Republic of Namibia

Ministry of Health and Social Services

# INFECTION PREVENTION AND CONTROL ACTION PLAN

## 2023/2024 – 2026/2027


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October 2023

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The Ministry of Health and Social Services (MoHSS) would like to acknowledge that this Infection Prevention and Control (IPC) Action Plan was developed through a consultative effort. The MoHSS is grateful to all the stakeholders who contributed their time, expertise, and feedback to develop this plan. Through stakeholder input, the MoHSS has been able to create a comprehensive and effective plan for preventing the spread of infection in our healthcare setting.

The Ministry wishes to express its sincere appreciation to the following

The IPC task team for their tireless efforts in compiling the IPC Action Plan

MoHSS healthcare providers at the facility, district, regional, and national levels

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Health care providers from the private sector

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For the full list of contributors and their respective contributions, please see Appendix 3.

# CONTENTS

# FOREWORD

The Namibian Infection Prevention and Control (IPC) Action Plan was developed in collaboration with key stakeholders including healthcare workers and partners in health. The main aim of the IPC Action plan is to have a healthcare system that is free from healthcare-associated infections (HAIs) and other infections through well-coordinated IPC practices that promote safety for patients, healthcare personnel, and the community.

HAIs are one of the most common adverse events in care delivery and represent a significant public health issue, affecting morbidity, mortality, and quality of life. It is estimated that at any given time, up to 7% of patients in industrialised countries and 10% in developing countries will acquire at least one HAI. A large percentage of HAIs are preventable through effective IPC measures.

The United Nations Sustainable Development Goals (SDGs) highlighted the importance of IPC as a contributor to safe, effective, high-quality health service delivery. Effective IPC measures are a cornerstone in combating threats posed by epidemics, pandemics, and antimicrobial resistance.

The IPC Action Plan sets out the key strategies and activities for implementation that will ultimately reduce HAIs and improve the quality of healthcare services. Some of the strategies include strengthening the IPC programme; using updated national IPC guiding documents; focusing on IPC education and training, improving HAI surveillance; and monitoring and evaluation of IPC activities.

Although the IPC Action Plan is presented as a stand-alone document to provide details on the proposed activities, it is aligned with the National Quality Management Policy's strategic objective of improving patient and healthcare worker safety through strengthening IPC practices, as one of its intermediate objectives. Key aspects of the IPC Action Plan will thus directly feed into broader health system planning processes, including the implementation of quality standards at healthcare facilities. This will ensure its coherent integration, avoiding verticalisation when improving the quality of health services.

The MoHSS wishes to acknowledge, with thanks, the support of the World Health Organization (WHO) and all other partners for providing technical and financial assistance for the development of the IPC Action Plan.

The MoHSS takes this opportunity to request that all health sector stakeholders embrace this IPC Action Plan and contribute to its implementation to reduce HAIs, thereby ensuring the safety of our Namibian healthcare services.

BEN NANGOMBE
EXECUTIVE DIRECTOR

## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AMR | Anti-Microbial Resistance |
| CLABSI | Central Line-associated Bloodstream Infection |
| CAUTI | Catheter-related Urinary Tract Infections |
| CDC | Centers for Disease Control and Prevention |
| CMO | Chief Medical Officer |
| COVID-19 | Coronavirus Disease |
| CPD | Continuing Professional Development |
| CSSD | Central Sterile Services Department |
| DHIS | District Health Information System |
| ECHO | Extension for Community Healthcare Outcomes |
| HAI | Healthcare Associated Infection |
| HCW | Healthcare Worker |
| HIS | Health Information Systems |
| HIV | Human Immunodeficiency Virus |
| HPCNA | Health Professions Council of Namibia |
| IHR | International Health Regulations |
| IPC | Infection Prevention and Control |
| IPCAT | Infection Prevention and Control Assessment Tool |
| ICUs | Intensive Care Units |
| JEE | Joint External Evaluation |
| KPIs | Key Performance Indicators |
| LMICs | Low and Middle Income Countries |
| MDRO | Multi-drug resistant organisms |
| MLIREC | Ministry of Labour, Industrial Relations and Employment Creation |
| MMS | Multi-Modal Strategy |
| MoHSS | Ministry of Health and Social Services |
| M&E | Monitoring and evaluation |
| NAAP | National Anti-Microbial Resistance Action Plan |
| NAPHS | National Action Plan for Health Security |
| NAD | Namibia Dollar |
| NIP | Namibia Institute of Pathology |
| NQPS | National Quality Policy and Strategy |
| NTLP | National Tuberculosis and Leprosy Programme |
| OHS | Occupational Health Services |

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|---|---|
| OECD | Organisation for Economic Cooperation and Development |
| OT | Operation theatre |
| PEP | Post Exposure Prophylaxis |
| PPE | Personal protective equipment |
| PPP | Public-private partnership |
| QAD | Quality Assurance Division |
| SARS-CoV-2 | Severe Acute Respiratory Syndrome Coronavirus type 2 |
| SADC | Southern Africa Development Community |
| SDGs | Sustainable Development Goals |
| SMO | Senior Medical Officer |
| SRN | Senior Registered Nurse |
| SSI | Surgical site infection |
| SOP | Standard operating procedures |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| TOR | Terms of reference |
| TOT | Trainer of Trainers |
| TrACSS | Tripartite AMR Country Self-Assessment Survey |
| TB | Tuberculosis |
| TWG | Technical Working Group |
| UCSF | University of California San Francisco |
| UHC | Universal Health Coverage |
| UNAM | University of Namibia |
| UNICEF | United Nations Children's Fund |
| URC | University Research Co., LLC |
| VAP | Ventilator-associated pneumonia |
| WASH | Water, sanitation and hygiene |
| WHO | World Health Organization |
| WHO/AFRO | World Health Organization Regional Office For Africa |

## GLOSSARY OF CONCEPTS, TERMS, AND JARGONS

**Antimicrobial resistance (AMR):** Antimicrobial resistance occurs when microorganisms such as bacteria, viruses, fungi and parasites change in ways that render the medications used to cure the infections they cause, ineffective. When the microorganisms become resistant to most antimicrobials they are often referred to as "superbugs".

Reference: https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance

**Healthcare facility:** Any place where people receive healthcare. For example, hospitals, primary healthcare centres, isolation camps, burn patient units, feeding centres, ambulatory care, and others.

**Healthcare worker:** All healthcare professionals primarily engaged in improving health by providing preventative, curative, promotional or rehabilitative healthcare services; a paid or unpaid person.

**Healthcare associated infections:** An infection occurring in a patient during the process of care in a hospital or other health care facility, which was not present or incubating at the time of admission. HAIs may also appear after discharge. They represent the most frequent adverse event associated with patient care.

**Infection:** The presence of microorganisms in or on the body with clinical signs of infection (for example, fever, lesions, wound drainage) either locally or systemically.

**IPC focal point:** A designated individual or group responsible for ensuring that IPC policies and procedures are in place and implemented at a healthcare facility or organisation. The IPC focal point is responsible for promoting adherence to IPC practices, identifying and responding to IPC-related issues, and providing education and training to healthcare workers regarding IPC.

**IPC minimum requirements:** IPC standards that should be in place at national and facility levels to provide minimum protection and safety to patients - HCWs and visitors to sanitise, based on the WHO core components for IPC programmes.

**IPC professional/practitioner:** Trained healthcare professional - in certified postgraduate IPC course/nationally recognised course.

**Multidrug-resistant organism (MDRO):** A microorganism, predominantly bacteria, that is resistant to one or more classes of antimicrobial agents commonly used for treatment. Some MDROs are resistant to nearly all available antimicrobial agents, making treatment options extremely limited, and sometimes even non-existent.

**Multimodal strategy:** A multimodal strategy for IPC is an evidence-based approach involving the implementation of multiple interventions and/or actions to prevent healthcare-associated infections. This approach involves a combination of administrative, environmental and personal protective measures, as well as education through training programmes for healthcare workers. The aim is to improve patient safety and reduce the risk of healthcare-associated infections through the use of multiple interventions.

**Personal protective equipment (PPE):** Specialised clothing and/or equipment worn to protect healthcare workers or any other person/s from infection. These usually consist of items such as: gloves, masks and gowns. In cases of blood or airborne infections, these will include face protection, goggles or face shield/mask, gloves, gown or coverall, head cover and rubber boots.

**Standard operating procedure (SOP):** Set of step-by-step instructions compiled by an organisation to assist workers in carrying out routine operations in the most effective manner.

**Standard precautions:** A set of activities designed to prevent the transmission of organisms between patients/staff for the prevention of healthcare-associated infections. These must be applied to all patients who require healthcare, by all health workers in all health-related settings. They include - hand hygiene; use of personal protective equipment; safe handling and disposal of waste and sharps; safe handling and management of clean and used linen; environmental cleansing; and decontamination of equipment.

**Transmission-based precautions:** Additional measures focused on the particular mode of transmission of the micro-organism is always used in addition to standard precautions. They are grouped into categories according to the route of transmission of the infectious agent. Transmission-based precautions should be applied when caring for patients with known infections, patients who are colonised with an infectious organism, and asymptomatic patients who are suspected of/under investigation for colonisation of an infectious micro-organism.

# EXECUTIVE SUMMARY

Namibia is committed to providing high-quality healthcare services to its citizens. However, HAIs continue to pose a significant challenge in the country.

The COVID-19 pandemic highlighted the critical need for effective IPC strategies to prevent the spread of the virus, to protect patients, healthcare workers and the community. It furthermore emphasised the critical necessity to maintain essential healthcare services and improve overall public health outcomes.

The IPC Action Plan was subsequently developed to provide a comprehensive and coordinated approach to prevent and control HAIs in Namibia. The development of the IPC Plan was informed by the WHO's IPC assessment tool (IPCAT) to score the country, which is based on the minimum requirements for IPC programmes at the national level as well as the strengths, weaknesses, opportunities and threats (SWOT) analysis conducted during the stakeholders meeting.

***The key challenges identified include:***

- Limited resources and infrastructure to support the implementation of IPC activities
- Inadequate IPC education and training for healthcare workers
- Limited access to laboratory facilities and diagnostic tests
- Inadequate surveillance and reporting systems for HAIs
- Limited public awareness and understanding of IPC practices.
-

***The IPC action plan therefore aims to:***

- Strengthen the IPC programme
- Implement evidence-based IPC interventions in all healthcare settings
- Enhance IPC education and training for healthcare workers
- Improve surveillance, monitoring and reporting of HAIs
- Strengthen monitoring and evaluation (M&E) of IPC activities

The IPC action plan provides a framework for the prevention and control of HAIs in Namibia. The successful implementation of the plan requires sustained effort to overcome the challenges and build the necessary capacity and infrastructure. This will require commitment and cooperation from all stakeholders, including healthcare workers, policymakers and the public.

It is essential to prioritise IPC activities and invest in the necessary interventions and training to ensure the long-term sustainability of the programme. By working collaboratively and proactively, Namibia can achieve its vision of a safe and effective healthcare system that provides high-quality healthcare services to all its citizens.

## BACKGROUND

Infectious diseases are a global public health concern, and IPC strategies are critical to addressing this burden. The WHO estimates that HAIs affect hundreds of millions of people globally each year, with an estimated 7-10% of patients in high-income countries and 25% of patients in low- and middle-income countries (LMICs) acquiring at least one HAI during their hospital stay.

In LMICs, HAIs rates are often higher due to several factors, including inadequate resources, poor infrastructure, and limited access to IPC measures. A systematic review of studies on the burden of HAIs in LMICs found that the overall prevalence of HAIs was 15.5%, with rates ranging from 2.2% to 57.6% depending on the type of infection and the country studied. The highest rates were found in intensive care units (ICUs) and surgical wards. In addition to the human cost of HAIs, there is also a significant economic burden. A study in LMICs estimated that the annual cost of HAIs was between US$ 4.5 billion and US$ 5.7 billion, with the majority of costs attributed to prolonged hospital stays and increased use of antibiotics.

Globally, there are various initiatives and programmes that aim to reduce the burden of HAIs and improve IPC measures in healthcare facilities. For example, the WHO has developed guidelines and tools for IPC, and the Global Health Security Agenda includes IPC as a key component of its efforts to prevent, detect and respond to infectious disease threats.

In the Southern African Development Community (SADC) region where Namibia is located, infectious diseases remain a significant public health challenge. According to the SADC Regional Indicative Strategic Development Plan, communicable diseases, including HIV/AIDS, TB, and malaria, account for a significant proportion of morbidity and mortality in the region. Moreover, the region is vulnerable to emerging infectious diseases such as haemorrhagic fevers, cholera, hepatitis E and COVID-19, which have the potential to cause significant health and economic impacts.

The Namibian healthcare system consists of public and private health facilities, with the public sector being the primary provider of healthcare services. There are significant disparities in access to healthcare services, especially in rural areas, where access to adequate healthcare services and resources is limited. This situation increases the risk of infectious disease transmission and exacerbates the burden of disease in such areas.

Efforts by MoHSS to improve IPC in the health sector dates back to 2003, when the Quality Assurance Division (QAD) was established and mandated to ensure the achievement of acceptable levels of quality in healthcare services. This was done through the development of a continuous mechanism for setting standards, measuring performance and improving the quality of healthcare services. IPC activities were since then integrated under the QAD.

In 2004, the MoHSS with the support of University Research Co., LLC (URC) initiated a project to improve medical injection safety in Namibia, which spanned for a period of seven years (up to 2011). The project aimed to reduce the transmission of HIV and other blood-borne pathogens among patients and providers during delivery of medical injections. Some of these achievements included -

- Development and operationalisation of policy documents, such as the National IPC Guidelines (2010 1st Edition), Post Exposure Prophylaxis (PEP) guidelines and the National Waste Management Policy and Guidelines of 2010
- The average number of injections prescribed per patient declined from 1.42 per patient visit at baseline to less than 0.5 in 2009
- By the end of the project, the re-use of syringes or needles had stopped at all facilities
- Use of safe sharp containers rose from 2% of 32 hospitals at baseline to 95% of 167 reporting facilities in 2009
- In 2011, the MoHSS developed a generic IPC training curriculum for healthcare workers to capacitate them with the necessary knowledge and skills to implement the recommended IPC practices. The MoHSS continued to

strengthen the IPC activities through the revision of the national IPC guidelines in 2015 and developing other supporting documents such as the Central Sterile Services Department (CSSD) guidelines, Operation Theatre (OT) manual, and Phlebotomy, Blood Donation and Parenteral Therapy guidelines. Furthermore, the MoHSS developed the National Action Plan for Antimicrobial Resistance in 2017 and the Quality Healthcare Standards in 2022, where IPC is one of the key service elements.

## *2.1 IPC integration and Coordination*

In 2017, the MoHSS employed a full time National IPC practitioner to coordinate the overall IPC activities within the QAD. Whereas there have been remarkable achievements with the IPC programme, there have also been significant challenges in implementing IPC strategies, some of which include -

- ***Limited resources:*** The healthcare system in Namibia faces significant resource constraints, including a shortage of healthcare workers, inadequate infrastructure, and limited financial resources. These limitations compromise the effectiveness of IPC measures and increase the risk of infectious disease transmission.
- ***Lack of awareness:*** Many people in Namibia are not aware of the importance of IPC measures in preventing and controlling infectious diseases. There is therefore a need for increased public awareness and education campaigns to promote the adoption of best practices in IPC.
- ***Limited research:*** There is a lack of research on the prevalence and burden of infectious diseases in Namibia, which hinders the development of evidence-based IPC strategies. There is thus a need for increased research to generate data on the epidemiology and impact of infectious diseases in Namibia.
- ***Weak Health Information System (HIS):*** There is a need to strengthen the HIS to facilitate the collection, analysis and dissemination of data regarding infectious diseases. A robust HIS is essential for monitoring disease trends, identifying outbreaks, and evaluating the impact of IPC interventions.
- ***Climate change:*** Climate change is expected to increase the risk of infectious diseases in Namibia, particularly vector-borne diseases such as malaria. This situation underscores the need for a proactive and integrated approach to IPC that considers the potential impacts of climate change.

In light of these challenges, there was a need of a comprehensive, evidence-based IPC Action Plan that prioritises interventions that address the most significant drivers of infectious diseases, promotes equity in access to healthcare services and builds capacity in the healthcare system to prevent and control infectious diseases.

The development of the IPC Action Plan is in line with the National Quality Management Policy and Strategic Plan and also aligns with the Quality Standards for Healthcare Services in Namibia. The IPC Action Plan will provide a framework for addressing the prevention and control of infectious diseases in healthcare settings and beyond.

The action plan will bring together various stakeholders, including healthcare workers, healthcare facilities, line ministries, government agencies, professional associations, academia, non-governmental organisations, and partners to strengthen the current IPC strategies, policies and guidelines. The IPC Action Plan will also help to strengthen the existing IPC policies and guidelines, increase investment in IPC infrastructure, promote best practices, and enhance capacity in the healthcare system to prevent and control infectious diseases and improve the quality of healthcare services in Namibia.

The local Namibian definition of quality of healthcare services as agreed upon by stakeholders during the Namibian Quality Management Policy development is "Health care that is timely, **safe,** respectful, responsive and improves health outcomes in Namibia".

The quality dimension of safety is closely related to IPC, as preventing infections is a critical aspect to ensure safe and high-quality healthcare. IPC measures are designed to prevent the transmission of infectious agents, including bacteria, viruses and fungi - between patients, healthcare workers and visitors.

IPC practices involve a range of activities, including hand hygiene, personal protective equipment (PPE) use, environmental cleaning and disinfection, safe injection practices and proper management of medical waste. These measures are essential for reducing the risk of HAIs, which can cause serious harm to patients and healthcare workers, as well as increase healthcare costs.

To ensure the quality dimension of safety in IPC, healthcare organisations must develop and implement effective IPC policies and procedures which are evidence based, regularly reviewed and updated, and communicated effectively to all staff and stakeholders.

Healthcare organisations should also prioritize the education and training of healthcare workers on IPC practices, as well as providing the necessary resources and equipment to implement these practices effectively. Additionally, healthcare organisations must monitor and measure infection rates, identify areas for improvement, and implement changes to continually improve the quality of care and patient safety.

Strategic objective 3 of the Namibian National Quality Policy and Strategy (NQPS) focuses on; "Improving patient and health-care worker safety" with the Intermediate objective 3.1 looking at "strengthening of IPC standards" of which one of the activities is to "develop a dedicated implementation strategy for IPC with a multi-modal approach". The IPC Action Plan has therefore been developed in alignment with the MoHSS NQPS.

## *3.1 Situation analysis*

The situational analysis provides background on the achievements and main challenges of implementing IPC activities at all levels of care, in relation to the WHO IPC core components. Namibia has made significant progress in improving IPC in healthcare facilities in recent years. However, there are still gaps and challenges that need to be addressed.

A 2018 survey conducted in Namibia found that while the majority of healthcare facilities had IPC policies and procedures in place, there were gaps in the implementation and monitoring of these policies. For example, only 64% of facilities reported having a designated IPC focal person, and only 43% had conducted IPC training for healthcare workers in the previous year.

In Namibia, data on the prevalence and incidence of HAIs is limited. However, a study conducted at a tertiary hospital in Windhoek, found that the prevalence of HAIs was 9.3%, with the highest rates observed in the ICU and surgical wards.

### *3.1.1 Scope of IPC in the Namibian health sector*

**IPC as a tool to combat AMR**

Antimicrobial stewardship programmes are often interlaced with IPC to better optimise the fight against AMR. In 2017, the MoHSS developed a National AMR Action Plan (NAAP), with six key strategic objectives including - surveillance, prevention, antimicrobial use, awareness, collaboration and communication, education and training; and research and development. The strategic objective on prevention ensures reduction in incidences of infection

through effective hygiene, IPC measures, biosecurity and community access to water, sanitation, and hygiene (WASH) facilities and practices. The strategic objective on antimicrobial use focuses on responsible antimicrobial use in humans and animals, therefore limiting the emergence of AMR. The implementation of AMR activities, therefore, is intended to be built around existing systems, policies and programmes.

Since 2017/2018, the MoHSS contributed to the Global Database for the Tripartite AMR Country Self-Assessment Survey (TrACSS), which is aimed at monitoring the country's progress regarding the implementation of the AMR national actions plans.

**IPC as a tool to reinforce other national public health programmes (HIV and Tuberculosis)**

The MoHSS launched the third edition of the National TB IPC guidelines in 2022, aimed at providing guidance on updated recommendations to prevent the transmission of Tuberculosis within healthcare facilities, congregated settings, households and other community settings.

**Achieving global health security goal**

The Joint External Evaluation (JEE) conducted in Namibia in 2016, revealed critical gaps that need to be addressed to ensure the safety of the population from the next major public health event. These results helped guide the development of the Namibian National Action Plan for Health Security (NAPHS), which was launched in 2020. The NAPHS is a roadmap for health security strengthening in the country. NAPHS is based on the One Health approach to prevent, promptly detect and effectively respond to human, animal and environmental public health threats such as Hepatitis E Virus outbreaks and the COVID-19 pandemic. Successful implementation of NAPHS in Namibia will significantly contribute to improved national health security and attainment of health-related SDGs as well as Universal Health Coverage (UHC). IPC is therefore covered under the strategic objective of strengthening AMR.

**IPC as a tool for achieving occupational health and safety in healthcare settings**

The safety of healthcare workers is paramount in the provision of care, and compliance with IPC interventions helps protect patients and caregivers. The National Occupational Safety and Health Policy developed in 2021 by the Ministry of Labour and Industrial Relations and Employment Creation (MLIREC), aims to provide guidance on the development of workplace health promotion programmes to address psychosocial issues, communicable and non-communicable diseases and to enhance positive lifestyles.

The MoHSS is responsible for the statutory control of the implementation and monitoring of the pertinent legislation relating to health issues at the workplace in all sectors. Within the MoHSS, Occupational Health Services (OHS) is a sub-division under the Public and Environmental Health Services Division, which falls under Primary Healthcare Services Directorate. The staff structure makes provision for Chief Medical Officer of Occupational Health, Environmental Health Practitioner and Senior Health Programme Administrator. However, currently the sub-division is understaffed, with only the Chief Medical Officer position currently occupied. Budgetary provisions are made up to directorate level, with no sub-division allocations specified. Specific functions of the OHS sub-division include - registration of approved inspection authorities, investigation of workplace incidents, information dissemination and stakeholder consultations, as well as the development of legal instruments in collaboration with MLIREC and other stakeholders. Furthermore, the subdivision is responsible for coordinating medical examinations for high-risk workforce, administration of occupational diseases notifications, and providing advice to the MLIREC with regards to occupational health matters

### *3.1.2 Findings from the WHO IPC core components assessment tool (IPCAT)*

In July 2022, the WHO IPC core components assessment tool (IPCAT) was used to assess the Namibian IPC programme at national level. The findings from the assessment provided a foundational framework upon which the Namibia IPC Action Plan was developed. The summary findings are presented in this section of the Action Plan. However, the details are attached in Annexure 1.

***i. Core component 1: IPC programmes***

Even though an IPC programme at national level exists with annual work plans, there is no identified, protected and dedicated budget allocated to the IPC programme, according to its planned activities. The national IPC programme is led by a full-time dedicated IPC focal point who has undergone post graduate training in IPC.

***ii. Core component 2: IPC guidelines***

*The following National IPC guiding documents were developed:*

- National Waste Management Policy and Integrated Health Care Waste Management Plan (2010)
- Post-Exposure Prophylaxis Guidelines (2011)
- National IPC Guidelines (2010 and revised version in 2015)
- COVID-19 IPC SOPs (Version 2)
- Management of human remains of a person who died of COVID-19 SOPs
- Operation theatre manual (2015)
- Central sterile service department guidelines (2015)
- Phlebotomy, blood donation and parenteral therapy guidelines (2015)
- National quality standards for healthcare facilities (2022)

Notably, the National IPC guidelines developed in 2015 have not been reviewed. These IPC guidelines were developed according to evidence-based scientific knowledge and were disseminated at facility level.

***iii. Core component 3: IPC education and training***

The national IPC programme provides guidance and recommendations for in-service IPC training at facility level, including content and support for IPC training of health workers. A national IPC curriculum for in-service training of healthcare workers has been developed and is in alignment with the national IPC guidelines.

***iv. Core component 4: HAI surveillance***

A multi-disciplinary Technical Working Group (TWG) for HAI surveillance is not available at national level. There is thus no national strategic plan for HAI surveillance.

***v. Core component 5: Multimodal strategies for implementation of IPC interventions***

Multimodal strategies are not included as the best approach for implementation in IPC guidelines, IPC education and training programmes.

***vi. Core component 6: Monitoring/audit of IPC practices and feedback***

There are National IPC key performance indicators as part of the national dashboard reporting. This includes quarterly reporting on hand hygiene, surgical site infections, and waste management for healthcare facilities in the country.

### *3.1.3 SWOT analysis*

During the stakeholders meeting to draft the IPC action plan, stakeholders were divided into groups to cover the six thematic areas of the IPC action plan which are:

- IPC Programme at national level
- National IPC guidelines
- Education and training

- Surveillance of HAI
- Multimodal strategy
- Monitoring and evaluation (M&E)

A SWOT analysis was undertaken by stakeholders to provide a comprehensive, analysis of IPC programme in Namibia and to compliment the findings of the WHO IPCAT minimum requirement assessment. The findings are presented below describing the strengths, weaknesses, opportunities and threats (SWOT) of each IPC thematic area.

| *1. IPC Programme at national level* | | |
|---|---|---|
| **Internal factors** | **Strengths:**<br>• Funding by the state<br>• IPC national focal person appointed full time<br>• Trained IPC focal points (98% of districts)<br>• Legal Framework by WHO available<br>• Namibian legal framework constituted from international guidance/aligned to international standards<br>• External technical and financial assistance provided<br>• Strong political support and commitment | **Weaknesses:**<br>• No dedicated IPC budget, therefore, no work structure, limited activities<br>• Inadequate IPC staff structure at all levels<br>• Insufficient IPC trained personnel at all levels<br>• Only one dedicated national IPC focal person on full-time<br>• Stakeholder participation in IPC activities not optimal |
| **External factors** | **Opportunities:**<br>• To allocate a dedicated budget for IPC activities<br>• To solicit donor support and funding<br>• Revision of the existing staff establishment | **Threats:**<br>• Donor funding is dwindling<br>• Economic crisis due to SARS-COV-2 pandemic<br>• Limited budget |
| *2. National IPC guidelines* | | |
| **Internal factors** | **Strengths:**<br>• Political buy-in & national support.<br>• National IPC guidelines in place at both national and facility level (National IPC 2015, due for review)<br>• IPC guidelines in alignment with international standards<br>• Local expertise to review guidelines<br>• Other national guideline that supports IPC, e.g., phlebotomy, CSSD, waste management, operational theatre manual | **Weaknesses:**<br>• IPC guidelines not reviewed regularly<br>• Lack of strategy for the implementation of the IPC guidelines<br>• Develop an integrated IPC document for the country (Inclusive of TB, Malaria etc)<br>• No policy or strategy to enable implementation<br>• Guideline not speaking to the infrastructure requirements, e.g., use of handle controlled taps and setting up of benches in waiting areas (need to align the two)<br>• Guidelines not readily accessible (e.g., CSSD) |

| | | |
|---|---|---|
| **External factors** | **Opportunities:**<br>• External financial and technical support (WHO, CDC, UNICEF and others)<br>• Consider developing electronic versions of the NIPC documents | **Threats:**<br>• Budget constraints |
| ***3. Education and training*** | | |
| **Internal factors** | **Strengths:**<br>• There is a knowledgeable IPC focal person to provide in-service training<br>• There are IPC focal points at the facility level<br>• Existing in-service training curriculum<br>• Existing draft curriculum for postgraduate (Welwitchia Health Training Centre).<br>• Existing IPC guidelines<br>• Preservice training of undergraduate in IPC | **Weaknesses:**<br>• A few of the IPC focal persons at the facility level have undergone a formal post graduate IPC training<br>• Lack of consistency in applying the training<br>• Inadequate M&E<br>• No career path and financial reward in IPC (lack of motivation)<br>• IPC is placed under patient safety<br>• Lack of coordination<br>• Inadequate induction of newly appointed IPC focal person<br>• Lack of IPC Association |
| **External factors** | **Opportunities:**<br>• Develop tools that assess the effectiveness of the training on IPC<br>• Utilize the existing national training centre for IPC training<br>• Make use of existing virtual training platform e.g., ECHO (extension for community healthcare outcome)<br>• Establish an independent IPC programme with dedicated budget<br>• To strengthen the coordination of training and education<br>• Ensure that IPC training courses are accredited by HPCNA for CPD points<br>• Strengthen the induction of the IPC programme and utilise the existing Human Resources for Health strategic plan to motivate the education of IPC practitioners<br>• Establish IPC association to advocate for recognition | **Threats:**<br>• Insufficient number of trained IPC practitioners<br>• Inadequate funds for IPC training<br>• Staff turnover |

| *4. Surveillance of HAI* | | |
|---|---|---|
| **Internal Factors** | **Strengths:**<br>• Focal person available in most hospital<br>• A reporting tool (dashboard) for Surgical Site Infections (SSI) surveillance is available<br>• Most of the health facilities have access to the laboratory services which makes it easier to conduct lab surveillance<br>• MoHSS IPC curriculum<br>• Training institutions training health professional are available | **Weaknesses:**<br>• No multi-disciplinary TWG for HAI surveillance at national level<br>• No M&E of SSI surveillance<br>• Data collected on SSI not analysed and disseminated<br>• No surveillance for other HAIs such central line bloodstream infection (CLABSI), catheter-associated urinary tract infections (CAUTI), and ventilator-associated pneumonia (VAP)<br>• Not all regions are reporting<br>• No central reporting system<br>• IPC focal person at regional and district level assigned other duties, making it difficult to implement IPC activities<br>• No national strategic plan for HAI<br>• No training of focal person on HAI surveillance |
| **External factors** | **Opportunities:**<br>• Focal person to start with surveillance<br>• IPC national steering committee to select a multi-disciplinary TWG for HAI surveillance at national level<br>• Training institutions to incorporate IPC training in the curriculum to strengthen surveillance<br>• To add other HAI's to the reporting tool.<br>• Multi-disciplinary TWG to develop a national strategic plan for HAI surveillance | **Threats:**<br>• Lack of IPC trained experts<br>• None of the training institutions offer IPC courses<br>• No central surveillance report system (scatted data) |
| *5. Multimodal Strategy (MMS)* | | |
| **Internal factors** | **Strengths:**<br>• There is an IPC programme | **Weaknesses:**<br>• MMS not included in the implementation of IPC guidelines, education |
| **External factors** | **Opportunities:**<br>• WHO provides guidance on how to include MMS in the implementation of IPC guidelines, education | **Threats:**<br>• Financial constraints |

| *6. Monitoring and evaluation* | | |
|---|---|---|
| **Internal factors** | **Strengths:**<br>• There is an IPC Dashboard for monthly data capture and quarterly reporting at national level | **Weaknesses:**<br>• Lack of monitoring for other HAI indicators on the dashboard, as currently there is only for SSI, therefore there is a need to include CLABSI, CAUTI, VAP and others<br>• Lack of training in effective monitoring<br>• Lack of monitoring and evaluation of hand hygiene compliance<br>• Lack of monitoring infrastructure/ involving IPC practitioner in planning<br>• No feedback, no data analysis, no audit, no ownership |
| **External factors** | **Opportunities:**<br>• Expansion of current staff establishment across all levels from national to district levels<br>• Funding of basic training<br>• Opportunities to strengthen training<br>• Integration of IPC activities under one umbrella<br>• Opportunities to include all indicators on dashboard | **Threats:**<br>• Restricted career path<br>• Lack of ownership<br>• Lack of financial support<br>• Lack of integrated data systems<br>• Lack of feedback |

## 4. ALIGNMENT

The IPC Action plan will guide the planning, implementation and M&E of the IPC interventions in the country and is aligned to the following:

1. WHO Global IPC Strategy
2. National quality policy and strategy of the Ministry of Health and Social Services.
3. Namibia primary healthcare and hospital quality standards
4. Namibia's Vision 2030
5. National Health Policy Framework 2010–2020
6. National Development Plan (NDP5) 2017/2018–2021/2022 Desired Outcome 21 (D21)
7. Ministry of Health and Social Services Strategic Direction 2017/2018–2021/2022
8. Public-private partnership (PPP)
9. Harambee Prosperity Plan
10. African Union Agenda 2063
11. United Nations sustainable development goals
12. WHO, World Bank and Organisation for Economic Co-operation and Development (OECD)
13. Centre for Disease Control African Union IPC Legal Framework
14. National Occupational Safety and Health Policy 2021
15. Namibia Antimicrobial Resistance National Action Plan 2017

## 5. GUIDING PRINCIPLES

The following are the guiding principles for the IPC action plan:

### *5.1 Leadership*

Good leadership and political commitment are essential at all health system levels, including the health facility level where the provision of IPC measures and patient safety should be an integral component of care. IPC activities shall be led and coordinated by the designated cadres at all levels of healthcare.

### *5.2 Government stewardship and ownership*

The MoHSS, as the custodian of health in Namibia, will be accountable for the implementation of the action plan. Activities of the action plan will be coordinated by the IPC focal persons under the QAD with the support of relevant stakeholders.

### *5.3 Teamwork*

Engagement, participation and buy-in from multi-sectoral, multi-stakeholder (national and sub-national levels), throughout the institutionalisation and implementation of the IPC action plan is crucial. IPC improvement is best achieved through teamwork. Stakeholders should be engaged in all healthcare initiatives to build consensus and create ownership.

### *5.4 Empowerment of patients and communities*

Patient and community engagement plays a significant role in ensuring improved infection prevention and safety of healthcare services and communities.

### *5.5 Measurement*

IPC plans will be guided by accurate performance measurement results. Measurement will include monitoring a selected core set of indicators in compliance with the national quality standards. The outcomes will be utilised to develop interventions to improve the overall IPC and quality of healthcare.

### *5.6 Training, mentoring and continuous professional development (CPD)*

Ongoing in-service training, mentoring and CPD are essential to ensure the safety of patients, healthcare workers and the community. Training curricula for all categories of healthcare workers must incorporate IPC principles.

# 6. STRATEGIC DIRECTION

## *6.1 Vision*

"Ensuring safety and well-being for all".

## *6.2 Mission*

To mitigate the occurrence of HAIs through the diligent implementation of evidence-based IPC practices.

## *6.3 Goal*

To improve patient safety, reduce the incidence of HAIs, and protect the health of all healthcare workers as well as the general public.

## *6.4 Strategic objectives and interventions*

The following are the strategic objectives:

1. Ensure an active IPC programme
2. Implement evidence-based IPC interventions in all healthcare settings
3. Enhance IPC education and training for healthcare workers
4. Improve surveillance, monitoring and reporting of HAIs
5. Strengthen M&E of IPC activities

### *6.4.1 Strategic objective 1. Ensure an active IPC programme*

National IPC programmes with clearly defined objectives, functions and activities should be established for the purpose of preventing HAIs, promoting patient and healthcare worker safety, and combating AMR through IPC good practices. National IPC programmes should be linked to other relevant national programmes and professional organisations to ensure consistency.

**Key intervention 1:** To strengthen the national IPC programme

**Activities:**

- Appoint two IPC Specialists at national level to plan and coordinate the National IPC programme with clearly defined responsibilities
- Appoint dedicated IPC focal points at hospital level with clearly defined responsibilities as per WHO and MoHSS national quality standards recommendations i.e., one IPC focal person per 250 bed capacity
- Ensure a dedicated budget for implementing IPC activities
- Establish IPC subdivision under the proposed Quality Management Directorate

**Key intervention 2:** To ensure strong enabling environment for IPC

**Activities:**

- Ensure adequate staffing levels and workload according to international and national standards, both for IPC

practitioners and other healthcare workers.

Implement and maintain appropriate, and sustainable infrastructure that supports proper implementation of IPC, including:

- ⇨ Ensuring adequate bed occupancy
- ⇨ Isolation in single rooms, where appropriate
- ⇨ Ventilation systems
- ⇨ Waste management
- ⇨ Decontamination and sterilisation,
- ⇨ WASH services and activities
- ⇨ IPC commodities and supplies

- Ensure IPC involvement in the procurement and distribution of equipment and supplies, including construction and renovation of health facilities

**Key intervention 3:** Enhanced stakeholders' participation in IPC activities.

**Activities:**

- Ensure active National IPC steering committee with; updated terms of references (TORs) that includes all relevant stakeholders
- Stakeholders to identify areas of support within the IPC action plan

**Key intervention 4:** Strengthen IPC preparedness, readiness, and response to public health emergencies

**Activities:**

- To develop/review and update national preparedness and response plans/SOP as required
- Ensuring surge capacity including - rapidly scalable infrastructural capacity, efficient supply-chain and logistics, and sufficient trained human resources
- Ensure collaboration in active surveillance systems for the rapid detection of emerging pathogens including AMR, epidemic- and pandemic-prone pathogens
- Develop relevant SOPs for healthcare workers' protection in emergencies
- Ensure effective messaging and communication in collaboration with relevant response pillars

### *6.4.2 Strategic objective 2. Implement evidence-based IPC interventions*

Evidence-based guidelines should be developed and implemented for the purpose of reducing HAI and AMR. Education, training and monitoring of adherence to guideline recommendations should be undertaken to achieve successful implementation.

**Key intervention 1:** Review and update national IPC related guidelines

**Activities:**

- Review the national IPC, CSSD, OT, Phlebotomy, Integrated Waste Management Policy and guidelines
- Ensure dissemination, implementation and monitoring of national IPC related guidelines
- Develop a national IPC legal framework

- Develop hospital level SOPs/ policies aligned with the national IPC related guidelines and the MoHSS national quality standards

**Key intervention 2:** Ensure implementation of IPC quality standards

**Activities:**

- Orient healthcare workers on the IPC as per the national quality standards
- Assess health facilities on compliance to IPC as per national quality standards
- Support healthcare facilities to address gaps, through quality improvement initiatives to ensure compliance to quality standards

### *6.4.3 Strategic objective 3. Enhance IPC education and training*

The national IPC programme should support the education and training of the health workforce as one of its core functions. When coupled with national IPC guidelines, training contributes to a reduction in HAI and AMR, and a more skilled health workforce. Supporting and facilitating training at all levels should be considered as an important indicator for assessing the impact of IPC programmes. In collaboration with local academic institutions, the national IPC programme should develop IPC pre- and post-graduate, as well as in-service training curricula. All healthcare workers should commit and be supported to implement IPC practices as part of their daily work.

**Key intervention 1:** Capacity building of healthcare workers

**Activities:**

- Revise and update the IPC in-service training curriculum and align it to the WHO IPC minimum requirements
- Conduct in-service training on IPC standards and practices
- Develop approaches and resources for the education and orientation of patients, families and communities on relevant IPC measures

**Key intervention 2:** Promote undergraduate and postgraduate education in IPC

**Activities:**

- Conduct consultative meetings with stakeholders to integrate IPC into relevant undergraduate and postgraduate programmes/courses
- Advocate for a recognised career pathway for IPC professionals and advocate for job opportunities
- Advocate for funding to support postgraduate education in IPC

### *6.4.4 Strategic objective 4. Improve surveillance, monitoring, and reporting of HAIs*

HAI surveillance is the first step to assess the magnitude of the burden of disease by the systematic collection of data in targeted wards/units. Healthcare facilities should regularly conduct HAI surveillance.

**Key intervention 1:** Strengthen surveillance of HAIs

**Activities:**

- Establish a multi-disciplinary TWG for HAI surveillance at national level to -
  - ➟ Revise the list of HAIs to be monitored

- Develop HAIs case definitions and revise data collection tools
- Incorporate HAIs indicators in the national district health information system (DHIS)
- Develop processes for analysing and reporting of HAIs data
- Develop processes for evaluating the quality of the data
- Conduct training on HAIs surveillance for IPC focal points
- Strengthen collaboration with the microbiology laboratory for hospital-based and national level HAI and AMR surveillance
- Ensure utilisation of surveillance data for decision-making
- Promote rationale use of antimicrobial use

### *6.4.5 Strategic objective 5. Strengthen M&E of IPC programme*

IPC programme M&E is critical for ensuring that healthcare facilities are providing safe and effective care to their patients. M&E assists in identifying gaps and areas for improvement, measures the effectiveness of IPC interventions, ensures compliance with standards and regulations, promotes accountability and improved patient outcomes.

**Key intervention 1:** Strengthen the M&E component of IPC activities implemented

**Activities:**

- Develop M&E framework for IPC programme
- Review key performance indicators (KPIs) for IPC
- Conduct national quality standards assessment at health facilities level and utilise findings for improvement initiatives
- Conduct regular M&E for WASH services and structures through healthcare facilities audits
- Monitor adherence to IPC guideline implementation

**Key intervention 2:** Strengthen the reporting of quarterly IPC KPIs

**Activities:**

Regular review and update of the national IPC KPI reporting tool

Train IPC focal points on KPI reporting tool

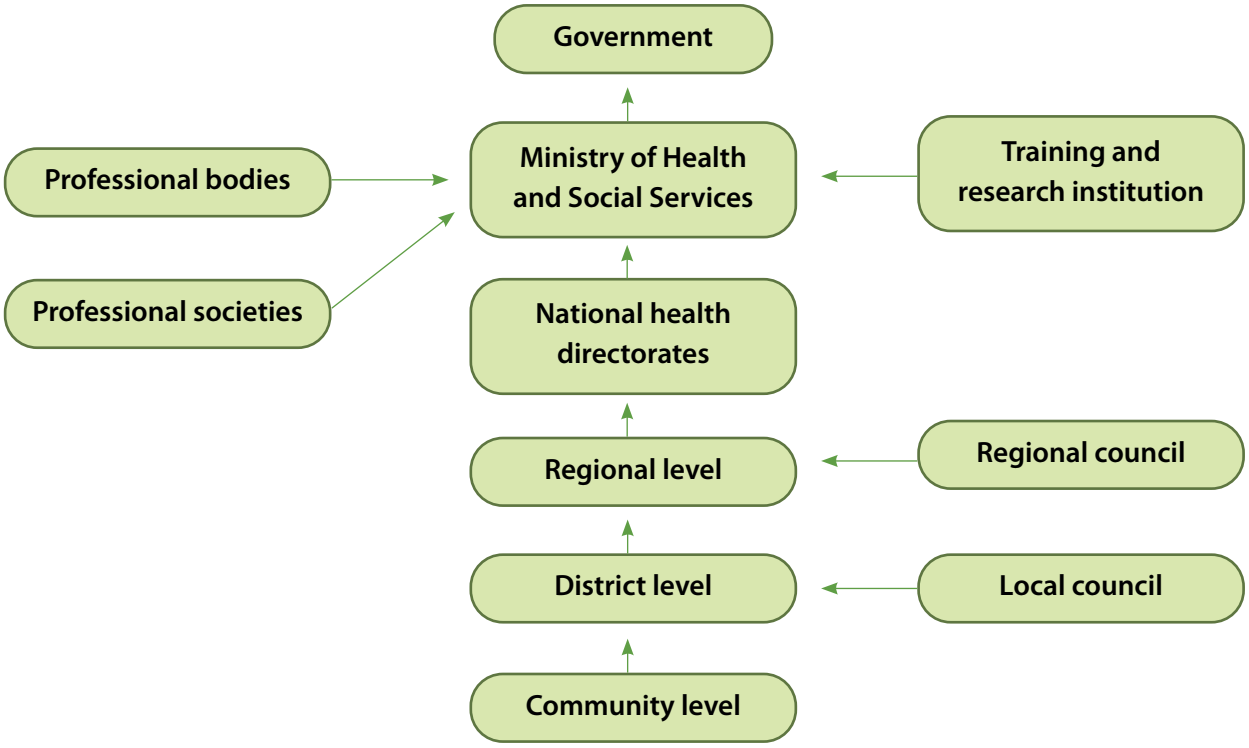
Provide regular feedback to the regional and district teams on the IPC reports

# 7. IMPLEMENTATION ARRANGEMENTS

## *7.1 Institutional arrangements*

The MoHSS shall be the central coordination point for the IPC action plan, which will be institutionalised and incorporated into the structures and functions of the healthcare system so that it is not implemented in isolation. The key aspects of the action plan will be integrated into the next version of the national health policy framework and MoHSS strategic direction.

The key stakeholders responsible for implementing the action plan are shown in the schematic diagram below:




## *7.2 Legal and regulatory arrangements*

The following legislation and regulations will guide the implementation of the IPC action plan:

- Public and Environmental Health Act 1 (2015)
- General Health Regulation GN121 (1969)
- Hospitals and Health Facilities Act 36 (1994)
- Medical and Dental Act 10 (2004)
- Nursing Amendment Act 10 (2018)
- Pharmacy Act 9 (2004)
- Allied Health Professions Act 7 (2004)
- Social Work and Psychology Act 6 (2004)
- Blood Transfusion Act of 1962
- Tobacco Products Control Act 1 (2010)
- Mental Health Act 18 (1973)
- National Disability Council Act 26 (2004)

- Namibia Institute of Pathology Act 15 (1999)
- Medicines and Related Substances Control Act 13 (2003) with amendments (2008)
- Atomic Energy and Radiation Protection Act 5 (2005)
- International Health Regulations (IHR) 2005, ratified 2007
- Labour Act 11 (2007)

## *7.3 Resource mobilisation*

The MoHSS, development partners and stakeholders will be required to mobilise the necessary human, material, and financial resources for the implementation of the IPC action plan. Public-private partnerships (PPPs) should be encouraged.

### *7.3.1 Human resources*

A skilled, motivated and adequately supported health workforce is critical in the implementation of the IPC action plan. The MoHSS should strive towards an appropriate and responsive staff establishment for the programme. Each facility should have a dedicated IPC focal person as per the Namibian quality standards for healthcare facilities. The healthcare workforce should be trained on IPC.

### *7.3.2 Logistics and supplies management*

With funding from the Government and relevant stakeholders, basic commodities and supplies required for the provision of healthcare services that will support the implementation of the action plan should be procured and maintained at acceptable levels.

### *7.3.3 Financial resources*

Significant efforts will be required to mobilise financial resources to support the implementation of the IPC action plan. The government and relevant stakeholders shall work out the budgets needed to cover the costs of all planned activities in the action plan including human resources, capacity building and commodities and supplies.

### *7.3.4 Infrastructure refurbishment/development*

Existing health facilities including infectious diseases isolation facilities should be renovated and maintained in good condition, and where necessary facilities should be upgraded or constructed to respond to the healthcare needs of the Namibian population and the IPC standards in the country.

### *7.3.5 Information management*

IPC data collection systems should be strengthened to ensure data quality and accessibility to support IPC interventions.

### *7.3.6 Time management*

Effective implementation of the National IPC programme requires adequate time. All key stakeholders should dedicate appropriate time to ensure that relevant steering committees and TWG meetings at all levels of healthcare are held regularly and effectively coordinated.

# 8. MONITORING AND EVALUATION FRAMEWORK AND REPORTING

An information system to support monitoring of IPC activities is necessary for the measurement, performance feedback, and reporting. Reliable IPC metrics should be embedded in the health information infrastructures, and in the spirit of transparency, information must be available to all relevant actors, including patients, providers, regulators and policy-makers.

Performance data will be used to inform the design of improvement activities and expansion efforts as required.

## *8.1 Key performance indicators*

The following core set of indicators are proposed to monitor implementation of IPC action plan as indicated in the table below:

| ***Strategic objective 1. Ensure an active IPC programme*** | | |
|---|---|---|
| **Interventions** | **Activities** | **Key performance indicators** |
| **Key intervention 1:**<br>**To strengthen the national IPC programme** | 1.1.1 Appoint two IPC specialists at national level to plan and coordinate the national IPC programme with clearly defined responsibilities | % of IPC specialists appointed at national level |
| | 1.1.2 Appoint dedicated IPC focal points at hospital level with clearly defined responsibilities as per National Quality Standards (one IPC focal person per 250 bed capacity) | Proportion of hospitals with IPC focal persons as per the standard recommendations |
| | 1.1.3 Ensure a dedicated budget for implementing IPC activities | Availability of IPC budget |
| | 1.1.4 Establish IPC subdivision under the proposed Quality Management Directorate | Availability of IPC subdivision |
| **Key intervention 2:**<br>**To ensure a strong enabling environment for IPC** | 1.2.1 Ensure adequate staffing levels and workload according to international and national standards, both for IPC practitioners and other health care workers | Workforce density per category of healthcare worker |
| | 1.2.2 Implement and maintain appropriate, and sustainable infrastructure that supports proper implementation of IPC, including -<br>• Ensuring adequate bed occupancy<br>• Isolation in single rooms, where appropriate<br>• Ventilation systems<br>• Waste management<br>• Decontamination and sterilisation<br>• WASH services and activities<br>• IPC commodities and supplies | • Proportion of facilities with adequate bed occupancy rates<br>• Proportion of facilities with single room isolation space<br>• Proportion of facilities with adequate ventilation systems<br>• Proportion of facilities with functional incinerators.<br>• Proportion of hospitals with functional autoclaves<br>• Proportion of hospitals with adequate WASH facilities<br>• % stock of IPC commodities and supplies |

| | | |
|---|---|---|
| | 1.2.3 Ensure active National IPC Steering Committee with; updated TORs that include all relevant stakeholders | • % of IPC Steering Committee meetings held as planned |
| | 1.2.4 Ensure IPC involvement in the procurement and distribution of equipment and supplies, including construction and renovation of health facilities | • % of procurement meetings for IPC items where IPC was involved<br>• % constructed and renovated health facilities where IPC was involved |
| **Key intervention 3:**<br>**Enhanced stakeholders' participation in IPC activities.** | 1.3.1 Stakeholders to identify areas of support within the IPC action plan | • % of activities supported by stakeholders |
| **Key intervention 4:**<br>**Strengthen IPC preparedness, readiness, and response to public health emergencies** | 1.4.1 To develop/review and update national preparedness and response plans/SOP as required | • Availability of updated national preparedness and response plans/SOP |
| | 1.4.2 Ensuring surge capacity including - rapidly improved infrastructural capacity, efficient supply chain and logistics, and sufficiently trained human resources | • Response time to scale up infrastructure, supply chain and human resources |
| | 1.4.3 Ensure collaboration in active surveillance systems for rapid detection of emerging pathogens including AMR, epidemic- and pandemic-prone pathogens | • Number of collaborative meetings held |
| | 1.4.4 Develop relevant SOPs for healthcare worker protection in emergencies | • Availability of relevant SOPs for protecting healthcare workers' in emergencies |
| | 1.4.5 Ensure effective messaging and communication in collaboration with relevant response pillars | • Timeliness of information dissemination across response pillars |
| | | |
| ***Strategic objective 2. Implement evidence-based IPC interventions*** | | |
| **Interventions** | **Activities** | **Key performance indicators** |
| **Key intervention 1: Review and update national IPC related guidelines** | 2.1.1 Review the national IPC, CSSD, OT, phlebotomy, integrated waste management policy and guidelines | % of guidelines reviewed according to plan |
| | 2.1.2 Ensure dissemination, implementation and monitoring of national IPC related guidelines | % of guidelines disseminated according to plan |
| | 2.1.3 Develop a national IPC legal framework | • Availability of IPC legal framework |
| | 2.1.4 Develop hospital level SOPs/policies to align with national IPC related guidelines and national quality standards | • Proportion of hospitals with the recommended IPC policies as per standards |

| | | |
|---|---|---|
| **Key intervention 2:**<br>**Ensure implementation of IPC quality standards** | 2.2.1 Orient healthcare workers on the IPC as per national quality standards | • Proportion of healthcare workers oriented on IPC as per the standards |
| | 2.2.2 Assess health facilities on compliance to IPC as per national quality standards | • Proportion of hospitals complying to IPC standards |
| | 2.2.3 Support healthcare facilities to address gaps, through quality improvement initiatives to ensure compliance with quality standards | • Proportion of hospitals with documented quality improvement initiatives to address gaps in IPC |

| ***Strategic objective 3. Enhance IPC education and training*** | | |
|---|---|---|
| **Interventions** | **Activities** | **Performance indicators** |
| **Key intervention 1:**<br>**Capacity building of healthcare workers** | 3.1.1 Revise and update the IPC in-service training curriculum aligned to WHO IPC minimum requirements | • Availability of a revised IPC in-service training curriculum |
| | 3.1.2 Conduct in-service training on IPC standards and practices | • % of IPC focal persons trained as trainer of trainers (TOTs) |
| | 3.1.3 Develop approaches and resources for the education and orientation of patients, families and communities on relevant IPC measures | • Documented evidence of orientation of patients, families and communities |
| **Key intervention 2:**<br>**Promote undergraduate and postgraduate education in IPC** | 3.2.1 Conduct consultative meetings with stakeholders to integrate IPC into relevant undergraduate and postgraduate programmes (courses) | • % of undergraduate and postgraduate programmes where IPC is integrated |
| | 3.2.2 Advocate for a recognised career pathway for IPC professionals and advocate for job opportunities. | • Availability of a career pathway for IPC professionals |
| | 3.2.3 Advocate for funding to support postgraduate education in IPC | • Proportion of IPC focal persons supported to pursue postgraduate education in IPC |

| ***Strategic Objective 4. Improve surveillance of HAI*** | | |
|---|---|---|
| **Interventions** | **Activities** | **Performance indicators** |
| **Key intervention 1:**<br>**Strengthen surveillance of HAIs** | 4.1.1 Establish a multidisciplinary TWG for HAI surveillance at national level to -<br>• Revise the list of HAIs to be monitored<br>• Develop HAIs case definitions and revise data collection tools<br>• Inclusion of HAI indicators in national DHIS<br>• Develop processes for analysing and reporting of HAI data<br>• Develop processes for evaluating the quality of the data | % of multi-disciplinary TWG for HAI surveillance meetings held according to plan |
| | 4.1.2 Conduct training on HAI surveillance for IPC focal points | • Proportion of IPC focal points trained on HAI surveillance |

| | | |
|---|---|---|
| | 4.1.3 Strengthen collaboration with the microbiology laboratory for hospital-based and national level HAI and AMR surveillance | • Documented evidence of collaboration |
| | 4.1.4 Ensure utilisation of surveillance data for decision making | • Documented evidence of decisions informed by surveillance data: |
| | 4.1.5 Promote rationale for use of antimicrobials | • Antibiotic utilisation rate |
| | | |
| ***Strategic objective 5. Strengthen M&E of IPC programme*** | | |
| **Interventions** | **Activities** | **Performance indicators** |
| **Key intervention 1: Strengthen the M&E component of IPC activities implemented** | 5.1.1 Develop M&E framework for IPC programme | • Availability of M&E framework for IPC programme |
| | 5.1.2 Review KPIs for IPC | • Availability of reviewed KPIs for IPC |
| | 5.1.3 Conduct national quality standards assessment at health facilities level and utilise findings for improvement initiatives | • Proportion of facilities with baseline quality standards assessment results |
| | 5.1.4 Conduct regular M&E of WASH services and structures through healthcare facilities audits | • Proportion of facilities with documented audits for WASH |
| | 5.1.5 Monitor adherence to IPC guideline implementation. | • Proportion of facilities adhering to IPC standards |
| **Key intervention 2: Strengthen the reporting of quarterly IPC KPI** | 5.2.1 Regular review and update of the national IPC KPI reporting tool | • Availability of an updated IPC KPI reporting tool |
| | 5.2.2 Train IPC focal points on KPI reporting tool | • Proportion IPC focal points trained on KPI reporting tool |
| | 5.2.3 Provide regular feedback to the regional and district teams on the IPC reports | • % of feedback according to plan |

# 9. COSTING OF ACTIVITIES

## *9.1 Cost estimation methodology*

The cost estimate for implementing the Namibian IPC action plan was conducted using programme costing methodology. This approach involved identifying and quantifying activities to be costed, determining and quantifying specific inputs required for such activities, as well as collecting unit costs from diverse sources. Subsequently, a dedicated costing tool was developed to generate precise estimates of the required investment.

## *9.2 Summary of cost findings*

Adopting the previously mentioned approach, the anticipated total cost of executing the Namibian IPC action plan over a five-year period was estimated at 143.38 million Namibia dollars (NAD), which is approximately equivalent to 8.03 million US dollars (USD), based on the prevailing exchange rate. On average, this translates to an annual investment requirement of 28.42 million NAD. Annual costs vary, ranging from a minimum of 27.36 million NAD in the first year, to a maximum of 31.53 million NAD in the second year. A comprehensive breakdown of annual costs, along with investment needs categorised by strategic objectives, is provided in the table below.

***Table 1: Total estimated cost under each strategic objective (NAD in millions)***

| **5-Year cost estimation for the national IPC action plan** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **No** | **Strategic pillar** | **Estimated cost** | | | | | **5-Year estimated cost** | **%** |
| | | **Year1** | **Year2** | **Year3** | **Year4** | **Year5** | | |
| 1 | Strategic objective 1. Ensure an active IPC programme | 23.80 | 24.84 | 24.04 | 24.04 | 24.04 | 122.05 | 85.1% |
| 2 | Strategic objective 2. Implement evidence-based IPC interventions | 0.71 | 3.20 | 0.71 | 0.71 | 0.71 | 6.02 | 4.2% |
| 3 | Strategic objective 3. Enhance IPC education and training | 2.86 | 3.06 | 2.86 | 2.86 | 2.86 | 14.58 | 10.2% |
| 4 | Strategic objective 4. Improve surveillance of HAI | - | 0.14 | - | - | - | 0.14 | 0.1% |
| 5 | Strategic objective 5. Strengthen M&E of IPC programme | - | 0.29 | - | - | 0.29 | 0.58 | 0.4% |
| | **Total cost** | **27.36** | **31.53** | **27.61** | **27.61** | **27.89** | **143.38** | **100%** |

## 10. ADVOCACY AND DISSEMINATION (COMMUNICATION STRATEGY)

The MoHSS and its partners have a significant role regarding advocacy of the IPC action plan at all levels.

Initiatives will include:

- Organising campaigns
- Participating in international events to create awareness of the importance of IPC such as the -
  - ➟ World Antimicrobial Awareness Week
  - ➟ World Hand Hygiene Day
  - ➟ Patient Safety Day

The IPC action plan will be disseminated to create awareness among various stakeholders and the general public.

The following activities will be carried out to disseminate the plan -

1. Launching of the plan and making available printed copies thereof to all facilities and stakeholders
2. Incorporating the plan on the MoHSS website
3. Organising dissemination workshops, and continuous IPC training to share the strategies and interventions of the plan
4. Regular engagement through IPC forums, and steering committee meetings at all levels.

## 11. CONCLUSION

The Namibian National IPC Action Plan provides a comprehensive approach to strengthening and institutionalising IPC in the health sector. The plan's strategic objectives aim to address the recommended minimum requirements for IPC by the WHO, which includes having an IPC programme and guidelines, IPC education and training, HAI surveillance, multimodal strategies for the implementation of IPC interventions, and monitoring as well as auditing of IPC practices, including the provision of adequate feedback.

To ensure collaboration, multi-sectoral engagement, and an inter-disciplinary approach, the IPC action plan will be implemented through a "One Health" approach. The implementation of this plan is expected to support the creation of a culture of safety at all levels of healthcare service delivery, thereby ensuring the provision of safe healthcare services.

# 12. APPENDIX

## *12.1 ANNEX 1: IPC National Action Plan strategic objectives, activities, timelines and costing*

| ***Strategic objective 1. Ensure an active IPC programme*** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Timelines** | | | | | | | |
| **Interventions** | **Activities** | **2023** | **2024** | **2025** | **2026** | **2027** | **Total Cost (NAD)** |
| **Key intervention 1:**<br>**To strengthen the national IPC programme** | 1.1.1 Appoint two IPC specialists at the national level to plan and coordinate the national IPC programme with clearly defined responsibilities | 892,632 | 892,632 | 892,632 | 892,632 | 892,632 | 4,909,476 |
| | 1.1.2 Appoint dedicated IPC focal points at the hospital level with clearly defined responsibilities as per National Quality Standards (one IPC focal person per 250-bed capacity) | 22 ,762,16 | 22,762 116 | 22,762,116 | 22,762,116 | 22,762,116 | 114,256,896 |
| | 1.1.3 Ensure a dedicated budget for implementing IPC activities | - | X | - | - | - | - |
| | 1.1.4 Establish IPC subdivision under the proposed Quality Management Directorate | - | - | X | - | - | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1.2.1 Ensure adequate staffing levels and workload according to international and national standards, both for IPC practitioners and other health care workers | X | X | X | X | X | - |
| **Key intervention 2:**<br>**To ensure strong enabling environment for IPC** | 1.2.2 Implement and maintain appropriate, and sustainable infrastructure that supports proper implementation of IPC, including -<br>• Ensuring adequate bed occupancy<br>• Isolation in single rooms, where appropriate<br>• Ventilation systems<br>• Waste management<br>• Decontamination and sterilisation<br>• WASH services and activities<br>• IPC commodities and supplies | - | 800,000 | - | - | - | 800,000 |
| | 1.2.3 Ensure active national IPC steering committee with; updated TORs that include all relevant stakeholders | X | X | X | X | X | - |
| | 1.2.4 Ensure IPC involvement in the procurement and distribution of equipment and supplies, including the construction and renovation of health facilities and support visits to the regions | - | 241,960 | 241,960 | 241,960 | 241,960 | 1,687,840 |
| **Key intervention 3:**<br>**Enhanced stakeholders' participation in IPC activities** | 1.3.1 Stakeholders to identify areas of support within the IPC action plan | X | X | X | X | X | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Key intervention 4:**<br>**Strengthen IPC preparedness, readiness, and response to public health emergencies** | 1.4.1 To develop/review and update national preparedness and response plans/ SOP as required | X | X | X | X | X | - |
| | 1.4.2 Ensuring surge capacity including - rapidly improved infrastructural capacity, efficient supply-chain and logistics, and sufficiently trained human resources | X | X | X | X | X | - |
| | 1.4.3 Ensure collaboration in active surveillance systems for the rapid detection of emerging pathogens including AMR, epidemic- and pandemic-prone pathogens | X | X | X | X | X | - |
| | 1.4.4 Develop relevant SOPs for healthcare worker protection in emergencies<br>Activity: Meetings and workshops | 144,000 | 144,000 | 144,000 | 144,000 | 144,000 | 720,000 |
| | 1.4.5 Ensure effective messaging and communication in collaboration with relevant response pillars | X | X | X | X | X | - |
| | | | | | | | |
| ***Strategic objective 2. Implement evidence-based IPC interventions*** | | | | | | | |
| **Interventions** | **Activities** | **2023** | **2024** | **2025** | **2026** | **2027** | **Total Cost** |
| **Key intervention 1: Review and update national IPC related guidelines** | 2.1.1 Review the national IPC, CSSD, OT, phlebotomy, integrated waste management policy and guidelines<br>Activities: Four workshops for 40 participants and printing | X | 768,000 | - | - | - | 768,000 |
| | 2.1.2 Ensure dissemination, implementation and monitoring of national IPC-related guidelines<br>Activity: Workshops | X | 1,440,000 | X | X | X | 1 440,000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 2.1.3 Develop a national IPC legal framework<br>Activity: one international consultant (one month) and two workshops | - | 288,000 | - | - | - | - |
| | 2.1.4 Develop hospital-level SOPs/ policies to align with national IPC related guidelines and national quality standards<br>Activities: four workshops for 40 participants and printing | X | X | X | X | X | - |
| **Key intervention 2:**<br>**Ensure implementation of IPC quality standards** | 2.2.1 Orient healthcare workers on the IPC as per national quality standards<br>Activity: Workshops | 705,000 | 705,000 | 705,000 | 705,000 | 705,000 | 3,525,000 |
| | 2.2.2 Assess health facilities on compliance to IPC as per national quality standards | X | X | X | X | X | - |
| | 2.2.3 Support healthcare facilities to address gaps, through quality improvement initiatives to ensure compliance to quality standards | | | | | | - |
| | | | | | | | |
| ***Strategic objective 3. Enhance IPC education and training*** | | | | | | | |
| **Interventions** | **Activities** | **2023** | **2024** | **2025** | **2026** | **2027** | **Total Cost** |
| **Key intervention 1:**<br>**Capacity building of healthcare workers** | 3.1.1 Revise and update the IPC in-service training curriculum aligned to WHO IPC minimum requirements<br>Activity: Training | 940,000 | 940,000 | 940,000 | 940,000 | 940,000 | 4,700,000 |
| | 3.1.2 Conduct in-service training on IPC standards and practices | X | X | X | X | X | - |
| | 3.1.3 Develop approaches and resources for the education and orientation of patients, families and communities on relevant IPC measures | - | 200,000 | X | X | X | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Key intervention 2:**<br>**Promote undergraduate and postgraduate education in IPC.** | 3.2.1 Conduct consultative meetings with stakeholders to integrate IPC into relevant undergraduate and postgraduate programmes (courses) | X | X | X | X | X | - |
| | 3.2.2 Advocate for a recognized career pathway for IPC professionals and advocate for job opportunities. | - | - | X | X | X | - |
| | 3.2.3 Advocate for funding to support postgraduate education in IPC | 1,920,000 | 1,920,000 | 1,920,000 | 1,920,000 | 1,920,000 | 9,680,000 |
| | | | | | | | |
| ***Strategic objective 4. Improve surveillance of HAI*** | | | | | | | |
| **Interventions** | **Activities** | **2023** | **2024** | **2025** | **2026** | **2027** | **Total Cost** |
| **Key intervention 1: Strengthen surveillance of HAIs** | 4.1.1 Establish a multidisciplinary TWG for HAI surveillance at the national level to -<br>Revise the list of HAIs to be monitored<br>Develop HAIs case definitions and revise data collection tools<br>Inclusion of HAIs indicators in national DHIS<br>Develop processes for analysing and reporting of HAIs data<br>Develop processes for evaluating the quality of the data<br>Activity: One workshop for five days | X | 144,000 | X | X | X | 144,000 |
| | 4.1.2 Conduct training on HAIs surveillance for IPC focal points | | | - | - | - | |
| | 4.1.3 Strengthen collaboration with the microbiology laboratory for hospital-based and national level HAI and AMR surveillance | X | X | X | X | X | - |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | 4.1.4 Ensure utilisation of surveillance data for decision-making | X | X | X | X | X | - |
| | 4.1.5 Promote rational use of anti-microbials | X | X | X | X | X | - |
| | | | | | | | |
| ***Strategic objective 5. Strengthen M&E of IPC programme*** | | | | | | | |
| **Interventions** | **Activities** | **2023** | **2024** | **2025** | **2026** | **2027** | **Total Cost** |
| **Key intervention 1: Strengthen the M&E component of IPC activities implemented** | 5.1.1 Develop M&E framework for the IPC programme<br>Activity: Two workshops | - | 288,000 | - | - | 288,000 | 576,000 |
| | 5.1.2 Review KPIs for IPC | - | X | - | - | X | - |
| | 5.1.3 Conduct national quality standards assessment at the health facilities level and utilise findings for improvement initiatives. | X | X | X | X | X | - |
| | 5.1.4 Conduct regular M&E of WASH services and ensure structures through healthcare facilities audits | X | X | X | X | X | - |
| | 5.1.5 Monitor adherence to IPC guideline implementation | X | X | X | X | X | - |
| **Key intervention 2: Strengthen the reporting of quarterly IPC KPI** | 5.2.1 Regular review and update of the national IPC KPI reporting tool | X | X | X | X | X | - |
| | 5.2.2 Train IPC focal points on KPI reporting tool | X | X | X | X | X | - |
| | 5.2.3 Provide regular feedback to the regional and district teams on the IPC reports | X | X | X | X | X | - |
| **TOTAL AMOUNT IN NAMIBIA DOLLAR** | **27,363,748** | **31,533,708** | **27,605,708** | **27,605,708** | **27,893,708** | **143,375,232** | |

## 12.2 ANNEX 2: IPCAT Minimum requirement assessment

| *Assessment tool of minimum requirements for infection prevention and control programmes at national level* | | | |
|---|---|---|---|
| **ID** | **TOPIC** | **RESPONSE YES/NO** | **SCORE** |
| **1** | **Core component 1: IPC programmes** | | **3** |
| 1.1 | An active IPC programme exists at the national level | No | 0 |
| 1.2 | An appointed IPC focal point in charge of the programme can be identified | Yes | 1 |
| 1.3 | The appointed IPC focal point(s) have undergone training in IPC in the prevention of healthcare-associated infections (HAI) | Yes | 1 |
| 1.4 | There is an identified, protected and dedicated budget allocated to the IPC programme, according to planned activity | No | 0 |
| 1.5 | The appointed IPC focal point(s) have dedicated time for the tasks (at least one full-time equivalent) | Yes | 1 |
| **2** | **Core component 2: IPC guidelines** | | **4** |
| 2.1 | The national IPC programme has a mandate to produce guidelines for preventing and controlling HAI | Yes | 1 |
| 2.2 | The development of guidelines involve the use of evidence-based scientific knowledge and international/national standards | Yes | 1 |
| 2.3 | The guidelines are for national coverage, including all acute health care facilities (both public and private) | Yes | 1 |
| 2.4 | The guidelines are reviewed at least once every five years and updated to reflect the current evidence base | No | 0 |
| 2.5 | The IPC programme actively addresses guideline adaptation and standardisation of effective preventive practices (standard operating procedures) and their implementation to reflect local conditions | Yes | 1 |
| **3** | **Core component 3: IPC education and training** | | **4** |
| 3.1 | The national IPC programme provides guidance and recommendations for in-service IPC training at the facility level (for example - frequency, expertise required, requirements for new employee orientation, monitoring and evaluation approaches) | Yes | 1 |
| 3.2 | The national IPC programme provides content and support for IPC training of health workers at the facility level | Yes | 1 |
| 3.3 | A national IPC curriculum for in-service training of health care workers has been developed in alignment with the national IPC guidelines, approved and endorsed by an appropriate national body | Yes | 1 |
| 3.4 | A national system and schedule of monitoring and evaluation is in place to check on the effectiveness of training and education, at least annually | Yes | 1 |
| **4** | **Core component 4: HAI surveillance** | | **0** |
| 4.1 | A multi-disciplinary technical group for HAI surveillance is established at the national level by the national IPC focal point | No | 0 |

| | | | |
|---|---|---|---|
| 4.2 | A national Action plan for HAI surveillance (with a focus on priority infections based on the local context) is developed by the multi-disciplinary technical group | No | 0 |
| 4.3 | The national IPC focal point/team is trained in HAI surveillance concepts and methods | No | 0 |
| **5** | **Core component 5: Multimodal strategies for implementation of IPC interventions** | | **2** |
| 5.1 | There is a trained national IPC focal point with knowledge of implementation science and multimodal improvement strategies and their application to IPC | Yes | 1 |
| 5.2 | The national IPC focal point coordinates/supports local implementation of IPC improvement interventions | Yes | 1 |
| 5.3 | Multimodal strategies are included as the best approach for implementation in IPC guidelines, and IPC education and training programmes | No | 0 |
| **6** | **Core component 6: Monitoring/audit of IPC practices and feedback** | | **3** |
| 6.1 | A multi-disciplinary technical group for IPC monitoring is established at the national level | Yes | 1 |
| 6.2 | Action plan for IPC monitoring is in place, including an integrated system for collection, analysis and feedback of data | No | 0 |
| 6.3 | A minimal set of core indicators for healthcare facilities in the country is defined | Yes | 1 |
| 6.4 | A mechanism to train national and local auditors is in place | No | 0 |
| 6.5 | Hand hygiene compliance monitoring and feedback is identified as a key national indicator, at the very least, for reference hospitals | Yes | 1 |
| | ***Adding up total score*** | ***Max score (%)*** | ***Total "Yes" responses / 25*** |
| | IPC programmes | 60 | 3/5 |
| | IPC guidelines | 80 | 4/5 |
| | IPC education and training | 100 | 4/4 |
| | HAI surveillance | 1 | 0/3 |
| | Multimodal strategies | 67 | 2/3 |
| | Monitoring/audit of IPC practices and feedback | 60 | 3/5 |
| | Final total score | 64 | 16 |

## *12.3 Appendix 3: Attendance registers for stakeholders meetings*

National IPC strategic development workshop, 11 – 15 July 2022, held at Gross Barmen, Okahandja, Otjozondjupa Region

| No | Name/Surname | Position | Institution/Organisation |
|---|---|---|---|
| 1. | Augustinus Kastherody | IPC National Level | MoHSS |
| 2. | Shiyave Josephine | IPC Regional | MoHSS |
| 3. | Waltraud Munkanda | Chief Health Programme Officer | MoHSS |
| 4. | Caroline Sakeus | Senior Registered Nurse (KRD) | MoHSS |
| 5. | Ottilie H Kovalova | CMO (Chief Medical Officer) | National Correctional Services |
| 6. | Cecilia Mbala | MO – Medical Officer | WCH/ MoHSS |
| 7. | Johanna Shivute | IPC – Focal Person | Onandjokwe Intermediate Hospital |
| 8. | Erastus Haindongo | Senior Lecturer/ IPC National | UNAM |
| 9. | Julie Neidel | Quality Programme Manager | Global Programmes/ UCSF |
| 10. | Agatha Ngatjiheue | IPC Occupational Health Manager | Roman Catholic Hospital |
| 11. | Vanessa Tjijenda | Lecturer | NUST |
| 12. | Petrus Kawali | Senior RN IPC Focal Person | Rundu Hospital Kavango East |
| 13. | Sylvia Hamata | Vice-President IMANA | IMANA |
| 14. | Florence Mulonda | Senior RN IPC Focal Person | MoHSS -WCH |
| 15. | Yvonne Stephanus | Regional Director | RMT/MoHSS |
| 16. | Leena Ashipala | MD IPC COVID-Pillar | MoHSS |
| 17. | Edwin Sithole | Public Health Specialist | CDC – Namibia |
| 18. | Helena Mungunda | Senior TA | MoHSS- NTLP |
| 19. | Annely Shiikwa | IPC Focal Person RN | MoHSS |
| 20. | Collin Ndjai | IPC | Kharas MoHSS |
| 21. | Liisa Kotti | RN IPC Focal Nurse | MoHSS |
| 22. | Paul Farai Rupende | RN Scrub Nurse | Ongwediva Medipark |
| 23 | Elizabeth Shali | Academic Dean | Welwitchia Health Training Centre |
| 24. | Mutombo W Kabidiki | IPC Practitioner Zambezi SMO | MoHSS |
| 25. | Christine Joaguim | SRN | St Martin Hospital Oshikuku |
| 26. | Rubben Haiyaka | Doctor | NAMPOL |
| 27. | Rosina Hishitile | Registered Nurse/IPC | Swakopmund Hospital |
| 28. | Lydia Shiluwah | Registered Nurse/IPC | MoHSS |
| 29. | Apollo Basenero | CMO | MoHSS QAD |
| 30. | Simon Iyambo | OHSO | NIP |
| 31. | Eddy M. Maiba | Legal Service Officer | MoHSS Legal Services |
| 32. | Aina Erastus | IPC Officer | WHO |
| 33. | Dr Dinelago Nashitope | Medical Officer | MoHSS - Case Management |
| 34. | Francina Tjituka | Head: QAD | MoHSS |
| 35. | Landry K. Cihambanya | WHO/AFRO - IPC Officer | WHO/AFRO |
| 36. | Prof. Chedly Azzouz | WHO/AFRO | WHO/AFRO |
| 37. | Tulonga Nhinda | CMO | MoHSS |
| 38. | Dr Hilma Nangombe | MOHSS Research Division | MoHSS Research Division |
| 39. | Tendai Makamure | WHO | WHO/AFRO |

*National IPC action plan costing workshop, 5 – 9 December 2022, Swakopmund, Erongo Region*

| No. | Name/Surname | Position | Institution/Organisation |
|---|---|---|---|
| 1. | Niita Tauya | HR | MoHSS |
| 2. | Augustinus Kastherody | IPC National Level | MoHSS |
| 3. | Dr Ndinelao Nashitope | Medical Officer | MoHSS |
| 4. | Waltraud Munkanda | Chief Health Programme Officer | MoHSS |
| 5. | Johanna A Gawachab | Senior Health Programme Officer | MoHSS |
| 6. | Anelly HN Shiikwa | RN | MoHSS- Omaheke |
| 7. | Almecro EJ Boois | Finance | MoHSS |
| 8. | Mutombo W Kabidiki | IPC Practitioner SMO | MoHSS - Zambezi |
| 9. | Aina Erastus | IPC Officer | WHO |
| 10. | Helena Mungunda | Senior TA | MoHSS- NTLP |
| 11. | Simon Iyambo | OHSO | NIP |
| 12. | Tulonga Nhinda | CMO | MoHSS |

*National IPC action plan writing workshop, 22 - 24 March 2023, held at Fürstenhof Hotel, Windhoek, Khomas Region*

| No. | Name/Surname | Position | Institution/Organisation |
|---|---|---|---|
| 1. | Francina Tjituka | Head: QAD | MoHSS QAD |
| 2. | Apollo Basenero | CMO | MoHSS QAD |
| 3. | Hilma Shikololo | Quality Improvement Officer | DSP |
| 4. | Albertina Israel | M&E Officer | MoHSS QAD |
| 5. | Aina Erastus | IPC Officer | WHO |
| 6. | Florence Mulonda | Senior RN IPC Focal Person | MoHSS WCH |

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## NOTES

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