoring procedures will be implemented to guarantee vaccine quality, and the private sector companies are involved in the planning processes for vaccine deployment. Expected time period from the time of arrival at point of entry to commencement of vaccination is two weeks contingent on the following prerequisites: (1) Clearance is obtained in advance before the arrival of vaccine; (2) Legal documents/approvals/registration of the imported vaccine have been completed in advance and will not hamper clearance; (3) Clear plan for distribution of vaccines from CMS to end-user service delivery point is in place; and (4) Workforce preparedness is carried out and advance training and other HR administrative processes to enable the teams to begin vaccination.

Namibia plans to vaccinate about 60% of the population, which will be approximately 1,5 million people to achieve a sufficient level of herd immunity. Therefore, in addition to participation in the COVAX facility, the country is exploring ways to secure additional doses of vaccines to immunize at least 60% of the population. Under the guidance of the National COVID-19 Vaccine Task Force, the decision-making on the identification of various target populations such as health workers, people aged 65 and older, and those with comorbidities were based on the WHO Strategic Advisory Group of Experts on Immunization (SAGE) prioritization roadmap and limited vaccine supply from COVID-19 Vaccines Global Access (COVAX) facility. The decision-making process to identify target populations was done by a team of epidemiologists, public health specialists, Expanded Programme on Immunization (EPI), technical advisors, monitoring and evaluation specialists, data systems experts, demographers and biostatisticians with the primary focus on reducing COVID-19 related morbidity and mortality and maintenance of the most critical essential services such as health services. The planned COVID 19 vaccination in Namibia targets 140,849 people in Phase Ia and b, 342,565 in Phase IIa and b, and 1,064,956 in Phase IIc and d, as summarized in the Table below (p. 15).

Namibia Medicines Regulatory Council (NMRC) shall use the “Reliance approach” to review applications for emergency use of COVID-19 vaccines based on prior authorizations by WHO prequalification/Emergency Use Listing (EUL) Programme or Stringent Regulatory Authorities (SRAs). This process takes approximately ten days.

Namibia’s NDVP budget takes into consideration key activities required before vaccine deployment and those for implementation and monitoring and evaluation. The planned activities and budget process leverage existing health system strengths to maximize efficiency through integration of COVID -19 vaccination plan into existing delivery systems and facilitate expenditure tracking. During the COVID -19, Government budgetary and public financial

management processes has adopted innovative ways to provide funds and payments to secure the much-needed resources. The Ministry of Health and Social Services received certain exemptions on some of the provisions of the Finance Act, Treasury Instructions and Procurement Board to secure doses of COVID -19 vaccines.

<b>Phase I (limited vaccine availability 1-10% national population)</b>	<b>Estimated Target</b>
<b>Phase 1a (initial launch)</b>	
Health workers at <u>high to exceedingly high risk</u>	53,849
Older adults: 60 to 69 years old with at least one comorbidity and 70+ with no comorbidities	87,000
Senior government officials and members of the diplomatic corps	
<b>Phase II (limited vaccine availability, 11-20% national population)</b>	
<b>Phase 2a</b>	
Sociodemographic groups at significantly higher risk of severe disease or death. Groups with comorbidities or health status determined.	255,746
Disadvantaged socio demographic groups at significantly higher risk of severe disease/ death	
<b>Phase 2b</b>	
Employment groups at elevated risk of acquiring and transmitting infection because they are unable to physically distance.	86,819
Contingency	17,814
Total (1a, 2a, 2b, Contingency)	501,228
<b>Target</b>	<b>501,228</b>
<b>Phase III (moderate vaccine availability, for 21-60% national population)</b>	
<b>Phase 3 a</b>	
Health workers not covered in initial phase of vaccination	6,000
<b>Phase 3b</b>	
Older adults, 60-69 years with no comorbidities	958,756
Groups with comorbidities or health status determined to be at significantly higher risk of severe disease or death: All adults age 16-69 years with comorbidities not included in Phase 1.	
Socio demographic groups at significantly higher risk of severe disease or death	
Employment groups at elevated risk of acquiring and transmitting infection because they are unable to effectively physically distance	
Contingency	37,700
Total (3a, 3b and Contingency)	1,002,456
<b>Grand Total Target (60%)</b>	<b>1,503,684</b>

Namibia is no stranger to mass vaccination campaigns and will leverage this experience with clear delivery strategies put in place to deliver the COVID-19 vaccine to different target populations while strict Infection Prevention and Control measures will be enforced. Micro-planning with the regions and districts will ensure that every eligible person is reached.

Human resources management and training chapter (chapter 8), outlines plans to adequately meet the human resource requirements, including training and supervision, for the successful roll-out of COVID-19 vaccine in the country. The section highlights cadres and numbers of people to be trained and given the situation created by COVID 19 also identifies training methods.

The chapter on Vaccine Acceptancy and Uptake outlines the communication programme areas of COVID-19 vaccine to ensure continuous dialogue on vaccines with the public and stakeholders. It stipulates strategies to keep stakeholders and the general public abreast with the correct information regarding COVID-19 vaccines with the aim of eliminating or minimizing misinformation that can negatively affect the vaccine roll out.

Ministry of Health and Social Services has a well-established adverse event following immunization (AEFI) and Adverse Events of Special Interest (AESI) in place. Additional trainings will be conducted for COVID 19 Vaccine Taskforce members and staff responsible for vaccination to adequately prepare for any AEFI/AESI within the context of COVID-19 vaccines.

The section on immunization monitoring describes in detail the COVID-19 immunization monitoring system for Namibia. It comprises the immediate monitoring of COVID-19 vaccination deployment programme including the mid-to-long term monitoring of immunization. Additionally, it describes how the health care workers and programme managers can use the data collected to identify challenges, implement corrective measures and improve the quality and success of the COVID-19 vaccination.

COVID -19 deployment and vaccination plan for COVID 19 Vaccines also includes surveillance activities that are crucial to enable public health authorities to reduce transmission of COVID-19 as well as help to guide the implementation and adjustment of the vaccination programme and policies.

The Namibia COVID-19 vaccination plan concludes by outlining evaluation activities for COVID-19 vaccine plan for Namibia which assist to assess vaccine effectiveness, quantify the impact of the vaccine and identify any improvements to the COVID-19 vaccination process.

The estimated doses per district and the number of teams required for fixed, mobile and outreach strategies are provided as Annex VII.

# Chapter 1. Introduction

## 1. Background

Namibia is a large and sparsely populated country, located in the South-western part of Africa. It shares borders with Angola to the north, Zambia to the north east, Botswana to the east, South Africa to the South and the Atlantic Ocean to the West. The population density of Namibia has grown over the years from 1.7 in 1991 to 2.8 people per square kilometer in 2016. According to the 2016 Inter-censal Survey, the total population of Namibia in 2021 is projected at 2, 553, 757 people with a growth rate of 1.9 % and a population density of 2.8 persons per square km, which presents administrative challenges, particularly for provision of access to social and health services. However, the Government adopted a Primary Health Care approach in 1990. Over 76% of citizens have access to a health facility within 10 km radius and more than 80% of the population receive health service in the public sector.

The annual growth rate for urban areas was 4.0%, which is much higher than the national rate. There was however, a negative growth rate (- 0.1%) in rural areas due to high migration to urban areas. The highest growth rates are recorded for Erongo (3.4%) and Khomas (3.1% compared to 1.9% in the period 1991-2001). It is a low upper middle-income country with a surface area of 824,268 square km and some 526 000 square kilometers of sea.

According to the World Bank (<http://data.worldbank.org>) life expectancy at birth is 68 years in 2015; more than 10 years higher than 2005 estimates, when aggregated, life expectancy was 55.98 years.



Figure 1.1 Map of Namibia

Namibia plan to implement the COVID-19 Vaccine through the Expanded Program on Immunization (EPI) under the Directorate of Primary Health Care. The EPI Programme was launched in 1990 and has since been an integral part of the Primary Health Care delivery system. The programme receives 100% funding from the Government and EPI services are provided for free to the public. Development partners also give technical and financial support in various areas.

This plan is intended to provide strategic guidance to health workers and institutions, both in the public and private sector, on country mechanisms and systems around COVID-19 deployment and vaccination at all levels. It was informed by global and national instruments and guided by latest evidence available at the time of its development and will be further shaped by the vaccine-specific recommendations.

## 1.1 Objective of this chapter

- To provide brief background information on COVID-19 disease, the current national and global COVID-19 vaccine landscape, the COVAX platform, and some of the considerations for COVID-19 vaccine introduction including coordination and partnership issues.

## 1.2 Background on SARS-CoV-2 and Coronavirus disease 2019

Coronaviruses (CoV) are a large family of enveloped RNA viruses that are distributed broadly among humans, other mammals, and birds and that cause respiratory, enteric, hepatic, and neurologic diseases. They cause a wide range of diseases such as the common cold, Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).

SARS-CoV-2 is a new strain of coronavirus and the disease caused by SARS-CoV-2 infection is called Coronavirus disease of 2019 (COVID-19). The symptoms of COVID-19 may vary. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Common symptoms include mild fever, cough, fatigue, shortness of breath, and myalgias (muscle aches). Anyone can become sick with COVID-19, regardless of age and health status. Older people, and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness. Complications of COVID-19 include severe disease and may lead to death.

Coronavirus disease (COVID-19) has spread rapidly throughout the world. In March 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a pandemic. The pandemic has severely impacted health systems, economic and social progress throughout the world. As of 30 January 2021, over 101.1 million people worldwide have been diagnosed with COVID-19, according to the WHO dashboard. The pandemic has so far claimed more than 2,25 million lives, and many areas of the world are experiencing a resurgence in cases. As of 2 February, Africa accounted for 2,564,356 cases and 61,355 deaths. This translates to 2.5% of all confirmed cases, and 2.7% of deaths globally.

### The National Response to the COVID-19 Pandemic

**Public Health and Social Measures implemented:** To combat the pandemic, public health and social measures (i.e., wearing of masks, physical distancing and hygiene) continue to be implemented. In addition, regulations, and directives under the Public and Environmental Health Act (Act 1 of 2015) have been gazetted to, among others, regulate cross-border travels, lockdowns,

business operating hours, curfews, isolation, quarantine, public transport, case management, surveillance, contact tracing, safe burials.

The country will procure vaccines through the COVAX Facility, the Africa Medical Supplies Platform and through bilateral deals to secure sufficient doses of vaccines.

### 1.3 COVID-19 Vaccines and COVAX

#### COVID-19 Vaccines

WHO suggests that vaccines are considered efficacious if they clearly demonstrate efficacy (on a population basis) ideally with ~50% point estimate. However, vaccines with high efficacy are preferred. Notwithstanding, countries apply predefined criteria to select vaccine type for a country vaccination program. Vaccines to prevent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection are considered the most promising approach for controlling the pandemic. COVID-19 vaccine development is occurring at an unprecedented pace. Currently, there are over 200 vaccine candidates for COVID-19 being developed. Of these, at least 52 candidate vaccines are in human trials with several in Phase I/II while few are being deployed after going through Phase III clinical trials.

The vaccines are being designed through various approaches and platforms. Their differences lie in whether they use a whole virus; just the parts of the virus that triggers the immune system; or just the genetic material that provides the instructions for making specific proteins and not the whole virus.

#### Vaccines pre-qualified for Emergency Use Listing by WHO

As of 20 January 2021, about 15 vaccines are under evaluation process for WHO Emergency Use Listing (EUL). Seven other candidate vaccines are expected to receive emergency use authorization during the first quarter of 2021.

Multiple types of vaccines are in use concurrently across countries that started vaccination. Examples of vaccines which received approval by multiple national regulatory authorities and currently being used at the time of developing this document, and it includes;

- **The Pfizer-BioNTech (BNT162b2) COVID-19 Vaccine** has 95% efficacy (95% CI 90.3-97.6) in preventing symptomatic COVID-19 at or after day 7 following the second dose. Among adults  $\geq 65$  years who had other comorbidities and/or obesity, vaccine efficacy was 91.7 percent (95% CI 44.2-99.8). It is indicated for individuals aged 16 years or older and administered in two intramuscular doses of 0.3 mL each, given three weeks apart. BioNTech vaccine has been authorized for use in several locations. It requires an ultra-cold chain of minus 70°C and may stay up to 5 days under 2-8°C storage. **WHO granted EUL as of 15 December 2020.**
- **The Oxford, AstraZeneca, and the Serum Institute of India (ChAdOx1 nCoV-19/AZD1222)** vaccine has been authorized for use in several countries, including the United

Kingdom and India. It is based on adenovirus vector that expresses the spike protein. It is given intramuscularly, and it is administered as a two doses vaccine, at an interval of 28 days. This vaccine had 70.4% efficacy (95% CI 54.8-80.6) in preventing symptomatic COVID-19 at or after 14 days following the second dose. This vaccine is kept under 2-8<sup>0</sup>C for at least 6 months and administered within existing health care settings. **WHO granted EUL as of 15 Feb 2021.**

- **The Johnson & Johnson (Janssen Ad26.COVS.S) vaccine** – This vaccine is based on adenovirus vector that expresses a stabilized spike protein. It is given intramuscularly and is being evaluated as a single dose or two doses 56 days apart. Clinical trials described high rates of neutralizing and binding antibodies after a single vaccine dose in healthy individuals 18 to 85 years old. **WHO granted EUL as of 15 March 2021.**

**In addition, the following vaccines are undergoing review for EUL by WHO:**

- **Moderna COVID-19 Vaccine** by Moderna, Inc.
- **Sinopharm** by the Beijing Bio-Institute of Biological Products
- **Sputnik V** by the Gamaleya Research Institute of Epidemiology and Microbiology

### **Understanding the ACT Accelerator and COVAX**

To curb the gap in availability of effective tools for combating COVID-19, WHO and partners launched an ACT Accelerator, a historic global partnership, in April 2020 consisting of governments, health organizations, scientists, businesses, civil society, and philanthropists to accelerate the development, production, and equitable access to COVID-19 tests, treatments, and vaccines. It aims to accelerate the end of the health and economic crises, restoring full societal and economic activity globally in the near term and facilitating high-level control of COVID-19 disease in the medium term. The ACT Accelerator comprises four pillars: Diagnostics, Therapeutics and Vaccines (also known as COVAX), with the Health Systems Connector pillar working across the other three.

The global Vaccines pillar – also known as COVAX – convened by CEPI, GAVI and WHO, is speeding up the search for effective vaccines for all countries. It is also supporting the building of manufacturing capabilities, and buying supplies, ahead of time so that 2 billion doses can be fairly distributed by the end of 2021 to low- and middle-income countries. COVAX has already signed an advance purchase agreement for up to 40 million doses of the Pfizer-BioNTech vaccine and, pending WHO emergency use listings, nearly 150 million doses of the AstraZeneca/Oxford candidate which is anticipated to be available in Q1 of 2021. WHO calls on countries and manufacturers to prioritize supplying COVAX rather than bilateral deals to ensure fair distribution of the vaccines for lower- and middle-income countries.

### **Namibia's Participation in the COVAX Facility**

Namibia is not a "GAVI" country, meaning, Namibia does not qualify for free doses of vaccines from GAVI, because of its ranking as an upper-middle income country. Seven other countries in Africa are in the same predicament, including South Africa, Botswana, Mauritius, and Seychelles. Hence, to have access to COVID-19 vaccine, the country submitted a *non-binding intention to*

*participate* in the COVAX Facility as a Self-Financing Country on 18th September 2020. The government made a down payment of 15% of the total cost of vaccine doses from the COVAX Facility, enough to vaccinate 20% of the population, equivalent to approximately 508 200 persons. The government also signed a *Financial Purchase Agreement* and *Financial Guarantee* for settling the outstanding balance to the COVAX Facility.

Namibia appointed UNICEF as the *Procurement Coordinator*, capitalizing on an existing expertise and relationship through an MOU with UNICEF for procurement of childhood vaccines. Countries also must indemnify Manufacturers prior to receiving allocated doses of vaccines through signing *Indemnification Agreements*. The COVAX Facility will distribute doses of vaccine to countries once they become available, however, countries must be prepared to use more than one type of vaccine due to limited availability of vaccine doses.

To achieve a sufficient level of herd immunity, Namibia plans to immunize/vaccinate about 60-80% of the population, which will be approximately 1,5 million persons (please see Chapter 5 and Chapter 7 for details). Hence, apart from Namibia's participation in the COVAX Facility, the country must secure additional doses of the vaccines to vaccinate at least up to 60% of the population to achieve a desirable level of herd immunity and interrupt further transmission.

#### **1.4 Considerations for COVID-19 vaccine introduction**

Namibia considered and applied the WHO SAGE endorsed six guiding principles below in planning for vaccine introduction to strengthen the overall immunization programme and the health system in general, which include:

1. A strong country-led, evidence-based decision-making, planning and prioritization process that is accountable and coordinated with other components of the health system.
2. A well-performing or improving and responsive immunization programme.
3. Seizing the opportunity to achieve:
  - a well-trained and motivated health workforce;
  - quality education and communication about the new vaccine for the community;
  - functional cold storage, logistics and vaccine management systems;
  - safe immunization practices and monitoring and management of adverse events; and
  - high-quality monitoring and evaluation, including disease surveillance and immunization coverage monitoring.
4. Resource, performance, and management accountability. Maximizing opportunities to deliver vaccines as integral components of comprehensive health promotion and disease prevention and control services.
5. Sufficient allocation of human and financial resources to introduce the new vaccine and sustain its use without adversely affecting other programmes and services.
6. A safe and efficacious vaccine that is appropriate for local use and is available with an uninterrupted, sufficient supply.



The following are some key considerations in the selection of Covid-19 vaccines for deployment in the Namibian setting:

- Safety and efficacy (at least 70% efficacy on population basis, with consistent results in the elderly) and with no serious adverse events
- Vaccine with no more than two dose regimens
- Shelf life of at least 6-12 months
- Stability during storage and distribution
- Supply and sustainability (i.e., supplier capacity)
- Vaccine Cost
- Emergency Use Authorization (EUA) by WHO or approval by other stringent evaluating authorities like the FDA and EU.

In line with the WHO calls on all countries introducing vaccines, Namibia will use vaccines that meet rigorous international standards for safety, efficacy and quality to accelerate readiness for deployment.

### **1.5 Coordination with other health programmes or sectors**

Introduction of a COVID-19 vaccination will be coordinated by the Primary Health Care (PHC) Directorate and integrated into the Expanded Programme on Immunisation. Strong linkages between other PHC services and immunization programmes is key for reaching the target population for the COVID-19 vaccination. Strengthening infectious disease surveillance systems will not only be critical in monitoring the introduction of the vaccine and the impact vaccines are having, but also for preparedness for possible future outbreaks. The Health Information System division will drive the process of adapting the WHO DHIS2 vaccine packages and integrate COVID-19 vaccination trackers, e-Registry, vaccination certificates into the existing DHIS2 legacy system.

Collaboration with different sectors, including finance, social welfare, social protection schemes, education, transport, energy will ensure COVID-19 vaccine introduction complements, rather than competes with, other COVID-19 response and recovery efforts.

### **1.6 Private sector engagements**

The presence of the private health sector in Namibia is very prominent, hence it is of utmost importance to involve a broad range of stakeholders in the sector through the Health Industry Forum of Namibia (HIFN), and individual health care providers and institutions. Corporate entities and the hospitality sector have pledged unreserved support to the vaccination campaign including, but not limited to, supply chain and logistics expertise, infrastructure, and funding.

## **Chapter 2. Regulatory Preparedness**

Namibia Medicines Regulatory Council (NMRC) is the national regulatory body responsible for ensuring that medicines produced or imported into the country for human or animal use are safe, efficacious and of acceptable quality. During pandemics such as COVID-19, the NMRC will ensure the availability of treatment options at the quickest possible turnaround time without compromising on quality, efficacy, and safety of COVID-19 Vaccines.

### **2.1 Objectives of this chapter**

- To provide information on current practices and options for regulatory preparedness that will ensure timely decision-making by NMRC during public health emergencies.

### **2.2 Emergency regulatory procedures**

#### **2.2.1 Pathways for emergency regulatory approval**

##### **Reliance**

The Council has approved a reliance approach as an alternative pathway to fast track the approval of vaccines. To this effect, the Council has a list of authorities and organizations it considers to be stringent and relies on. NMRC will therefore use this reliance approach to review applications for emergency use of COVID-19 vaccines based on prior authorisation by WHO prequalification/Emergency Use Listing (EUL) Programme or Stringent Regulatory Authorities (SRAs). The authority has guidelines on the approval of COVID-19 vaccines which requires the following documents to be submitted by the applicant for non-COVAX facility vaccines and for COVAX facility vaccines, the dossier will be accessed directly from WHO:

- An application dossier (quality and clinical data).
- The quality information summary (QIS), as approved/endorsed by the reference SRA or WHO.
- The unredacted full assessment reports from the reference SRA or WHO prequalification to enable NMRC verify the sameness of the vaccine being applied for.
- Proof of cGMP compliance or inspection reports from the reference SRA or WHO prequalification.
- Risk Management Plan (RMP).
- The bridging report, or justification for exemption, to address the benefit-risk of the vaccines in the local context should address the following:
  - comparability of the studied population to the Namibian population (e.g., ethnicity, gender representation, age groups);
  - relevance of reference SRA-approved conditions of use regarding epidemiology and disease pattern in Namibia as well as other implications for efficacy and safety;
  - interactions with food and with other medications relevant in Namibia that are not discussed in the reference SRA's assessment report;

- clinical role of a vaccine and its recommended use according to relevant national and international treatment guidelines; and
- other related quality issues, including but not limited to, storage conditions and conditions of administration and use.

### **Regional harmonization**

Namibia will participate in the Southern African Development Community (SADC) joint review of COVID-19 vaccine dossiers. Terms of references for this joint review process have been finalised and experts have been nominated. The requirements will be made available by the SADC Secretariat.

### **The evaluation process for the provision of emergency use authorization for COVID-19 vaccines:**

1. Applicant<sup>1</sup> submits dossier with the necessary relevant documents to the office of the Registrar.
  - Non-COVAX facility vaccine dossiers: applicants should submit dossiers with relevant documents as stated above to the office of the Registrar.
  - COVAX facility vaccine dossiers: NMRC will access dossiers directly from WHO PQ.
2. The applicant will be issued an acknowledgement letter to confirm receipt of the dossier by secretariat. The dossier will be assigned a reference number.
3. An abridged review of the dossier will be done using the reliance pathway. Assessment templates will be developed. This review takes not more than 3 days.
4. If no queries arise, the product/vaccine will be presented to the NMRC Scientific committees for further review, this review process is estimated to take 5 days.
5. The Scientific Committee then recommends the vaccine to the Council for decision making. The Council has the capacity to approve or reject the presented vaccine. Decision-making is expected to be made within 2 days.
6. In the instance that the Council rejects the product, a rejection letter will be issued to the applicant. However, if the Council approves the product, an approval letter is then issued to the applicant. The Applicant will be informed within 1 day of the Council's decision.
7. Upon completion of dossier assessment and queries arise, the applicant will be informed to rectify any deficiencies that have been identified.
8. Response from the applicant will be reviewed within 2 days of submission; and if they are found to be unsatisfactory, the dossier/ vaccine will be rejected. Whereas if the response is found to be satisfactory, then it will follow the same process as the "no queries" route described above.

**The flow diagram below depicts the evaluation process for the provision of emergency use authorization for COVID-19 vaccines:**

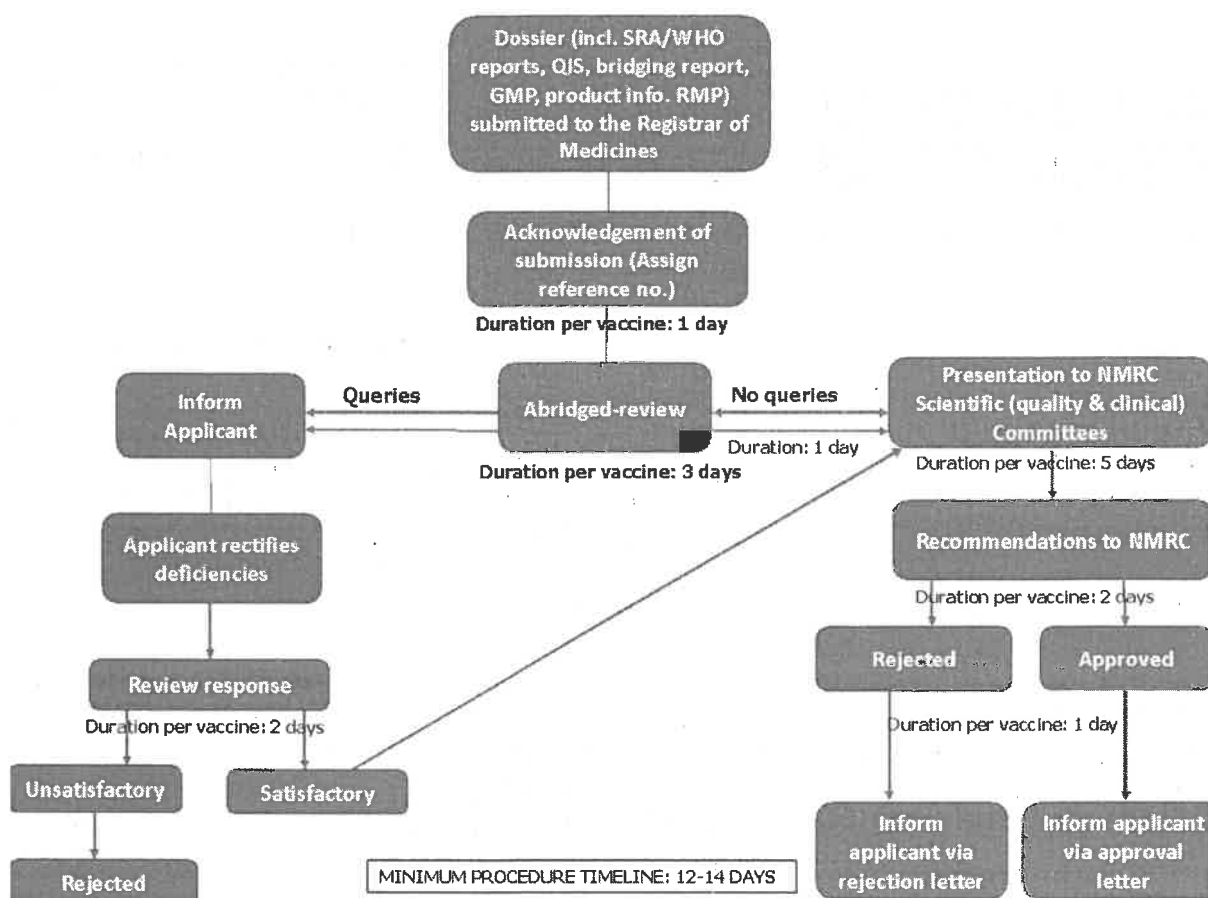


Figure 2.1 Evaluation process for the provision of emergency use authorization for COVID-19 vaccines

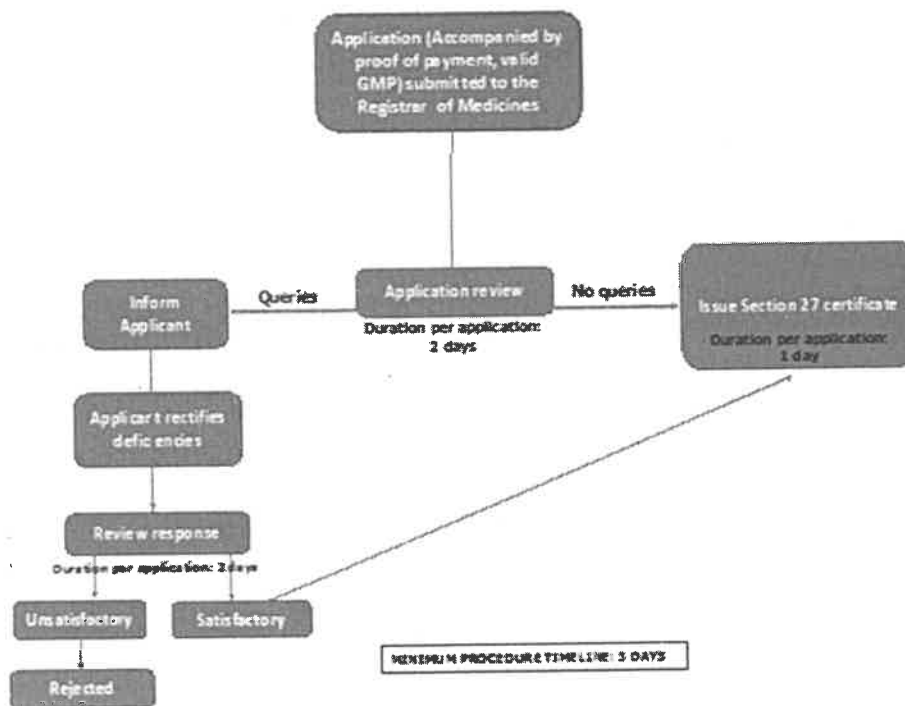
## 2.2.2 Importation procedures

An unregistered vaccine may only be supplied in accordance with the provisions of Section 27 of the Medicines and Related Substances Control Act, 2003 (Act No. 13 of 2003) and related regulations. The NMRC will process Section 27 applications from applicants who are holders of a license in terms of section 31(5) (c) of the Medicines and Related Substances Control Act 2003 (Act No. 13 of 2003) and must comply with the conditions set in that license. Central Medical Stores is licensed to import medicines including vaccines in terms of section 31(5) (c) on behalf of the government. Prior to placing an order for COVID-19 vaccine, applicants are required to have obtained authorization for Section 27 clearance. Applicants will not be required to resubmit another Section 27 application if doses issued on the initial authorization have not been fully supplied. Each consignment should be accompanied by a certificate of analysis (CoA) for each batch which is subject to verification by NMRC before distribution. **Moreover, Section 45 allows the Minister of Health, in consultation with the Council, to exclude by notice in the Gazette certain medicines from operation of any or all provisions of Medicines and Related Substances Control Act, 2003, subject to such conditions the Minister may determine, (as per Act No. 13 of 2003), which effectively allows the Minister to authorise import license holders to bring any of the vaccines on the exempted list into Namibia.**

**The approval process for Section 27 applications for COVID-19 vaccines will be as follows:**

1. Applicant submits a compassionate clearance application with the below listed relevant documents to the office of the Registrar.
  - Copy proof of valid GMP from an authority NMRC aligns with (see annexure VII attached).
  - Proof of payment for section 27 clearance application (this is not required for applications from CMS).
2. The application is reviewed within 2 days of receiving it and;
  - i. if there are deficiencies in the submission, the applicant will be informed to rectify any deficiencies that have been identified or;
  - ii. if no deficiencies arise then a Section 27 certificate/ permit will be issued within 1 day.
3. Upon resubmission of the application, a review response will be done within 2 days. If the application is found to be unsatisfactory it will be rejected.
4. When the application is found to be satisfactory upon resubmission, a Section 27 certificate will be issued within 1 day.

**The flow diagram below depicts the approval process for Section 27 applications for COVID-19 vaccines.**



*Figure 2.2 Approval process for Section 27 applications for COVID-19 vaccines*

## 2.3 Expedite lot release of COVID-19 vaccines

Lot release of COVID-19 vaccines will not be required in Namibia as there is currently no legislation provision and no capacity within the country in terms of the expertise and laboratory. The manufacturer is however required to provide a copy of the certificate of analysis to accompany each batch/lot of the vaccine arriving in Namibia.

## 2.4 Traceability of vaccines in the context of the COVID-19 pandemic

The tracing of COVID-19 vaccines in Namibia will be carried out by manufacturers, importers and distributors such as the Central Medical Stores, the Health Information System and vaccinating teams in Namibia as follows:

2.4.1 A manufacturer is responsible for keeping records of vaccines supplied to Namibia. Such records should include but not limited to: name of the vaccine, manufacturing date, batch number(s) and expiry date, date of shipment and name of importer in Namibia.

2.4.2 The importer and distributor, being the Ministry of Health and Social Services of the Government of the Republic of Namibia, is responsible for keeping records of vaccines received and distributed. Such records should include but not limited to; name of the vaccine, manufacturer(s), manufacturing date/ expiry date, date received, facilities supplied, and batch number(s) supplied to each facility, date the vaccine will be dispatched.

2.4.3 The healthcare workers at vaccinating sites will be responsible for keeping records of vaccines received by the facility/site and administered to vaccine recipients. Such records should include but not limited to; name of the vaccine, manufacturer(s), manufacturing date/ expiry date, date received, name of vaccine recipient, and batch number(s) administered, date the vaccine will be administered.

**The flow diagram below depicts the vaccine tracking and tracing responsibilities for each stakeholder.**

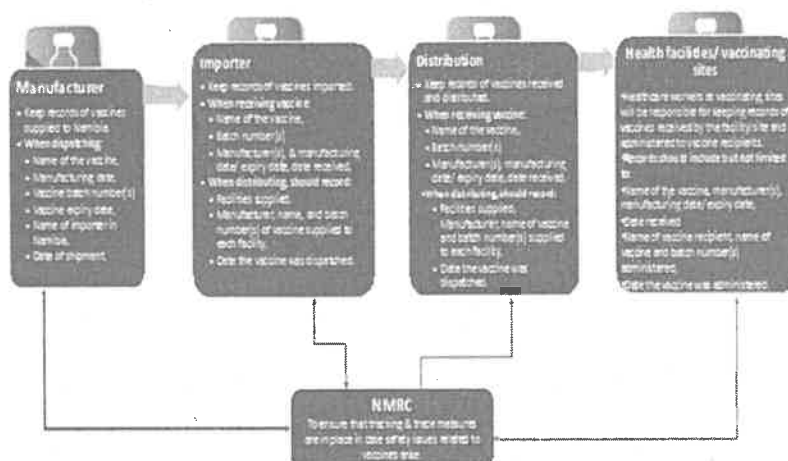


Figure 2.3 Stakeholder track and trace responsibilities for COVID-19 vaccines

## **Chapter 3. Planning and Coordination**

### **3.1 Objectives of this chapter**

- To advise the Ministry of Health and Social Services on COVID-19 vaccine introduction coordination mechanism to manage deployment and vaccination operations at all levels.

### **3.2 Establish a COVID-19 vaccine deployment and vaccination coordination mechanism**

Namibia has experience with conducting mass vaccination campaigns targeting a wide age range of the population. Namibia is drawing from this experience with the introduction and deployment of COVID-19 vaccines. Wide consultations were made with various national bodies to ensure a robust, accountable, and transparent decision-making process at country level to assure the public that deployment of the COVID-19 vaccine in the country is based on epidemiological needs, assessed through rigorous scientific review and that population safety is of utmost importance.

A National COVID-19 Vaccine Taskforce with sub-groups acts as the Inter-Agency Coordination Committee (ICC) for the successful planning, coordination, and implementation of activities. The multi-sectoral Taskforce comprises of senior-level officials from the MoHSS and relevant government Ministries such as the Ministry of Home Affairs, Immigration, Security and Safety; Ministry of Finance; Ministry of Education; Ministry of International Relations and Cooperation, the Office of the Prime Minister; collaborating partners (WHO, UNICEF, US CDC), institutions of higher learning, research and scientific community, as well as representatives from the private sector health care providers and civil society organizations.

In addition, the country has established a COVID-19 Vaccine National Coordination Committee, led by the Sub-Pillar on training, service delivery and supervision in conjunction with the Family Health Division of the Primary Health Care Directorate. Given the complexity of vaccine delivery and uncertainty of the type of vaccine availability, participation from additional experts will be co-opted when necessary.

**Terms of reference of the COVID-19 Vaccine National Co-ordination Committee are as follows:**

- 1 Review global-level information related to COVID-19 vaccines and incorporate it into the planning and preparation for COVID-19 vaccines deployment at country level;
- 2 Consider the recommendations issued by the Scientific and Clinical Evaluation sub-group acting as the National Immunization Technical Advisory Group (NITAG);
- 3 Define the deployment plan with clear functions, responsibilities, and deadlines for different stakeholders;
- 4 Align deployment plans with the national COVID-19 preparedness and response plan, with an estimate of costs to facilitate budget advocacy and resource allocation;
- 5 Establish an operations process for coordination, information and communication;

- 6 Provide higher level authorities status reports as needed;
- 7 Communicate with partners and the media through the Public Education, Communication and Community engagement sub-pillar;
- 8 Ensure integration with existing immunization programs and coordination across programs and different sectors, embedding the vaccination program into existing health system structures;
- 9 Coordinate and/or support the implementation of health services readiness and capacity assessments (at facility and community level) to identify bottlenecks and guide delivery of vaccines and other essential supplies; and
- 10 Monitor progress using methods such as a dashboard with key indicators, readiness assessment tools, etc.

### **3.3 National Immunization Technical Advisory Group**

The country is still in the process of formalizing the National Immunization Technical Advisory Group (NITAG). In the absence of a NITAG, the National COVID-19 Vaccine Taskforce sub-group responsible for Scientific and Clinical Evaluation was established with clear Terms of Reference. The team comprises a multidisciplinary group of national experts responsible for providing independent, evidence-based advice to MoHSS and the COVID-19 vaccine NCC. This team will therefore fulfil the role of a Technical advisory body similar to NITAG and RITAG until NITAG is officially appointed.

Given the nature of the pandemic and the different target groups, participation from additional experts from the medical and nursing health professional Councils and Associations, academic intuitions (e.g., UNAM School of Medicine) will be co-opted as needed.

The core members of the Scientific and Clinical Evaluation Technical Working Group participate regularly in the overall COVID-19 Vaccine Taskforce meetings to ensure adequate information flow at policy, planning and implementation levels. The Technical Working Group in its evidence-based, independent, advisory role, shall provide transparency and credibility to the decision-making process and contribute to building public confidence in the vaccination programme.

### **3.4 Approach to vaccine selection for Namibia**

The Scientific and Clinical Evaluation sub-group applies the principles of evidence-based medicine and has put in place stringent guidance for the evaluation of data emerging from clinical trials in support of issuing vaccine-specific recommendations. In addition, to achieve high and equitable vaccine uptake, the use of existing scientific knowledge is essential, as is acquisition of new information, and learning in real time about what works and what does not.

- Many countries and pharmaceutical companies are in the process of developing COVID-19 vaccines and these are in different developmental phases. The scientific and clinical evaluation subgroup (SCES) examined the different vaccines currently in development. According to WHO draft landscape and tracker of COVID-19 candidate vaccines, there are 63 vaccines in clinical phase of development and an additional 174 vaccines in pre-clinical



development (as of 29 January 2021). SCES took into consideration the WHO pre-approved vaccines and those in phase 3 of clinical development.

Table 2.1 Overview of the different platforms used to deliver vaccines (as of 16. 03 2021)

Platform		Candidate vaccines (no. and %)	
PS	Protein subunit	27	33%
VVnr	Viral Vector (non-replicating)	12	15%
DNA	DNA	11	13%
IV	Inactivated Virus	11	13%
RNA	RNA	10	12%
VVr	Viral Vector (replicating)	4	5%
VLP	Virus Like Particle	3	4%
VVr + APC	VVr + Antigen Presenting Cell	2	2%
LAV	Live Attenuated Virus	1	1%
VVnr + APC	VVnr + Antigen Presenting Cell	1	1%
		<b>82</b>	

*Note: All candidates shown above are in clinical trial phase.*

More nuanced scientific treatment of the pros and cons of the different vaccine platforms which are licensed for use in humans are continuously reviewed by the SCES. It is important to underscore that the vaccines authorised so far and those in development produce a polyclonal response, generating numerous antibodies that target different parts of the virus. Changes to any of those target sites raise the possibility that the vaccines would be less effective, not that they would not work at all.

In other words, it is reasonable to expect that the antibodies will still recognize this variant with a possibility of decreased recognition efficacy and as a result, diminished efficacy. A recent study in Germany assessed the efficacy of Pfizer's COVID-19 vaccine against the B.1.1.7 variant. Study authors found no biologically significant difference in neutralization activity compared to previous variants and concluded that "it is very unlikely that the UK variant viruses will escape BNT162b2-mediated protection."<sup>2</sup> Namibia will closely monitor the latest available data stemming from peer-reviewed publications and aim to remedy the predicament through booster shots, observing the same principles as in Hepatitis C and influenza vaccination programmes.

In the context of global health, our knowledge about health challenges posed by pathogens potentially causing infectious disease epidemics and pandemics has increased. As of now, different platforms are widely used for vaccine development. These platforms have their advantages and disadvantages as shown in Table 3.3 below, with respect to vaccines ability to induce an effective immune response, manufacturing capacity, and users' safety. Inactivated or weakened virus vaccines use a form of the virus that has been inactivated or weakened so it does not cause disease, but still generates an immune response. Protein-based vaccines use harmless fragments of proteins or protein shells that mimic the COVID-19 virus to safely generate an immune response.

<sup>2</sup> Muik A, Wallisch AK, Sanger B, et al. Neutralization of SARS-CoV-2 lineage B.1.1.7 pseudovirus by BNT162b2 vaccine-elicited human sera. bioRxiv. Published online January 19, 2021. doi:10.1101/2021.01.18.426984

Decision making matrix, featuring all the criteria which SCES took into account when considering vaccine candidates for Namibia, is presented below. It is important to emphasise here that Namibia adopted WHO suggested criterion of what defines an efficacious COVID-19 vaccine which states that a “clear demonstration of efficacy (on a population basis) ideally with ~50% point estimate” should be a minimum criterion for any acceptable COVID-19 vaccine, and that efficacy can be assessed against “disease, severe disease, and/or shedding/transmission” endpoints.<sup>3</sup>

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<sup>3</sup> WHO target product profiles for COVID-19 vaccines. World Health Organization, Geneva 2020.

Assessment criteria: regulatory requirements (safety and efficacy), logistical requirements, dosing per vial, pricing

**STRENGTHS (+)**

- Based on the currently available data from Phase 3 trials, Pfizer vaccine appears to offer robust protection (52% after first dose, 95% after second dose). Pfizer vaccine received emergency approval from major National Regulatory Authorities (FDA, EMA as well as WHO pre-qualification). Recommended for all the age groups.
- An interim analysis of clinical trials showed the Oxford-AstraZeneca vaccine had an average efficacy of 70% in protecting against the virus. Researchers said this figure could be as high as 90% by tweaking the dose. 70.4% efficacy (95% CI 54.8-80.6) in preventing symptomatic COVID-19 at or after 14 days following second dose, 12,390 participants. Vaccine efficacy against B.1.1.7 not statistically different (75 vs 84%), though lower neutralizing antibody response. Preliminary data against B.1.351 efficacy against mild/moderate disease 21.9% (95% CI -49.0-59.8).
- There are three vaccines currently far along in development in China, from the companies Sinopharm, Sinovac Biotech and CanSino. They are all based on inactivated viruses and thus do not require ultracold supply chain.
- An investigational COVID-19 vaccine developed by Janssen Pharmaceuticals appears to be safe and effective at preventing moderate and severe COVID-19 in adults. The vaccine requires only a single injection and can be stored in a refrigerator for months. Johnson and Johnson/Janssen vaccine is preferred in Namibian context for the following reasons:
  - a. It is a single-dose vaccine, with 66.9% efficacy in preventing moderate to severe COVID-19. Efficacy against severe disease higher at 85% (28 days after vaccination).
  - b. Overall efficacy: 72% USA, 66% Latin America, 57% South Africa (B.1351 most infections), possibly 85% protection against severe COVID-19.

Assessment criteria: regulatory requirements (safety and efficacy), logistical requirements, dosing per vial, pricing

**OPPORTUNITIES (+)**

- COVAX facility may include Pfizer and AstraZeneca vaccine after Namibia has met the national regulatory framework (as outlined in the NDVP). Based on the current commitments, the total number of anticipated doses for Namibia stand at 95,489 = 47,744 for full course for Pfizer BioNTech,

**WEAKNESSES (-)**

- In terms of logistical requirements, Pfizer vaccine might pose certain challenges as it requires ultra-cold storage, and as such is not suitable for Namibia. Pfizer designed temperature-controlled thermal shippers utilizing dry ice to maintain recommended storage temperature conditions of  $-70^{\circ}\text{C} \pm 10^{\circ}\text{C}$  for up to 10 days unopened. These can be used as temporary storage units by refilling with dry ice every five days for up to 30 days of storage. In refrigeration units that are commonly available in hospitals, the vaccine can be stored for five days at refrigerated 2-8°C conditions (Pfizer COVID-19 Vaccine Distribution Factsheet).
- Overall results show the AstraZeneca vaccine's efficacy is slightly lower than other leading candidates; its safety in elderly has not been well established.
- The vaccines currently developed in China have only partial data on the efficacy of the vaccines released from their respective phase II and III trials. Efficacy tends to be lower than in their Western counterparts, ranging from 50 to 90%.
- It must be emphasised that the issue of safety and efficacy data in older cohorts is not specific to Oxford AstraZeneca vaccine; other vaccine candidates have more data compared to AZ but still limited to draw firm conclusions. As a result of these systemic limitation pertaining to older age sub-groups, that are in fact a decade long feature in vaccinology research, the Government of Indonesia has decided to roll out its vaccines manufactured in China to younger populations.

**THREATS (-)**

- Uncertainty surrounding funding for COVAX facility, the intense competition on the global market and hoarding of vaccines by wealthy countries.
- Prolonging the time between the first vaccination and the booster shot could decrease immunisation potential and increases the risk of mutations occurring.

109,978 for Oxford AstraZeneca =95,489 for full course, and 229,173 for Janssen vaccine. (manufactured by J&J) which requires one dose only.

#### ANALYSIS SUMMARY

Overall, it is not possible to compare safety and efficacy seen in different vaccine models since different challenges and different assays are used that are not standardized. Considering that the data on leading vaccine candidates have not all been released through peer-reviewed journals, drawing scientifically meaningful comparisons is extremely tenuous. Based on the currently available data, and bearing in mind the SWOT analysis outlined above, the SECS therefore sets out the following:

1. The phased approach to vaccination as set out in Chapter 5 of NDVP is highly recommended with prioritization given to healthcare workers and adults aged 70 and above with/without comorbidities and those aged 60 to 69 years old with at least one comorbidity, in Phase 1a, based on the vaccine type available
2. Should Namibia only receive one type of vaccine in phase 1a, it should be administered according to the staging matrix in Chapter 5.
3. Should more than one type of vaccine be available at the same time, and if they received the requisite WHO pre-qualification and the approval of Namibia Medicines Regulatory Council, they should be administered observing the prioritisation roadmap outlined in Chapter 5.

### 3.5 Establish a chain of reporting and management structure

The reporting and management structure for COVID 19 vaccination is aligned to and benefit from existing health service delivery set up in the country. The MOHSS-led multisectoral National COVID-19 Vaccine Taskforce acting as the Immunization Coordination Committee (ICC) will continue to ensure transparency and credibility of decision-making processes in all the COVID-19 planning and implementation. The MOHSS current reporting and management structure for vaccination provides a platform for the COVID-19 vaccine deployment, reporting and management.

The Deputy Executive Director (DED) within the executive branch of the MOHSS Management, and reporting to the Executive Director, is the Focal Person responsible for managing the overall National Deployment and Vaccination Plan (NDVP) in coordination with the National COVID-19 Vaccine Task Force Team. The DED is the chairperson of the COVID 19 Vaccine Taskforce (and COVAX Facility focal person for Namibia) deputized by Acting Director for Central Medical Store. The EPI within the Family Health Division in PHC Directorate of MOHSS, which has strong reporting and management structure at all levels for routine immunization and mass vaccination (campaigns), is the focal point responsible for the vaccination component of the National Deployment and Vaccination Plan while Central Medical Stores (CMS) is the focal point for vaccine cold chain and logistics.

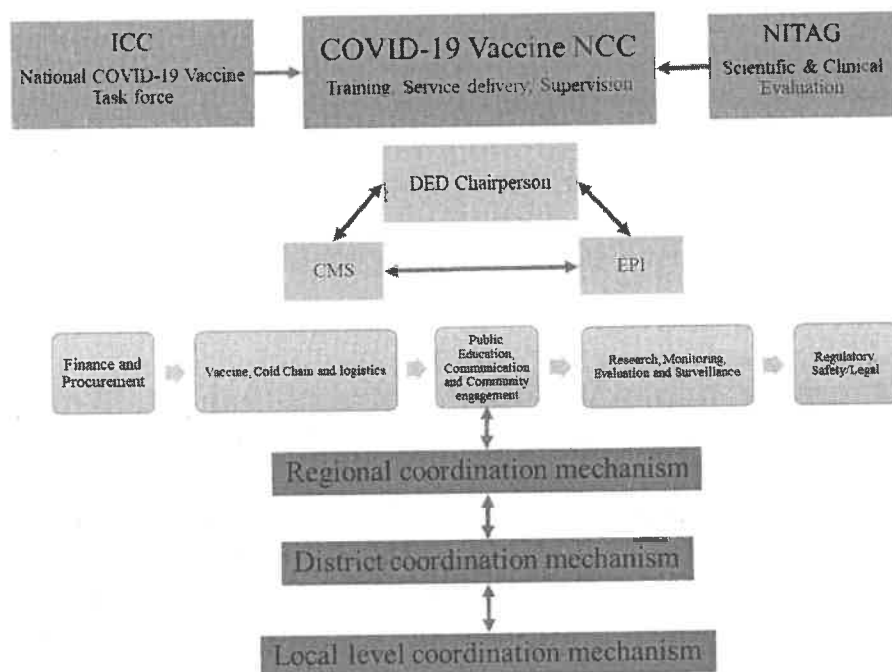


Figure 3.1 Reporting and managing activities in support of vaccine deployment

Subgroups established under the National COVID-19 Vaccine Taskforce, provides guidance in specific areas to the COVID-19 Vaccine NCC, including but not limited to 1) Vaccine, Cold Chain and Logistic, 2) Public Education, Communication and Community Engagement, 3) Research, Monitoring, Evaluation and Surveillance, 4) Finance and Procurement, 5) Regulatory and Safety/Legal, etc.

The training, service delivery, supervision and co-ordination of the vaccine strategy will be the core duties of the COVID-19 Vaccine NCC. As explained in section 3.3, the Scientific and Clinical Evaluation sub-group and the National Adverse Events Following Immunizations Committee will be providing evidence-informed clinical advice to the COVID-19 Vaccine NCC.

With reference to the established National Deployment and Vaccination Plan, the reporting structure is illustrated in figure 3.1 below, which includes the office of the DED as Namibia Focal Person for the COVAX Facility the EPI Program as the focal point of vaccination and the Central Medical Stores as the focal point for logistics.

*Note: In the current vaccination structure, the country is working on the legislative procedures to formally establish ICC and NITAG. In the interim the COVID-19 Vaccine Taskforce acts as the ICC, the Scientific and clinical evaluation functions (National Adverse Events Following Immunization Committee roles included) as NITAG. To strengthen the coordination of the NDVP, the sub-group on training, service delivery and supervision serves as the COVID-19 vaccine national coordination committee.*

*Table 3.1 Chain of reporting and protocols for management structure*

<b>Offices</b>	<b>Reporting and control protocol (National, Regional and District levels)</b>
<i>DED COVID 19 Vaccine taskforce (Incident Manager)</i>	<ul style="list-style-type: none"> <li>• Responsible for managing a country’s overall National Deployment and Vaccine Plan (NDVP) in coordination with the National COVID-19 Vaccine Task Force Team</li> <li>• Delegates responsibilities for deployment of vaccine and vaccination to the FPL and FPV.</li> <li>• In collaboration with the FPL and FPV, drafts the final report and outcomes on the deployment and vaccination activities.</li> </ul>
<i>Central Medical Stores (Focal point for logistics)</i>	<ul style="list-style-type: none"> <li>• Responsible for deployment of the NDVP.</li> <li>• Collects and organizes contact information for members of deployment committees, other key authorities and prepares a duty roster.</li> <li>• Proposes execution schedule covering shipments of vaccine and the mode of transport of each shipment.</li> <li>• Oversees process for forecasting, vaccine reception, storage, transport distribution and waste management.</li> <li>• Establishes processes for data collection, analysis, visualization and communication using management information systems, inventory management system and health facility service capacity assessments.</li> </ul>

	<ul style="list-style-type: none"> <li>• Drafts a standard format for information to be collected by each level.</li> <li>• Establishes processes for monitoring and evaluating deployment activities.</li> </ul>
<p>Expanded Programme on Immunization (EPI) <i>(point for vaccination)</i></p>	<ul style="list-style-type: none"> <li>• Responsible for the vaccination component of the NDVP.</li> <li>• Collects and organizes contact information for members of deployment committees, other key authorities and prepares a duty roster.</li> <li>• Establishes processes for providing public information.</li> <li>• Establishes processes for data collection and information to display using a management information system.</li> <li>• Establishes a process for carrying out post-deployment surveillance and management of AEFI/AESI, monitoring and evaluating vaccination activities.</li> </ul>

## **Chapter 4. Finance and procurement**

### **4.1 Objectives of this chapter**

- To present Namibia budget for COVID-19 vaccine deployment and vaccination
- To outline the execution plan for the allocated budget in line with the prescribed Acts, Policies, and guidelines.

### **4.2 Budget inputs and budgetary units**

Each activity specified in this deployment plan is costed, leveraging the existing health system to maximize efficient spending. The identified Subgroups are assigned responsibilities for overseeing, implementing, or contracting the delivery of each function prepared for effective budgeting and subsequent implementation, and monitoring.

The short-term budget considers the initial allocation that covers the first 3% of the national population (health workers, Cross-border Freight Drivers) and the next 17% of the population (older people and those with underlying health conditions, Sex Workers, Traditional Healers, People in Correctional Facilities and Police holding cells; Staff at Points of Entry, high risk persons residing in informal settlements ). The medium-term budget considers the incremental shipments to cover beyond the initial 20% (the additional priority populations).

The proposed budget is scenario-based and aligned with the vaccine delivery strategies outlined in the plan. A full list of necessary budgetary inputs over short and medium terms for COVID-19 vaccination, with some falling under the direct mandate of the immunization programmes, and others expected from the health system, is annexed to this plan.

### **4.3 Estimated funding needs (costing)**

The costed NDVP informs what is available and what additional resources are required to implement the plan immediately between February and March 2022 or 1 to 3 years; to be revised annually in alignment with standard budgeting and expected delivery periods or as the country COVID-19 situation dictates.

### **4.4 Costed plan**

The objective of budgeting is to determine additional cost on top of current routine immunization and health system spending and matched with available resources. The estimated cost of the existing routine immunization and health system costs that will be used for COVID-19 vaccine deployment will be included in the budget and provided by the MoHSS and other stakeholders. This plan will be submitted to the MoF to provide the resource envelope within which to deliver COVID-19 vaccines such as the human resources, the vaccines, consumables, transportation and storage. The GRN is consulting with cooperate



entities, developmental partners and multilateral organizations to solicit support for the implementation of the NDVP.

The drafting of the budget was approached taking into consideration integration into existing delivery systems and facilitate expenditure tracking, with minor adjustments to existing financial information systems (e.g., adding immunization expenditure-related codes to financial management information systems). Monthly monitoring and evaluation on the IFMS, and continuous assessment Procurement plan will be factored in.

#### **4.5 Budgetary and public financial management processes**

At the beginning of the COVID-19 pandemic in Namibia, the National Health Emergency Management Committee through various thematic pillars identified needs and developed a costed plan which was presented to the Ministry of Finance to avail funding for the National e Emergency Response. The government has deployed innovative ways to process funds and payments to secure the much-needed resources, for example procuring PPEs, ventilators, minor engineering works, renovations, etc. In addition, the Ministry of Health and Social Services had received exemption of some provisions of the Finance Act, Treasury Instructions and Procurement Board requirements under strict conditions and Auditor-General oversight. The same innovations will be utilized especially to secure doses of vaccine given the current scramble for vaccine doses globally

#### **4.6 Procurement**

**Processes:** Methods on how to execute is required through a procurement plan. The Minister of Finance may be approached for an exemption (Emergency Procurement) with justifications, specific terms and conditions on how to execute the activities on an emergency basis, and to ensure delivery within the time frame.

**Sourcing:** Generally, items which can be sourced only from Manufacturers, Pooled Procurement bodies, and those that can be locally sourced, should be identified. Items that can be acquired through the normal procurement processes, and or from the existing contracts options are provided within different procurement methods and different procurement thresholds. For the purpose of this plan, proposed items are listed in the attached procurement plan, however, the list is not exhaustive and will be adjusted as the situation unfolds.

Challenges in suppliers' capabilities and abilities to supply and deliver the required commodities within the required timeframe in most cases will be interruption in supply chain, importation requirements and the effects of non-delivery of commodities to the deployment plan.

## Chapter 5. Identification of target populations

Estimating relevant target populations is a complex and urgent activity in preparation for COVID-19 vaccine introduction. Under the guidance of the National COVID-19 Vaccine Task Force, subgroups were formed to work on specific areas. The identification of various target populations such as health workers, older people aged 60 and above and those with comorbidities were based on the WHO Strategic Advisory Group of Experts on Immunization (SAGE) prioritization roadmap and vaccine supply as communicated by COVID-19 Vaccines Global Access (COVAX) facility. These guiding documents were used to ensure equity of vaccine access to groups at greater risk of acquiring COVID-19 infection due to their socio-economic status, epidemiological data on disease burden, severity and mortality status in the Namibian context.

The decision-making process for identifying target populations was prepared by a team comprising of epidemiologists, public health specialists, Expanded Programme on Immunisation (EPI) technical experts, technical advisors, Monitoring and Evaluation (M&E) specialists, data systems experts, demographers and biostatisticians.

The official data sources consulted for the target setting were:

- 2013 Demographic Health Survey (DHS), District Health Information Software (DHIS-2),
- The Namibia Labour Force Survey 2018 Report,
- National Strategy for Non-Communicable Diseases,
- The Multisectoral Strategic Plan for the prevention and control of Non-Communicable Diseases (NCDs) (2017/18 – 2021/22),
- Namibia Statistics Agency (NSA) national projections for 2021 based on the 2011 Housing and Population Census
- Education Management Information System (EMIS).
- Health Professions Councils of Namibia (HPCNA) and administrative databases of other professional bodies and essential workers.

### • 5.1 Objectives of this chapter

- To identify a target population to ensuring equitable distribution of the vaccine among priority high-risk groups.
- To define target populations.
- To estimate vaccine quantities per target population.
- To inform strategies for the deployment, implementation and monitoring of the COVID-19 vaccine(s) in line with the country's target setting.
- To ensure the plan and resources are aligned to identified targets for COVID-19 vaccination.

### 5.2 National allocation of COVID-19 vaccines

The Namibian COVID-19 vaccine allocation plan is guided by the WHO framework for fair, equitable and timely allocation mechanism for COVID-19 vaccines through the COVAX Facility

and is planned in three phases. The plan considers epidemiologic setting and vaccine supply scenarios for priority use cases for vaccines against COVID-19 in the context of limited supply.

The vaccine doses required per phase were determined using the following formula below:

$$\text{Vaccine dosage} = \% \text{ coverage} \times \text{national population estimate} \times 2 \text{ vaccine doses}$$

The vaccination plan is sequenced in three phases as outlined below:

**Phase 1:** Allocated proportionally to all prioritized target populations (20% coverage of the national population).

**Phase 2:** Allocated proportionally to all prioritized target populations (21% - 60% coverage of the national population).

**Note:** A approximate 4% contingency has been factored into the calculations to account for waphase, maladministration, mishandling or population underestimation in the first and second phases, respectively.

### 5.3 Target populations identification and definition

The initial focus of the vaccination programme will be to reduce morbidity and mortality and achieve a herd immunity in order to maintain critical healthcare services. It is important to emphasize that micro-planning for the estimation and identification of the target age group at the sub national level will be used in the micro-planning phase to ensure no key population is missed.

The initial launch will be divided into two phases, phases 1 and 2. Phase 1 will prioritize health workers at elevated risk of being infected and cover older adults aged 60 and above with/without comorbidities. Phase 2 will cater for the sociodemographic groups at significantly higher risk of severe disease or death premised on the recommendations from WHO (SAGE) and US-CDC. This includes groups with comorbidities or health status determined to be at significantly higher risk of severe disease or death and disadvantaged groups where there is underdiagnosis of comorbidities to ensure equity in deployment of vaccines. Employment groups at elevated risk of acquiring and transmitting infection because they are unable to physical distance are also included in Phase 1. The different prioritized groups and the definitions for these populations are found in annex 5.1.

### 5.4 Targeted populations size estimations

*Table 5.1 Targeted population estimations*

<b>Overall public health strategy for active community transmission: Initial focus will be on direct reduction of morbidity and mortality and maintenance of most critical essential services; also, reciprocity. We will then expand to reduce transmission to further reduce the disruption of social and economic functions.</b>			
<b>Vaccine Supply</b>	<b>Priority group and definition</b>	<b>Est. vaccine quantity</b>	<b>Remarks</b>

Scenario		(COV-1)	
<b>Phase I</b> (assumes limited vaccine availability for 1-20% of the national population)	<u>Phase 1a (initial launch)</u> <ul style="list-style-type: none"> <li>• <b>Health workers</b> at <u>high to very high</u> risk of acquiring and transmitting infection</li> </ul>	53,849	Based on figures from HPCNA of registered HCWs, MoHSS Human Resources department for unregistered HCWs, porters, drivers, cleaners, kitchen staff, security guards, etc.
	<u>Phase 1b</u> <ul style="list-style-type: none"> <li>• <b>Older adults</b> People aged 60 and above with or without comorbidity</li> </ul>	95,000	Based on NSA pop. estimates for 2021 (not covering the whole cohort) This
	<u>Phase 1c</u> <b>Sociodemographic groups at significantly higher risk of severe disease or death</b>  <u>Groups with comorbidities or health status is determined to be at significantly higher risk of severe disease or death.</u>		
	Diabetes Mellitus	36,276	6% prevalence of the total population
	Hypertension + Cardio-vascular Disease	45,000	Estimate based on C-19 mortality as driven by cardiac disease
	Cancer	9,024	80% of the 7000 5-year prevalence rate of Global Cancer Report December 2020 (11,248)
	Chronic renal failure	500	Based on risk estimates from Namibia C-19 data analysis
Pulmonary TB + Chronic Respiratory	12,000		

Diseases		
People living with HIV alone and or with comorbidity	83,000	30% of PLHIV in Namibia
Phase 1d <b><u>Disadvantaged socio demographic groups at significantly higher risk of severe disease death due to potential lack of access to health care</u></b>		
People living with disabilities	2,500	As guided by PHC, MoHSS
Inmates in police holding cells and correctional facilities	8,000	Ministry of Home Affairs and Immigration
Adult refugees (16+) with at least one comorbidity	2,000	Based on number of refugees at Osire Camp
Minority groups (sex workers, homeless etc.)	19,446	Sex workers, homeless
Individuals living in informal settlements	30,000	Above 40 years, with at least comorbidity based in Windhoek, Swakopmund and Walvis Bay
Phase 1e <b>Employment groups at elevated risk of acquiring and transmitting infection because they are unable to physically distance. These groups include:</b>		

	High priority teachers and school staff	15,500	EMIS Namibia, 2019
	Police officers and correctional services officers	16,000	80% of country total
	Employees in the mining industry	13,059	80% of country total
	Employees in the fisheries industry	10,960	80% of country total
	Senior government officials, members of the diplomatic corps, government executives, religious and traditional leaders	1,300	GRN employees (MPs, executive, judiciary, local councilors, traditional leaders, Ministry of International Relations and Cooperation
	Other essential non-health frontline workers (transport, retail, agriculture sectors)	30,000	Ballpark estimate - to be subdivided into sectors using 2018 Labour Force Survey *Transport sector includes cross-border, freight and public transport drivers (Namibians and resident permit holders)
	Contingency (3.6%)	17,814	As guided by the PHC, MoHSS
	<b>Total</b>	<b>501,228</b>	
	<b>Target</b>	<b>501,228</b>	
<b>Phase II a,b,c,d)</b> (assumes	<u>Phase 2a</u> <b>Health workers</b> not covered in initial phase of vaccination		

moderate vaccine availability for 21-40% (Total 60% of the national population)	Health workers at low to moderate risk of acquiring and transmitting COVID-19 infection	6,000	This includes the health workers not covered in phase 1a
	<u>Phase 2 b</u> <ul style="list-style-type: none"> <li>▪ <b>Adults</b>              60 years and older with or without comorbidities that were not covered in phase 1c</li> </ul>	75,000	Based on NSA pop. Estimates for 2021 (not covering the whole cohort)
	Groups with comorbidities or health states determined to be at significantly higher risk of severe disease or death (All adults age 16-69 years with comorbidities not included in Phase 1)	255,000	Based on population estimates from 2013 DHS+ (for Diabetes, HPN, Obesity); NAMPHIA-2017 (PLHIV on ART) and National TB Prevalence survey 2018
	<u>Phase 2 c</u> <b>Socio demographic groups at significantly higher risk of severe disease or death due to a potential lack of access to health care</b>		
	<ul style="list-style-type: none"> <li>▪ People living with disabilities not included in initial vaccination phase</li> </ul>	17,500	All people living with disabilities not covered in phase 1 of vaccination. As guided by PHC.
	<ul style="list-style-type: none"> <li>▪ Inmates in police holding cells and correctional facilities not included in initial vaccination phase</li> </ul>	8,000	All incarcerated inmates not covered in phase 1 of vaccination. As guided by PHC.
	<ul style="list-style-type: none"> <li>▪ Adult refugees (16+) with no comorbidities</li> </ul>	5,000	Based on refugee population figures in Namibia
	<ul style="list-style-type: none"> <li>▪ People living in extreme poverty</li> </ul>	42,000	50% of the total estimated in Namibia 85,747.

	<ul style="list-style-type: none"> <li>▪ Hard to reach population groups such as those living in rural and remote areas</li> <li>▪ Adults aged 16-59 years living in informal settlements in hot spot areas (Windhoek, Walvis Bay and Swakopmund)</li> </ul>	30,000	Based on DHS 2013 survey
		87,519	Based on DHS 2013 survey
	<u>Phase 2d</u>		
	<b>Employment groups at elevated risk of acquiring and transmitting infection because they are unable to effectively physically distance (<i>this includes remaining employees not covered in phase 1</i>)</b>		
	Remaining schoolteachers and staff	15,500	All teachers and school staff not covered in phase 1 of vaccination (EMIS 2019, Namibia)
	High school learners and students in institutions of higher learning	120,200	50% of the total number of learners in secondary phase and students in tertiary phase (260,405)
	Correctional services officers	12,800	100% of the *ca. 2,800
	Military personnel living in barracks	12,000	100% of the *ca. 12,000
	Remaining employees in the mining industry	3,265	Remaining 20% of the employees in the mining industry not covered in phase 1 of vaccination *ca. 16,325 in total
	Remaining employees in the fisheries	2,740	Remaining 20% of



industry		the employees in the fishing industry not covered in phase 1 of vaccination *ca. 20,000 in total
Employees in the tourism and hospitality industry	49,000	50% of the *ca. 98,000 employed in tourism and hospitality.
Employees in the agricultural industry	55,332	50% of the *ca. 110,664
Employees in the informal business sector	83,700	20% of the *ca. 418,674.
Remaining government executives, traditional and religious leaders	500	Based on estimated numbers of employees in key GRN posts (MPs, Cabinet members, Regional Councilors, Traditional. & Religious leaders)
Remaining other non-health frontline workers (transport, postal services, communication services, retail sector)	83,700	20% of the total of 105,774. Note that this population group is likely to be counted under those living in informal settlement, those with comorbidity and those living under extreme poverty
Contingency (3.8%)	37,700	As guided by the PHC
<b>Total</b>	<b>1,002,456</b>	
<b>Grand Total Target</b>	<b>1,503,684</b>	

## 5.5 Equitable vaccine distribution

The WHO avers that universal health coverage (UHC) means all people have access to the health services they need (prevention, promotion, treatment, rehabilitation, and palliative care), without the risk of experiencing financial hardship when paying for such services.

Community engagement and trusted relationships with health care providers are crucial to the success of routine immunization programs as well as vaccine clinical trials and campaigns. The distribution of COVID-19 vaccines in Namibia will rely on a foundation of strong immunization and primary health care services, coordination and collaboration with other stakeholders to reach the most vulnerable populations and ensure their access to critical preventive care. The guiding principle of national equity is to ensure that there is equitable access to vaccines, and that groups at increased risk of COVID-19, due to underlying societal, geographic or biomedical factors, benefit from vaccination.

Although everyone is affected by the COVID-19 pandemic, its impact is not shared equally. Some groups are experiencing serious illness and death at higher rates specifically associated with biological factors, e.g. those who are older or have underlying health conditions. Other groups are experiencing disproportionately greater health and other burdens because of societal factors, e.g. limitations of people living in poverty to practice physical distancing and experiencing barriers to accessing quality health care. Systemic disadvantages associated with the poor and marginalized groups are usually linked with disproportionate pandemic burden.

Promoting equity at national level requires addressing higher rates of COVID-19 related severe illness and mortality among such systematically disadvantaged or marginalized groups. The Namibian vaccine distribution plan therefore embraces fair allocation based on African indigenous values for the operation of principles that govern the practice of fairness and equity<sup>4</sup>.

Examples of specific considerations include but are not limited to gender, race, socioeconomic status, people living in informal settlements, people with disabilities, low-income migrant workers, refugees, homeless persons and other hard-to-reach population groups. Namibia has immunization delivery systems and the required infrastructure to ensure equitable access to COVID-19 vaccines for these vulnerable populations.

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<sup>4</sup> Framework for the fair, equitable and timely allocation of COVID-19 vaccines in Africa, 2020.

## Chapter 6. Vaccination delivery strategies

### 6.1 Objectives of this chapter

- To outline strategies in place to deliver the COVID-19 vaccine to different target populations in Namibia.
- To outline the eligible population for vaccination against COVID-19 in Namibia.
- To enforce the existing Infection Prevention and Control measures required during the vaccination.

### 6.2 Vaccination delivery strategies

#### 6.2.1 Define recommended immunization schedule

The vaccine schedule and recommendations for administration are defined based on table 6.1 below.

*Table 6.1 Recommended COVID-19 vaccine schedule*

Type of vaccine	# of doses	Dosing schedule	Developers
Pfizer BioNTech	2 doses	Day 0 and day 21	Pfizer/BioNTech + Fosun Pharma
AstraZeneca	2 doses	Day 0 and day 28	AstraZeneca + University of Oxford
Sinopharm	2 doses	Day 0 and day 28	Sinopharm + China National Biotech Group Co + Beijing Institute of Biological Products
Gamaleya	2 doses	Day 0 and day 21	Gamaleya Research Institute; Health Ministry of Russian Federation
Moderna	2 doses	Day 0 and day 28	Moderna + National Institute of Allergy and Infectious Diseases

#### 6.2.2 Outline of vaccine delivery strategies

The Expanded Programme on Immunization (EPI) was launched and embedded into the PHC directorate with the mandate to provide immunization services against specific communicable diseases such as Polio, Diphtheria, Pertussis, Tuberculosis, Measles, and Tetanus to the children under five years, as well the provision of Tetanus Toxoid vaccination to the women

of child-bearing age (15-49 years)<sup>5</sup>. The national immunization has increased from 67% in 1991 to 78% in 2001, and later found to be at 87% in 2019<sup>6</sup>. The significant increase in the coverage rate is attributed to the multiple efforts implemented within the country such as immunization campaigns, outreach visits, and community mobilizations through the media, and community health workers.

COVID-19 vaccination is integrated into the existing Expanded Programme on Immunization and is therefore being delivered through the existing vaccine delivery models applicable to all the health care service delivery settings within the country.

Scaling up the influenza vaccine delivery platforms available within the private health sector to optimize them in the delivery of the COVID-19 vaccination through the private health care practitioners will reach private health care services users.

Namibia considers the use of fixed vaccination site settings close to target populations to reduce travelling time, minimize costs and decrease logistical concerns. The vaccination sites have been identified, all the people identified for vaccination have been mapped by the regions and districts. The district vaccination teams have identified the individuals to be vaccinated and the communities they are coming from, which informed the decision of the selected health facilities as vaccination points. Planning for target groups and the general public included surveys, focus group discussions, community meetings and other methods of communication to gather the public preferences on the best vaccine administration strategy and sites to maximize uptake.

The vaccination strategy was based on the need to efficiently deliver COVID-19 vaccines to the target population in phases, as outlined in section 5.3, 5.4 and in line with the human resources and health facilities as stipulated in section 8.2. Phase 1a and 1b is planned for a period of 2 months, phase 2a and 2b for 4 months and phase 2c and 2d for 5 months. Assuming Namibia gets the phase 1 vaccine consignment in February/March 2021, and the subsequent deliveries are timely received, it is estimated that 60-80% of the population will be vaccinated by January 2022. Table 6.2 below summarizes the vaccination strategy which includes the target population, vaccination sites and timeframe.

*Table 6.2 Namibia COVID-19 vaccine delivery strategies and sites*

Phase	Target population	Vaccination Sites (health facilities)	Vaccination TimeLine	Estimated number of Vaccinations/ facility/day	Estimated total number of Vaccinations/ Day
Phase 1a, 1b	140849	200	Mar – Apr 2021	32	6402
Phase 2a, 2b	360379	354	May- Aug 2021	16	5460

<sup>5</sup> <http://www.wisis.unam.na/theses/shikongo2010.pdf>.

<sup>6</sup> <https://knoema.com/atlas/Namibia/topics/Health/Health-Service-Coverage/Immunization-against-DPT>.

Phase 2a, 2b	360379	354	May- Aug 2021	16	5460
Phase 2c, 2d	1064956	354	Sept 2021- Jan 2022	34	12102

### 6.2.3 Enforce infection prevention and control measures

MOHSS has Infection Prevention Control (IPC) programs with an IPC focal point in place at national, regional, district, and health care facility levels throughout Namibia. These are guided and enforced by the MoHSS' National Infection Control Policy/guidelines which are available at all health service delivery as well as administration levels. The Ministry's policy on waste management is also an integral part of the National Public and Environmental Health policy and legislative frameworks.

The strengthening of these IPC protocols led to the establishment of COVID-19 IPC committees at all levels within the MoHSS and other institutions since the declaration of the pandemic during early 2020. The IPC structures continue to oversee the implementation of COVID-19 infection control measures in all areas of human congregation such as health facilities, markets, schools, and any other place of human concentration. IPC measures implemented and found to be effective include social distancing, triaging of patients in health facilities, hand washing/sanitizing, decongestion of facilities etc. These IPC efforts have contributed to the decrease in the local transmission rates within the country. The IPC programs are being further strengthened to prevent transmissions at vaccine administration sites.

Managerial staff of the immunization sites and mobile teams ensure adequate access to IPC supplies and equipment, including PPE, face masks, alcohol rub/sanitizers, hand washing stations with soap and water, waste disposal bags and sharps containers to enable HCWs to adhere to IPC measures. Preventative measures in place include:

- Appropriate hand hygiene (hand washing or use of hand sanitizer)
- Appropriate use of face masks
- Ensuring there is no sharing of equipment/supplies between patients, and that adequate cleaning is occurring between recipients.
- Decongestion of health facilities
- Entry into the immunization centers is restricted to essential personnel and recipients.
- Safe disposal of waste products resulting from the administration of vaccines as per MoHSS waste management protocol.

Immunization activities in Namibia are conducted in a clean and hygienic environment that facilitates IPC practices. This includes ensuring adequate social distance during immunization sessions and in the waiting areas. This is accomplished by limiting the size of vaccination sessions at a time and making use of open (i.e., outdoor) spaces whenever possible.

Immunization sessions, regardless of the vaccine strategy used, adhere to the recommended IPC practices, both to protect HCWs, the receivers of the vaccine, families and the surrounding community from COVID-19. Because the initial vaccine delivery strategy prioritizes the vaccination of target populations who are at highest risk for COVID-19, IPC measures will be strictly enforced to avoid having the vaccination sessions becoming transmission events for the high-risk populations.

IPC programs in place involve training sessions on IPC measures, including standard precautions and risk assessments, knowing when and how to use PPE, and understanding how COVID-19 is transmitted. Reusable PPEs are used where possible, and they help to avoid large numbers of potential waste generated through discarding PPEs in health facilities.

#### **6.2.4 Integrate COVID-19 vaccination with other health interventions across the life course.**

COVID-19 vaccination provides Namibia with an opportunity to extend immunization services across the life course and potentially improve integration of immunization with other health services.

Integrated approaches comprehensively address the health needs of Namibia's populations, make efficient use of resources and improves collaboration between programs, potentially leading to increased demand for services, which can reduce overall morbidity and mortality. For those with underlying conditions, COVID-19 vaccination can be added as part of disease-specific follow-ups. By developing "delivery platforms," there will be opportunities to integrate new vaccines and additional interventions more easily in the future, should the need arise. The COVID-19 vaccination will include screening for signs and symptoms of COVID-19 and any underlying conditions as the starting point. A patient suspected of COVID-19 will be managed according to the National Case Management Guidelines.

## Chapter 7. Preparation of cold chain, supply and logistics and management of health care waste

Cold chain and supply logistics readiness is key to efficiently deploying COVID-19 vaccines to the target populations in line with defined vaccination strategies. Due to potential variations in storage temperature requirements of the different COVID-19 vaccine products, Namibia compiled information on the available cold chain, supply and logistics capacity, including surge capacity within the Ministry of Health and Social Services (MOHSS) and private health facilities, to develop the vaccine deployment strategy and to mobilize resources to fill identified gaps.

Different COVID-19 vaccines require different level of cold storage e.g., ultra-cold chain (UCC) storage temperatures (e.g., -70 °C, -20°C and +2°C to +8°C). Use of vaccines that requires UCC need extra preparations due to high cost of procuring the UCC facilities, equipment, and the training of human resources, needed for UCC to be functional, hence for a public health approach, Namibia is prioritizing vaccines that will be stored at existing cold chain temperature facilities. The cold-chain storage at national level will be strengthened by renting additional storage space of about 180 m<sup>3</sup>. This storage will be acquired through renting for the duration of the vaccination period. The procurement process for acquiring additional storage via renting have already started and will be concluded in a week's time.

Since the first batches of COVID-19 vaccine supply may be limited, with a short shelf life and may not have vaccine vial monitors, the country will ensure strengthened supply chain information system on stock management and distribution by means of keeping detailed records of received and distributed vaccines, such as batch numbers, expiry date, and places where the vaccine has been delivered to.

The MOHSS will be monitoring and reporting vaccine utilization and wastage rates to guide appropriate allocation of subsequent supply. In addition, the country has a robust mechanism to track vaccine distribution from the national store down to the service points to avoid risk of diversion and falsification. These same mechanisms will be applied for COVID-19 vaccines.

Table 7.1. Effective Vaccine Management Assessment Scores, November 2019

EVMA Criteria	Namibia Vaccine Supply Chain Levels				
	National	Region	District	Health Facility	Overall
E1: Vaccine Arrival Procedures	38				38
E2: Temperature Monitoring	21	47	71	70	68
E3: Storage Capacity	95	87	89	88	89
E4: Buildings, equipment and transport	81	89	91	85	88
E5: Maintenance	67	77	67	64	66
E6: Stock management	44	73	61	55	58
E7: Distribution	41	57	57	51	53
E8: Vaccine management	72	84	80	89	84
E9: MIS and supportive functions	63	59	60	60	60

Legend

80% & above:

60% to <80%:

<60% :

Monitor and sustain

Comprehensive intervention

Urgent action required

## 7.1 Objectives of this chapter

- To guide the Ministry of Health and Social Services on supply chain activities required (procurement, storage, and distribution of COVID-19 vaccine).
- To ensure a well-coordinated COVID-19 vaccine distribution preparedness.
- To manage health care waste accordingly (returns and reverse logistics).

## 7.2 Prepare supply chain for vaccine deployment

An effectively managed supply chain is crucial to the successful deployment of COVID-19 vaccines. Based on the current information shared by the manufacturers, it is assumed that most vaccines will be stored at +2 °C to +8 °C, with exceptions that some vaccines that would require frozen (-20°C) in lieu of traditional cold packs during transport. Prior to vaccine introduction, Namibia conducted careful assessments of the existing supply chain system and identified the following gaps in the public health sector and recommended solutions:

Table 7.2 Cold Chain equipment capacity at all levels

Equipment	National	Regional	District	Health facility
UCC (-70)	0	0	0	0
Freezing (-20)	100%	80%	60%	20%
Refrigerators (+2 - +8)	80%	100%	100%	100%

- The national level and regional levels need additional cold chain storage for 2°C to 8°C of approximately 140 m<sup>3</sup> for national level and about 40m. Namibia has started with the process of acquiring additional storage space for hiring warehouses from the private sector.
- There is a shortage of vaccine refrigerator temperature monitoring devices at all levels in the public health sector supply chain, however the MoHSS made provision in the budget to procure these devices to close the gap.
- There is no electronic tracing and tracking system at facility level. This gap will be closed by means of manual recording as the electronic recording will demand time to acquire funding resources. Once funding has been secured, electronic tracing will be piloted in selected facilities, then scaled to all regions as funding becomes more available.
- Insufficient refrigerated trucks for transportation of vaccines to sub-national level. The MOHSS will approach the private sector to procure or for donations.
- Namibia does not have ultracold chain capacity at present.

In lieu of these challenges Namibia will engage development partners and the private sector to address the capacity shortfalls. The country may consider outsourcing of storage and transportation which could be a more efficient and cost-effective solution since the workload is transferred to supply chain experts with experience in managing lean and agile systems.



If outsourcing is used as a solution, strict, independent monitoring procedures will be implemented to guarantee vaccine quality, and the private sector companies will be involved in the planning phase for vaccine deployment.

To achieve a successful COVID-19 deployment operation the MOHSS will employ the following key elements:

- Develop and coordinate a distribution plan and standard operating procedures (SOPs) to be communicated to all levels of the supply chain managers.
- Train, and appoint enough supply chain and healthcare workers.
- Avail and maintain sufficient cold chain capacity, including surge capacity.
- Ensure an efficient supply chain system and infrastructure; data recording and reporting mechanism for vaccines and cold chain equipment.
- Ensure a robust oversight and data-driven management, including systems for monitoring adherence to cold chain practices, and secured resources from both internal and external sources.

### **7.3 Strengthen supply chain human resource capacity**

Managing the vaccine and other supplies to ensure successful and timely deployment is a complex task.

The Ministry will put in place adequate Human Resources (HR) at all levels to be responsible for storing, handling, transporting, tracking the movement and reverses logistics and waste disposal of the vaccines. The staff members will be properly oriented on the deployment plan and trained on the relevant guidelines, SOPs, including on IPC and proper management of equipment, prior to vaccine arrival. The Ministry utilized available tools for assessing HR capacity for managing the supply chain, identified gaps, and ensured enough capacity is available to effectively carry out the deployment operations. The MoHSS will need to employ one (1) Pharmacist, ten (10) Pharmacist Assistants and one (1) Administrative officer, and one (1) System Administrator to close the identified HR gap.

### **7.4 Assess the vaccine, logistics and cold chain capacity needs**

With reference to 7.2, the global supply of vaccine will be limited, especially in the initial phases of vaccine deployment, and this may result in several shipments of lesser amounts of vaccine over time. Namibia deployment strategies included - existing cold chain and supply chain capacity, available surge capacity, to ensure quality vaccines will be equitably delivered to the service points in the right place, at the right time and in the right quantity.

**The following are prerequisites that are met prior to the development of appropriate deployment strategies:**

**Forecasting the vaccine and logistics needs:** The Immunization Supply Chain Sizing Tool provides information on equipment, supply and budget requirements needed to support deployment and vaccination operations based on the size of the population to be vaccinated (see Section 4.3).

**Assessing the available storage capacity:** The Cold Chain Equipment Inventory and Gap Analysis Tool is useful in assessing vaccine volumes and corresponding cold chain capacity per catchment area. In Namibia, the Effective Vaccine Management (EVM) assessment was completed at the end 2019. The results included information on storage capacity. Therefore, the country used the same assessment results to inform storage capacity for COVID-19.

**Identifying surge capacity:** Assessed and mapped available cold chain capacities according to the three temperature ranges (e.g., +2 °C to +8 °C, -20 °C) for storing the diverse types of COVID-19 vaccines under development. Included all available cold chain equipment outside the immunization programme (e.g. pharmaceutical division, national reference laboratories, and private and business sectors) in the inventory and calculation of capacity.

**Preparing a distribution plan:** Prepared a distribution plan for vaccines and ancillary supplies (such as syringes, safety boxes, vaccine carriers, cooling packs, markers, data collection forms, AEFI/AESI response kits and IPC/PPE) based on the target population and number of staff that will comprise the vaccination and monitoring teams (e.g., vaccinators, recorders, social mobilizers, supervisors, and monitors).

**Reinforcing supply and stock management:** Initially, the COVID-19 vaccine supply will be scarce, with short shelf life, and may not have VVM. Therefore, the monitoring and recording of cold chain equipment temperature, vaccines distribution, inventory and stock management, waphase rates will be done rigorously and efficiently throughout the supply chain.

**Establishing a vaccine traceability system:** Established a robust mechanism to ensure the traceability of the COVID-19 vaccines to avoid a risk of diversion and falsification of the vaccines. This will be achieved by using the current existing electronic inventory management systems e.g., Central Medical Store (CMS) Syspro and Facility Electronic Stock Card (FESC) at facility level. Manual recording will be used at health facilities where electronic inventory systems are not available due to lack of resources.

**Planning for the security of vaccines and concerned staff:** In the context of high demand but limited stocks, clear security arrangements will be in place to ensure the safety and integrity of COVID-19 vaccines and auxiliary products throughout the supply chain. A plan will be developed to safeguard the security of all concerned staff and all vaccine storage facilities, including during transit and for the preparation of supply chain and management of health care waste. There are tools that have been updated to include items relevant to COVID-19. Supply chain managers will be trained and ensure they familiarize themselves with the tools for scenario analysis and micro planning to be able to simulate the impact on human resources, logistics and budgets (11). If capacity is inadequate, Namibia will consider practical options to address capacity gaps at the various levels of the supply chain. Where eligible for partner support, Namibia will submit this information as part of their application for vaccine allocation and support for deployment. Namibia will regularly check for the latest information about the vaccine that will be made available to them, and to revisit and adjust the country's plan accordingly.

## **7.5 Ensure supply chain system functionality**

Namibia will strive for a lean supply chain, distributing vaccines as quickly as possible to vaccination sites, especially for vaccines that require ultra-cold chain storage. Vaccines that require normal storage (2-8 degrees Celsius) will be handled as per existing procedures for other vaccines in the country.

This may include bypassing regional or district storage locations and holding very limited stock at a time, - or more frequent delivery of vaccines to the storage points/sites. In the context of COVID-19 vaccine deployment, the following strategies will be implemented to facilitate supply chain efficiency:

- Staff will be trained to demonstrate ability to perform tasks according to standard protocols.
- Policies, guidelines, and SOPs will be updated based on vaccine profiles, and disseminated to concerned stakeholders through a variety of channels, including mobile communication.
- Operational tools, including those required for recording, reporting, and monitoring will be available and accessible.
- Warehousing infrastructure will be rearranged to ensure safe and smooth operations (receiving, storing, repacking, transporting, and monitoring) during handling of vaccine and logistics.
- Namibia conducted Cold Chain assessment in 2014 which informed the development of the cold chain replacement plan has been fully implemented jointly by WHO/UNICEF/CDC. This resulted in enough cold chain equipment distributed across the country. There is still enough refrigerators and cold boxes at national level to date. Whilst the Cold Chain inventory was conducted in December 2020.
- Sustained power supply, including backup generators, are available in the facilities.
- Current security measures will be strengthened to prevent theft of vaccines during storage and transport.
- Existing communication channels shall be used, for reporting issues needing urgent attention.
- An existing information management system, e.g., Pharmaceutical Management System, is operational, and data is available.
- There measures being taken to strengthen the existing operational budget which will be easily accessible to CMS timeously.
- The private sector is being engaged throughout, and oversight is provided to ensure adherence to standard operating procedures.

## **7.6 Manage and track vaccines effectively**

Some vaccines will be used under WHO's Emergency Use Listing (EUL) procedures (14, 15, 35). The Ministry shall utilize these vaccines based on Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines of the manufacturer in lieu of the expiry date. The country is developing plans to ensure clear communication of these protocols and the distinction of the COVID-19 vaccine from previous antigens (e.g., manufacturers' date in lieu of expiry date, and guidance on management) to all relevant stakeholders to ensure that they are upheld across the

supply chain. There will be proper recording and reporting of vaccine batches/lots will also be implemented for Adverse Event Following Immunization (AEFI) and Adverse Event of Special Interest monitoring, batch/lot recall in case of serious AEFI, etc.

Measures are being taken to improve the supply chain management system to facilitate track-and-trace capability and a plan is being put in place to ensure that security and authenticity of supply is critical.

The Ministry will carefully monitor usage and waphase rates, for reporting to the COVAX Facility, and to guide forecasting for the successive Phases of the deployment and future management of COVID-19 vaccination.

### **7.7 Prepare for COVID-19 vaccine requiring ultra-cold chain (UCC) storage temperature**

Due to Namibia's climate conditions, cost of the UCC facilities and related accessories and training of human resources, a decision has been made for Namibia not to acquire vaccines that may need UCC storage facilities.

### **7.8 Manage reverse logistics**

An existing strategy and SOPs for managing reverse logistics is being updated. Vaccines that have no VVM neither expiry date, and any unused vials at the end of the campaign shall be returned to the Regional and National store level for proper storage and management. All vaccine vials shall be duly accounted for in all vaccine stores and service points. Daily tracking of the vaccines at regional and district level shall be done electronically. Facilities that do not have electronic recording devices shall do the recording manually.

### **7.9 Manage health care waste**

To minimize risk to the communities, each vaccination team will practice on-site waste segregation and implement reverse logistics, whereby any health care waste will be taken from the facility or point of generation by the vaccination team to be disposed properly along with other hazardous wastes. This shall be done in accordance with the existing National Waste Management Guideline, and the waste management plan. In addition, there are infection control officers and environmental health practitioners at all levels that are already managing the waste and infection control services. All district hospitals and some health facilities are equipped with functional incinerator. Health facilities that do not have incinerators have access to the one at the district level.

## Chapter 8. Human resources management and training

### 8.1 Objectives of this chapter

- To identify the steps involved in preparing a plan to address the human resource requirements, including training and supervision, for the successful roll-out of COVID-19 vaccine.

### 8.2 Human resources needs

The successful introduction of COVID-19 vaccines requires a substantial number of human resources, provided with high-quality training and performance support. Medical officers, Nurses, Pharmacists, Community Health workers, Drivers, are sourced.

Currently, the MoHSS does not have a system to provide a national overview of human resources by category.

*Table 8.1 Highlights of human resources required for deployment and vaccination plan*

Region	# of health facilities	# of Vaccinators (3 vaccinators per team)	# Volunteers (2 volunteers per team)	# District Supervisors (2 per 10 facilities)	# Independent Monitors (1 per 10 Team Catchment Area)	# Drivers needed
Zambezi	29	87	58	6	3	9
Kavango East & West	58	174	116	10	5	15
Ohangwena	37	111	74	7	4	11
Oshana	18	54	36	4	2	6
Omusati	50	150	100	9	5	14
Oshikoto	28	84	56	5	3	8
Otjozondjupa	23	69	46	4	4	8
Kunene	29	87	52	4	4	8
Erongo	26	78	52	4	4	8
Khomas	12	36	24	2	1	3
Omaheke	14	42	28	2	1	3

Hardap	15	45	30	3	3	6
//Kharas	15	45	30	3	3	6
<b>TOTAL</b>	<b>354</b>	<b>1062</b>	<b>708</b>	<b>65</b>	<b>42</b>	<b>107</b>

The plan makes provision for 3 health workers (Registered Nurse / Medical Officer) per health facility as vaccinators. It also provides for 2 District Supervisors per 10 vaccination facilities and one Independent Monitor per 10 vaccination facilities. The total number of health workers required 1062, and 708 volunteers, including community health workers, per vaccination facility. That is a Vaccination Team of 5(3 HCW and 2 volunteers). The estimated number of drivers required is 107. Three health workers will be assigned to join the vaccination team and the remaining health care workers will continue providing the other essential health services including routine childhood immunization.

Conclusion: additional human resources (also staff for community mobilization, cold chain and supply chain management and other required support functions) are not needed as the existing workforce will be deployed.

### 8.3 Capacity development

MoHSS has procedures and processes in place to ensure the quality of training at all service delivery levels across the country. In preparation to the vaccinator workforce, MoHSS has established the following:

- The National Health Training Network will provide continuous capacity development to the health care workers;
- The National Health Training Network has designated a focal point responsible to coordinate with stakeholders for planning, training, and supervision at various levels;
- MoHSS has identified the job categories that need to be trained, including not only vaccinators, but also individuals responsible for promoting the vaccine and clinical waste handlers;
- MoHSS defined the key competencies required by each category of personnel to deploy COVID-19 vaccine safely and correctly;
  - Medical officers, Registered Nurses, and Enrolled Nurses will act as vaccinators.
- MoHSS has identified the training modalities for each job category, either digitally and/or face to face;
  - Medical officers, Pharmacists, Nurses are trained through both models
  - Community health workers and Auxiliary staffs are trained through the face-to-face model.
- NHTC and FHD have reviewed available training materials at global level and has determine adaptations needed, including translation; and
- Stakeholders and other partners within and outside of MoHSS, e.g., NHTC has partnered with UNAM (Medical, Dental and Nursing Schools); International University of Management and Welwitschia University to assist with the development of training materials and delivery thereof.

## 8.4 Design and plan trainings

Online, in-person and blended learning (combination of online and in-person) are the most common methods used to train staff.

Namibia has considered staff experience and motivation for online training, the relative advantages of each modality, as well as the experience obtained during the training conducted for health workers during the pandemic to support the design of the Covid-19 vaccine deployment training: **in-person, online and blended.**

Table 8.2 Design of COVID-19 vaccine deployment training

RHTC	REGION(S)	ToTs to be trained	No. Of participants	Internet Usage & Mobile	Training Days	Partners for Training Sup
NHTC	<ul style="list-style-type: none"> <li>• Khomas</li> <li>• Omaheke</li> </ul>	4 + 2 per region = 8	25/session	Yes	3 Days	UNAM (Nursing & Medical School)
Keetmanshoop RHTC	<ul style="list-style-type: none"> <li>• Karas</li> <li>• Hardap</li> </ul>	2 + 2 per region = 6	25/session	Yes	3 Days	
Otjiwarongo RHTC	<ul style="list-style-type: none"> <li>• Otjiwarongo</li> <li>• Kunene</li> <li>• Erongo</li> </ul>	2 + 2 per region = 8	25/session	Yes	3 Days	IUM  Welwitschia University
Oshakati RHTC	<ul style="list-style-type: none"> <li>• Oshana</li> <li>• Omusati</li> </ul>	2 + 2 per region = 6	25/session	Yes	3 Days	WHO
Onandjokwe RHTC	<ul style="list-style-type: none"> <li>• Oshikoto</li> <li>• Ohangwena</li> </ul>	2 + 2 per region = 6	25/session	Yes	3 Days	UNICEF  CDC
Richard Chambi Kamwi RHTC	<ul style="list-style-type: none"> <li>• Zambezi</li> </ul>	2 + 2 per region = 4	25/session	Yes	3 Days	
Rundu RHTC	<ul style="list-style-type: none"> <li>• Kavango East</li> <li>• Kavango West</li> </ul>	2 + 2 per region = 6	25/session	Yes	3 Days	

### Training required

The following training is required:  
**Covid-19 vaccination training:**

1. Pathogen and coronavirus Disease
2. Vaccine Characteristics and Administration
3. Cold Chain Management
4. Infection Prevention and Control and Waste Management
5. Target population (characteristics, justification, vaccine phased deployment)
6. Community Mobilization key messages about Covid-19 vaccination
7. Interpersonal Communication
8. AEFI/AESI
9. Record Keeping, Monitoring and Evaluation,
10. Supervision

## **8.5 Supportive supervision**

Description of a supportive supervision system:

- The supervisors will participate in micro planning and will be trained prior to the commencement of the vaccination.
- Intensified supportive supervisory visits to be made for the first 3 months following the COVID-19 vaccine introduction: one visit per month over a 3-month period.
- Monitoring indicators have been identified to assess the performance of health workers over time.
- MoHSS ensured Health Workers have access to online learning materials.
- MoHSS developed and is encouraging the use of job aids and learning materials by supervisors during supervisory visits.
- Supervisory checklists were developed.
- MoHSS will conduct on-the-job training sessions for Health Workers.
- MoHSS has identified innovative approaches such as digital tools for supportive supervision and self-assessment, as well as monitoring dashboards.
- The District Supervisors will conduct supervisory visits to vaccination sites before commencement to ensure sites readiness and during vaccination to ensure quality is maintained throughout the vaccination process.

## **8.6 Key resources required**

For the additional requirements, e.g., vehicles, electronic devices, training of supervisors, per diems for visits and transportation expenses that is required, MoHSS, looked at harnessing existing capacity where possible, and ensured that provision for these is included in the NDVP and budget.

## **8.7 Unique scenarios**

Additional human resources and specialized training may be needed if the COVID-19 vaccine product(s) require ultra-cold chain (UCC) can be used in a controlled temperature chain (CTC) or use a novel delivery strategy. As more information becomes available on vaccine products, the Ministry relies on WHO and global partners to make these materials for additional training needs available.



## **Chapter 9. Vaccine acceptancy and uptake (demand creation)**

### **Key messages**

- Introduction and promotion of the new COVID-19 vaccine to the general public.
- The acceptancy and uptake of the COVID-19 Vaccine will be successful if the following integrated approaches are adopted:
  - Continuous media monitoring, misinformation management and community feedback to inform the development of messages on COVID-19 Vaccination.
  - Building supportive and transparent information sharing through community engagement with stakeholders, vulnerable groups, and the public at large.
  - Empower the health workers, Community Health Workers and Volunteers, and other community activists with the required information to effectively communicate with the target populations and communities.
  - A functional mechanism that promptly responds to the AEFI is key in mitigating communication crises.

### **9.1 Objectives of this chapter**

This chapter outlines the communication programme areas of COVID-19 vaccine that the Ministry of Health and Social Services will lead, with support from stakeholders, to ensure that there is continuous dialogue and information sharing on vaccines with the public and stakeholders. The COVID-19 vaccine is a new health intervention; therefore, it is important to ensure that stakeholders and the public are kept abreast of the most recent correct and factual information regarding COVID-19 vaccines. Consistent information sharing with the public and stakeholders eliminates misinformation within the public domain as this could negatively affect the vaccine roll out.

This chapter covers the different approaches and strategies that would be implemented in order to reach the maximum acceptance and uptake of the COVID-19 vaccine.

The specific objectives are outlined:

- To provide guidance to the national response on demand creation strategies for the introduction of the COVID-19 vaccines and increase acceptance of the vaccines;
- Increase the proportion of the population that is confident to take the COVID-19 vaccine to at least 60% to meet the herd immunity goal;
- To address misinformation through community engagement strategies and media engagement; and
- To set the foundation for tracking the implementation of the communication strategy through an M&E framework.

## **9.2 Initiate demand creation**

### **9.2.1 Political/High level support**

Namibia has enjoyed political support for COVID-19 preparedness and response, this facilitated acceptance of health prevention messages by the general population. A Risk Communication and Community Engagement (RCCE) Pillar was established, as part of the National Health Emergency Response Committee to coordinate and implement a set of Response Committee to coordinate and implement a set of standard operating procedures (SOPs) and terms of reference (TORs) that is in line with WHO guidelines.

To date essential national-level advocacy meetings with parliamentarians, medical and nursing associations, civil society networks, community engagement networks, relevant ministries, religious bodies/leaders, NGOs, and donors took place. This indicates strong buy-in and commitment from the local institutions and development partners. Therefore, this category of stakeholders plays a critical role in community sensitization; hence the working relations will be strengthened and as key influencers they will be provided with factual information on the Vaccine so that they are able to share with the public.

### **9.2.2 Quality and dissemination**

The RCCE Pillar is constituted by different government ministries, UN agencies, development partners and non-governmental organizations (NGOs) coordinated to implement a national plan of action on RCCE by the Ministry of Health and Social Services co-led by the Ministry of Information, Communication and Technology. The Pillar has sub-divided itself in sub-committees for mass communications, community engagement and media monitoring. It monitors the activities of the sub-committees and ensures quality, relatable, and easy-to-understand communication materials. A clear distribution plan from printing to the general public is in place. Strong collaboration with print and electronic media has been established over the past year. In addition, each health districts and some NGOs including the Namibia Red Cross Society have trained and deployed community health workers and volunteers at community level for health education, construction of handwashing facilities and community case surveillance. A Vaccine Communication Strategy and RCCE strategy are also in place. The RCCE pillar aims to build on these existing platforms and resources for developing the campaign on vaccine introduction.

### **9.2.3 Capacity building**

Capacity building needs on vaccine acceptance and uptake will be identified and integrated into training programme for frontline health workers, social workers, RCCE, community influencers, mobilizers such as volunteers and community activists and the media. The health care workers will be briefed on the key messages (a guide will be developed) to share with the clients, especially at a time of vaccination. Special focus will be given to increase health workers' capacity to engage clients and communities through interpersonal communication training to create and maintain trust

with the public. The RCCE pillar will conduct interpersonal communication training through internal training plans, technical briefing, and orientations. The community health workers, volunteers and other community activists will be continuously provided with the most recent information as per the communication vaccine programs. Community Health Workers shall be trained to identify information gaps on the vaccine within the communities in which they are operating.

#### **9.2.4 Use of data for planning, monitoring, and evaluation**

Demand planning needs will be informed by data from a range of behavioral and social drivers of uptake. A demand creation and advocacy strategic framework, outlining priorities, key messages for each audience segment and implementation will be guided by a multi-country WHO KAP survey envisaged to be conducted in early March 2021. When carrying out surveys, assessments, or other rapid data collection activities to understand the drivers of vaccination, it will be important to account for: what people think and feel about vaccines; the social processes that drive or inhibit vaccination; individual motivations to seek vaccination; and the practical factors that shape the seeking and experience of vaccination.

Regular review of media polls and audience reception rapid assessment will guide any adjustments to be responsive to any changes in the programme, the information environment, or in any other areas that may impact vaccination acceptance and uptake.

To track the implementation of the activities outlined, the RCCE pillar will be reporting the progress of the activities that have been implemented at both national and regional levels. There will be monthly progress reports that will be submitted to the main National Health Emergency Management Committee (NHEMC) for COVID-19 vaccine. In addition, the NHEMC will be updated on the status of the activities being implemented during the weekly meetings.

It is vital to understand and act on the drivers of vaccine acceptance and uptake. The drivers of vaccination are complex, context-specific and change over time. Regular and timely data collection, analysis and use of data on the behavioral and social drivers of vaccination uptake will inform evidence-based planning and contribute to the monitoring and evaluation of our interventions. Data collection and analysis will be done via Media Monitoring Sub-Committee and the Community Engagement sub-committee which will inform RCCE messaging to stakeholders and the public. The RCCE will take a systematic approach to planning will also offer insights that can potentially mitigate the negative effects of any service disruptions, system shocks and vaccine-related events.

### **9.4 Integrated Demand Approach**

#### **9.4.1 Social listening, digital engagement and misinformation management**

The novel SARS-Cov-2 virus has triggered rapid spread of misinformation – an “Informedics” – across social networks. Vaccine-critical messaging has increased more than two-fold compared

with pre-COVID-19 levels. There are several anti-vaccine activists in the country that campaign for people to refuse to take the vaccine once it becomes available. This misinformation may be attributed to the lack of correct information on COVID-19 vaccines that can be used to counter any misinformation claim. The RCCE Media monitoring sub-committee continuously identifies misinformation and rumors and promptly responds to them. This is normally addressed through Ministry's social media platforms; media interviews and the Minister of Health and Social Service's daily COVID-19 briefings. This is depending on the severity and reach of the rumors. However, there is a need for more influencers and the pillar aim to include religious, traditional and minority groups, political and business leaders, and community to address rumors in their constituency. To this effect the RCCE pillar will train/orient these cadre of influencers to help with acceptance of the COVID-19 vaccine. A committee dedicated to monitoring all media is activated and closely do analysis to determine the response. Monitoring committees will be strengthened both at regional and district levels. There is a vital role for all stakeholders to independently contribute towards positive messaging about the COVID-19 vaccine acceptance and to refute negative information that is targeted at particular groups or sectors.

#### **9.4.2 Risk Communication and Community Engagement**

One of the most critical issues is the central role of trust in enabling an effective outbreak response. First, risk communication and community engagement field workers need to play an active role for the demand and acceptance of the COVID-19 vaccine by providing factual, timely and appropriately contextualized information about the COVID-19 vaccine.

Second, community engagement is vital in any consideration of risk communication and positions communities as partners in the response by involving them in consultation and planning processes and providing mechanisms for feedback. Third, deployment of vaccines in a situation of limited supply creates the need for setting and gaining public acceptance for clear priorities.

Key considerations for supporting risk communication and community engagement activities to address vaccine hesitancy:

- Listen to communities through community feedback mechanisms and gather social data through different assessments and surveys to understand their concerns and beliefs, and address through timely and targeted communications and other strategies.
- Pre-testing of messages and continuous feedback from the public. It is important to create a platform that will enable the Ministry to hear all the concerns that the public might have as well as to pre-test and evaluate messaging. The Ministry will run pre- and post-test evaluations to ensure information is being effectively communicated.
- Use existing channels (social media, radio, TV, SMS's, hotlines, virtual sessions, community meetings, network, and groups, print media, advertising), to proactively share information about the vaccination development process and safety, the key risks, and challenges, to build public awareness and trust in the roll-out process.
- Forming working partnerships with the media. The media plays an important role in communicating messages to the nation. This includes social media, print, radio, and

television. The focus is to ensure that the media fraternity is provided with formative research and factual data and information and are urged to validate information prior to publishing to avoid misinformation and misperception among the public.

- Through risk communications and community engagement, share credible information from trusted sources in local languages, including braille and sign language, about eligibility and roll-out plans and details on populations that are prioritized for vaccination.
- Partner with national and community civil society organizations, faith-based organizations, NGOs, political parties, corporate institutions, youth groups, including training of journalists as key advocates in the response.
- Training of Community Health Care workers so that they are conversant with COVID-19 vaccine information and be able to facilitate community social mobilization sessions in both urban and rural communities, using the appropriate language and tools. The Community Health Workers will also be a platform where community feedback will be recorded for analysis. Community feedback is important because it enables early detection of myths, communication gaps, concerns, and even positive messages.
- Work with communities, traditional, religious, and influential leaders, to dialogue and deliver messaging.
- Engage local medical providers and ensure they support vaccination activities.
- Transparent and routine reporting on the progress and effectiveness of roll-out plans.
- Engage families that have lost their loved ones due to COVID-19 and the COVID-19 survivors to share the stories of hope.
- Communication and community engagement at national, regional, and local levels will be encouraged. Regional management structures of the government will be required to give feedback and to channel requests for specific communication needs for their region to the national level.

### **9.4.3 Empowering frontline health workers**

Key objectives are to educate health workers on the COVID-19 vaccine; increase health worker uptake and satisfaction with the vaccine as priority recipients; and improve health workers' ability to communicate and engage with priority groups and caregivers and endorse COVID-19 vaccination.

Guiding principles and high-level actions to be taken at national and subnational levels to support health worker capacity to increase COVID-19 vaccine demand and uptake:

- Demand activities should focus on health workers and other high-risk groups (e.g., elderly and comorbidities) that have been prioritized by the country.
- Health workers (in addition to community members) are also susceptible to misinformation and vaccine hesitancy and need to address.

#### **9.4.4 Crisis communications**

There are public concerns regarding the safety of the vaccine and its side-effects. Crisis communication ensures that the response team are prepared to respond immediately, fast and in a coordinated manner to any rumors. The RCCE pillar will work closely with the existing AEFI committees at all levels (as explained in Chapter 10) in order to inform the public with appropriate information on any event that might have happened. The RCCE pillar will regularly consult the AEFI committee in order to identify issues of concerns that need to be included in the messaging and to also inform the public. Development and dissemination of key messages and ensuring that immunization programmes and stakeholders speak with one voice; training of media and spokespersons; social mobilization and communication activities; and communicating with affected population and other target audiences in case of AEFI (Adverse Events Following Immunization).

There are mechanisms that are already in place, such as;

- The Standard Operation Procedures for managing crisis communication.
- The AEFI committees are established and available at all levels (district, regional and national).
- There will be regular meetings between the RCCE and AEFI committees. These meetings will jointly identify issues from the AEFI reports in order to develop new messages. This process will also enable us to guide the RCCE during the responses to the misinformation that might have occurred as a result of AEFI.

#### **9.5 Identification of communication programs areas**

Below is the list of COVID-19 vaccine program areas through which the communication activities will be based on. Messaging will be tailored according to the different viewpoints of the population, namely; Acceptance, Hesitation, Rejection, Anti-vaccine activist, Demander and Activist

##### **9.5.1 COVID-19 Vaccine safety and informed consent**

It is of great importance that the Ministry of Health and Social Services assures the public about the safety of the vaccines that are to be used in the country. The messages about vaccine safety will be specific to the vaccine/s to be used in the country and they will be developed under the guidance of the Health Experts within the National Vaccination Taskforce. Information about vaccine safety that is well understood by individuals will influence people to take up the vaccine. The uptake of the vaccine is voluntary, and informed consent as a requirement is to be explained for those that are ready to be vaccinated.

### **9.5.2 Positive messages about the COVID-19 Vaccine and vaccines in general**

The Ministry will lead with positive empowering messages about the vaccine, such as recognizing the important protection the vaccine will give to frontline workers and vulnerable people, and the role of the vaccine in protecting Namibian society and economy by securing livelihoods. There is a need to normalize the COVID-19 vaccine as one of many vaccines that are available throughout our lifetime. Persons who receive the vaccine will be encouraged to add their voice to this campaign to help normalize the process and allay concerns.

### **9.5.3 Who is eligible for the COVID-19 Vaccine / Primary targets**

There will be challenges in the supply of the COVID-19 vaccine for a considerable time. The Ministry will lead on messaging about priority groups for vaccination. This will include recognizing that vaccination helps break the chain and protects loved ones, even when they cannot yet be vaccinated due to supply limitations.

# **Chapter 10. Vaccine safety monitoring, management of adverse events following immunization (AEFI), Adverse Events of Special Interest (AESI) and injection safety**

## **10.1 Objectives of this chapter**

- To explain the unique and different context in which vaccine pharmacovigilance will have to be implemented in the COVID-19 vaccine context.
- To highlight the need for Namibia to plan for adequate supplies to ensure injection safety.

## **10.2 Addressing vaccine safety and pharmacovigilance challenges**

The role of vaccine safety surveillance during COVID-19 vaccine introduction is to facilitate the early detection, investigation and analysis of adverse events following immunization (AEFIs) and adverse events of special interest (AESIs) to ensure an appropriate and rapid response. The primary purpose of passive AEFI surveillance is to identify and respond to events that are temporally associated with vaccination. In contrast, AESI surveillance focuses on the specific events irrespective of vaccination, and the assesses if the event occurs more frequently in vaccinated individuals than in non-vaccinated individuals.

The safety monitoring of COVID-19 vaccines is unique and complex as the development of some vaccines is using modern technologies that were never previously licensed, against a novel target pathogen with many unknowns. The available vaccine safety profiles are based on pre-licensure clinical trials conducted in certain populations. In addition, the global deployment and administration of many COVID-19 vaccines will involve multiple vaccine presentations from different manufacturers delivered through different vaccine delivery platforms. It is therefore crucial that the country is well prepared, and a rigid vaccine pharmacovigilance system is in place to closely monitor the vaccine post-authorisation.

The country will use the online training of IST planned for 9 and 10 February 2021 to train the AEFI committee as well EPI focal points at district and regional level. In addition, all health workers who will be involved in the campaign will be trained using an online ECHO platform which is already in used in the country for other programmes.

The training will incorporate safe vaccine delivery, detection, management and reporting of suspected AEFIs. The management will also cover potential anaphylaxis. It will also include case investigations and causality assessment.

During the vaccination campaign AEFI management kit containing adrenalin and linking vaccination team to nearest facility prepared to manage cases of anaphylaxis.

The COVID-19 vaccines safety surveillance manual developed by WHO, provides relevant preparedness guidance prior to, during and after COVID-19 vaccine introduction for global, regional, and national staff of immunization programmes, regulatory authorities, partners and pharmacovigilance centres, as well as vaccine manufacturers and vaccine suppliers.



In Namibia, the spontaneous pharmacovigilance system is used to collect reports of AEFI. The current system relies on the healthcare workers to report. Whilst this has helped in collecting the reports in the past, it has never been sufficient not to miss important safety signals. There is a need to extend mechanisms for detection and reporting to ensure coverage of all possible AEFIs that are missed using the current approach.

In addition to encouraging patients to contact their health workers or return to the health facility if they suspect any AEFIs after vaccination, they can report to a toll-free number, similar to the existing toll-free service in use to provide information on COVID-19.

Volunteers will be recruited to coordinate the AEFI reporting telephone line and will refer the reporters to the appointed District Primary Healthcare Supervisor (DPHCS) based on the district they were vaccinated in. The DPHS will complete the AEFI form and advise the client on how to manage the event at home or to return to the health facility.

The toll-free line serves also serves as a platform for AEFI reporting by private health facilities as well as patients.

In the context of the urgency and novelty of COVID-19 vaccination, Namibia will take additional steps to ensure injection safety. Providing training for vaccinators on the importance of injection safety at every step of the vaccination process will be key, as will ensuring adequate supplies of safe injection equipment.

### **10.3 Key vaccine pharmacovigilance considerations**

#### **Recommended methods and tools to be used**

The spontaneous pharmacovigilance system will be used to collect the AEFIs using the existing case reporting forms (AEFI form) which have been adapted for COVID-19 vaccination. For cases that warrants an investigation, a case investigation form will be used to collect information, in addition to a clinical case record, lab report and autopsy report where necessary. The WHO Causality Assessment worksheets will be used to assess causality of AEFI cases.

In addition, vaccine quality issues should be reported to the Inspectorate of the NMRC using the pharmaceutical product quality reporting form. Errors or near error cases in vaccine administration can be reported to TIPC using the medication error reporting form. Electronic tools for data collection, collation, transmission, and processing will also be used.

#### **Stakeholders in AEFI reporting and investigations, roles, and responsibilities**

Clients/guardians/caregivers: Clients vaccinated should report any severe AEFIs or other unusual events to their health workers or through the toll-free number if they occur. Observe mild to moderate AEFI as per the instruction from their health care provider and report only if signs and symptoms persist.

Healthcare workers: Educate the clients on potential AEFIs and encourage them to report those that are unexpected, serious or of concern to them. Observe clients for possible AEFI and provide appropriate medical care. They should also notify adverse event to the district by completing the AEFI reporting form or call the toll-free number, especially the private healthcare workers.

The District Coordinating Committee (DCC): The District Primary Healthcare Supervisor (DPHCS) is a focal person for the DCC. The DPHCS collects AEFI reports and presents the reported AEFI cases to the DCC. At the same time, he/she shares reports of suspected AEFIs with the regional and national levels. The DCC should review all reports and determine if the reported AEFI cases meet the criteria required for a detailed investigation. Serious AEFI cases should be discussed with the technical experts in the District Co-ordinating Committee (DCC) and plan for a detailed field investigation. When necessary, they should contact the primary reporter and visit the locality of the event to interview the relevant stakeholders for information.

The Regional Health Management Team (RHMT) : The Chief Health Program Officer (CHPO) is the focal person for this team. CHPO compile the regional AEFI data and present it to the RHMT. Support the DCC in field investigation of serious AEFI cases. Confirm the AEFIs and complete all details and forward to the EPI. In the case of serious AEFIs, initiate investigations.

National AEFI Committee: The national EPI coordinator is the focal person for the National AEFI Committee. The national EPI focal person receives the AEFI reporting forms and investigation report from the RHMT. Present the AEFI investigation report to the National committee review in the context of other reported AEFI received from all regions, particularly in the same period, to see if this report may constitute a signal. The committee plays a key role in supporting the immunization program for AEFI investigation and causality assessment. The committee will attend the training organized by IST which is scheduled for 09 and 10 February 2021. They also provide recommendations to the MoHSS and EPI on vaccines based on the causality assessment findings.

Expanded Programme on Immunization (EPI): Provide the secretariat role to the AEFI and provide support to the regional and district teams Take program adjustment based on the recommendation from the National AEFI committee to minimize the risk of AEFI.

Therapeutics Information and Pharmacovigilance Centre (TIPC): The TIPC supports the EPI in its secretariat role to the national AEFI committee, and jointly coordinate and provide technical support to the committee. The TIPC also shares the AEFI reports with the WHO International Drug Monitoring Program. The NMRC takes the necessary regulatory actions concerning the vaccine and liaises with the vaccine manufacturers.

NMRC: The NMRC takes the necessary regulatory actions concerning the vaccine and liaises with the vaccine manufacturers. Request submission of the risk management plan (RMP) before approval of use of the vaccine and monitor its implementation. Require the manufacturer to produce additional post marketing safety data.

Vaccine Manufacturers/ Pharmaceutical Companies: Pharmaceutical companies are responsible to ensure the safety of their product throughout the lifetime of their medicine. Pharmaceutical companies should comply with the safety, efficacy and quality standards set by NMRC. They

should notify any serious AEFI reported in other country to NMRC as per the Namibia Adverse Medicine Reaction Surveillance guidelines.

### **Involvement of the private sector and their roles in safety monitoring and reporting**

The private healthcare workers will be engaged to participate in the safety monitoring of the vaccines in use. They will also be included in all the planned trainings with regards to vaccine safety. Communications will be sent through the various platforms including the Namibian Association of Private Health-facilities.

### **Communication**

Feedback on AEFI investigations: Feedback on findings of the investigation and causality assessment will be appropriately communicated to the affected parties through the existing communication platform by the Ministry of Health and Social Services.

Healthcare workers addressing public questions: Health staff and other stakeholders will be trained in practical aspects such as addressing questions posed by the public, building trust, creating messages for communications, and addressing mainstream media and social media. The WHO guidelines on Vaccine safety events on managing the communications response to the COVID-19 context will be used as a guide on the correct communication response.

## **10.4 Ensuring Safe Vaccination delivery**

In the COVID-19 context, target populations are different from those that immunization programmes are most familiar with. The EPI will ensure that health workers are provided with additional and refresher training on the importance of safe injection practices to ensure vaccination safety. Some COVID-19 vaccines are using newer technologies, but the current dosage is 0.3 or 0.5 ml which the program is familiar with. The following practices for administration of the vaccine will be enforced:

- The use of AD 0.5ml (Auto disable syringes)
- Use of Safety boxes
- Adherence to cold chain based on the vaccine type
- Strict adherence to IPC measures
- Basic PPE (guidance based on circular 76 of 2020 recommendation of PPE for different health care activities)

The CMS will only order AD syringes for administration of the vaccines. Safety boxes will be used in all health facilities.

### **10.4.1 Safeguard injection safety**

Injection safety is the safe handling of all injection equipment, routine monitoring of the availability and use of safe injection equipment, and correct disposal of contaminated injection equipment. Namibia has a well- established injection safety system under the quality assurance division. Sharps and, more specifically, needles are considered the most hazardous category of health care waste for health workers and the community at large if they are not properly handled and disposed of. All districts in the country have functional incinerators which will be utilized for

hazardous waste. The country fully complies with the WHO standards for infectious waste disposal.

### **Active surveillance for AESIs following COVID-19 vaccine introduction**

One of the primary aims of active surveillance systems is to estimate the risk of a AESI in a population exposed to a vaccine. As this surveillance is focused on a well-defined population, it can be used to estimate event rates accurately.<sup>6 147</sup> The staff of active surveillance systems initiate and maintain regular contact with health care professionals to identify cases of the health condition(s) of interest. This information can also be obtained by regularly extracting data from health care databases. Some approaches used for active surveillance of AESIs are cohort event monitoring (CEM), sentinel surveillance, etc. These will be described in detail during the establishment of the COVID-19 immunisation monitoring system in Namibia.

**10.5 Monitoring and evaluation framework (please note that actual targets are tbd.)**

Outcome	KPI	Baseline
To ensure all vaccines authorised for use in Namibia continue to be safe and of good quality.	% of facilities with AEFI reporting forms	0
	Total number of COVID vaccine associated AEFI_reported	0
	% Serious AEFI out of total reported	0
	Number of safety signals	0
	Number of safety signals generated Number of safety signals investigated out of total received	0
	Number of suspected vaccine defects reported	0

## Chapter 11. Immunisation monitoring systems

The monitoring of the vaccine administration is a complex and rigorous process to undertake as it entails immense data management. The data gathered through this process is used to measure the overall performance of the vaccination exercise, identify challenges and guide decisions and actions by Health Care workers (HCWs), programme managers and planners and policy makers.

In this regard, this section describes in detail the **COVID-19 immunization monitoring system** for Namibia. It comprises both the immediate monitoring of COVID-19 vaccination deployment programme as well as the mid-to-long term monitoring of immunization. Additionally, it describes how the HCWs, and programme managers can use the data collected to identify challenges, implement corrective measures, and improve the quality and success of the COVID-19 vaccination and immunization efforts. Key aspects of the vaccine administration to be monitored include **vaccine uptake** and **vaccine coverage**.

### 11.1 Objectives of this chapter

- To identify data needs and strengthen information systems to monitor progress with COVID-19 vaccination in Namibia.
- To develop or adapt existing data collection tools to record and track number and category of people vaccinated.
- To provide programmatic data to monitor COVID-19 immunization coverage trends and other measures of programme performance.
- To use coverage data to maintain achievements and reach additional target populations as outlined in the phased target setting (Chapter 5.3) — especially the hard-to-reach and minority or disadvantaged populations — through routine and outreach services.
- To outline a simple and flexible data quality assessment process for staff at the national, regional or district levels to evaluate key aspects of the COVID-19 immunization monitoring system to determine the accuracy of reported numbers of immunizations and the quality of the immunization monitoring system.

### 11.2 Data needs and monitoring objectives

The ongoing, rapid monitoring of COVID-19 vaccine uptake is a critical part of Namibia's COVID-19 response efforts. Immunization programmes and immunization monitoring systems play a critical role in vaccine delivery, the monitoring of vaccine doses administered, and generation of vaccination coverage estimates among key population groups. A strong, nationally coordinated approach is critical to collecting, tracking, and analyzing vaccination data, especially in early phases of vaccine administration, which is expected to occur in non-traditional settings.

This chapter outlines the anticipated vaccine administration data elements that will be reported to the national immunisation programme. The required data elements in this chapter represent demographic and vaccination information routinely captured by the monitoring information system during COVID-19 vaccination events. In addition to the ability to collect and report these

data elements, the COVID-19 immunisation monitoring system will also be required to report information from these data elements 1) in a timely fashion (within 24 hours of administration) and 2) through a connection to DHIS-2 tracker and Open Data Kit (ODK), currently used for routine immunisation monitoring. This will enable the MoHSS to reliably track COVID-19 vaccinations and analyze vaccination coverage by demographic factors once vaccine supplies are available. The vaccine administration data elements in this document will continue to evolve to include inventory and distribution elements as those parameters are finalised.

Data needs to which Namibian COVID-19 immunization monitoring system ought to respond could be said to encompass the following key stakeholders:

- Public health decision-makers and other national and regional authorities, the public, communities, civil society organisations, and the media;
- National, regional and global immunization partners, including donor organizations; and
- Vaccine manufacturers and regulatory bodies, health researchers and academics.

To meet the needs outlined above, Namibia COVID-19 immune monitoring system is designed to:

- Measure equitable uptake and coverage over time by geography, population groups, and risk groups.
- Monitor to what extent national policies which prioritize at-risk groups and settings (e.g. hospital and long-term care facilities) are effectively implemented.
- Provide a personal vaccination record (certificate) for any health, occupational, educational and travel purposes.
- Ensure that the necessary records and documentation are in place for use in surveys, safety monitoring, disease surveillance and vaccine effectiveness studies.
- Ensure that individuals can be monitored for the full course, in the case that a multidose schedule is required to reduce the incidence of dropouts.

### 11.3 Measures of COVID-19 vaccination progress

The Namibian COVID-19 immunization monitoring system is designed to measure the overall access to, and quality of COVID-19 immunization campaign. Namibia recognizes the importance of good quality indicators by ensuring they are formulated and defined to monitor the key components of the COVID-19 vaccination campaign. The following key measures will be used to track progress on COVID-19 vaccination in Namibia:

- 1) **COVID-19 vaccine uptake:** The number or proportion of people vaccinated with a certain dose of the vaccine in a certain period (e.g., during a month or year). Where it is expressed as a percentage, an alternative term - vaccination rate - is used.
- 2) **COVID-19 vaccination coverage:** The vaccinated proportion of a target population, which is similar to uptake, but considers vaccination in previous time periods. Over time, coverage can be constructed by accounting for uptake in previous time periods (weeks, months, years), depending on the duration of protection of the vaccine. For the year of introduction (2021), uptake and coverage can be used interchangeably.

NB: To improve vaccine uptake, the existing notification system e.g SMSs among other means will be used to disseminate information on the first and second dose uptake.

Where the situation allows, vaccine uptake and coverage will be disaggregated for each of the target populations as defined in Chapter 5 and as outlined in Table 11.1.

*Table 11.1 Dimensions for disaggregating vaccine uptake and coverage*

<b>Disaggregation</b>	<b>Definition</b>	<b>Use</b>	<b>% of vaccine refusals</b> (disaggregated by age/sex/target population/location)
Vaccine product	Pfizer- BioNTech Oxford- AstraZeneca <sup>7</sup>	- Calculate uptake and coverage with a last recommended dose. - Evaluate protection in a population, given differences in effectiveness. - Evaluate vaccine safety issues that are specific to the various products in use	
Geography	By health facility, district, region	-Monitor equitable distribution across regions in Namibia	
Sex	By sex of the vaccinated person (M/F)	-Monitor equitable distribution by sex	
Age group	By age group of the vaccinated person according to the Namibian policy for vaccine prioritization	-Age is a risk factor for severe COVID-19. Monitoring uptake among specific age groups is required to evaluate whether prioritization policies are implemented.	
Occupation	By prioritized occupational group	-Occupation is a risk factor for transmission of CoV-SARS-2, and country policies will	

<sup>7</sup> The list will be updated based in real time based on WHO prequalification of vaccines with a view to ensuring their continued safety and efficacy.



		need to ensure that essential frontline workers are protected first -Evaluate whether prioritization policies are implemented	
Other risk factors	Among people with comorbidities or other risk factors for COVID-19 such as pregnancy	-Evaluated whether prioritization policies are implemented	
Context	In nursing/old age homes, correctional facilities, universities, and schools	-Evaluate whether these strategies are implemented	
Other equity dimension	By socioeconomic, religious, disability, or any socially and economically disadvantaged populations	Monitor equitable distribution across different populations in Namibia.	

### 11.3.1 Definition of indicators for monitoring COVID-19 vaccination uptake and coverage

Uptake of COVID-19 vaccines will be represented as COV and will be tracked by dose as follows:

**COV-1:** The number of people in a target group receiving a first dose of the vaccine. **Proportion of a target group** that received the first dose of the vaccine. For example, in phase 1 of vaccination in Namibia, 510 045) of COV-1 correspond to 20% of the total Namibian population.

**COV-2,3:** The number of people who received a second (or third dose) of the vaccine, plus any booster doses if relevant for future recommended vaccination schedules.

**COV-c:** In case multiple vaccine products with different dose requirements are used in Namibia, this indicator will represent the number of people who received the last recommended dose for the respective vaccine product. The “c” denotes the dose that completes the schedule, which might be a first, second or third dose depending on the product that was used.

**Drop-out from COV-1 to COV-c:** The proportion of people who received at least one dose of a COVID-19 vaccine but did not receive the last dose in the schedule yet. The dropout will be calculated as  $(COV-1 - COV-c)/COV-1$ .

<p><b>Denominator:</b> Number of recipients who received the first dose.</p> <p><b>Numerator:</b> Number of recipients who received the first dose and who were eligible but did not receive the second dose.</p> <p><b>Interpretation:</b> “Among the &lt;N&gt; recipients who showed evidence of having received &lt;first dose&gt;, (per card or &lt;or register&gt;), &lt;dropout&gt; % did not show evidence of receiving &lt;second&gt;.”</p>
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**Measures of coverage**

Vaccine coverage indicators are the measures that will be used to assess and track COVID-19 vaccination coverage in Namibia. COVID-19 coverage data affect vaccination policies and programmes, so choices about what to measure and how to measure it have a real impact.

**Crude coverage**

<p><b>Denominator:</b> The number of individuals in the target group as defined in Chapter 5.</p>
<p><b>Numerator:</b> The total number of individuals in the target group for COVID-19 vaccine that received the dose per card or recall.</p>
<p><b>Disaggregation:</b> age, place of residence, sex, socio-economics status.</p>
<p><b>Interpretation:</b> Interpretation of this proportion is straightforward as it reported without confidence intervals or any representation of sampling uncertainty. “X% of the population who were eligible to receive the COVID-19 vaccine are estimated to have received &lt;dose&gt;, as documented by &lt;source(s)&gt;.”</p>

**11.4 System to record, report, analyze and use COVID-19 vaccination data**

The Namibian COVID-19 immunization monitoring system (IMS) is a computerized and confidential population-based system containing individual-level information on vaccines received in each area. It benefits the Namibian population directly by ensuring vaccination according to the schedule and it provides information to MoHSS which has the ultimate responsibility for the delivery and monitoring of COVID-19 vaccination programme. The COVID-19 IMS consists of a mixture of existing administrative reporting systems and coverage surveys, and each makes use of both paper-based and electronic records. The ‘anatomy’ of the Namibian COVID-19 immunization monitoring system is presented in Figure 11.1 below.

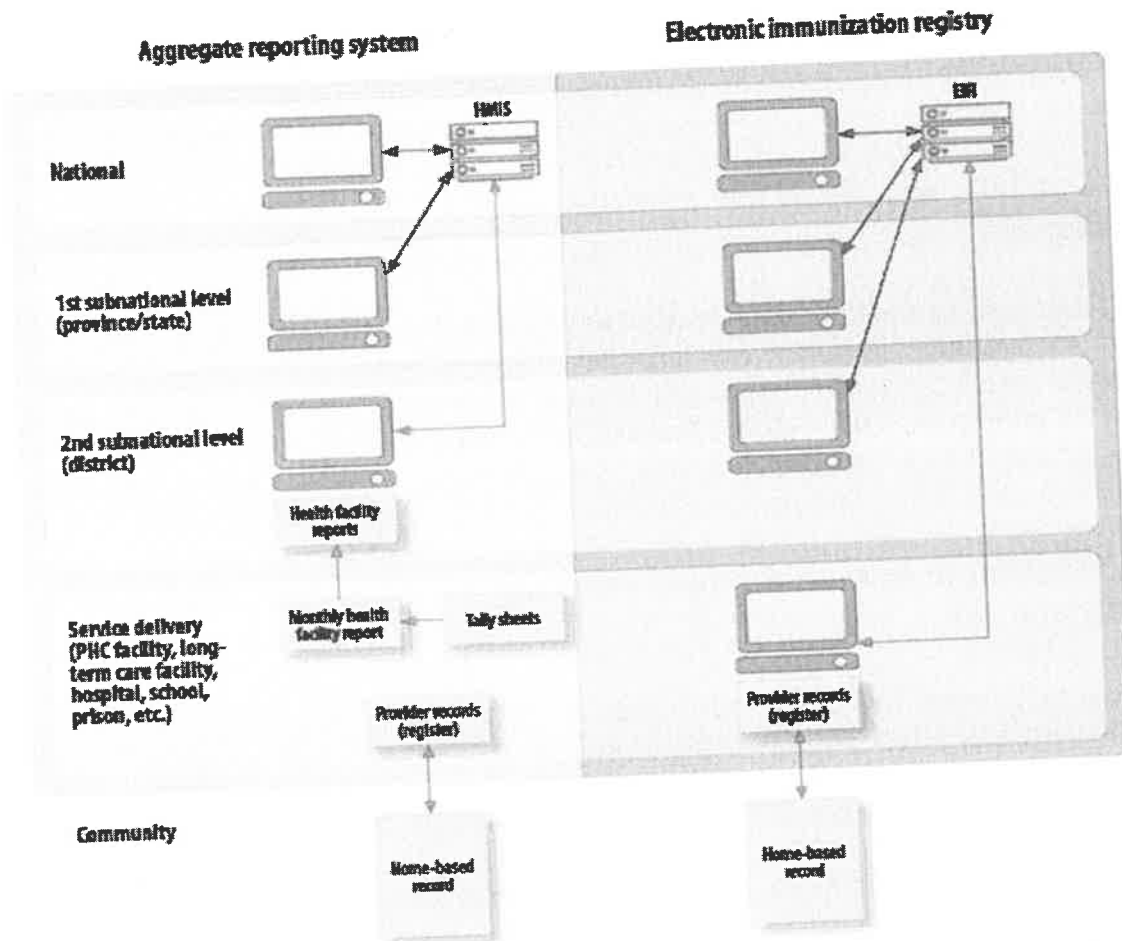


Figure 11.1 Proposed COVID-19 immunisation monitoring system for Namibia

Figure 11.1 is depicted above (adapted from the WHO *Interim Guidance on developing a national deployment and vaccination plan for COVID-19 vaccines*, November 2020). The system comprises both aggregate based records using the electronic, DHIS-2 and ODK data systems as well as paper-based, personal immunization registry. Paper-based records for routine immunization are captured at the facility or any other fixed point of administration, and then transferred to the electronic register on DHIS-2.

#### 11.4.1 Update facility-based records (provider records, vaccination registers, medical record systems)

Facility-based records to support Namibian COVID-19 immunization monitoring system will be kept in the facility, hospital, long-term care facility, prison or doctor's office. These include physical register books, provider-based digital medical record systems or an EPI, and they will be updated to reflect COVID-19 vaccination status. Provider records will serve broadly the same purposes as personal vaccination records, but also enable sending of reminders for second doses to patients, and to report data to public health authorities. They will also link vaccination data with other medical information, such as COVID-19 test results. Additional information captured in

provider records are: contact information of the vaccinated person – needed to issue vaccination reminders, or in case a safety concern arises with any vaccine product or batch; any characteristics of the vaccinated person that are needed for data disaggregation (sex, age, occupational group, risk profile, etc.); COVID-19 lab test results; and any adverse event following immunization (AEFI).

#### **11.4.2 Update tally sheets and periodic reports (only for aggregation-based systems)**

Tally sheets will be used to count the number of vaccinations administered during a day, week, month, immunization session or campaign day. They will allow for the tallying of COVID-19 vaccinations by dimension of disaggregation mentioned above. Namibia will develop specific tally sheets for specific COVID-19 target groups and strategies or use standard tally sheets but keep sheets separate for each strategy and group (such as health workers, social care workers, older populations, etc.). This will simplify their design and use.

#### **11.4.3 Distribute and use personal vaccination records, vaccination cards or certificates**

Physical, paper-based personal records will be used both in aggregate and individual systems and will be updated to reflect COVID-19 vaccination status. They will serve the following purposes: provide proof of vaccination for individual's travel, educational or occupational purposes; establish vaccination status in coverage surveys; provide vaccination information in case of an AEFI or in case of a positive COVID-19 test; and provide a useful vaccination card for adults and older adults to which COVID-19 vaccines and other recommended vaccines can be added and guidance on any doses required to complete vaccination course can be found.

#### **11.4.4 Data capturing tools**

The following data capturing tools that must form integral part of the Namibian COVID-19 immunization monitoring system, such as:

- COVID-19 Adverse Event Following Immunisation Form (see Annex I)
- COVID-19 Immunization Form (see Annex II)
- COVID-19 Immunization Tally Sheet (see Annex III)
- COVID-19 Immunization Tracking Worksheet (see Annex IV)
- COVID-19 Vaccination Consent Form (See Annex V)

**Note:** Please note that the forms are subject to review and approval by the National COVID-19 COVID 19 Vaccine Task Force.

In Table 11.2 below is outlined the logic model which underpins **Immunisation monitoring system** of the Namibian NDVP.

## Chapter 12. COVID-19 surveillance

COVID-19 surveillance has been implemented in Namibia since the beginning of the outbreak in March 2020 based on the guidelines made available by technical partners. It mainly focused on the outbreak response which included detection using standard case definition, real time reporting, and analysis of data to inform and improve the overall response. It is therefore crucial that vaccine surveillance is integrated into the COVID-19 surveillance system to monitor the impact and effectiveness of vaccination on COVID-19 infection.

The aim of national surveillance for COVID-19 is to enable public health authorities to reduce transmission of COVID-19, thereby limiting associated morbidity and mortality. As it relates to vaccination, surveillance will help to guide the implementation and adjustment of the vaccination programme and policies.

As COVID-19 vaccination is a novel virus, different objectives of disease surveillance are identified to relate to vaccination at different intervals such as short, medium and long term. It is imperative that as numerous vaccines are being used in different countries worldwide, it is expected that basic surveillance for both COVID 19 outbreak response as well as for vaccine impact monitoring is conducted as per their context. Existing Surveillance data systems will be utilized to incorporate the vaccine monitoring data.

### 12.1 Objectives of this chapter

The chapter comprises two sets of objectives: those pertaining to regular COVID-19 surveillance and those pertaining to COVID-19 surveillance in relation to vaccination.

Objectives of COVID-19 surveillance chapter are as follows:

- Enable rapid detection, isolation, testing and management of cases;
- Detect and contain clusters and outbreaks, especially among vulnerable populations;
- Identify, follow-up and quarantine contacts; monitor trends in COVID-19 cases and deaths;
- Guide the implementation and adjustment of targeted control measures, while enabling safe resumption of economic and social activities;
- Evaluate the impact of the pandemic on health care systems and society;
- Monitor longer term epidemiologic trends and evolution of COVID-19 virus; and
- Contribute to the understanding of the co-circulation of COVID-19 virus, influenza and other respiratory viruses, and other pathogens.

\*Objectives<sup>8</sup> of post-vaccine introduction surveillance are to:

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- Monitor vaccine coverage in targeted populations during the vaccination and coverage evaluation at the end of each phase.
- Identify under vaccinated groups
- Rapidly detect and evaluate possible adverse events associated with vaccination
- Estimate the effectiveness of the vaccine at preventing COVID-19 infection.
  - The following key indicators will be monitored:
    - COVID -19 incidence rates,
    - COVID-19 mortality and excess mortality rates,
    - Hospital bed capacity
- Estimate the effectiveness of the vaccine against different viral variants
- Identify risk factors for and outcomes of vaccine failure, including any impact on strain evolution
- Monitor the impact of the vaccination programme on prevalence of antibodies against COVID-19 as an indicator of population level immunity, and to monitor antibody waning in the population

#### **Understanding vaccine effectiveness (VE) and impact of vaccination**

- Different studies would be conducted in collaboration with academia to better understand the vaccine effectiveness.
- COVID-19 will be integrated into the national Influenza sentinel surveillance system.
- Criteria for sentinel sites and target groups as well as case definitions will be clearly set up and a protocol will be finalized according to the Global surveillance standards.

#### **Understanding long-term immunity, duration of immunity, and need for booster doses due to waning immunity**

This can be achieved through research cohort studies.

### **12.2 Collection, reporting and use of COVID-19 surveillance data**

To have high quality data for analysis and reporting, it is required that data elements be identified and standardized ahead of implementing surveillance activities. The following key data elements will be utilized for regular surveillance purposes:

Age/date of birth; Place of residence; Sex; severity of disease hospitalization, intensive care unit (ICU) admission, oxygen requirement, ventilatory support, extracorporeal membrane oxygenation; COVID-19 treatments provided (e.g., dexamethasone, COVID-19 antibodies, remdesivir, etc.); Comorbidities; laboratory testing related data (type of test, test results, date of test); Prior history of COVID-19 prior to this and date of last positive tests;

- Has the person received the COVID-19 vaccine (yes, no, unknown)?

- If yes, what are the brands/dates of vaccines (to be adapted based on the number of doses needed)?

Detailed overview of all the indicators and data elements related to COVID-19 can be found in the Data Management Plan for COVID-19 Surveillance and Case Management (MoHSS, April 2020).

### **12.3 Reporting requirements**

Namibia will continue fulfilling its international reporting requirements as per established protocols.

In Table 12.1 below is outlined the logic model which underpins **COVID-19 Surveillance (including post-rollout)** of the Namibian NDVP.

## **Chapter 13. Evaluation of COVID-19 vaccine introduction**

### **13.1 Objective of this chapter**

- To assess vaccine effectiveness (VE) (screening method and test-negative case-control design);
- To quantify the impact of the vaccine (Health Impact Assessment e.g. Time series analysis or comparing pre- and post-vaccination periods. The main data sources will be: health information systems; population, sentinel or laboratory-based surveillance systems; statistics reports; and medical records from health care services);
- To identify any improvements to the COVID-19 vaccination process (cohort studies to assess hospitalization and death outcomes among those vaccinated)
- To inform preparedness for any future pandemics.

### **13.2 COVID-19 Vaccine effectiveness**

Vaccine effectiveness is defined as the ability of a vaccine to protect against disease when used under field conditions (routine practice).<sup>1</sup> Vaccine effectiveness refers to the protection conferred by individual immunization on vaccinated persons.<sup>1</sup> COVID-19 vaccination program affect all people, even if only part of the population is vaccinated. When many people are immunized, the pathogen transmission decreases, which reduces the disease incidence and, consequently, protects the unvaccinated ones (indirect effect or herd protection). The health impact of a vaccination program refers to the total effects of the program, meaning the total (direct and indirect) effect on the vaccines and the indirect effect on unvaccinated persons.<sup>1</sup>

Vaccine effectiveness will be estimated by comparing vaccinated and unvaccinated persons from the same population in cohort or case-control studies. The health impact of a vaccination program is estimated by comparing all individuals of the population affected by the vaccination program with a reference population unaffected by any program, usually the same population before and after program implementation. Namibia will utilize the national health information systems, academic expertise in health services research, disease burden measurement and technology assessment in health care, policy makers, epidemiological surveillance, and immunization program professionals with experience in vaccine evaluations to conduct a health impact assessment (HIA) of COVID-19 vaccination program.<sup>2</sup>

### **13.3 Programmatic post-introduction evaluations of COVID-19 vaccines**

Following COVID-19 vaccines introduction into a routine immunization programme in Namibia, the purpose of a post-introduction vaccine evaluation is to evaluate the impact of the vaccine introduction on the country's immunization programme and to rapidly identify problems needing correction as vaccination expands in the country. The evaluation will lead to improvements in the implementation of the new vaccines, overall immunization programme can also provide valuable lessons for other countries for future vaccine introductions and also to inform preparedness for any future pandemics. The conduct of a classical post-introduction evaluation will likely require adaptation, where multiple COVID-19 vaccine products are introduced targeting different



population groups under the COVAX agreement. Namibia will find value in carrying out small post introduction evaluations after various introduction phases, e.g. a health worker specific evaluation, an older population evaluation, etc. The utility and design of a post-introduction evaluation for COVID-19 vaccines will depend on vaccine specific recommendations.

### **13.4 Vaccine effectiveness and impact**

In Namibia, confirmation of COVID-19 VE will be desired to verify performance in real-world populations and field conditions different from those enrolled in clinical trials. The clinical trials may not have answered all questions about VE for key secondary outcomes, such as among certain risk groups and against different levels of disease severity. Various methodologies have been used to evaluate VE, including cohort studies, case-control studies and the so-called screening method.

The method that is often used for evaluation of seasonal influenza VE due to its minimization of bias in the test-negative case-control design. Using this design cases and controls arise from the same population of persons seeking care for acute respiratory illness, the cases being those laboratory-confirmed for influenza and the controls being those who are negative (WHO, 2020). Vaccination status is then compared between cases and controls.

This method will be adopted in Namibia as it could also be appropriate for COVID-19 VE evaluations, using severe acute respiratory illness surveillance platforms, such as the Global Influenza Surveillance and Response System (WHO, 2020). However, the test-negative case-control design might prove more challenging for COVID-19 vaccines, in which existing immunity and non-random deployment of vaccines based on risk criteria might introduce biases.

Measuring the impact of COVID-19 vaccines in the population, that is the reduction in disease incidence, or reduction in disease severity or longevity, is also important. However, assessing the impact of COVID-19 vaccines is also likely to be challenging, given the lack of longitudinal baseline data and the evolving epidemiology of COVID-19 disease since the beginning of the pandemic.

Evaluations of VE and impact are important but must be done with methodological rigour to yield accurate results. Erroneous results can lead to inappropriate public health action. Namibia will conduct well executed evaluations in the country as well as with other countries in the Southern African Development Community (SADC) as these countries share similar demographic and epidemiologic characteristics to generate representative results for the region.

### **13.5 Evaluation tools**

There are existing country specific tools for immunization programs which will be adapted for the COVID-19 program.

### **13.6 Lessons learned**

Documenting the lessons learned from deployment and vaccination operations will provide essential information about the effort for Namibia and for other countries introducing COVID-19 vaccines.

**13.7 Monitoring and evaluation framework (please note that actual targets are tbd.)**

<b>Outcome</b>	<b>KPI</b>	<b>Baseline</b>
To quantify the impact of the COVID-19 vaccine by comparing pre- and post-vaccination periods.	Number of electronic and Paper based M & E tools for vaccination developed and piloted	0
	Number of HCW trained on vaccine evaluation, data collection, analysis and reporting	0
	Hospitalization rate due to COVID-19	13%
	ICU bed occupancy rate due to COVID-19	90%
	COVID-19 positivity rate	12%
	COVID-19 case fatality rate	1%

In Table 13.1 below is outlined the **consolidated logical framework for deployment of vaccination for COVID-19 vaccines in Namibia**

INPUTS/RESOURCE	ACTIVITIES/PROCESSES	OUTPUT	OUTCOMES	IMPACT
<p>S</p> <p>NMRC authorisation guidance</p> <p>Vaccine Dossier</p> <p>NMRC secretariat</p> <p>Committees and Council members</p> <p>Job aids on data management, surveillance and immunization, eligibility, consent for vaccination</p> <p><b>Resources:</b>  <i>Human:</i> Nurses, Medical doctors, Pharmacists, Community Health Workers, data collectors, data analysts, Cleaners Drivers and other cadres</p> <p>Local NGOs</p> <p>Traditional and political Leaders, MOAs, Development partners</p>	<p>Apply for registration and emergency use authorization of identified COVID-19 vaccines in Namibia</p> <p>Submit assessment reports to NMRC committee</p> <p>Develop vaccination deployment, distribution, and storage plans for vaccines and pharmaceuticals</p> <p>Develop SOPs, manuals and Job-aids</p> <p>Develop costed M&amp;E plan and monitor progress</p> <p>Adaptation and rollout of DHIS2 Vaccination Tracker database</p> <p>Strengthen routine surveillance for COVID-19 infection, hospitalization and excess mortality</p> <p>Integration of IDSR, and DHIS2 tracker databases</p>	<p>Vaccine registration certificate granted (Section 27 certificate)</p> <p>Assessment report developed</p> <p>Vaccination deployment, distribution, and storage plans in place</p> <p>SOPs, manuals and job-aids</p> <p>Costed M&amp;E plan (data capturing, analysis and reporting tools in place)</p> <p>COVID-19 infection, hospitalization and mortality rates monitored</p> <p>Costed budget and procurement plan developed, approved and disseminated</p> <p>Number of vaccines, pharmaceuticals and supplies distributed and used</p> <p>Number of immunization sites with optimum cold chain facilities</p> <p>Number of target population groups reached and vaccinated</p> <p>Technical Working Groups and Advisory Committees in place at all levels</p> <p>Identified and deployed HR plan at all level</p>	<p>Improved coordination of COVID-19 vaccination and other immunization programmes</p> <p>Vaccine coverage to allow achievement of herd immunity</p> <p>Increased knowledge and awareness of COVID-19 vaccine</p> <p>Low vaccine stockout and waphase rate</p> <p>Minimal defaulter rate for booster doses</p> <p>Low incidence of AEFI</p>	<p>Reduced COVID -19 Incidence and Prevalence</p> <p>Hospitalization rate due to COVID-19 reduced</p> <p>Excess mortality associated with COVID-19 among high-risk groups reduced</p> <p>Strengthened research and surveillance systems for COVID-19 infection and vaccine tracking system</p>

INPUTS/RESOURCES	ACTIVITIES/PROCESSES	OUTPUT	OUTCOMES	IMPACT
<p><i>Capital:</i> Vehicles, IT, laptops/tablets, printers Utilities: fuel, airtime, stationeries (pens, tally sheets), printing paper, cartridges, Analytical software packages (quantitative and qualitative)</p> <p>Means of communication: mobile phones, internet dongles, audio-visuals, mass media</p> <p><i>Logistics:</i> cold chain system</p> <p><i>Pharmaceuticals and supplies:</i> Vaccines, diluents, needles, syringes, sharps, containers, cottons, disinfectants, plastic aprons, face masks, hand gloves, Waste management supplies, sample collection consumables</p> <p>Existing data systems</p> <p>Funding</p>	<p>Develop costed budget and procurement plan at national and sub-national levels</p> <p>Formulate target population plan with Estimation and stratification of target group sizes by geographic locations, population type and vaccine type</p> <p>Formulate Technical Working Groups, and Advisory Committees at various levels</p> <p>Develop Human Resources plan for vaccine deployment</p> <p>Training of human resources at all levels</p> <p>Develop demand creation plan and strategies to minimize misinformation and stigma.</p> <p>Monitor vaccine uptake and Adverse Events Following Immunization (AEFI) associated with vaccination and vaccine coverage</p> <p>Document refusals and associated reasons</p> <p>Develop research agenda</p>	<p>Number of people trained, and topics covered</p> <p>All identified HR are trained prior to deployment</p> <p>Number/proportion of target group received first and second dose (Including dropout rate)</p> <p>Number of target population refusing vaccination</p> <p>Number of research projects on vaccine effectiveness and impact conducted</p> <p>Number of IEC materials developed and distributed</p> <p>Number and type of mass media events organized</p>		

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## **ANNEXURES:**

- Annex I: Namibia epidemiologic setting scenario
- Annex II: COVID-19 Adverse Event Form
- Annex III: COVID-19 Consent Form
- Annex IV: COVID-19 Tally Sheet/Facility/District/Regional National Periodic Form
- Annex V: Supervisory Checklist
- Annex VI: Vaccination Consent Form
- Annex VII: Regulatory Authorities and Organisations that NMRC aligns with
- Annex VIII: Estimated vaccine dosage per district

NB: Please note the Vaccination register could not be included in the main NDVP document due to size but forms an integral part of the M&E instrumentarium

**Annex I: Namibia epidemiologic setting scenario: Community Transmission**

<p><b>Overall public health strategy for active community transmission: Initial focus of vaccination programme is to reduce morbidity and mortality and maintain critical healthcare services; also, to achieve reciprocity. The coverage will then be expanded to further reduce transmission and lessen the burden experienced by social and economic functions.</b></p>	
<p><b>Vaccine Supply Scenario</b></p>	<p><b>Priority group and definition</b></p>
<p><b>Phase I</b> (assumes limited vaccine availability for 1-20% of the national population)</p>	<p><b>Phase 1a</b> (initial launch)  <b>Health workers and support staff at <u>high to very high risk of acquiring and transmitting infection.</u></b></p> <p>Health workers are defined as all people engaged in work actions whose primary intent is to improve health. This includes health service providers, such as doctors, nurses, midwives, public health professionals, technicians (laboratory, health, medical and non-medical), personal care workers, community health workers, healers and practitioners of traditional medicine<sup>5</sup>. Support staff are defined as the members that carry out specified work in order to assist or support the work of health care workers in health facilities.</p> <p>In phase 1a vaccination of HCWs will be identified as follows:</p> <ol style="list-style-type: none"> <li>1. COVID-19 isolation ICUs to staff working in ICUs, high-care wards (nurses, physicians, clerks, laboratory and medical scientists, radiologists and radiographers and porters working at ICU units, medical and nursing students/volunteers and staff attached to these units providing psycho-social support);</li> <li>2. COVID-19 isolation wards (nurses, physicians, clerks, radiologists and radiographers and porters working at ICU units, and staff attached to these units providing psycho-social support) and dentists and dental hygienists;</li> <li>3. HCW working in casualty wards of intermediate and tertiary hospitals;</li> <li>4. HCWs in non-COVID-19 wards</li> <li>5. HCW in medical outpatient and medical emergency units including emergency and ambulance drivers and paramedics;</li> <li>6. HCW working in triage units;</li> <li>7. HCWs in quarantine units (typically nurses and admin staff responsible for the facility, drivers);</li> <li>8. Laboratory and radiology staff working in diagnostics.</li> <li>9. All other healthcare staff not explicitly mentioned above, including general practitioners, nurses, community HCW, etc.</li> </ol>



- 10. Environmental practitioners supporting burials (undertakers, pathologists, mortuary staff, etc.).
- 11. Support staff (porters, receptionists, drivers, cleaners, general hand, kitchen staff, security guards).
- 12. Traditional healers

**Phase 1b**

**Older adults aged 60 and above with/without comorbidities.**

- NB: Some NRAs raised the issue of safety and efficacy among AstraZeneca trial participants aged over 65 flagging that not enough data participants in that age category is available to make conclusions on the vaccine's effectiveness. However, no data exists that AstraZeneca vaccine is unsafe. NRAs approved the AstraZeneca vaccine in people aged 18 and above, which includes people aged 65 and above. Therefore, Namibia will deploy AZ should this manufacturer's vaccine be featured in the first contingent.

\*this group includes older adults in old people's homes and institutions, people in mental health facilities and others in congregated settings.

**Government officials (legislature, judiciary and executive). To increase public trust of vaccine**

- The burden of COVID-19 among HCW in Namibia is high. As of 5 February 2021, Cumulative number of confirmed cases among HCW was 1645 (4.8%) out of a cumulative total of 34615 of confirmed cases with 6 (1.6%) deaths out of 370. Vaccination has multiplier effect-protection of HCWs and preservation of healthcare capacity. HCW provide care in high-risk settings and will be essential for vaccine distribution.
- COVID-19 exposure (inside and outside the healthcare setting) results in absenteeism due to quarantine, infection and illness. Vaccination has the potential to reduce HCW absenteeism
- The risk of severe COVID-19 and death increases steeply with age. Data from the phase 3 trial indicate that the efficacy and safety of the vaccine are comparable across all age groups (above the age of 16). Vaccination is recommended for older persons (WHO, 2020). The Namibian COVID-19 weekly epidemiological report, EPI Week 4, 2021, illustrate that the Case Fatality Rate for the age groups 70-74, 75-79 and 80+ is 10.8%, 14.4% and 20.1% respectively
- Although no study has been done in Namibia to investigate the perception on the target groups that should receive priority when a COVID-19 vaccine is available, The Harris Poll, n=1399 U.S. Adults, August 14-16, 2020 reported that survey respondents supported early allocation of COVID-19 vaccine to health care personnel and seniors<sup>1</sup>. In addition, WHO's SAGE roadmap for prioritizing uses of COVID-19 vaccines in the context of limited supply the guidelines also recommends that first priority must be given to HCW and old people.

1. Source: <https://theharris-poll.com/americans-want-high-risk-people-to-get-a-coronavirus-vaccine-first/>

**Phase 1c. Sociodemographic groups at significantly higher risk of severe disease or death**

The sociodemographic groups at significantly higher risk of severe disease or death is premised on the recommendations from WHO (SAGE) and US-CDC. The figures were derived from Namibia data mainly, Namibia Statistics Agency, Demographic Health Survey 2013 (Groups with comorbidities or health states determined to be at significantly higher risk of severe disease or death); NAMPHIA-2017 (PLHIV on ART) and National TB Prevalence survey 2018.

**Groups with comorbidities or health status determined to be at significantly higher risk of severe disease or death. This also equitably includes disadvantaged groups where there is underdiagnosis of comorbidities. The category includes individuals diagnosed with:**

- Diabetes Mellitus
- Arterial Hypertension + Cardio-vascular diseases (the prevalence of AH is high, those with uncontrolled AH should be prioritized).
- Cancer
- Pulmonary Tuberculosis + Chronic Respiratory Diseases
- People living with HIV and/or with comorbidity
- Chronic renal failure
- Other health conditions determined to be at higher risk of severe disease or death including but not limited to the following: chronic kidney disease, COPD, heart conditions such as heart failure, coronary artery disease or cardiomyopathies, obesity and sickle cell disease

**Phase 1 d Disadvantaged socio-demographic groups at significantly higher risk of severe disease death due to limited access to health care services:**

- People living with disabilities (including those in rehabilitation centers and institutions)
- Inmates in police holding cells and correctional facilities
- Adult refugees (16+) with at least one comorbidity
- Minority groups (including sex workers and the homeless)
- Individuals living in informal settlements aged 40 years and older with at least one comorbidity

**Phase 1 e.**

- **Employment groups at elevated risk of acquiring and transmitting infection because they are unable to physical distance. These groups include:**

	<ul style="list-style-type: none"> <li>• High priority teachers and school staff (teachers and staff in secondary schools and high schools teaching learners aged 16+ years)</li> <li>• Truck drivers bearing in mind local epidemiology data which demonstrates they are at higher risk.</li> <li>• Police officers and correctional services officers</li> <li>• Employees in the mining industry</li> <li>• Senior government officials including legislative, executive and judiciary, government executives, religious and traditional leaders and members of the diplomatic corps. Important to emphasize here that in Namibia context, key political leaders will be vaccinated publicly in order to underscore the message that vaccines are safe.</li> <li>• Other essential non-health frontline workers (truck drivers and port of entry staff-transport, retail, agriculture sectors)</li> </ul>
<p><b>Phase 2</b>  <b>a, b, c, d)</b>          (assumes moderate vaccine availability for 21-60% of the national population)</p>	<p><b>Phase 2 a.</b></p> <ul style="list-style-type: none"> <li>• <b>Health workers not covered in the initial phase of vaccination, these are health workers at low to moderate risk of acquiring and transmitting COVID-19 infection</b></li> </ul> <p><b>Phase 2 b Older adults 60 years and older with or without comorbidities not covered in phase 1b and All adults aged 16 years and older with comorbidities not included in Phase 1</b></p> <p><b>Phase 2 c</b></p> <ul style="list-style-type: none"> <li>• <b>Socio-demographic groups at significantly higher risk of severe disease or death, which include:</b></li> <li>• People living with disabilities (physical, mental, intellectual) not included in the initial vaccination phase</li> <li>• Inmates in police holding cells and correctional facilities not covered in phase 2</li> <li>• Adult refugees (16+) with no comorbidities</li> <li>• People living in extreme poverty</li> <li>• Minority groups (sex workers, homeless people, etc.)</li> <li>• Hard to reach population groups such as those living in rural and remote areas</li> <li>• Adults aged 16-59 years living in informal settlements inside the outbreak hot spot areas (Windhoek, Walvis Bay and Swakopmund), who are unable to effectively physically distance and are therefore at higher risk (based on vaccine availability)</li> </ul> <ul style="list-style-type: none"> <li>• <b>Phase 2 d Employment groups at elevated risk of acquiring and transmitting infection because they are unable to effectively physical distance (which include remaining employees not covered in phase 2b)</b></li> <li>• Remaining schoolteachers and staff</li> </ul>

- |  |  |
|--|--|
|  | <ul style="list-style-type: none"><li>• High school learners and students in institutions of higher learning</li><li>• Correctional services officers</li><li>• Military personnel living in barracks</li><li>• Remaining employees in the mining industry</li><li>• Remaining employees in the fishing industry</li><li>• Employees in the tourism and hospitality industry</li><li>• Employees in the agricultural industry</li><li>• Employees in the informal business sector</li><li>• Remaining government executives, traditional and religious leaders</li><li>• Remaining non-health frontline workers (transport, postal services, communication services, retail sector).</li></ul> |
|--|--|

## Annex II: ADVERSE EVENT FOLLOWING COVID-19 IMMUNIZATION REPORTING FORM



### MINISTRY OF HEALTH AND SOCIAL SERVICES

#### ADVERSE EVENT FOLLOWING COVID 19 IMMUNIZATION (AEFI) REPORTING FORM

Name of vaccination site is attached to:  Site Where Vaccine administered:	<input type="checkbox"/> Outreach/  <input type="checkbox"/> Mobile  <input type="checkbox"/> Fixed/PHC	District  Region	Date of vaccination:  Date AEFI started the following Vaccination:  Time AEFI Started the following Vaccination; Hr. _____ Min _____  Reporter's full name:				
Patient Full name:  Patient's Contact Details:  Physical Address of Patient:							
Unique ID	Birth Date: _____ Age _____ Years	Sex: Male <input type="checkbox"/> Female <input type="checkbox"/>  If female; Pregnant <input type="checkbox"/> Lactating <input type="checkbox"/>					
Name of vaccine	Site	Route	Dose	Dose (1st, 2nd, etc.)	Expiry date	Manufacturer	Batch/ Lot number
Minor Adverse Event/s Section							
<input type="checkbox"/> Severe local reaction <input type="checkbox"/> Seizures <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"/> Fever $\geq 38^{\circ}\text{C}$		Describe AEFI (Signs and symptoms) here:			
Other: (specify here, see list of other minor AEFI on reference page;							
Severe and Serious Adverse Event/s Section							
Adverse Event/s:							

<b>Severe</b> <input type="checkbox"/> Hospitalization <input type="checkbox"/> Life-threatening <input type="checkbox"/> Disabling	<b>Serious</b> <input type="checkbox"/> Death Date of death (DD/MM/YYYY): ___/___/_____  Autopsy done: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<input type="checkbox"/> Other medically important event (Specify) below: _____ _____ _____			
<b>Outcome of event at the time of the report:</b>					
<input type="checkbox"/> Fully recovered	<input type="checkbox"/> Recovered with sequelae	<input type="checkbox"/> Fatal- unrelated to reaction	<input type="checkbox"/> fatal - reaction may be contributory	<input type="checkbox"/> Fatal - due to reaction	<input type="checkbox"/> Unknown
Past medical history (including history of similar reaction or other allergies), concomitant medication and dates of administration (exclude those used to treat reaction) other relevant information (e.g., other cases). Use additional sheet if needed:					

*Minor AEFI on reference note*

Minor Adverse Event/s Section			
<b>Characteristics</b>	<input type="checkbox"/> Vasovagal reaction	<input type="checkbox"/> Immediate allergic reaction	<input type="checkbox"/> Vaccine side effects
<b>Timing after vaccination</b>	With 15 minutes	15-30 minutes of vaccination	1 to 3 days
<b>Constitutional</b>	<input type="checkbox"/> Warm <input type="checkbox"/> Cold	<input type="checkbox"/> Feeling of impending doom	<input type="checkbox"/> Fever <input type="checkbox"/> Chills <input type="checkbox"/> Fatigue
<b>Cutaneous</b>	<input type="checkbox"/> Pallor <input type="checkbox"/> Diaphoresis <input type="checkbox"/> Clammy skinny <input type="checkbox"/> Facial warmth	<input type="checkbox"/> Urticaria <input type="checkbox"/> Flushing <input type="checkbox"/> Angioedema	<input type="checkbox"/> Pain <input type="checkbox"/> Erythema <input type="checkbox"/> Swelling <input type="checkbox"/> Lymphadenopathy
<b>Neurologic</b>	<input type="checkbox"/> Dizziness <input type="checkbox"/> Lightheadedness <input type="checkbox"/> Syncope <input type="checkbox"/> Weakness <input type="checkbox"/> Change in vision <input type="checkbox"/> Change in hearing	<input type="checkbox"/> Confusion <input type="checkbox"/> Disorientation <input type="checkbox"/> Dizziness <input type="checkbox"/> Loss of consciousness <input type="checkbox"/> Weakness <input type="checkbox"/> lightheadedness	<input type="checkbox"/> Headache
<b>Respiratory</b>	<input type="checkbox"/> Anxiety	<input type="checkbox"/> Shortness of breath <input type="checkbox"/> Wheezing <input type="checkbox"/> Bronchospasm	N/A

		<input type="checkbox"/> <i>Stridor</i> <input type="checkbox"/> <i>Hypoxia</i>	
<i>Cardiovascular</i>	<input type="checkbox"/> <i>Bradycardia</i>	<input type="checkbox"/> <i>Hypotension</i> <input type="checkbox"/> <i>Tachycardia</i>	<i>N/A</i>
<i>Gastrointestinal</i>	<input type="checkbox"/> <i>Nausea</i> <input type="checkbox"/> <i>Vomiting</i>	<input type="checkbox"/> <i>Nausea</i> <input type="checkbox"/> <i>Vomiting</i> <input type="checkbox"/> <i>Abdominal cramps</i> <input type="checkbox"/> <i>Diarrhea</i>	<input type="checkbox"/> <i>Vomiting</i> <input type="checkbox"/> <i>Diarrhea</i>
<i>Musculoskeletal</i>	<i>N/A</i>	<i>N/A</i>	<input type="checkbox"/> <i>Myalgia</i> <input type="checkbox"/> <i>Arthralgia</i>

# Annex III: COVID-19 Consent Form



## MINISTRY OF HEALTH AND SOCIAL SERVICES NAMIBIA COVID-19 VACCINE CONSENT FORM

Health Facility (Site): Site Where Vaccine administered:			Recipient Full name:	
<input type="checkbox"/> Fixed/PHC	<input type="checkbox"/> Outreach	<input type="checkbox"/> Mobile/	Physical Address	
District		Region	Sex at Birth; <input type="checkbox"/> Male <input type="checkbox"/> Female	DOB: ____/____/____

**Emergency Use Authorization**

The Ministry of Health and Social Services / NMRC has made the COVID-19 vaccine available under an emergency use authorization (EUA). The EUA is used when circumstances exist to justify the emergency use of drugs and biological products during an emergency, such as the COVID-19 pandemic. This vaccine has not undergone the same type of review as an NMRC- approved or cleared product. However, the NMRC's decision to make the vaccine available is based on the totality of scientific evidence available, showing that known and potential benefits of the vaccine outweigh the known and potential risks.

**CONSENT**

- I have been provided with and have read/have been explained in my own language, the explanation regarding the nature of and implication of the vaccine, the fact sheet about the said vaccine which has been provided to me.
- I understand that if this vaccine requires two doses, the two doses of this vaccine shall be administered (given) for it to be effective. I have been given an opportunity to ask questions which were answered to my satisfaction/have ensured that the person named above for whom I am authorised to provide consent was also given a chance to ask question. I understand the benefits and risks of the vaccine.
- I give permission for the vaccine to be administered to me/the person named above for whom I am authorised to make this request and provide consent. I understand there will be no cost to me for this vaccine. I have been informed that after administration of the vaccine, I will be kept under observation for a period of at least 15-30. I authorise release of all information needed, including but not limited to medical records, such information provided by me for the purposes of the form as may be required for other public health purposes.

**WAIVER**

- I acknowledge that as a result of the vaccination certain risks are involved and that any adverse event following immunisation which might include injuries or death could occur to me. I accept and voluntarily incur and assume all risks of any adverse event following immunization.
- I waive all claims and agree to indemnify and hold the government of the Republic of Namibia, GAVI Alliance, donor states or organisations, and manufacturers of the vaccine and other agents or preposes against any and all losses, liabilities, damages, costs or expenses, including but not limited to litigation suits that may arise as a result of the vaccine immunization.
- I have read and fully understand the contents of this form and I execute it voluntarily.
- I undertake to:  
Attend the same vaccination centre on the date scheduled for the second dose as specified on this form and Covid-19 vaccination record card provided to me  
Bring and produce the Covid-19 vaccination record card provided to me

Recipient/ /Guardian (Signature): \_\_\_\_\_ Print Full Name: \_\_\_\_\_



Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Relationship to patient, if other than recipient:

\_\_\_\_\_

**Area Below to be Completed by Vaccinator**  
Which vaccine is the patient receiving today?

Vaccine Name	Administration			EUA Fact Sheet Date	Manu / Lot Nr
Pfizer/ BioNTech	<input type="checkbox"/> First Dose	<input type="checkbox"/> Second Dose	<input type="checkbox"/> Third Dose		
Moderna	<input type="checkbox"/> First Dose	<input type="checkbox"/> Second Dose	<input type="checkbox"/> Third Dose		
Astra-Zeneca	<input type="checkbox"/> First Dose	<input type="checkbox"/> Second Dose	<input type="checkbox"/> Third Dose		
Janssen	<input type="checkbox"/> Single Dose				
Sinovac	<input type="checkbox"/> First / Single Dose	<input type="checkbox"/> Second Dose	<input type="checkbox"/> Third Dose		
SinoPharm	<input type="checkbox"/> First / Single Dose	<input type="checkbox"/> Second Dose	<input type="checkbox"/> Third Dose		
Name:	<input type="checkbox"/> First / Single Dose	<input type="checkbox"/> Second Dose	<input type="checkbox"/> Third Dose		

Administration Site     Left Deltoid     Right Deltoid     Left Thigh     Right Thigh  
Dosage                                     0.5 ml                                     0.3 ml

I have provided the patient (and/or parent, guardian or surrogate, as applicable) with information about the vaccine and consent to vaccination was obtained.

Vaccinator Name and Surname: \_\_\_\_\_

Vaccinator Signature: \_\_\_\_\_





**MINISTRY OF HEALTH AND SOCIAL SERVICES**  
**COVID-19 Vaccination Facility daily/weekly/monthly report**

Region: \_\_\_\_\_ District: \_\_\_\_\_ Facility: \_\_\_\_\_ Vaccine Name: \_\_\_\_\_  
 Date (DD-MM-YY) \_\_\_\_/\_\_\_\_/\_\_\_\_  Mobile  Outreach  Fixed/PHC Reporting Period: \_\_\_\_\_

Category	Less than 60 years (Not Older adult)				60 years and above (Older adult)				Total
	At least one health condition		No Existing health condition		At least one health condition		No Existing health condition		
	Male	Female	Male	Female	Male	Female	Male	Female	
First dose	Health Care workers								
	Others								
	<b>Total</b>								
Second dose	Health Care workers								
	Others								
	<b>Total</b>								
Third dose	Health Care workers								
	Others								
	<b>Total</b>								

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Number of AEFIs: Minor \_\_\_\_\_ Severe \_\_\_\_\_ Serious \_\_\_\_\_

Number of vaccine doses available at beginning of the day/week/month: \_\_\_\_\_  
 Number of vaccine doses available received during day/week/month: \_\_\_\_\_  
 Number of vaccine doses used during day/week/month: \_\_\_\_\_  
 Number of vaccine doses remaining at the end of the day/week/month: \_\_\_\_\_

Full Name, signature of responsible person and Stamp

Comments: \_\_\_\_\_

*\*Use this form for daily, weekly, monthly and quarterly reporting*



MINISTRY OF HEALTH AND SOCIAL SERVICES

COVID-19 Vaccination District daily/weekly/monthly report

Region: \_\_\_\_\_ District: \_\_\_\_\_ Vaccine Name: \_\_\_\_\_

Date (DD-MM-YY) \_\_\_\_/\_\_\_\_/\_\_\_\_  Mobile  Outreach  Fixed/PHC Reporting Period: \_\_\_\_\_

	Less than 60 years (Not Older adult)					60 years and above (Older adult)				Total
	At least one health condition		No Existing health condition			At least one health condition		No Existing health condition		
	Category	Male	Female	Male	Female	Male	Female	Male	Female	
First dose	Health Care workers									
	Others									
	Total									
Second dose	Health Care workers									
	Others									
	Total									
Third dose	Health Care workers									
	Others									
	Total									

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MINISTRY OF HEALTH AND SOCIAL SERVICES

COVID-19 Vaccination National periodic report

Reporting Period: \_\_\_\_\_

Starting Date of vaccination (DD-MM-YY) \_\_\_\_/\_\_\_\_/\_\_\_\_

Date (DD-MM-YY) \_\_\_\_/\_\_\_\_/\_\_\_\_

Mobile     Outreach     Fixed/PHC

a) Current month

		Less than 60 years (Not Older adults)				60 years and above (Older adults)				Total
		At least one health condition		No Existing health condition		At least one health condition		No Existing health condition		
		Male	Female	Male	Female	Male	Female	Male	Female	
First dose	Health Care workers									
	Others									
	Total									
Second dose	Health Care workers									
	Others									
	Total									
Third dose	Health Care workers									
	Others									
	Total									

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# Annex V: Supervisory Checklist

COVID-19 (V01 - 16032021)



MINISTRY OF HEALTH AND SOCIAL SERVICES

Supervisory Check list during the COVID 19 Vaccination			
Designation: _____		Vaccination Site: _____	
Contact No: _____		Date: of visit _____	Time of visit _____
Facility Name: _____	<input type="checkbox"/> Tick here for Fixed Site	<input type="checkbox"/> Tick here for Outreach Site	<input type="checkbox"/> Tick here for Mobile Health Site
		Response Guide based Responses here	
1	Is the vaccination site easily accessible to the recipients?	Yes/No	
2	Does the Vaccination site have IEC materials (like banners or posters) displayed prominently?	Yes/No/NA	
3	Is there AEFI Kit /Try at the vaccination site or with the vaccination team	Yes/No/NA	
4	Does the team have all the documentation tools (Tally sheet, summary sheet, supervisory checklist, AEFI reporting form, Vaccine supply form) *Indicate <i>Partial</i> if there are any missing documents and state them, indicate <i>Yes</i> if all documents are available or <i>No</i> if all documents are not available	Partial/Yes/No	If partial, list missing document
5	No. of recipients present at the site during time of supervisory visit a) less than 5 (b) 6 - 10 (c) 11- 15 (d) more than 15	a) Less than 5 (b) 6 - 10 (c) 11 - 15 (d) more than 15	
6	Is a printed list of recipients available at the entry of the vaccination site? *Applies only where there is preregistration of recipients	Yes/No	
7	Are vaccination officers adequate for facility	Yes/No/NA	
8	Vaccination officer-1 checking the screening eligibility status of recipients at entry?	Yes/No/NA	
9	Verifying /authenticating recipients details adequately?	Yes/No/NA	
10	Crowd control and screening officer 2	Yes/No/NA	
11	Vaccination officer 3 (Mixing and preparing )	Yes/No/NA	
12	Vaccination officer 4 ( observation of vaccinated recipients for 30 min and support vaccinator)	Yes/No/NA	
13	Vaccinator(s) sanitizing / washing hands at regular intervals	Yes /No	
14	Beneficiaries following physical distancing of at least 1 meter ?	Yes /No	
15	Did the vaccinators attend training on COVID-19 vaccination?	Yes /No	
16	Provision of privacy in vaccination area (separate room/curtain/ screen)	Yes /No	
17	Did the Vaccination team receive enough vaccine supply as per targeted population	Yes /No	
18	Is the vaccination team managing vaccines as per the SOP (for the specific vaccine)	Yes /No	
19	No. of recipients observed while COVID-19 vaccine was administered	Number	
20	No. of observed recipients vaccinated with correct dose / technique?	Yes /No	
21	Does the number of used vials tally with the number of beneficiaries vaccinated?	Yes /No	
22	Is the vaccinator communicating date of second dose to recipients?	yes /No	
23	Is the Vaccinator checking date and time on each vial before opening the vial for use?	Yes /No	
24	Separate area for observation of recipients after vaccination available?	Yes/No/NA	
25	Is there appropriate vaccination waste management at the site ?	Yes /No	
26	Mention any Other observations here:		

## Annex VI: Vaccination Screening Form



### MINISTRY OF HEALTH AND SOCIAL SERVICES Vaccination Screening Form

Clinic Vaccination Site is attached to:		Recipient Name (First and Last)	
Site Where Vaccine administered	Mobile <input type="checkbox"/>	Email Address	
	Outreach <input type="checkbox"/>		
	Fixed <input type="checkbox"/>		
District	Region	Sex Assigned at Birth <input type="checkbox"/> Male <input type="checkbox"/> Female	DOB: ___/___/___
Physical Address;		<b>Outcome</b>	
		Vaccinate <input type="checkbox"/>	Do not Vaccinate <input type="checkbox"/>
<b>Screening Questionnaire</b>			
Does the recipient fall under the vaccination eligibility stage, currently being vaccinated?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
1	Have you received a previous dose of COVID-19 vaccine? If no continue to question no 2.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unknown
1.1	Is this your first dose?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unknown
1.2	If this is your second dose, when was the date of your first dose?	___/___/___	<input type="checkbox"/> Unknown
1.3	If this is your second dose, which vaccine did you receive (AstraZeneca/Oxford, SinoPharm, Serum Institute of India etc)?		<input type="checkbox"/> Unknown
2	Are you feeling sick today? For example, are you currently experiencing fever, chills, cough, shortness of breath, difficulty breathing, fatigue, muscle or body aches, etc.?	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unknown
3	In the last 10 days, have you had a COVID-19 test or been told by a healthcare provider or health	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unknown

	department to isolate at home due to COVID-19 infection?	
4	In the last 10 days, have been told by a healthcare provider or health department to quarantine at home due to COVID-19 exposure or travel?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
5	Have you been treated with antibody therapy or convalescent plasma for COVID-19 in the past 90 days (3 months)? <i>If yes, when did you receive the last dose?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
6	Have you ever had an immediate allergic reaction, such as hives, facial swelling, difficulty breathing or anaphylaxis, to any vaccine or shot or to any component of the COVID-19 vaccine, such as polyethylene glycol (PEG) or polysorbate? or a history of anaphylaxis due to any cause?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
7	Have you had any vaccines in the past 14 days (2 weeks) including flu shot?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
	<i>If yes, how long ago was your most recent vaccine?</i> Date; ___/___/___	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
8	Are you pregnant?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
9	Are you currently breastfeeding?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
10	Do you have cancer, leukemia, HIV/AIDS, a history of autoimmune disease or any other condition that weakens the immune system?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
11	Do you take any medications that affect your immune system, such as cortisone, prednisone or other steroids, anticancer drugs, or have you had any radiation treatments?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
12	Do you have a bleeding disorder or are you taking a blood thinner?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

**INFORMATION FOR HEALTH CARE PROFESSIONALS ABOUT VACCINATION ELIGIBILITY**

1. Are you pregnant?

**IF YES:** Please ask the patient whether they discussed vaccination with a medical provider. Patients who are pregnant may choose to be vaccinated if they feel they are at risk after providing evidence of approval from a medical provider.



2. Are you currently breastfeeding?

**IF YES: Please ask the patient whether they discussed vaccination with a medical provider. Patients who are lactating may choose to be vaccinated if they feel they are at risk after providing evidence of approval from a medical provider.**

3. Have you had a severe allergic reaction (e.g., anaphylaxis, trouble breathing) to a vaccine or injectable therapy, or a history of anaphylaxis due to any cause?

**IF YES: Please ask the patient evidence of approval from a medical provider. If they have, allow vaccination to proceed. Vaccine providers should observe patients after vaccination to monitor for the occurrence of immediate adverse reactions:**

- **Persons with a history of anaphylaxis: 30 minutes**
- **All other persons: 15 minutes**

4. Have you had a severe allergic reaction (e.g., anaphylaxis, trouble breathing) to any component of the vaccine?

**IF YES: Do Not Vaccinate**

5. Have you received any other vaccine within the past 14 days or are scheduled to receive any vaccine in the next 14 days?

**IF YES: Do Not Vaccinate**

6. Are you currently sick? For example, are you currently experiencing fever, chills, cough, shortness of breath, difficulty breathing, fatigue, muscle or body aches, etc.?

**IF YES: Have patient discuss existing symptoms with a medical provider.**

7. Do you have a bleeding disorder or are you taking a blood thinner?

**IF YES: Have patient been approved to receive vaccination by a medical provider. The US-CDC's *Advisory Committee on Immunization Practices (ACIP)* recommends the following technique for intramuscular vaccination in patients with bleeding disorders or taking blood thinners: a fine-gauge needle (23-gauge or smaller caliber) should be used for the vaccination, followed by firm pressure on the site, without rubbing, for at least 2 minutes.**

8. Have you tested positive for COVID-19 in the last 10 days?

**IF YES: Do Not Vaccinate**

9. Are you currently in quarantine for COVID-19 exposure?

**IF YES: Do Not Vaccinate**

10. If this is your second dose, when was the date of your first dose?

**Do Not Vaccinate if less than 3, 4 and 12 weeks for Moderna, Pfizer and Oxford-AstraZeneca vaccines respectively**

11. If this is your second dose, which vaccine did you receive (AstraZeneca/Oxford, SinoPharm, Serum Institute of India etc)?

**Ensure that the second dose is from the same manufacturer as the first dose. If different: Do Not Vaccinate.**

### Annex VIII: Estimated vaccine dosage per district

District	Total Population	Total Population 18 yrs and above (47%)	3% HCW	District Estimate of Doses
Omaruru	20,733	9,745	292	642
Swakopmund	76,229	35,828	1,075	2365
Usakos	20,750	9,753	293	644
Walvis Bay	86,111	40,472	1,214	2452
<b>ERONGO</b>	<b>203,823</b>	<b>95,797</b>	<b>2,874</b>	<b>6,103</b>
Aranos	12,103	5,688	171	188
Mariental	43,345	20,372	611	672
Rehoboth	39,595	18,610	558	614
<b>HARDAP</b>	<b>95,043</b>	<b>44,670</b>	<b>1,340</b>	<b>1,474</b>
Karasburg	20,336	9,558	287	0
Keetmanshoop	43,257	20,331	610	24
Luderitz	29,353	13,796	414	1162
<b>KARAS</b>	<b>92,946</b>	<b>43,685</b>	<b>1,311</b>	<b>1,186</b>
Andara	31,862	14,975	449	449
Nankudu	48,958	23,010	690	690
Nyangana	41,696	19,597	588	2,352
Rundu	123,536	58,062	1,742	2,264
<b>KAVANGO</b>	<b>246,052</b>	<b>115,644</b>	<b>3,469</b>	<b>5,755</b>
Windhoek	480,138	225,665	6,770	7,450
<b>KHOMAS</b>	<b>480,138</b>	<b>225,665</b>	<b>6,770</b>	<b>7,450</b>
Khorixas	19,019	8,939	268	282
Opuwo	68,187	32,048	961	1010
Outjo	24,182	11,366	341	358
<b>KUNENE</b>	<b>111,388</b>	<b>52,352</b>	<b>1,571</b>	<b>1,650</b>
Eenhana	74,440	34,987	1,050	0
Engela	170,445	80,109	2,403	0
Okongo	29,995	14,098	423	0
<b>OHANGWENA</b>	<b>274,880</b>	<b>129,194</b>	<b>3,876</b>	<b>-</b>
Gobabis	86,709	40,753	1223	1223
<b>OMAHEKE</b>	<b>86,709</b>	<b>40,753</b>	<b>1,223</b>	<b>1,223</b>
Okahao	15,095	7,095	213	0
Oshikuku	105,468	49,570	1,487	0
Outapi	75,016	35,258	1,058	1,163
Tsandi	38,007	17,863	536	536
<b>OMUSATI</b>	<b>233,586</b>	<b>109,785</b>	<b>3,294</b>	<b>1,699</b>
Oshakati	211,681	99,490	2,985	5,969

Grootfontein	45,687	21,473	644	644
Okahandja	32,634	15,338	460	510
Okakarara	26,107	12,270	368	410
Otjiwarongo	58,741	27,608	828	826
<b>OTJOZONDJUPA</b>	<b>163,169</b>	<b>76,689</b>	<b>2,301</b>	<b>2,390</b>
Katima Mulilo	105,706	49,682	1490	1490
<b>ZAMBEZI</b>	<b>105,706</b>	<b>49,682</b>	<b>1,490</b>	<b>1,490</b>
<b>NAMIBIA</b>	<b>2,513,487</b>	<b>1,181,339</b>	<b>35,440</b>	<b>37,669</b>

Actual No. of Doses Needed	No. of teams for Fixed strategy	No. of teams for Outreach Strategy	No. of teams for mobile strategy	Total No. of teams ( F,O,M ) strategy
322	1	2	1	4
1,182	2	1	2	5
322	5	5	1	11
1,336	2	2	0	4
3,161	10	10	4	24
188	1	1	1	3
672	5	10	1	16
614	8	10	1	19
1,474	14	21	3	38
315	18	10	1	29
671	8	0	0	8
455	4	2	0	6
1,442	30	12	1	43
494	18	10	1	29
759	5	2	1	8
647	18	10	1	29
1,916	9	3	1	13
3,816	50	25	4	79
7,447	6	0	1	7
7,447	6	0	1	7
295	6	5	2	13
1,058	1	3	2	6
375	1	1	1	3
1,728	8	9	5	22
1,155	18	10	1	29
2,644	10	10	1	21
465	5	10	1	16
4,263	33	30	3	66
1,345	7	4	1	12
1,345	7	4	1	12
234	2	1	1	4
1,636	2	0	2	4
1,163	9		0	2
589	2	1	1	4
3,623	15	2	4	14
3,283	18	10	1	29
3,283	18	10	1	29
1,277	6	0	1	7
1,386	3	2	1	6
569	2	0	1	3
3,232	11	2	3	16

709	2	1	2	5
506	4	1	1	6
405	6	2	1	9
911	7	3	3	13
2531	19	7	7	33
1640	4	1	1	6
1,640	4	1	1	6
<b>38,984</b>	<b>225</b>	<b>133</b>	<b>38</b>	<b>389</b>

