MINISTRY OF HEALTH
Republic of Liberia

Liberia National IPC Strategy
2022-2027

World Health Organization

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FOREWORD

Liberia has suffered immense setbacks due to the debilitating effects of the COVID-19 pandemic that started 16 March 2023 when the first case was detected in Liberia. Our health care workers lacked the basic infection prevention and control (IPC) knowledge and skills, leading to the unfortunate infection of 8,090 people with 295 deaths (Case fatality rate of 3.6% by 16 March 2023 (3years period), A total of 404 health workers with 08 deaths were recorded. Health care facilities became unsafe and a source of transmission.

The Ministry of Health (MOH) in collaboration with its partners introduced evidence-based public health measures to manage the epidemic. IPC was a key response pillar; activities undertaken helped in curtailing and eventually interrupting transmission in communities and health facilities.

Consequential to lessons learnt from this pandemic and previous Ebola and Lassa fever outbreaks, MOH-IPC Quality Management Unit has developed this evidence based national IPC strategic plan for the purpose of reducing health care-associated infections (HAIs) and strengthening the IPC program I the country.

This strategic plan was jointly developed by the Ministry of Health and its strategic partners with technical and financial support from WHO, will serve as a resource and reference document for implementation and monitoring of IPC activities and practices in the country.

The Ministry of Health is hopeful that this document will lead to establish a sustainable IPC culture in our country and that the catastrophic effects of the COVID-19 and other disease outbreaks will not repeat itself.

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ACKNOWLEDGEMENT

The National IPC Strategic Plan for Liberia is the result of tremendous and collaborative efforts from many individuals, institutions, organizations, and development partners, who were involved in both the conceptualization and development. Cognizant of the fact that any attempt to mention all those who have contributed carries the risk of unknowingly omitting important names, the Ministry of Health wishes to take this opportunity to express special appreciation to the following divisions, institutions and organizations for their tireless effort and involvement throughout the development of the National Strategic Plan: National Public Health Institute of Liberia (NPHIL), the United States Centres for Disease Control and Prevention (CDC), Jhpiego, UNICEF, and Last Mile Health.

A special gratitude goes to the World Health Organization (WHO) for providing technical, logistical, and financial support throughout this process. The Ministry wishes to specifically acknowledge the Quality Management Unit (QMU) for the commitment and tireless efforts in ensuring that the first National IPC Strategic Plan was developed in a highly participatory manner and the IPC technical working group that comprised members from the QMU, WHO, CDC, Last Mile Health etc. This team jointly participated in the coordination and provision of guidance to the whole process through various consultative forums and document reviews.

LIST OF ACRONYMS

AMR	Antimicrobial Resistance
CPD	Continuous Professional Development
DEOH	Department of Environmental and Occupational Health
DHIS2	District Health Information System
EVD	Ebola Virus Disease
GoL	Government of Liberia
HAI	Healthcare Associated Infections
HQMU	Healthcare Quality Management Unit
ICAT-MR	Infection Control Assessment Tool of the Minimum Requirements for IPC Programmes at National Level
IHR	International Health Regulation
IPC	Infection Prevention and Control
IPCAF	Infection Prevention and Control assessment Framework Tool for Facility Level
IPCAF-MR	Infection Prevention and Control assessment Framework Tool for Facility Level-Minimum Requirements
MMS	Multi Modal Strategies
NPHIL	National Public Health Institute of Liberia
OHS	Occupational Health and Safety
PHE	Public Health Emergency
PHEOCs	Public Health Emergency Operation Centres
PPP	Public- Private Partnerships
SDG	Sustainable Developmental Goals
SOPs	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities and Threats
TOR	Terms of Reference
TWG	Technical Working Group
UHC	Universal Health Coverage

UMMS	
UNICEF	United Nations International Children's Emergency Fund
US-CDC	United States Centers for Disease Prevention and Control
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation

LIST OF CONTRIBUTORS

MoH:

WHO:

CDC:

Last Mile Health:

1.0 Introduction

2.0 Background

Over the last decade, major outbreaks such as those due to the Ebola virus disease (EVD) and the Middle East respiratory syndrome coronavirus (MERS-CoV), and the coronavirus disease 2019 (COVID-19) pandemic, have demonstrated how epidemic-prone pathogens can spread rapidly through healthcare settings. These events have exposed the gaps in infection prevention and control (IPC) programs that exist irrespective of the resources available or the national level of income. Other less-visible health emergencies are also a compelling reason to address gaps in IPC, such as the silent endemic burden of healthcare-associated infections (HAIs) and antimicrobial resistance (AMR), which harm patients daily across all healthcare settings. In addition, sustainable Development Goals[1] (SDG) 3 (good health and well-being, particularly SDG 3.8, access to quality essential healthcare services) and SDG 6 (clean water and sanitation) reinforce the importance of IPC as a contributor to safe, effective quality health service delivery, mainly Water, Sanitation and Hygiene (WASH), quality of care and as a component of Universal Health Coverage (UHC). There is also a renewed focus on the International Health Regulations (IHR), positioning IPC as a critical strategy for dealing with public health threats of international concern. The 2022 World Health Assembly (WHA) approved a global strategy on IPC through a resolution that recognized the "critical importance of infection prevention and control in the human and animal health sectors and that it is a clinical and public health discipline based on a scientific approach." It called on the Member States "to acknowledge that clean, high-quality, safe, affordable care should be universally available and that no one should be unnecessarily exposed to infections due to suboptimal prevention and control practices."

In 2021–2022, a detailed global survey on the minimum requirements for national IPC programs carried out by World Health Organisation (WHO) showed that an active IPC program (a functioning program with annual work plans and budget) existed in 54.7% (58/106) of countries. However, only four participating countries (3.8%) met all minimum requirements for IPC. In addition, the survey identified gaps in IPC programs, such as limited availability of a budget dedicated explicitly to IPC, little support at the national level for IPC training rollout and monitoring of its effectiveness, and lack of expertise to conduct IPC monitoring.

3.0 Overview of IPC Services in Liberia

Following the devastating effects of the Ebola outbreak in West Africa, in which Liberia was severely affected, the Ministry of Health instituted critical public health measures to curb the transmission of highly infectious diseases. One of these measures was the establishment of the IPC Program within the Healthcare Quality Management Unit, including the IPC Program. The HQMU was established in 2015 as a health system-strengthening strategy for preparedness and response mechanism and to address future outbreaks. The HQMU has a Director who oversees the IPC Program and a National IPC Coordinator who oversees the implementation of the IPC Program.

During the Ebola Outbreak of 2014 to 2015, MOH and its partners used fragmented education modules for healthcare workers. The two main modules used were "Keep Safe and Keep Serving" (KSKS) and "Safe Quality Service" SQS. In 2018, these modules were updated in the context of the Liberia Health System by WHO and US-CDC and formed important contents of the present National IPC Guidelines.

The Ministry of Health and its strategic partners formed the IPC Technical Working Group (TWG) in 2016 to develop the National IPC Guidelines. The key partners were the World Health Organization (WHO) and the US-Centres for Disease Control (US-CDC). Other partners were Partners in Health (PIH), USAID, Last Mile Health, Expertise France, National Public Health Institute of Liberia (NPHIL), UNICEF, UMMS-ACCEL, etc.

In July 2018, the Ministry of Health (MOH), with support from WHO, conducted baseline assessments for the national program in 32 out of 38 (84%) hospitals using IPCAF and IPCAT-2) in Liberia. The overall IPCAT-2 score was 47.0 %, with gaps identified in all six core components assessed - HAI surveillance was at 0%, followed by IPC education and training at 20% and IPC guidelines at 47%. The national IPCAF score was intermediate at 451/800 (56%). Gaps were identified in all eight core components with variability across hospitals in Liberia; HAI surveillance, IPC programs, and guidelines had the most openings.

3.1 The Status of the National IPC Programme

The National level IPC Assessment was conducted on the 21st of September 2022 using the ICAT-MR, and results are illustrated below.

Core Component	% Maximum Score
IPC Programme	40
IPC Guidelines	100
Education and Training	50
HAI Surveillance	0
Multi-Modal Strategies	67
Monitoring/ audits in IPC practices and feedback	20
Final Score	48

Table 1: National IPC program scores

The results of the National IPC Program illustrate the critical gaps in the IPC National program, HAI surveillance, and monitoring/ audits in IPC practices and feedback. Identifying essential gaps and achievements at the country level helps in setting priorities. This can also demonstrate the impact and cost-effectiveness of IPC interventions while offering guidance on the implementation of IPC interventions. The importance of integration/linking and alignment of IPC interventions with water, sanitation, and hygiene (WASH) strategies are part of broader efforts to address AMR, health emergencies, and the quality and safety of health care. One of the strategic interventions in the National Healthcare Quality Strategy 2022-2026 is to institutionalize health promotion, disease prevention & preparedness in other sectors. The IPC Programs seek to harness and fit into this strategic Intervention.

IPC practices are critical in preventing infectious diseases and controlling the spread and management of non-communicable diseases. The integration approach in implementing programs will anchor the implementation of the National IPC strategy. IPC practitioners will play a central role in routine services, outbreak preparedness, and response, an essential intervention in the National Health Strategy.

This National IPC Program developed a strategy to mitigate the gaps identified through the different audits conducted, capitalizing on the experience and momentum generated in response to Ebola Viral Diseases Outbreak and COVID-19 and the strengths identified. The heightened focus on integrating IPC, WASH, AMR reduction strategies, and the One Health Approach will be

incorporated into this strategy. In addition, patient and healthcare worker safety has gained increased attention during this pandemic and will be addressed by strengthening occupational health services and improving IPC program implementation.

The Ministry of Health, through the Healthcare Quality Management Unit (HQMU), seeks to strengthen the IPC Programme by involving all key stakeholders and addressing the Country's IPC needs.

4. 0 Strategic Plan Development Process

The development of the National IPC Strategic Plan started with a desk review of IPC documents that included IPC implementation documents (these were in the form of National IPC Guidelines of Liberia, quarterly reports from the HQMU, minutes of the IPC TWG), IPC audits, using the IPCAF- MR tool, COVID-19 response documents, training modules, and standard operating procedures. SWOT analysis identified the strength and opportunities, weaknesses, and threats. Findings from the desk review and IPC audits informed the development of the situational and SWOT analysis and the basis for developing the Liberia National IPC Strategy and guiding the implementation of IPC practices. In addition, scanning for legal documents was done to identify the legal instruments necessary for the IPC program implementation. The Liberia National IPC Strategic Plan 2023-2027 developed from the MoH National Policy & Strategic plan, frameworks developed and guided by WHO and US-CDC Teams for adaptation to the country context.

4.1 Relevance of the strategy

This strategy has never existed; this is the first time the IPC program is developing a strategy. This strategy is guided by the following International and National documents, each with an IPC component. The documents are listed below, detailing a summary of the IPC component they address.

INTERNATIONAL	
Sustainable Development Goals	SDG 3 (good health and well-being) and SDG 6 (clean water and sanitation) reinforce the importance of IPC as a contributor to safe, effective, high-quality health service delivery.
International Health	The IHR aims to protect against the international spread of

Regulations, 2005, third edition (published 2016)	disease. The Ministry of Health must oversee the implementation of the IHR. Health facilities are on the front line of containment and response strategies requiring facilities to have IPC systems.
NATIONAL	
National Healthcare Quality Strategy, 2022-2027	The strategy accelerates progress in rebuilding the health system and improving measurable health outcomes. However, the IPC program needs strengthening to improve patient outcomes and increase health worker safety.
Liberia National IPC Guidelines, 2018	Reference document to guide IPC best practices in the Country to achieve better patient outcomes and increase healthcare worker safety.
Ministry of Health National Strategic Plan 2022-2026	Provide a programmatic framework for healthcare service delivery to all stakeholders and actors in the Liberian Health Sector. IPC is one of the programs identified in pushing the agenda of improving patient outcomes.
Ministry of Health National Policy and Plan, 2022-2032	To improve the health and social welfare status of the population of Liberia on an equitable basis by delivering quality services requires having a skilled workforce in IPC
Interdisciplinary Practical Guidelines on Antimicrobial Stewardship Programming in Liberia, 2022-2026	This gives practical guidance on how to implement Antimicrobial Stewardship Programs in health settings. If these programs are set effectively, they will reduce Healthcare Associated Infections, in which IPC plays a critical role.

Table 2: Documents for IPC strategy

4.2 Situation Analysis by IPC Core components

Liberia has 932 healthcare facilities, of which 462 (49.62%) are public (data from CHOs). Of the 462 healthcare facilities, 33 are hospitals, 35 are Healthcare Centers, and 404 are clinics. An assessment to assess existing IPC situations and practices across various healthcare facilities in the Country was done in September and October 2022. These activities were conducted to inform the development of the Country's' first Infection Prevention and Control Strategic Plan, Operational plan, and Monitoring and Evaluation Framework using randomly selected facilities.

A total of 255 facilities were assessed using the IPCAF-MR. Of these facilities, 29 (11%) were Hospitals, 36 (14%) were Health Centers, and 190 (75%) were Clinics. The other facilities could not be reached due to the heavy rains that made the roads inaccessible.91 (36%) % of the facilities assessed are private, while 7(3%) of the 255 facilities are Faith-based. The rest 157 (61%) are Public facilities.

4.2.1 Distribution of facilities assessed by County

County	**No. of facilities assessed**
Montserrado	87 (34%)
Nimba	44 (17%)
Margibi	25 (9%)
Bong	24 (9%)
Grand Cape Mount	20 (8%)
Grand Bassa	20 (8%)
Bomi	14 (5%)
Gbarpolu	10 (4%)
Grand Gedeh	5 (1,9%)
Maryland	1 (0.4%)
Sinoe	1 (0.4%)
Rivercess	1 (0.4%)
River Gee	1 (0.4%)
Grand Kru	1 (0.4%)
Lofa	1 (0.4%)
Total Number of facilities assessed	**255**

Table 3: Distribution of facilities by County

The overall mean score for the facilities assessed is 33% compliance with the minimum Requirements for the facility IPC programs.

4.2.2 Status of the IPC Program per type of Facility according to WHO Core Components of the IPC Program

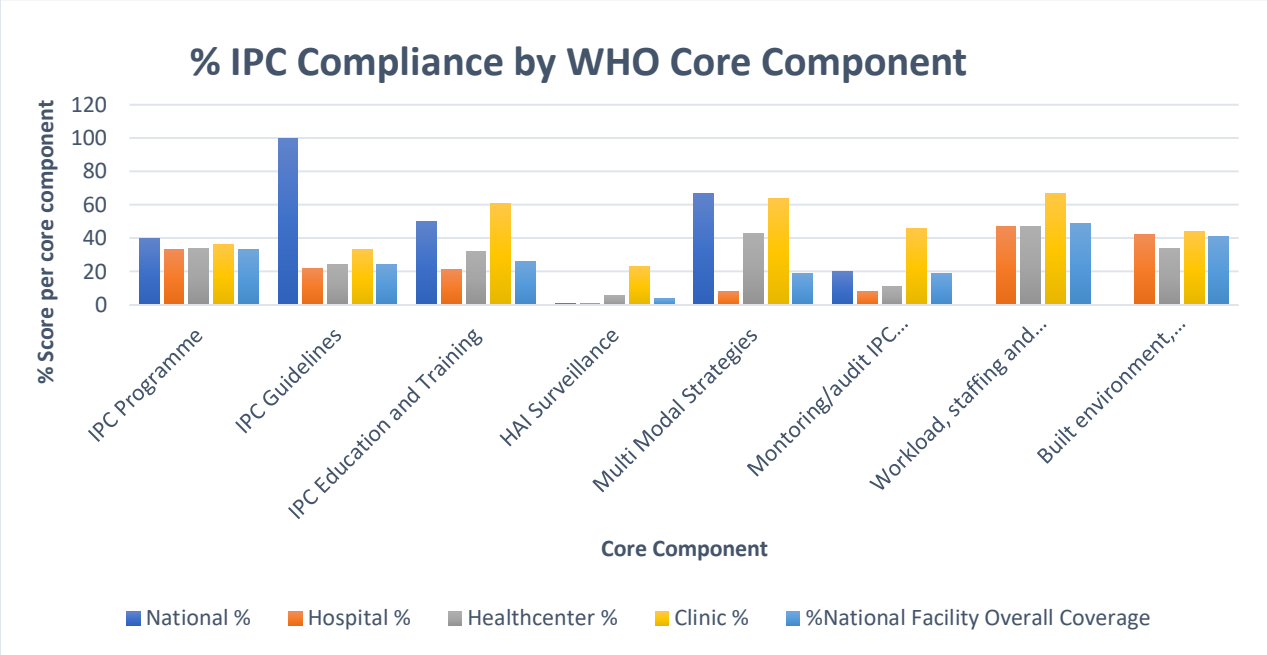

Figure 1: % IPC Compliance by WHO Core Component

4.3 Results for each core component area

4.3.1 IPC Programme

This component looks at having a full-time trained IPC Focal person at the Hospital level and either a full/part-time IPC Focal person at the health center or clinic level, an annual plan with goals and objectives, and a dedicated budget for the IPC Program as a minimum requirement. In all the facilities assessed, no IPC Annual plans or dedicated budgets are in place. Regarding the IPC Trained Focal people, only 79 (31%) of the facilities had a trained IPC Focal Person.

4.3.2 IPC Guidelines

The National IPC Guidelines are available in most facilities; however, this component looks at facilities with their own facility-specific guidelines and standard operating procedures (SOPs). Although the mean score was 27% for the availability of the SOPs, most SOPs were on hand hygiene, and the other standard and transmission-based precautions SOPs were unavailable.

4.3.3 Education and training:

27% of the IPC Focal persons were trained in IPC during the EVD and COVID-19 outbreaks. There is, however, no standard training package for the IPC Focal persons and neither a standardized training package for in-service training for clinical nor non-clinical staff. In addition,

there is no documentation to show that IPC training is being conducted on the job as planned activities in the various facilities.

4.3.4 HAI Surveillance

This is the poorest performing indicator in the IPC Programs. The mean score stands at 4% for all 255 facilities, mainly due to the HAI system not being set up at the National or facility level and limited microbiology lab support. The Microbiology department of the lab plays a critical role in support of the HAI Surveillance Program as the samples collected need to be analyzed and organisms identified, isolated, and susceptibility patterns studied.

4.3.5 Multi-Modal Strategies:

This component looks at the 5 components of a successful, robust Programme. The overall score was 19%. For the Multi-modal strategy to be effective, all the components need to be implemented collectively and not as silos, like what is currently happening in most facilities. The components of the MMS are:

- System change (availability of infrastructure and supplies, including dedicated budgets)
- Training and education (targeted training based on risk assessment and needs of the Facility)
- Monitoring and Evaluation (providing timeously feedback on IPC issues, using data collected to make informed decisions)
- Reminders in the workplace (having posters, SOPs, leaflets, and pamphlets to remind health workers and foster behavior change amongst health workers)
- Institutional Safety Climate (harnessing the gains and having all relevant stakeholders on board, including the commitment by Facility Leaders to the IPC Programs, having systems in place to identify role models and champions in the IPC Program.

4.3.6 Monitoring /auditing of IPC practices and feedback:

This component looks at using IPC data to make informed decisions effectively. The limited documentation of IPC practices and data contributed to the low scores, as no reports back up the work being done. Overall, the mean score was 19%.

4.3.7 Workload, staffing, and bed occupancy:

This component addresses the health worker-patient ratios, ward designs, single-bed occupancy, and bed spacing to address the IPC standards. There is a need to address human resource capacity,

especially in public hospitals, as private facilities have systems to ensure adequate staffing levels. In private hospitals, when staff shortages occur, there are systems to notify management, who then authorizes temporary staff hiring based on needs. In most facilities, the bed spacing is not adequate, and only in the pediatric and emergency units where bed occupancy was more than one patient in some facilities.

4.3.8 Built environment, materials, and equipment for IPC:

This component addresses the Water, Sanitation, and Hygiene structures (WASH), including infrastructure, equipment, and supplies to promote effective and efficient IPC practices. An overall score was 41% in the facilities, bringing in the critical need for IPC and WASH Programs to have linkages as a well-organized IPC program will rely on the crucial support that WASH offers.

The practical implementation of all these elements will result in better patient outcomes, increased staff confidence, and increased productivity, thus reducing healthcare-associated infections and decreasing health worker infections.

Based on the assessment of the 255 health facilities and the results of the National ICAT-MR and IPCAF-MR, a SWOT analysis was then carried out to identify strengths, weaknesses, opportunities, and threats in the IPC Program. Finally, priority areas and strategic interventions were drawn based on the SWOT analysis.

5. 0 SWOT Analysis

The strength, weaknesses, opportunities, and threats are analysed by assessing internal and external factors using IPC core components that are used as guidance for effective implementation of Infection Prevention and Control, which helps clarify the current situation. This assessment aims to build on strengths, resolve weaknesses, exploit opportunities, and avoid threats. The SWOT analysis was made through desk reviewing reports of several supervision and assessments conducted by the Ministry of Health and through consulting experts with years of experience in implementing IPC in the Country starting from the beginning of the IPC Program.

5.1 The SWOT analysis was done per component.

1. IPC Program Management and Institutional Coordination Structure		
Internal factors	**Strength** • Presence of an IPC focal person at the national level in the Health Quality Management Unit and coordinating the program • Presence of IPC FPs at the subnational level (County, district, and health facility) • Inclusion of IPC as a cross-cutting issue in the emergency management and surveillance program at the national level • At the national level, IPC has become a priority in complementary initiatives and in the ensuing quality of health services • Expression of senior leadership at MoH's commitment to IPC at the national level using complementary priority initiatives • Existence of IPC TWG • Collaboration with Health Partners	**Weakness** • Absence of enforcing mechanism (IPC Steering Committee) to ensure implementation of the IPC program • Weak coordination among stakeholders involved in the IPC program • Lack of structural governance and stand-alone national and regional IPC program with clearly defined objectives, functions, and activities. (No IPC Policy) • Poor linkage with other relevant national programs and professional associations.

External factors	**Opportunity** • IPC has become a concern of higher officials across other sectors (Government, MoH, Senior Management Teams) • Existence of partners that support the program • The demand for IPC due to epidemics and pandemics • IPC guidelines and Isolation Facility Management Guidelines	**Threats** • Emerging and re-emerging infectious disease outbreaks and AMR may compromise the implementation of comprehensive IPC interventions • The presence of competitive health service programs may inhibit IPC from becoming a priority • No budget allocation of the IPC program at all levels • Resource limitation • Current socio-political situation. The upcoming elections can cause a shift of priorities and investment from health, including IPC. It could also result in unrest and disruption of service delivery

2. National Infection Prevention and Control Standards and Guidelines		
Internal factors	**Strength** • Presence of IPC Guidelines • Some IPC monitoring indicators included in DHIS2	**Weakness** • Poor implementation and adherence of healthcare workers to the recommended IPC practices • The IPC Guidelines are not widely disseminated • Lack of SOPs and Pocket guide/job aids at the facility level • Inadequate IPC monitoring and evaluation system (• Absence of national IPC strategy and strategy roadmap • Inadequate required supplies and infrastructures to ensure IPC guideline implementation • Absence of comprehensive IPC program monitoring indicators

External factors	**Opportunity** • Presence of supporting partners in the development of required IPC documents and capacity building • Inclusion of IPC requirements into healthcare facility standards • IPC practice happening as a cross-cutting guide in all healthcare services	**Threats** • Absence of a sufficient budget to properly implement the IPC strategies • Unavailability of quality and appropriate technology supplies and infrastructures to ensure the standard implementations of IPC • Lack of commitment and integration of other sectors (for example, Water and Sewerage Authority, Environmental Protection Agency, etc.)
3. National Infection Prevention and Control Education and training		
Internal factors	**Strength** • Presence of an IPC training package	**Weakness** • Shortage of well-skilled and dedicated master/lead trainers • Poor coordination of training among partners • Absence of nationally endorsed IPC training package and related videos • Need for a reliable and adequately trained IPC team of healthcare workers at the facility level and • Lack of uniformity and standardization of the IPC training package among the stakeholders • Limited IPC knowledge, skill, and attitude among healthcare workers.
External factors	**Opportunity** • Supporting partners increased interest in capacity building for IPC • The occurrence of life-threatening disease outbreaks magnified the importance of IPC	**Threats** • Attrition of IPC-trained healthcare professionals at all levels • The pre-service education curriculum does not contain comprehensive IPC knowledge and practice • No budget allocation for IPC activities at national and subnational levels

4. Surveillance of HAIs		
Internal factors	**Strength** • The existence and rollout of IDSR Guidelines in health facilities	**Weakness** • Absence of HAIs' surveillance plan, monitoring, reporting, and handling mechanism at all levels of the health system • Lack of HAI's process and outcome indicators at the national, county/district, and hospital level
External factors	**Opportunity** • Presence of partners showing interest in promoting and implementing AMR mitigation • Presence of existing routine data collection mechanism (DHIS2) • Established health emergency and surveillance departments at all health system level • There is a National Emergency Call Center linked to the Counties	**Threats** • Emerging and re-emerging infectious disease outbreaks • No budget and capacity to do periodic HAI surveillance

5. Multi-modal strategy		
Internal factors	**Strength** • Presence of IPC Focal Persons at the National, County, and Health Facility Levels	**Weakness** • There is no clear policy for the implementation of IPC practice through a multi-modal approach • Lack of sustainability in the creation of champions in IPC practice • Lack of successful linkage of IPC to quality improvement initiatives at national levels • Inadequate implementation of an IPC multi-modal bundle of care at facilities

		• A culture of non-compliance and system change in IPC practice
External factors	**Opportunity** • Increased attention of the leadership due to the frequent appearance of infectious pandemics • The presence of multiple partners can support the IPC program • National and sub-national hand hygiene campaigns implemented as part of the MMS initiative and COVID-19 pandemic response	**Threats** • Limited resource • A high attrition rate of trained IPC Focal persons

6. Monitoring/audit of IPC practices and feedback		
Internal factors	**Strength** • Presence of eJISS	**Weaknesses** • There is no clear IPC M&E framework. • Lack of comprehensive and representative IPC indicators • Lack of regular monitoring/auditing of IPC practices • There is no regular audit and feedback mechanism of health care practices according to IPC standards. • Lack of accountability for both reporting and performance improvement • Lack of structure and dedicated staff for IPC M&E at all levels • The progress and impact of the national program are not monitored

External factors	**Opportunity** • Presence of the DHIS2 platform • Presence of partners who support supportive supervision and monitoring of IPC practices	**Threats** There is no budget allocation mechanism for staff recruitment based on the workload

7. Workload, staffing, and bed occupancy		
Internal factors	**Strength** • Availability of qualified workforce • Availability of WASH infrastructure • Availability of infrastructure and IPC standards in most facilities	**Weakness** • Limited staff-to-patient ratio • Limited refresher training for staff on IPC and WASH • Lack of budget and logistical support to implement IPC and WASH activities • Lack of waste management and occupational health and safety equipment • Limited beds in facilities • Inadequate spacing and poor bed management • There is no surge plan for staffing in most healthcare facilities.
External factors	**Opportunity** • Expansions of health facilities • Increasing the Number of health facilities and repurposing the service • Presence of standard patient flow guidelines and Health facility design • Staff willingness to obtain specialized training.	**Threats** • Turn-over rate of IPC trained health care professionals at all levels due to lack of staff motivation. • Lack of integration/ linkage of IPC in the pre-service education curriculum • Insufficient budget allocation • Spread of preventable diseases due to IPC and WASH strategies

8.Built environment, materials and equipment for IPC		
Internal factors	**Strength** • There are standards for health facility design and construction • There are guidelines for WASH and IPC at healthcare facilities • Availability of job aids and SOPs • Some facilities have functional healthcare waste management equipment (incinerator, ash pit, placenta pits).	**Weakness** • Infrastructure (WASH components, buildings, electricity, and road) of healthcare in many health facilities are not convenient for fulfilling IPC standards • Unavailability and high cost of some products of IPC materials • Limited Maintenance and proper utilization of IPC materials
External factors	**Opportunity** • Existence of the WASH and IPC program • Behavioral change toward hand hygiene due to the COVID-19 pandemic. • Staff acceptance to improve Facility (particularly waste management and OHS) •	**Threats** • Unavailability and high cost of some products of IPC material in the market • Natural disasters destroying WASH infrastructures • Inadequate implementation of the National WASH Program at healthcare facilities

Table 4:SWOT analysis per IPC Core Component

5.2 Stakeholder analysis

Stakeholder	Role	Anticipated Challenges	Institutional response /Strategic Implication/
MoH	• Establish a national coordinating body • Policy and guidelines development • Resource mobilization and funding • Coordination • Training and capacity building • Surveillance		• Strong stewardship of the IPC program at all levels • Lobby for resources & allocate budget • Integrate/Link IPC with other programs as a cross-cutting issue • Promote PPP
Counties	• Establish governance & leadership structures • Resource mobilization and funding • Coordination • Supervision of health facilities • Training and capacity building	• Establishing appropriate structure • Budget allocation • Weak coordination, monitoring & follow up	• Appropriate stewardship of IPC • Leadership support • Enhance existing M&E integrating IPC • Collaboration • Advocacy
Health Facilities	• Front-line implementer • Establish a strong IPC structure • Resource mobilization and budget allocation • Engagement of all staff, clients & community	• Considering IPC as low priority • Leadership engagement • Budget allocation • Fragmented implementation	• Strong stewardship & advocacy • Strengthen management capacity • Enhance M&E framework • Accountability • Integration of program intervention with quality of care

Liberia Medical & Dental Council	• Integrate IPC standards in health facility regulatory requirements	• Mandate • Capacity	• Shared responsibility and accountability • Leadership support
Central Medical Store	• Provision of supplies and commodities	• Not part of the priority list equipment • Access to foreign currency	
Line Ministries	• Integration of IPC in educational curricula • Consider priority conditions inadequate water supply to health facilities • Quality control & surveillance of water supply	• Consider IPC as a low priority for medical & other health education • Curricula development • Priority for adequate water supply	• Strong communication and information • Shared responsibility & common understanding • Collaboration • Advocacy
Civil Service Agency	• Collaborative engagement in structure establishment • Ratification of HR-related directives	• Delay in decision making	
Partners	• Provision of technical support & capacity building • Funding and resource allocation to government priorities	• Fragmentation • Dissatisfaction • Limited funding • Withdrawal (project termination)	• Strong government leadership • Harmonization and alignment • Transparency & advocacy • Efficient resource use • Enhance engagement in planning, implementation, and M&E
Ministry of Education	• Ensure the development of appropriate & standard training materials	• Standardizing training methodology • Curricula designing	• Technical support and capacity building

	• Ensure provision of standard training (including knowledge & skill) • Include IPC as one of licensing & accreditation course		• Improved M&E and certification
Professional Associations	• Provision of technical advice & support • Capacity building • Research	• Setting pre-requisite • Mixing with one's association priority	• Enhance mechanism for collaborative roles • Motive and help to engage in the CPD program
Clients and attendants	• Participation, engagement & ownership	• Role and mandate • Participation	• Advocacy and promotion of their role on HAIs prevention • Put in place enabling platform for engagement

Table 5: Stakeholder analysis

6.0 Prioritized Core Components

The National IPC Quality Strategic Plan for 2022-2026 focuses on all eight components but prioritizes four (4) core components where significant gaps exist. These are core components one (1) IPC Programme, three (3) Education and Training in IPC, four (4) HAI Surveillance, and eight (8) Built Environments, material, and equipment in IPC. It is recognized that health facilities need to implement all core components to have an effective IPC program; hence the M&E plan will consider and cover all the other core components.

6.1 Core Component 1: National IPC Programme

The National IPC program is domiciled in the Healthcare Quality Management Unit (HQMU)and is headed by a Director and the National IPC Focal Person. Technical Working Groups for the National IPC Advisory Committee set up and developed the terms of reference (TORs). IPC committees for the County and Facility levels are no longer functional. There were no full-time IPC persons in most Hospitals. There is a need to activate the Technical Working Groups (Sub-committees) to realize the National IPC Steering Committee's function fully.

There was no standardized system of assessment of facility-level IPC programs in place. This made quantitative assessment of progress difficult; therefore, only general points can be made. It has been observed that key facility-level planning components (training and monitoring, and evaluation plan) needed strengthening. A revised IPCAF-MR tool used for the assessments provided a detailed analysis of the implementation of the eight (8) core components. There is no repository or central database for information collected during audits and site support visits.

To achieve effectiveness in the operation of IPC focal persons, there is a need to establish full-time focal person posts at all levels of the health delivery system. This shifts the focus and ownership of IPC interventions to operational, clinical, and non-clinical staff in institutional and community settings. Additionally, there is a need to introduce the IPC link person strategy in IPC implementations.

6.2 Core Component 3: Education and Training

Education and training have been a significant focus of the National IPC Programme, and several modules and training programs have been developed and implemented. However, all the IPC modules need to be reviewed and updated to the IPC requirements and guidelines; there is no National IPC training plan, and many of the training modules have been developed by partners. Having an IPC training sub-committee will be a useful forum to monitor training

and provide guidance on the training and competencies of trainers for IPC. This sub-committee needs to be appointed so that the quality and experience of use of the training modules developed can be evaluated and incorporated into a national training plan as appropriate.

The IPC training sub-committee will explore multiple and integrated approaches to training to ensure access to infection prevention and control education across all professions aligned to their roles and responsibilities. A team and a mechanism for timely review and delivery of IPC training shall be established when faced with threats of new and re-emerging infections and emergencies, and outbreaks. Strengthening of IPC professional expertise to support the demand and needs for IPC services and programs shall be institutionalized. The training sub-committee will develop a system for monitoring the quality of education delivered and assessing gaps that need to be addressed through training and education.

6.3 Core Component 4: Healthcare-associated Infections (HAI) Surveillance

There is no standardized national HAI surveillance system and case definitions in place. Therefore, the actual burden of HAI is unknown. There are currently no IPC indicators in the National DHIS2 system. There is a need to establish a HAI system with clear case definitions. It is essential to identify high risks areas, departments, and procedures to determine where to focus HAI surveillance and develop appropriate interventions to reduce the burden of HAIs.

6.4 Core Component 8: Built Environment, Materials, and Equipment for IPC at Health Facility

The built environment, materials, and equipment core component focus on providing a safe and functional environment for patients and health workers at healthcare facilities. The situation analysis revealed significant challenges centered around WASH services, waste management, and IPC materials and equipment.

6.4.1 WASH Services

WASH services requirements remain a challenge across all healthcare facilities. These services must be improved at all levels through increased access to potable water, strengthened water quality monitoring, and access to standard sanitation and hand hygiene facilities.

6.4.2 Waste Management

Healthcare waste management remains challenging in most healthcare facilities from generation to final disposal. A lack of healthcare waste management worsens the situation. Most healthcare waste disposal facilities are non-functional, especially incinerators. There is a need to create a collaborative platform for managing healthcare waste. It is also prudent to have a healthcare waste management plan in place.

6.4.3 IPC Materials and Equipment

There is no dedicated budget to assist in the function of the National IPC Programme either at the National or Facility level. The current provision of IPC materials and equipment improved due to allocation from the National COVID-19 response budget. Individual facilities have been ordering from National Medical Stores and primarily donations from partners. A designated budget is vital for managing the IPC program for a continuous, reliable supply of the materials and equipment necessary for implementation. There is a need to consistently involve IPC practitioners at all levels of health care so that the amount and quality of IPC materials and equipment are appropriate.

6.4.4 Healthcare Infrastructure

There is limited consultation of IPC expertise in planning and designing new healthcare and repurposing healthcare facilities. It is essential to have modern infrastructure that supports good IPC practices and quality of care.

7. 0 IPC Strategic Direction

7.1 Mission

To provide and coordinate acceptable, accessible, appropriate, and equitable quality IPC programs aligned with evidence-based practices while maximizing available resources in Liberia.

7.2 Goal

To strengthen IPC programs across all levels of healthcare in both public and private sectors.

7.3 Background

The 2022 World Health Assembly (WHA) approved a global strategy on IPC through a resolution that recognized the "critical importance of infection prevention and control in the human and animal health sectors and that it is a clinical and public health discipline based on a scientific approach." It called on the Member States "to acknowledge that clean, high-quality, safe, affordable care should be universally available and that no one should be unnecessarily exposed to infections due to suboptimal prevention and control practices."

The IPC Global Strategy has three main strategic objectives, which are;

1 To reduce infection and AMR in healthcare by 2030.
2 To ensure active IPC Programs are in place and implemented.
3 To integrate IPC within other areas (WASH/PHE/UHC, patient safety and AMR, OHS where appropriate)

To achieve these objectives, the strategy proposes 8 Strategic directions to follow, and these are:

- Political commitment and policies
- Active IPC Programs and minimum requirements
- IPC integration
- IPC knowledge and expertise
- Data for action
- Advocacy and communications
- Research and development
- Collaboration and stakeholder support

The IPC Direction is determined and anchored on the following guiding principles:

- **Prevention:** identify risk factors for infection, and applying interventions to reduce transmission of pathogenic organisms to patients, visitors, and healthcare workers.

- **Healthcare worker Health and Safety:** the health and safety of healthcare workers are to be considered in all healthcare programs.
- **Integration:** Integration of IPC Programme with all other health services.
- **Quality Improvement:** IPC is an integral part of the overall QI strategy of improving the health of the Nation.
- **Ethical appropriateness**: The rights of patients, visitors, and healthcare staff shall be respected. Privacy and confidentiality shall be upheld within the constraints of safe practice.

7.4 IPC Priorities based on the SWOT Analysis

- Core Component 1: National IPC Programme
- Core Component 3: Education and Training
- Core Component 4: Healthcare-associated Infections Surveillance
- Core component 8: Built Environment, Materials, and Equipment for IPC at Health Facility

7.5 Strategic Objective 1

Strengthen IPC program implementation structures

7.5.1 Strategic Intervention

Operationalize the platforms for planning and reviewing IPC activities at different levels of the health delivery system

Appointment of National IPC Advisory Committee.

Facility-based IPC structures were established though some were not functional. The National IPC Advisory Committee will become a technical working group with sub-committees, and its functionality will be supported. According to Liberia, the National IPC Guidelines, County and Hospital IPC committees shall be established. Operationalization of new IPC structures and strengthening the existing facility-based will be some essential deliverables for the strategy.

7.5.2 Strategic Intervention

Advocate for the establishment of IPC posts at various levels in the health delivery system

For a long time, the IPC program has relied on part-time employees who, to a greater extent, had other responsibilities. This limited the effectiveness of IPC practitioners in executing their mandates. Therefore, the creation of full-time posts for facilities shall be advocated.

7.5.3 Strategic Intervention: Establish a system of IPC link persons at public hospitals

In well-resourced countries settings, there is often one IPC practitioner for 100 beds; in resource-limited settings, the ratio tends to be one IPC practitioner per 250 beds. In limited resource settings like Liberia, staff in clinical units can be trained to fulfil IPC practitioner functions. This IPC link person system relies on the team in clinical units providing IPC services.

7.5.4 Strategic Intervention: Capacitate IPC focal persons at primary healthcare facilities

Primary care facilities were observed generally to have inadequate and at times no IPC programs. Limited training was one of the identified reasons. Through this strategy, the capacitation of IPC focal persons through training and mentorship will be strengthened.

7.6 Strategic Direction 2:

Strengthen IPC Competencies

7.6.1 Strategic intervention: Capacitate the health delivery system with up-to-date, relevant knowledge and skills in IPC through education and training

Infection Prevention and Control is integral to the health delivery system, requiring a well-informed workforce at all levels. The Ministry of Health will put in place mechanisms to ensure all public and private health sector workers and community involvement in health delivery activities are capacitated with up-to-date IPC knowledge and skills relevant to their day-to-day duties.

7.6.2 Strategic Intervention: Establish a standardized and coordinated system of IPC training

The practice of IPC evolves as new evidence for best practices emerges. With advancements in medical technologies and threats from emerging and re-emerging infections, the MoH shall ensure standardization of all IPC training by different players. The Multi-modal strategies will be used to build the appropriate IPC competencies.

7.6.3 Strategic Intervention: Engage the community in IPC to minimize infections

Communities empowered with infection prevention measures are an important, primary, and robust support structure for IPC and AMR prevention. The MoH will liaise with all its programs (intra-ministry), other government Ministries, Departments, Agencies, and

development partners to identify and take advantage of opportunities to disseminate relevant IPC and AMR information.

7.7 Strategic Direction 3

Establish a Standardised National HAI Surveillance System.

7.7.1 Strategic Intervention: Institutionalize instruments to determine the burden of HAIs

HAI surveillance tools and case definitions will be developed. Identification of high risks areas, departments, and procedures for active HAI surveillance will be made. Appropriate interventions to reduce the burden of HAIs will be implemented.

7.7.2 Strategic Intervention: Strengthening healthcare Worker infection surveillance

Developing /reviewing existing screening and reporting guidelines for occupational health will be conducted. Guidelines for screening and reporting for COVID-19 infections are available though the system needs to be strengthened to include other infections. There is a need for managers at all levels to facilitate the implementation and reporting of all health worker infections at all levels. The development of the IPC policy at all healthcare facilities will be assured. The dissemination and sensitization of the policy to management and staff will be conducted to improve staff screening and strengthen occupational health services. All health workers will be expected to comply with the IPC policy.

7.8 Strategic Direction 4

Strengthen Built Environment, Materials, and Equipment to Ensure Quality Services are Provided to Communities.

7.8.1 Strategic Intervention: Strengthen the involvement of IPC specialists in the planning and designing of infrastructure.

The repurposing of healthcare facilities was conducted in response to COVID-19. Limitations of the available infrastructure in providing adequate isolation facilities necessitated this. However, it was observed that there was inadequate consideration of IPC professionals' input in planning and executing these changes, which resulted in inappropriate practices being introduced and encouraged. Therefore, engagement and collaboration with the Infrastructure Unit in the Ministry of Health and Environmental Health departments to facilitate IPC specialists' participation in the planning, designing, and repurposing of healthcare infrastructure is vital and will be pursued.

7.8.2 Strategic Intervention: Strengthen WASH Services in all facilities

Advocating for functional WASH services is one of the interventions that will be used. IPC and Environmental Health WASH-related activities will be integrated.

7.8.3 Strategic Intervention: Strengthen waste management services in all facilities

Waste management infrastructure has been observed to be critically inadequate, yet it facilitates proper waste management. The COVID-19 pandemic exposed these inadequacies with increased waste from diagnostic services, personal protective equipment, and vaccination. Advocating for standard and functional waste management services in all health facilities (Incinerators, Ottoway pits, bottle crushers, and ash pits.) will be a priority. This will be reinforced by establishing waste segregation systems in all facilities.

7.8.4 Strategic Intervention: Strengthen the management of decontamination services for equipment and materials (sterilizers and mechanisms for validating sterilizers.)

Most healthcare facilities rely mostly on pressure cooker pots for sterilization. Pressure cooker pots do not provide optimum sterilization. In some facilities with any form of decontamination process, there is a lack of a standard building with unidirectional flow. The higher levels of care vary regarding the equipment, materials, and systems for decontamination services. It is prudent that advocacy for acquiring appropriate and effective sterilizing equipment for all levels of care be heightened. A system for validation of sterilizers will be established as they do not exist.

7.9 Implementation Modalities

7.9.1 Regulatory framework

The targets for Sustainable Development Goal (SDG) 3-Ensure Healthy Lives and Well-Being for all ages, and SDG 6- Clean Water and Sanitation at a global level are relevant to IPC programs. This strategy aims to contribute towards achieving these targets and goals. In addition, the International Health Regulations (2005), whose primary purpose is to protect against the international spread of diseases, establishes a vital role of IPC concerning Public Health Emergencies of International Concern (PHEICs) of which COVID-19 is one.

The Government of Liberia has strategic documents that provide a template and the strategic direction for all national programs, IPC included. The National Healthcare Quality Strategy of 2022-2026, in line with the National Health Policy 2022-2031, prioritizes:

- Improving access to high-impact community-based, primary, secondary, and tertiary health services that are universal, affordable, and responsive to the needs of the population
- Increasing the utilization of services through the expansion of health facilities to under-served populations by improving the population's care-seeking behavior, the quality of care, and the availability of essential drugs, basic and advanced diagnostic equipment
- Strengthening the capacity and competency of the existing workforce, producing additional healthcare workers with the right skills mix, recruiting and deploying according to service delivery needs, and retaining skilled providers where they are needed most
- Sustaining the current community health program to deliver health services to vulnerable and under-served populations based on a well-defined package of care
- Implementing the international health regulation (IHR) 2005 to build the required core capacities to prevent, detect and respond to health emergencies utilizing the one health platform

At the same time, the health sector must become more efficient by:

- Allocating resources to counties and health facilities according to their population size, disease burden, workload, and utilization
- Decentralizing health system management to the appropriate levels based on their capacity
- Creating a culture of data use and analysis for programming, planning, and decision making
- Improving the coordination of all efforts to support the delivery of quality, affordable, and universal health services, eliminating fragmentation, duplication, and minimizing gaps; and
- Creating a culture at all levels of the health system that values and endeavors to do more for the population within available resources

These priorities all apply to and are essential for IPC. Some establish the platform for IPC implementation, while IPC practices facilitate the achievement of some of the priorities. The

National Healthcare Quality Strategy 2022-2026 unpacks these priorities. The National IPC strategy will further unpack the Health Sector Priorities and The National Health Strategic interventions to establish its cross-cutting position in quality healthcare provision.

7.9.2 Mitigating Risks

The IPC Strategic plan is aligned with and further unpacks the National Healthcare Quality Strategy (2022-2026). It is hoped that Lessons learned and investments made during the preparedness and response to COVID-19 will hopefully assist in taking the IPC agenda forward. The focus of the IPC strategy is to strengthen the management and implementation of IPC across all programs, including accessing a budget line to carry out IPC implementation. This will improve IPC practices among healthcare workers, the response to current and emerging infections, and antimicrobial resistance. Implementing IPC interventions will lead to improved quality of care and patient, including healthcare worker safety in tandem with the quality thrust of the National Healthcare Quality Strategy.

7.9.3 Financing of Strategy

Financial support for IPC programs comes from several fragmented sources (government, private sector, and development partners), resulting in uncoordinated implementation. The National IPC strategy has a costed implementation framework. This will guide investment support from the government, private sector, and development partners.

7.9.4 Monitoring and Evaluation of the Strategy

The National Healthcare Quality Strategy guides the IPC strategy. Monitoring and evaluation (M&E) functions are essential to ensure that priority health interventions outlined in the IPC strategy are implemented as planned and that desired or targeted results are attained.

Monitoring and Evaluation of the IPC strategy 2022-2026 will use an integrated and comprehensive health systems approach that is built firmly under a single country-led M&E platform, the MoH Directorate of Performance Monitoring and Evaluation.

A Monitoring and Evaluation Plan, which outlines key interventions, a selection of core indicators, their baselines, and yearly targets to track the performance of the IPC Strategy, has been developed and appears in this document in the M&E plan section.

8.0 Conclusion

The National IPC Strategy (NIPCS) will run for four years, from 2023-2027, to be in sync with the National Health Quality Strategy. A mid-term review will be conducted in 2025. This will be used to assess progress and provide critical information for the next National IPC Strategy.

8.1 Implementation Plan:

The implementation matrix is outlined below for National and Facility level plans and according to the WHO 8 Core Components of an IPC Programme.

8.2 Coordination of the Strategy

Different activities under each strategic objective and priority area of this strategic plan shall be implemented within a specific timeline over the four-year implementation period. The National IPC Steering Committee will give guidance and strategic direction for the implementation of the strategy, while the HQMU shall oversee the implementation of this strategy with technical support from the IPC TWG.

8.3 Resourcing and resource mobilization

The National IPC Steering Committee will endeavor to advocate for the resources to implement the activities through stakeholder engagements. The National IPC Steering Committee will ensure the Strategic Plan has a dedicated budget to fulfill its mandate. The HQMU will ensure timely reporting and use data from facilities to develop indicators to lobby for the financing of IPC activities from the Government of Liberia and Partners.

8.4 Monitoring and Evaluation

The HQMU will develop a Monitoring and Evaluation (M&E) framework for this strategic plan. Monitoring will focus on routine and continuous tracking of prioritized IPC activities. Evaluation will assess how well HQMU, Health facilities, and IPC stakeholders meet their objectives. The mid-term Evaluation will inform any changes necessary to put implementation back on track, and the end evaluation will document learning from the performance of the strategic plan to inform the next steps.

9.0 Implementation Framework Matrix

Table 6: National IPC Strategic plan implementation matrix

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline in years					Responsible Person/Department
					2023	2024	2025	2026	2027	
IPC Program and all relevant IPC Program linkages	National Level	Have a functional national IPC program	Active, stand-alone, national IPC program with clearly defined objectives, functions should be established for the purpose of preventing HAI, promoting patient safety and combating AMR through IPC good practices.	Establish a National IPC coordination office with a team trained in IPC and a dedicated budget	X					MoH/ HQMU
				Appoint National IPC Steering Committee	X					CMO/DCMO
				Designate member of IPC team as representative on the IPC TWG within the One Health Platform	X					HQMU/DCMO/CHS/HRH
				Develop a national IPC policy	X					HQMU/ Planning and Policy/ DCMO/CHS/HRH/OGC/Partners
				Advocate for establishment of IPC posts at various levels in health delivery system		X	X			IPC Steering Committee/IPC TWG/HQMU/Health services/ HRH
	Facility level	Have a functional IPC program at Facility Level	Active, stand-alone, facility-based IPC program with clearly defined objectives, functions and activities established for the purpose of preventing HAI, promoting patient safety and combating AMR through IPC good practices.	Have a dedicated trained IPC focal person at all healthcare facilities (public and private) with clear TOR	X	X	X			IPC Steering Committee/IPC TWG/HQMU/Health services/ HRH
				Have Quality Management Teams at all hospitals and IPC teams at all Districts/ Counties. IPC committees and teams should have clear TORs, administrative advocacy capacity, be multidisciplinary, and should be led by an IPC trained health officer.	X	X				HQMU/ Hospitals
				Have a dedicated budget for IPC implementation in all facilities	X	X	X	X	X	IPC Steering Committee/IPC TWG/HQMU/Health services/ HRH
				Establish a system of IPC link persons at Public Hospitals	X	X	X			HQMU

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/Department
					2023	2024	2025	2026	2027	
IPC Guidelines	National	Evidence based Ministry approved IPC Guidelines adapted to local context and reviewed at least every 5 years	Evidence based ministry approved Guidelines adapted to the local context and review at least every 5 years	Support National IPC Committee to review and revise current National IPC Guidelines based on evidence	X					MoH/GoL/Partners
				Print and distribute Guidelines	X					MoH/GoL/Partners
				Develop strategy to review and revise Guidelines at 5 years	X					MoH/GoL/Partners
				Train facility IPC Focal persons on updated guidelines	X	X				MoH/GoL/Partners
	Facility	Evidence based facility SOPs based on the National IPC Guidelines	Have following SOPs available in healthcare facilities -Hand hygiene, decontamination of medical devices and patient care items, environmental cleaning, healthcare waste management, injection safety and healthcare worker protection (PEP/ Vaccinations)	Develop SOPs as per revised National IPC Guidelines	X					MoH/GoL/Partners
				Revise emergency plans including for surge capacity	X					MoH/GoL/Partners
				Train facility staff on revised National IPC Guidelines and developed SOPs	X	X	X			MoH/GoL/Partners
				Routinely monitor implementation of some of the Guidelines and SOPs	X	X	X	X	X	HQMU/ Mand E Unit

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/ Department
					2023	2024	2025	2026	2027	MoH/HQMU/Partners
IPC Education and Training	National	Strengthen the healthcare workforce expertise through the development of a National IPC training Program		Update and standardize minimum standards for National IPC Curricula for pre-service training in coordination with National Council for Higher Education and harmonize IPC Curricula across Universities		X				MoH/HQMU/Partners
				Develop and standardize training tools and materials that are aligned with National Guidelines and promote use of simulation and Multi Modal Strategies		X				MoH/HQMU/Partners
				Conduct a National Trainer of Trainer training for IPC Focal Persons	X					MoH/HQMU/Partners
				Develop a National certification Program for IPC Professionals	X	X				MoH/HQMU/Partners
				Mentor County and Facility IPC Focal Persons	X	X	X	X	X	MoH/HQMU/Partners
	Facility	Strengthen the healthcare workforce expertise by supporting and facilitating IPC education and training at facility level		Conduct annual in-service trainings on IPC Guidelines and SOPs for all Health workers involved in service delivery and patient care and other personnel who support health service delivery	X	X	X	X	X	County IPC FPs/MoH/Partners
				Offer continuing Medical Education on IPC topics at facility level	X	X	X	X	X	MoH/Medical Institutions/IPC TWG/Partners
				Conduct routine monitoring and Evaluation of training program and health worker knowledge on IPC	X	X	X	X	X	MoH/HQMU

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/ Department
					2023	2024	2025	2026	2027	
HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	National HAI Surveillance Programme to include mechanisms for timely data feedback and can be used for benchmarking to reduce HAI and AMR	Designate member of the IPC Team as a representative on the Surveillance TWG within the One Health Platform	X					IPC TWG/AMR TWG/Partners
				Establish a standardized National HAI surveillance system and incorporate HAI Surveillance Plan into National AMR Plan for Human Health. Plan should have clear surveillance definition and feedback from National Level to Facility Level	X	X				IPC TWG/AMR TWG/Partners
				Integrate HAI indicators into DHIS-2 for routine reporting of HAI surveillance data		X				IPC TWG/AMR TWG/Partners
				Link routine HAI surveillance system with National IPC Program	X	X				IPC TWG/AMR TWG/Partners
	Facility	Establish a facility HAI Surveillance system that support facility level IPC interventions	Facility based HAI Surveillance systems should guide IPC interventions and detect outbreaks with timely feedback to health workers and stake holders	Conduct active HAI surveillance data, using current HAI surveillance case definitions as part of the IPC Program in District Hospitals to inform local interventions	X	X	X	X	X	IPC TWG/AMR TWG/Partners
				Train health workers in HAI Surveillance, basic epidemiology and IPC	X	X	X	X	X	IPC TWG/AMR TWG/Partners
				Conduct routine reporting of HAI surveillance data to MoH	X	X	X	X	X	
				Provide regular feedback on the HAI Surveillance data to health workers, facility management and stakeholders	X	X	X	X	X	IPC TWG/AMR TWG/Partners

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/ Department
					2023	2024	2025	2026	2027	
Multi Modal Strategies	National	Enhanced knowledge and skills of healthcare workers in IPC best practice through the use of multi-modal education		1. Incorporate multi-modal strategies (i.e., system change; education and training; monitoring and feedback; communications and reminders; and safety climate and culture change) in the implementation of national IPC guidelines and SOPs	X	X				MoH/HQMU
				2. Provide training and education on multi-modal strategies at the national level	X		X			MoH/Partners
				3.Develop and disseminate IEC materials and other awareness-raising tools to all healthcare facilities (public and private) to serve as reminders in the workplace	X	X	X	X	X	MoH/Partners
				4. Implement advocacy and campaigns at the national level to promote organizational culture change at the facility level and advance IPC goals	X	X	X	X	X	MoH/Partners
				5. Link national IPC team with accreditation bodies to promote multi-modal strategies			X	X		MoH/HQMU/Regulatory bodies/ Partners
				6. Establish a system of regular reporting, Evaluation and feedback on multi-modal strategies across health facilities including feedback	X	X				MoH/Partners
	Facility			1. Provide training and education on multi-modal strategies at the facility level	X	X	X	X	X	MoH/Partners
				2. Link IPC program with quality improvement and patient safety programs to promote multi-modal strategies	X	X	X	X	X	MoH/Partners
				3. Use multi-modal strategies at all health facilities (private and public) to implement a hand hygiene (HH) program	X	X	X	X	X	HQMU/ Counties

				4. Use multi-modal strategies at all health facilities (private and public) to implement a surgical site infection (SSI) control program		X	X	X	X	HQMU/ Counties
				5. Use multi-modal strategies at all health facilities (private and public) to implement other IPC programs, depending upon resources		X	X	X	X	HQMU/ Counties

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/ Department
					2023	2024	2025	2026	2027	
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	A National IPC assessment Program that is providing feedback of findings has been established	Establish a National M and E plan focused on IPC Processes and outcomes with clear goals, targets, and operational Plans	X					IPC TWG/Partners
				Develop and /or adapt tools to collect information needed for monitoring, audit, and feedback systemically, including hand hygiene adherence using the Hand hygiene self-assessment framework	X	X				IPC TWG/Partners
				Define minimum set of IPC Indicators for health facility to intergrate within the National monitoring systems (DHIS-2)	X					IPC TWG/Partners
				Establish a mechanism to train National and Local auditors	X					IPC TWG/Partners
				Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	X	X	X	X	X	IPC TWG/Partners
				Regularly analyse routinely collected IPC data and use results to inform decision making at the National and facility level	X	X	X	X	X	IPC TWG/Partners
				Facilitate facility level self/peer evaluation against National standards and goals	X	X	X	X	X	IPC TWG/Partners

	Facility	Regular audits and timely feedback of IPC practices are performed at health facility level and feedback provided to all health facility staff	Hospitals develop a program for regular IPC assessments	Conduct quarterly IPC hand hygiene observation, annual hand hygiene self-assessment framework with feedback and quality improvement	X	X	X	X	X	IPC TWG/Partners
				Regularly report on key IPC indicators to the National program via the DHIS-2	X	X	X	X	X	IPC TWG/Partners
				Establish a system at all health facilities for reporting key IPC indicators into DHIS-2	X	X				IPC TWG/Partners

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/ Department
					2023	2024	2025	2026	2027	
Workload, staffing and bed occupancy	National		Supervise and mentor the operationalization of optimal workloads, staff levels, bed occupancy and safety	Develop a National Plan for human resource development in IPC	X	X				
				Develop, revise National standards for bed occupancy and bed spacing levels at Primary, Secondary and Tertiary levels based on international standards		X				
				Advocate for resources to enforce workload, staffing and bed occupancy in facilities	X	X	X	X	X	
	Facility	Facilities at primary, secondary and tertiary levels operate within a safe environment with standardized bed occupancy and optimal staff levels	Health facilities in all levels operate within a safe environment with standard occupancy and optimal staff levels	Frequently review SOPs to routinely monitor for adherence to National Standards for bed occupancy, staffing and workload.		X	X	X	X	
				Design facility wards using approved plans that are compliant with National standards for bed occupancy		X	X	X	X	

WHO Core Component	Level	Desired Outcomes	Description	Strategies	Timeline					Responsible Person/ Department
					2023	2024	2025	2026	2027	
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within healthcare facilities		Adopt National WASH and health facilities work plan as part of the National IPC Guidelines	X					MoH/HQMU
				Establish National IPC standards for Facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)	X	X				MoH/HQMU
				Link National IPC Team with Environmental Health Department to coordinate on WASH in health facilities standards	X					MoH/NPHIL/DEOH
				Link National IPC Team with National Medical Stores to coordinate Logistics and address procurement requests for IPC supplies and equipment	X					MoH/HQMU
				Link National IPC Team with Pharmacy Department to coordinate logistics and alignment with Medical Counter measures Plan	X					MoH/HQMU
	Facility	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards for adequate built environment, material and equipment	Facilities should have adequate built environment, materials, and equipment including water availability, sanitation facilities, hand hygiene facilities, waste management, ventilation and medical device decontamination	Ensure facilities have sufficient power supply that is compliant with National IPC/WASH and occupational health and safety Standards	X	X	X	X	X	MoH/HQMU/ NPHIL/DEOH
				Ensure facilities have functional ventilation (natural/ mechanical) that is compliant with IPC/WASH and occupational health and safety standards	X	X	X	X	X	MoH/HQMU/ NPHIL/DEOH
				Ensure facilities have adequate isolation rooms or are able to cohort or physically separate patients as per IPC/WASH and occupational health and safety standards	X	X	X	X	X	MoH/HQMU/ NPHIL/DEOH
				Ensure Facility has a dedicated area for medical device decontamination or sterilization and is compliant with National IPC /WASH and occupational health and safety standards		X	X	X	X	MoH/HQMU/ NPHIL/DEOH

				Ensure that Facility has sterile and disinfected equipment reliably available and compliant with National IPC /WASH and occupational health and safety standards		X	X	X	X	MoH/HQMU/ NPHIL/DEOH
				Conduct regular assessments of Built Environment and medical device decontamination to ensure compliance with National IPC/WASH and occupational health and safety standards	X	X	X	X	X	MoH/HQMU/ NPHIL/DEOH

Monitoring and Evaluation matrix

Table 7: National IPC Strategy M&E matrix

Core Component	Strategic Intervention	Indicator Type	Indicator	Data Source	Disaggregation	Frequency of collection	Baseline and year	Target				
								2023	2024	2025	2026	2027
IPC Programme	Improved functionality of the national and subnational IPC programme with a dedicated IPC budget allocation in place	Outcome	% of planned IPC Steering Committee meetings conducted	Implementation Fidelity Monitoring Report/	National and Subnational	Quarterly	0(2022)	4	4	4	4	4
		Outcome	GoI budgetary allocation for IPC as a share of total GoI for health Total Expenditure on IPC as a total expenditure on health	National Health Accounts survey report National Health Accounts survey report		Bi-annually Bi-annually	0(2022) 0(2022)	20% 20%	30% 30%	40 %	50 %	
		Output	% of Hospitals with a costed Annual IPC operational plans	Implementation Fidelity Monitoring Report		Annually	0(2022)	23 Hospitals	35 Health Centres			

		Output	% of facilities with a trained and full time IPC focal person	Implementation Fidelity Monitoring Report		Annually	0(2022)	23 Hospitals				
		Output	Proportion of health facilities with functional IPC Committees	Implementation Fidelity Monitoring Report		Quarterly	0(2022)					
IPC Guidelines	National IPC Guidelines available at all levels	Output	% of health facilities that have access to national IPC guidelines	Implementation Fidelity Monitoring Report		Quarterly	0(2022)					
IPC Training and Education	Healthcare worker knowledge and expertise on IPC strengthened	Output	% of targeted healthcare workers trained IPC Focal Persons and CHOs trained as Trainer of Trainers in IPC % of training beneficiaries verified as being trained	Training report & Attendance listing		Annually	0(2022)					
		Output	% of health facilities conducting in-service IPC training plans % of facilities achieving minimum threshold (80 %) in the execution of their	IPC Focal Person's Report		Quarterly	0(2022)					

			in-service training plan									
HAI Surveillance	HAI Systems that support IPC interventions established in National and Sub National levels	Output	% of facilities meeting **minimum standards** for HAI surveillance	IPCAF Assessment Report			0(2022)					
		Output	Incidence of occupational exposure due to (needle stick injuries, body fluids, etc.	HMIS		Monthly	0(2022)					
MMS	Incorporate MMS in the implementation of National IPC Guidelines and SOPs	Output	% of hospitals meeting minimum (80%) hand hygiene compliance score	Annual Hand hygiene audit report		Annually	(2022)					
		Output	Proportion of facilities using MMS to implement a surgical site infection control programme	HMIS		Monthly	0(2022)					
Monitoring /audit of IPC practices and feedback	Regular audits and timely feedback of IPC practices and feedback											
			%									
			%									

	provided to inform decisions											
								1	1	1	1	1
Built environment, materials, and equipment for IPC	Ensure safe working environment by adhering to National IPC/WASH standards for the built environment, material and equipment	Outcome	Proportion of hospitals with isolation facilities that meet IPC/WASH standards	Assessment Report		Annually	0(2022)					
		Output	Proportion of facilities with access to improved water supply facilities within the premises	DHIS 2		Monthly	0(2022)					
			Proportion of facilities with adequate water storage available (regularly filled water tank(s) which provide storage of up to 48 hours of water demand									
		Output	Proportion of facilities with adequate cleaning equipment (colour coded mops, 2	IPC Reports		Annually	0(2022)					

			bucket system, detergents and disinfectants)									
		Output	% of facilities with regular access to electricity (various sources solar, generator, LEC)	DHIS 2		Monthly	0(2022)					
		Output	% of Facilities with potential stock-out of IPC items (face shield, gloves, gowns, facemask, environmental detergents, soap, ABHR) in the previous 3 months NB: (Current stock balance less than the average monthly consumption)	eLMIS		Quarterly	0(2022)					
		Output	Percentage of facilities with functional available toilets which meets the minimum IPC standards (separate washrooms for staff and patients, both sexes, functional HH	eJISS Reports		Quarterly	0(2022)					

			station in or near the toilets,									
		Output	Proportion of health facilities with functional incinerators	eJISS Reports		Quarterly	0(2022)					
		Output	% of facilities meeting minimum IPC standards for decontamination	IPC Reports		Annually	0(2022)					

WHO Core Component	Level	Desired Outcomes	Strategies	Timeline in years					Costing	Source of Funds
				2023	2024	2025	2026	2027		
IPC Program and all	National Level	Have a functional	Establish a National IPC coordination office with a team trained in IPC and a dedicated budget	X						

relevant IPC Program linkages		national IPC program	Appoint National IPC Steering Committee	X						
			Designate member of IPC team as representative on the IPC TWC within the One Health Platform	X						
			Develop a national IPC policy	X						
			Advocate for establishment of IPC posts at various levels in health delivery system		X	X				
	Facility level	Have a functional IPC program at Facility Level	Have a dedicated trained IPC focal person at all healthcare facilities (public and private) with clear TOR	X	X					
			Have Quality Management Teams at all hospitals and IPC teams at all Districts/ Counties. IPC committees and teams should have clear TORs, administrative advocacy capacity, be multidisciplinary, and should be led by an IPC trained health officer.	X	X	X	X	X		
			Have a dedicated budget for IPC implementation in all facilities	X	X	X	X	X		
			Establish a system of IPC link persons at Public Hospitals	X	X	X				

WHO Core Component	Level	Desired Outcomes	Strategies	Timeline					Costing	Source of Funds
				2023	2024	2025	2026	2027		
IPC Guidelines	National	Evidence based Ministry approved IPC Guidelines adapted to local context and reviewed at least every 5 years	Support National IPC Committee to review and revise current National IPC Guidelines based on evidence	X						
			Print and distribute Guidelines	X						
			Develop strategy to review and revise Guidelines at 5 years	X						

			Train facility IPC Focal persons on updated guidelines	X	X					
	Facility	Evidence based facility SOPs based on the National IPC Guidelines	Develop SOPs as per revised National IPC Guidelines	X						
			Revise emergency plans including for surge capacity	X						
			Train facility staff on revised National IPC Guidelines and developed SOPs	X	X	X				
			Routinely monitor implementation of some of the Guidelines and SOPs	X	X	X	X	X		

Strategic Plan costing

Table 8: IPC Strategic Plan costing matrix

WHO Core Component	Level	Desired Outcomes	Strategies	Timeline in years					Types of Activity	Activity	Total Cost
				2023	2024	2025	2026	2027			
IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Establish a National IPC coordination office with a team trained in IPC and a dedicated budget	X					Training	Train National IPC Coordinator in ICAN Diploma and post Graduate IPC Courses	78,500.00
IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Appoint National IPC Steering Committee	X	X	X	X	X	Advocacy	Technical Working Group monthly session	1,000.00

IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Designate member of IPC team as representative on the IPC TWG within the One Health Platform	X					Qtrly meetings	Once every year	6,000.00
IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Develop a national IPC policy	X					International Consultancy	Hire an international consultant to support the development of the National IPC Policy	24,750.00
IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Advocate for establishment of IPC posts at various levels in health delivery system	X	X	X	X	X	Meeting	Establish/reactivate quality improvement teams at 34-38 public and private hospitals	33,750.00
IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Advocate for establishment of IPC posts at various levels in health delivery system	X					Procurement	Procurement of quality improvement equipment and supplies (autoclaves, delivery beds, delivery sets, incinerators	750,000.00

IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Advocate for establishment of IPC posts at various levels in health delivery system	X					Training	Train quality improvement teams at 34-38 hospitals on the eight core components of IPC program, quality of care and patient safety	24,764.00
IPC Program and all relevant IPC Program linkages	National	Have a functional national IPC program	Advocate for establishment of IPC posts at various levels in health delivery system	X					Monitoring	Monitor activity implementation of the QIT at 34-38 hospital in the country	150,000.00
IPC Program and all relevant IPC Program linkages	Facility level	Have a functional IPC program at Facility Level	Have a dedicated trained IPC focal person at all healthcare facilities (public and private) with clear TOR	X	X	X			Meeting	Designate IPC focal persons for all healthcare facilities	0.00

IPC Program and all relevant IPC Program linkages	Facility level	Have a functional IPC program at Facility Level	Have a dedicated trained IPC focal person at all healthcare facilities (public and private) with clear TOR	X	X	X			Training	Refresh old staff and orientate newly designated IPC focal person at hospitals	409,000.00
IPC Program and all relevant IPC Program linkages	Facility level	Have a functional IPC program at Facility Level	Have a dedicated trained IPC focal person at all healthcare facilities (public and private) with clear TOR	X	X				Training	Refresh old staff and orientate newly designated IPC focal person at the districts	100,000.00
IPC Program and all relevant IPC Program linkages	Facility level	Have a functional IPC program at Facility Level	Have a dedicated budget for IPC implementation in all facilities	X	X	X	X		Advocacy	dedicated budget to be included for IPC Implementation	1,000,000.00
IPC Program and all relevant IPC Program linkages	National	Procurement of assorted IPC Supplies	Procurement of assorted IPC Supplies	X	X	X	X	X	Procurement	Procure assorted materials (examination gloves, sterile gloves, Gyn gloves, Nose mask,	1,500,000.00

										bodybags, biohazard bags, hand sanitizers, hand liqud soap, waste bins, heavy duty gloves, dispoable aprons, reusable aprops, coverall, boots, etc	
IPC Guidelines	National	Evidence based Ministry approved IPC Guidelines adapted to local context and reviewed at least every 5 years	Support National IPC Committee to review and revise current National IPC Guidelines based on evidence	X					Review Meeting	Review meeting to update and revise national IPC guidelines	25,000.00
IPC Guidelines	National	Evidence based Ministry approved IPC Guidelines adapted to local context and reviewed at least every 5 years	Print and distribute Guidelines	X					Logistics	Printing 1000 copies of national IPC guidelines	75,000.00

IPC Guidelines	National	Evidence based Ministry approved IPC Guidelines adapted to local context and reviewed at least every 5 years	Train facility IPC Focal persons on updated guidelines	X	X				Training	Conduct IPC orientation for 1954 health facility focal person	675,000.00
IPC Guidelines	Facility level	Evidence based facility SOPs based on the National IPC Guidelines	Develop SOPs as per revised National IPC Guidelines	X	X				Meeting	Conduct meeting to develop IPC SOPs as per the revised IPC guidelines	225,000.00
IPC Guidelines	Facility level	Evidence based facility SOPs based on the National IPC Guidelines	Revise emergency plans including for surge capacity	X	X				Funding	Provide funding for hiring surge capacity when needed	360,000.00
IPC Education and Training	National	Strengthen the healthcare workforce expertise through the development of a National IPC training Program	Update and standardize minimum standards for National IPC Curricula for pre-service training in co-ordination with National Council for Higher Education and harmonize IPC		X				Meeting	Adopt and validate IPC curriculum for into preservice training institution	5,000.00

			Curricula across Universities								
IPC Education and Training	National	Strengthen the healthcare workforce expertise through the development of a National IPC training Program	Update and standardize minimum standards for National IPC Curricula for pre-service training in co-ordination with National Council for Higher Education and harmonize IPC Curricula across Universities		X				Training	Conduct training for IPC instructors in preservice institutions	10,900.00
IPC Education and Training	National	Strengthen the healthcare workforce expertise through the development of a National IPC training Program	Develop and standardize training tools and materials that are aligned with National Guidelines and promote use of simulation and Multi Modal Strategies		X				Meeting	Integrate IPC modules in pre-service curriculum	500,000.000

IPC Education and Training	Facility level	Strengthen the healthcare workforce expertise by supporting and facilitating IPC education and training at facility level	Conduct annual in-service trainings on IPC Guidelines and SOPs for all Health workers involved in service delivery and patient care and other personnel who support health service delivery	X	X	X	X		Training	Conduct annual in-service IPC training for health workers across 15 counties	300,000.00
HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Designate member of the IPC Team as a representative on the Surveillance TWG within the One Health Platform	X					Advocacy	Appoint and train IPC focal person for One Health TWG	50,000.00
HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Establish a standardized National HAI surveillance system and incorporate HAI Surveillance Plan into National AMR Plan for Human Health. Plan should have clear surveillance definition and feedback from	X	X				Workshop and meetings	Develop HAI Surveillance Plan	55,000.00

			National Level to Facility Level								
HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Establish a standardized National HAI surveillance system and incorporate HAI Surveillance Plan into National AMR Plan for Human Health. Plan should have clear surveillance definition and feedback from National Level to Facility Level	X	X	X	X	X	Advocacy	Integrate HAI Surveillance into the national surveillance system	75,000

HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Establish a standardized National HAI surveillance system and incorporate HAI Surveillance Plan into National AMR Plan for Human Health. Plan should have clear surveillance definition and feedback from National Level to Facility Level	X	X	X	X	X	Training	Conduct HAI Training for 75 HCW in 10 selected hospitals	12,000.00
HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Integrate HAI indicators into DHIS-2 for routine reporting of HAI surveillance data		X				Meeting	Update and print HMIS tools to include IPC indicators	10,000.00
HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Integrate HAI indicators into DHIS-2 for routine reporting of HAI surveillance data						Meeting	Update and print HMIS tools to include IPC indicators	10,000.00

HAI Surveillance	National	Establish a National HAI Surveillance system that supports the National IPC Program	Integrate HAI indicators into DHIS-2 for routine reporting of HAI surveillance data						Meeting	Update and print HMIS tools to include IPC indicators	30,000.00
HAI Surveillance	Facility level	Establish a facility HAI Surveillance system that support facility level IPC interventions	Conduct active HAI surveillance data, using current HAI surveillance case definitions as part of the IPC Program in District Hospitals to inform local interventions	X	X	X	X		Procurement	Procure HAI laboratory equipment	500,000.00
HAI Surveillance	Facility level	Establish a facility HAI Surveillance system that support facility level IPC interventions	Conduct active HAI surveillance data, using current HAI surveillance case definitions as part of the IPC Program in District Hospitals to inform local interventions					X	Procurement	Laboratory Reagents and Supplies	100,000.00
HAI Surveillance	Facility level	Establish a facility HAI Surveillance system that support facility	Train health workers in HAI Surveillance, basic epidemiology and IPC	X	X	X	X		Training	Conduct HAI Surveillance in 10 hospital across Liberia	15,000.00

		level IPC interventions									
HAI Surveillance	Facility level	Establish a facility HAI Surveillance system that support facility level IPC interventions	Train health workers in HAI Surveillance, basic epidemiology and IPC	X	X	X	X	X	Training	Conduct HAI Surveillance in 10 hospital across Liberia	12,000.00
HAI Surveillance	Facility level	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	Conduct routine reporting of HAI surveillance data to MoH		X	X	X		Advocacy	Monitoring and supervision	40,000.00
HAI Surveillance	Facility level	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	Provide regular feedback on the HAI Surveillance data to health workers, facility management, and stakeholders	X	X	X	X		Monitoring		10,000.00

Multi-Modal Strategies	National	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	1. Incorporate multimodal strategies (i.e., system change; education and training; monitoring and feedback; communications and reminders; and safety climate and culture change) in the implementation of national IPC guidelines and SOPs	X	X	X	X	X	Procurement	Based on the findings after the incorporation of the multimodal strategies	25,000.00
Multi-Modal Strategies	National	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	2. Provide training and education on multimodal strategies at the national level			X					30,000.00
Multi-Modal Strategies	National	Establish a facility HAI Surveillance system that supports facility-	2. Disseminate IEC materials and other awareness-raising tools to all healthcare facilities (public and private)	X	X	X	X	X	Procurement	Printing of assorted IEC/job aides' materials	150,000.00

		level IPC interventions	to serve as reminders in the workplace								
Multi-Modal Strategies	National	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	3. Implement advocacy and campaigns at the national level to promote organizational culture change at the facility level and advance IPC goals	X	X	X	X	X	Advocacy Meetings	Observance of the IPC commemorations	75,000.00
Multi-Modal Strategies	National	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	4. Establish a system of regular reporting and evaluation on multimodal strategies across health facilities, including feedback	X	X				Advocacy Meetings	Conduct meetings for regular reporting system	20,000.00
Multi-Modal Strategies	National	Establish a facility HAI Surveillance system that supports facility-level IPC interventions	5. Link IPC program with quality improvement and patient safety programs to promote	X	X	X	X	X	Advocacy Meetings	Conduct meetings for IPC integration for patient safety and AMR	50,000.00

			multimodal strategies								
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Evaluate a National M and E plan focused on IPC Processes and outcomes with clear goals, targets, and operational Plans		X		X		System Evaluation	Hire a consultant to conduct a system evaluation of the national IPC program	24,750.00

Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program was established to assess capacity and gaps in the National IPC Program implementation, including the provision of feedback of assessment findings and hand hygiene assessments	Develop and/or adapt tools to collect information needed for monitoring, audit, and feedback systemically, including hand hygiene adherence using the Hand hygiene self-assessment framework	X	X				Meeting	Develop tools for IPC program evaluation	20,000.00
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program was established to assess capacity and gaps in the National IPC Program implementation, including the provision of feedback of	Define a minimum set of IPC Indicators for health facilities to integrate within the National monitoring systems (DHIS-2)	X					Meeting	Incorporate IPC indicators into the DHIS2	15,000.00

		assessment findings and hand hygiene assessments									
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program was established to assess capacity and gaps in the National IPC Program implementation, including the provision of feedback of assessment findings and hand hygiene assessments	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	X	X	X	X	X	Field Visits	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	60,000.00

Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program was established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities						Field Visits	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	60,000.00
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities						Field Visits	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	200,000.00

		assessment findings and hand hygiene assessments									
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities						Field Visits	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	0.00

Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities						Field Visits	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	0.00
Monitoring/ audit of IPC practices and feedback	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of	Conduct routine monitoring and audit of IPC activities and structures of healthcare facilities	X	X	X	X	X	Meeting	Analyze IPC data quarterly/annually	40,000.00

		assessment findings and hand hygiene assessments									
Monitoring/ audit of IPC practices and feedback	Facility level	Regular audits and timely feedback of IPC practices are performed at health facility level and feedback provided to all health facility staff	Conduct quarterly IPC hand hygiene observation, annual hand hygiene self-assessment framework with feedback and quality improvement	X	X	X	X		Field Visits	Conduct quarterly IPC hand hygiene observation, annual hand hygiene self-assessment framework with feedback and quality improvement	70,000.00
Monitoring/ audit of IPC practices and feedback	Facility level	Regular audits and timely feedback of IPC practices are performed at health facility level and feedback provided to all	Establish a system at all health facilities for reporting key IPC indicators into DHIS-2	X					Advocacy	Conduct meeting to establish IPC reporting system	5,000.00

		health facility staff									
Workload, staffing and bed occupancy	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Develop a National Plan for human resource development in IPC	X					Consultancy	Develop a National Plan for human resource development in IPC	8,000.00

Workload, staffing and bed occupancy	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Develop a National Plan for human resource development in IPC						Consultancy	Develop a National Plan for human resource development in IPC	3,000.00
Workload, staffing and bed occupancy	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of	Develop a National Plan for human resource development in IPC						Consultancy	Develop a National Plan for human resource development in IPC	5000.00

		assessment findings and hand hygiene assessments									
Workload, staffing and bed occupancy	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Develop a National Plan for human resource development in IPC						Consultancy	Develop a National Plan for human resource development in IPC	14,250.00

Workload, staffing and bed occupancy	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of assessment findings and hand hygiene assessments	Develop a National Plan for human resource development in IPC						Consultancy	Develop a National Plan for human resource development in IPC	0.00
Workload, staffing and bed occupancy	National	A National IPC monitoring and evaluation Program established to assess capacity and gaps in the National IPC Program implementation including the provision of feedback of	Advocate for resources to enforce workload, staffing and bed occupancy in facilities	X	X	X	X		Advocacy	Conduct regular meeting to advocate for IPC funding	5,000.00

		assessment findings and hand hygiene assessments									
Workload, staffing and bed occupancy	Facility level	Facilities at primary, secondary and tertiary levels operate within a safe environment with standardized bed occupancy and optimal staff levels	Frequently review SOPs to routinely monitor for adherence to National Standards for bed occupancy, staffing and workload.	X	X	X	X	X	Meeting	Reviewing of IPC SOPs	10,000.00
Workload, staffing and bed occupancy	Facility level	Facilities at primary, secondary and tertiary levels operate within a safe environment with standardized bed occupancy and optimal staff levels	Design facility wards using approved plans that are compliant with National standards for bed occupancy	X	X	X	X	X	Field visits		40,000.00

Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment, materials, and equipment within healthcare facilities	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines	X					Meeting	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines	20,000.00
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment, materials, and equipment within healthcare facilities	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines						Meeting	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines	1,000.00

Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment, materials, and equipment within healthcare facilities	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines						Meeting	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines	1,500.00
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment, materials, and equipment within healthcare facilities	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines						Meeting	Adopt National WASH and health facilities work plan as part of the National IPC Guidelines	1,000.00

Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within healthcare facilities	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)		X				Meeting	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)	7,000.00
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)						Meeting	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and	0.00

		healthcare facilities								Medical Device decontamination)	
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within healthcare facilities	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)						Meeting	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)	0.00

Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within healthcare facilities	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)						Meeting	Establish National IPC standards for facility built environment that are not addressed in WASH in healthcare facility plan (include ventilation, isolation and Medical Device decontamination)	0.00
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within	Link National IPC Team with Environmental Health Department to coordinate on WASH in health facilities standards	X					Coordination	Link National IPC Team with Environmental Health Department to coordinate on WASH in health facilities standards	10,000.00

		healthcare facilities									
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment , materials, and equipment within healthcare facilities	Link National IPC Team with National Medical Stores to coordinate Logistics and address procurement requests for IPC supplies and equipment	X					Coordination	Link National IPC Team with National Medical Stores to coordinate Logistics and address procurement requests for IPC supplies and equipment	5,000.00
Built environment, materials, and equipment for IPC	National	Ensure safe working environment by establishing National IPC and WASH standards for adequate built environment ,	Link National IPC Team with Pharmacy Department to coordinate logistics and alignment with Medical Counter measures Plan	X					Coordination	Link National IPC Team with Pharmacy Department to coordinate logistics and alignment with Medical Counter	5,000.00

		materials, and equipment within healthcare facilities								measures Plan	
Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards for adequate built environment, material and equipment	Ensure facilities have sufficient power supply that is compliant with National IPC/WASH and occupational health and safety Standards	X	X	X	X	X	Advocacy	Ensure facilities have sufficient power supply that is compliant with National IPC/WASH and occupational health and safety Standards	0.00
Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards	Ensure facilities have functional ventilation (natural/ mechanical) that is compliant with IPC/WASH and occupational health	X	X	X	X	X	Advocacy	Ensure facilities have functional ventilation (natural/ mechanical) that is compliant with	0.00

		for adequate built environment, material and equipment	and safety standards							IPC/WASH and occupational health and safety standards	
Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards for adequate built environment, material and equipment	Ensure facilities have adequate isolation rooms or are able to cohort or physically separate patients as per IPC/WASH and occupational health and safety standards	X	X	X	X	X	Advocacy	Ensure facilities have adequate isolation rooms or are able to cohort or physically separate patients as per IPC/WASH and occupational health and safety standards	0.00

Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards for adequate built environment, material and equipment	Ensure facility has a dedicated area for medical device decontamination or sterilization and is compliant with National IPC /WASH and occupational health and safety standards	X	X	X	X	X	Advocacy	Ensure facility has a dedicated area for medical device decontamination or sterilization and is compliant with National IPC /WASH and occupational health and safety standards	0.00
Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards for adequate built environment,	Ensure that facility has sterile and disinfected equipment reliably available and compliant with National IPC /WASH and occupational health and safety standards	X	X	X	X	X	Procurement	Procure decontamination and reprocessing materials and sterilization pots	175,000.00

		material and equipment									
Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards for adequate built environment, material and equipment	Ensure that facility has sterile and disinfected equipment reliably available and compliant with National IPC /WASH and occupational health and safety standards								75,000.00
Built environment, materials, and equipment for IPC	Facility level	Ensure safe working environment by adhering to National IPC /WASH and occupational health and safety standards	Conduct regular assessments of Built Environment and medical device decontamination to ensure compliance with National IPC/WASH and occupational health	X	X	X	X	X	Field Visits	Conduct 3 days field visits	85,000.00

		for adequate built environment, material and equipment	and safety standards								

GRAND TOTAL: 8,669,714.00

Costing summary

Core Component	Costing per year in USD					Total
	2023	2024	2025	2026	2027	
IPC Programmes						3,070,764.00
IPC Guidelines						1,450,050
IPC Education and Training						515,900.00
HAI Surveillance						639,000.00
Multi-Modal Strategies						1,225,000.00
Monitoring and auditing in IPC						524,750.00
Workload, staffing, and bed occupancy						903,750.00
Built Environment, IPC supplies, and equipment						338,500.00
Total						**8,669,714.00**

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