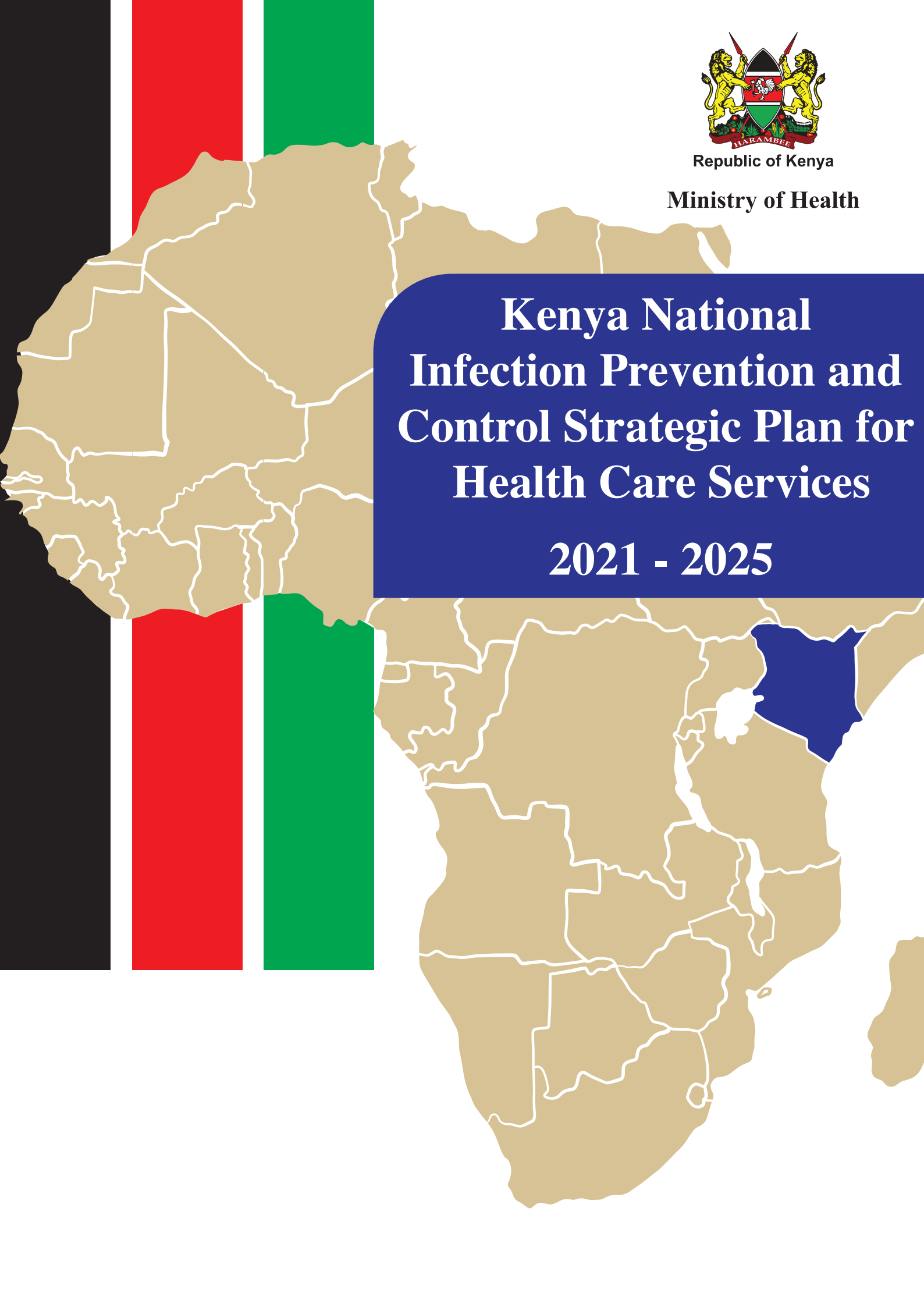
Republic of Kenya

Ministry of Health

Kenya National Infection Prevention and Control Strategic Plan for Health Care Services

2021 - 2025



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FOREWORD

The review of this Kenya National Strategic Plan for Infection Prevention and Control 2021-2025 was guided by the Kenya Health Policy 2012-2030 (KHP) and the National Infection Prevention and Control Policy for Health Care Services in Kenya 2015. This strategic plan seeks to fulfill the aspirations of the KHP of delivering quality and affordable health care to all Kenyans. It acknowledges that quality health service is one that is delivered in an environment that is safe to the service seeker, service provider, and the public.

The strategic plan has been developed using a consultative approach involving all key stakeholders in the health sector, while taking cognizance of all levels of government under the devolved system. The strategic priorities identified were determined following a comprehensive situation analysis, detailed review and synthesis of current evidence, and consideration of the current national and health sector environment that would facilitate implementation of the plan. Recommendations from the situation analysis and evidence synthesis guided the prioritization of interventions for implementation in this strategic plan.

This strategic plan provides the health sector with a medium-term focus: objectives and priorities to enable it to undertake actions that will move the sector toward provision of quality health care through the reduction of health care-associated infections (HAIs) in both clients and health care workers. The plan provides a detailed description of priority interventions to be undertaken and health outcomes to be achieved in the journey toward a health care system free from HAIs.

The Ministry of Health (MOH) is grateful to its staff, development and implementing partners, and other health stakeholders who contributed through various efforts in shaping the development of this plan. The Ministry is committed to the full implementation of this plan. We look forward to working collaboratively with national and county governments, partners, and all other stakeholders to ensure successful implementation.

Susan N. Mochache, CBS
Principal Secretary
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PREFACE

Infection prevention and control (IPC) refers to measures aimed at preventing and controlling infections and transmission of infections in health care settings and the community. Infection Prevention and Control is a Quality Standard and is crucial in all health care facilities and is critical for a well-functioning health system. Ensuring compliance with IPC practices depends on understanding the extent of the implementation of policies and guidelines. Many hospitals remain deficient in competent health care workers on infection prevention and there is an acute awareness of the need to correct this shortfall. Implementation of IPC guidelines is essential in all health care facilities for the wellbeing and safety of patients, staff, visitors and all who come within the scope of patient care activities.

IPC programs have been shown to be both clinically and cost-effective providing important cost savings in terms of fewer Health care-associated infections (HAIs), reduced length of hospital stay, less antimicrobial resistance and decreased costs of treatment for infections. Such infections may be pre-existing on admission or may be acquired in health care settings (nosocomial infections).

This updated strategic plan on infection prevention and control (IPC) of the Ministry of Health responds to the heightened concerns about inappropriate IPC practices in health care settings in the country and the need for sustained preparedness and response in the wake of the occurrence of emerging and re-emerging infections such as the ongoing Covid-19 pandemic. This document lays down the roadmap to implementing sustainable IPC actions.

In order to realize the policy and guidelines, it is important to have a comprehensive work plan that will serve as a guide for all key stakeholders (the Ministry, development and implementing partners) to ensure that we deliver IPC and related activities on time and per scope. I would like to acknowledge the hard work of National IPC Unit in coordinating the development of this 5-year work plan. I urge all stakeholders to adhere to the national IPC policy, follow the national IPC guidelines and use this strategic plan to realize the goals enshrined key national documents.

Dr. Patrick Amoth, EBS
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ABBREVIATIONS

AIDS	acquired immunodeficiency syndrome
AMR	antimicrobial resistance
CAI	community-acquired infection
CAUTI	catheter-associated urinary tract infection
CDC	Centers for Disease Control and Prevention
CHMT	county health management team
CLABSI	central line-associated bloodstream infection
DDSR	Division of Diseases Surveillance and Response
DRMH	Division of Reproductive and Maternal Health
HAI	health care-associated infection
HCW	health care worker
HIV	human immunodeficiency virus
IEC	information, education, and communication
IPC	infection prevention and control
IPNET	Infection Prevention Network–Kenya
KHP	Kenya Health Policy 2012-2030
KMTC	Kenya Medical Training College
KNH	Kenyatta National Hospital
KQMH	Kenya Quality Model for Health
M&E	monitoring and evaluation
MOH	Ministry of Health
MSH	Management Science for Health
MTaPS	Medicines, Technologies, and Pharmaceutical Services program
NASCOP	National AIDS and STI Control Program
NHPL	National Public Health Laboratory
NIPCAC	National IPC Advisory Committee
NLTP	National Leprosy and Tuberculosis Programme
NPHL	National Public Health Laboratory
OSH	occupational safety and health
PPE	personal protective equipment
SOP	standard operating procedure
SSI	surgical site infection
SWOT	strengths, weaknesses, opportunities, and threats
TB	tuberculosis
TWG	technical working group
UHC	universal health coverage
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
VAP	ventilator-associated pneumonia
WASH	water, sanitation, and hygiene
WHO	World Health Organization

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1. Rationale for and purpose of the IPC Strategic Plan

Infection prevention and control (IPC) is a scientific approach and practical solution designed to prevent harm caused by infection to patients, health workers, and the community. It is grounded in infectious diseases, epidemiology, social science, and health system strengthening. IPC occupies a unique position in the field of patient safety and quality universal health coverage since it is relevant to health workers and patients at every single health care encounter.

A comprehensive and effective approach to IPC consists of establishing IPC programs with strong links to other national programs, for example, those addressing quality and safety and antimicrobial resistance (AMR). The presence of an IPC program is a necessary, but not sufficient, condition to achieve safe, high-quality health care. In addition, at the facility level an adequately built environment (including the necessary infrastructure, materials and equipment, appropriate bed occupancy, adequate human resources or staffing, and workload) represents the foundation enabling the implementation of all other core components and the achievement of safe practices. These two prerequisites—an IPC established program and an adequate built environment—support the effective implementation of IPC guidelines, training and education, monitoring, audit, feedback, and surveillance. Implementation success in each of these areas also depends on the adoption of a multimodal approach, that is, a strategy consisting of several elements implemented in an integrated way with the aim of improving an outcome and changing behavior.

No country nor health care facility, even within the most advanced and sophisticated health care systems, can claim to be free of the problem of health care-associated infections (HAIs). The need for having IPC programs nationally and at the facility level is clearly reinforced within the World Health Organization (WHO) 100 Core Health Indicators list.

HAIs, also referred to as "nosocomial" or "hospital" infections, are infections occurring in a patient during the process of care in a hospital or other health care facility that was not present or incubating at the time of admission. They also include occupational infections among staff working in a health care facility. HAIs are one of the most common adverse events in care delivery and a major public health problem with an impact on morbidity, mortality, and quality of life. At any one time, up to 7% of patients in developed and 10% in developing countries will acquire at least one HAI. These infections also present a significant economic burden at the societal level. However, a large percentage of HAIs are preventable through effective IPC measures.

Community-acquired infections (CAIs) are infections contracted outside of a health care facility or present at the time of admission. These infections can be spread to other patients and health care workers, or in the community, if proper IPC and water, sanitation, and hygiene (WASH) measures are not implemented.

The threats posed by epidemics, pandemics, AMR have become increasingly evident as ongoing universal challenges and they are now recognized as a top priority for action on the global health agenda. Effective IPC is the cornerstone of such action.

In Kenya, the actual burden of HAIs and CAIs has not been accurately quantified. It has been estimated that HAIs account for about 10-25% of hospital admissions. Current evidence shows that HAIs increase mortality rate and prolong the length of stay in hospitals, cause illness amongst health care workers (HCWs), raise health care costs, and increase AMR.

Effective IPC aims at preventing or controlling these hospital- or community-acquired infections. With the re-emergence and emergence of new pathogens and AMR, managing HAIs and CAIs is becoming a significantly increasing challenge. Over the past five years, the MOH Kenya has made significant efforts toward addressing the problem of these infections, amidst some challenges. Some of the key achievements that have been made in this area over the past five years include:

1. Establishment of the Division of Patient and Health Care Worker Safety that has a recognized IPC program
2. Development of strategic documents that includes the National Antimicrobial Resistance Surveillance Strategy; National Policy on the Prevention and Containment of Antimicrobial Resistance and its National Action Plan 2017-2022; and National Strategic Plan for Infection Prevention and Control for Health Care Services in Kenya, 2014-2018
3. Development of an IPC training curriculum that has been used for HCW trainings on IPC practices in the counties
4. Establishment of IPC programs at the county and national level
5. Collaboration and integration with other national parallel and regulatory programs
6. Dissemination of the IPC policy and guidelines to the counties
7. The development of facility IPC assessment/audit tools, which have been utilized at the county level
8. Inclusion of IPC in the joint facility inspection checklist and the Kenya Quality Model for Health (KQMH)

However, despite these efforts and gains there are still several components of IPC that have not been fully addressed because of inadequate funding for the division; weak collaboration and coordination structures; and insufficient surveillance systems for HAIs, CAIs, and AMR that have not yet been adequately established.

In recognizing the need to strengthen existing systems and implement evidence-based methods to tackle infectious diseases in health care settings, as well as the gradual development of drug-resistant infections, the MOH undertook to review and update the National IPC strategic plan with a view of aligning it with the current policy environment in the health sector and to refocus its objectives within the context of the overall Kenya Health Policy 2014-2030 (KHP). This strategic plan is aimed at providing a clear direction to the health sector and partner programs supporting IPC in the country.

1.2. Linkage with the Kenya Health Policy 2012- 2030

Through the Constitution of Kenya 2010 under the Bill of Rights, the Government of Kenya has committed itself to providing equitable, affordable, and quality health care of the highest standard to all its citizens. This is to be achieved through the implementation of appropriate policies and programs within the health sector. The KHP, which was developed in line with the Constitution of Kenya 2010 and the Kenya Vision 2030, has highlighted six priority policy objectives on which the health sector is going to focus its efforts. These are:

1. Eliminating communicable diseases
2. Reducing the burden of non-communicable diseases
3. Reducing the burden of injuries from violence and accidents
4. Providing essential health services
5. Reducing the health risk exposures
6. Strengthening health sector collaboration with other sectors

To achieve these objectives, the MOH has adopted the WHO Health Systems Approach as the core principle in guiding strategic investments into the health sector.

The six policy objectives and the health systems building blocks jointly form the “policy framework,” within which one can view the national health system in Kenya. The national “policy intent” of providing equitable, affordable, and quality health care of the highest standard to all its citizens is thus anchored in this framework.

The WHO definition of “quality of care” emphasizes, among other elements, the aspect of “safety” for both service seekers and service providers within health service delivery settings. The profiling of and desire to eliminate communicable diseases in the national health policy, and the emphasis on safer health care delivery settings within the Kenyan health system, thus builds a strong rationale and justification for profiling IPC strategies in the health sector in Kenya.

1.3. Linkage with Universal Health Coverage (UHC)

Kenya has adopted universal health coverage (UHC) as one of the big four priority agendas, with an aspiration that by 2022 all persons in Kenya will be able to access essential services they need for their health without the risk of financial catastrophe.

As more people access affordable health care, including specialized services, the risk of HAIs and other communicable diseases increases and therefore the need to ensure safe IPC practices are in place.

To address this concern, Kenya has adopted a national quality assurance framework, the KQMH, which provides a pathway through which optimal levels of patient safety can be achieved.

1.4. Linkage with the National IPC Policy

In recognizing the need to redesign and strengthen existing systems and implement evidence-based methods to tackle infectious diseases in all health care settings, as well as the gradual development of drug-resistant infections, the MOH, in collaboration with the county health management team (CHMT) has been implementing the National Infection Prevention and Control Policy and Guidelines for Health Care Services in Kenya 2015. This strategy provides a road map to fast-track implementation of the IPC policy and guidelines at all levels and take into consideration the new IPC interventions.

1.5 Linkage with other policies, programs, and sectors

The national IPC program will continue to play the lead role in formulating strategic plans to implement this policy, building partnerships among stakeholders, and ensuring availability of resources. In addition, it is committed to playing a key role in the participatory partnership with other programs, investors, development partners, international agencies, civil society organizations, and other bodies. The contribution of these stakeholders has been invaluable, and the program will continue to encourage this collaboration and partnership for the purposes of realizing synergies; providing linkages; and promoting trust, goodwill, and ownership among all stakeholders.

Specifically, there will be communication and collaboration between programs within MOH (e.g., National AIDS and STI Control Program [NASCOP], WASH, waste management, occupational health and safety, immunization, national laboratories, AMR, reproductive health) and with other key ministries, working groups, and partner organizations. Some other sectors that will have a close linkage with the IPC program are:

- Public Works Department: This department will have an important role to play to ensure sufficiency of structural requirements such as adequate ventilation and lighting, hand washing facilities, efficient autoclaves, and negative pressure rooms. Valuable input on building layouts that facilitate good IPC practices are provided for.
- Kenya Police: Their services will be called upon for involuntary detentions when an infectious source (person with an epidemiologically significant condition) resists hospitalization and isolation, despite sufficient health education.
- Ministry of Labor: This department will assist in the development of disease management program for employees and the development of policy on pre-employment testing and occupational safety and health.
- Professional health regulatory bodies and associations: These entities will facilitate championing for the safety, physical, and social welfare of HCWs and quality of practice and will provide IPC trainings and research opportunities including accredited IPC continuing professional development training both online and onsite with accredited points for license renewal, career opportunities, and personal growth and development.
- Commission of university education to accredit IPC training program within universities offering health-related courses.

- Ministry of Water and Irrigation: Facilitate availability and accessibility of water and sewage facilities in health facilities and at the community level and participate in sanitation and hygiene promotion and education. This will harness hygiene and sanitation, which are key components in containing most disease transmissions at hospitals and within the community.
- Ministry of Environment and Forestry: Promote, monitor, and coordinate environmental activities and enforce compliance of environmental regulations and guidelines for mainstreaming waste management in curricula at all levels of education and training.
- County governments: To implement IPC guidelines, plans, and policies, ensure that health care providers obtain the appropriate IPC training. Provide resources, supplies, and infrastructure to promote effective IPC programs within health facilities in the counties. Put in place monitoring and evaluation (M&E) systems.
- Ministry of Education: Promote implementation of the health strategies in education, including the National School Health Strategy Implementation Plan, which includes health education, training, and research. Enhance integration of science, technology, and innovation into national production systems for sustainable development.
- Technical and vocational education and training: Provide relevant and adequate skills and competencies in strategic disciplines to include basic IPC knowledge for spurring industrial and economic development in line with the aspirations of the Kenyan people for growth and prosperity of various sectors of the economy.
- Private and faith-based organizations: Private and faith-based organizations are important in achieving UHC and an adequate standard of health care for all people, especially in resource-limited settings and for marginalized groups. The involvement of private and faith-based organizations will bring about an interdisciplinary approach to public health, which is critical to success.
- Development and implementing partners: The role these partners play in the achievement of the recently adopted 17 Sustainable Development Goals cannot be overemphasized, particularly in the achievement of Goal 17, which aims to ensure “no one is left behind” in the implementation of these goals through partnerships in finance, technology, capacity building, trade, and systemic issues.

1.6. Organization of health services in Kenya

In Kenya, health services are devolved in line with the Kenya Constitution. The role of the MOH is to develop policies, guidelines, and standards while the implementation of these is at the county level. At the national level, there are six tertiary hospitals while all other health institutions fall under county governments.

There are six levels of health care facilities in Kenya, as follows:

- Level 1 - Community facilities
- Level 2 - Health dispensaries
- Level 3 - Health centers
- Level 4 - County hospitals (sub-county hospitals)
- Level 5 - County/sub-county referral hospitals
- Level 6 - National referral hospitals

This national strategic plan outlines IPC practices and interventions at all the levels of health care delivery as defined by the national health sector policy documents, and includes places for emergency health operations, such as during accidents and disaster operation settings.

1.7. Review process of the National IPC Strategic Plan

The review of this Kenya national strategic plan was a highly participatory and consultative process. The MOH set up a technical working group (TWG) comprising experts in different aspects of IPC to guide the process. A TWG inception workshop was convened in Machakos county and a draft strategic plan was compiled. The second and third TWG retreats were conducted in Nairobi, where the document was finalized.

CHAPTER TWO: SITUATION ANALYSIS

2.1. Scope of IPC in the Kenyan health sector

The Kenya National IPC Policy has defined IPC as "a process where policies, procedures, and activities are designed to prevent spread of infections in the health care settings and communities." This definition is broad, comprehensive, and in-line with the global definition and understanding of IPC. However, different health sector stakeholders have their own working definitions and conceptual understanding of what IPC is, or what it entails, within health service delivery settings. These working definitions often comprise the IPC-related range of activities and interventions that actors are undertaking in various health care settings. The key elements of these different working definitions and range of IPC interventions within the Kenyan health sector can be categorized into five broad themes:

- IPC as an element of quality of care and patient safety in health care service delivery
- IPC as an element of occupational health and safety practices in health care settings
- IPC as an element of environmental health in health care settings
- IPC as an element of clinical and public health surveillance and action
- IPC as an element of community health
- IPC supplies, equipment, and infrastructure as critical elements for effective IPC

2.1.1. IPC as an element of quality of care and patient safety in health care service delivery

IPC is seen as an element of patient safety in health service delivery settings. Under this theme, IPC is described and perceived as a range of interventions, which include:

- Prevention of HAIs, including:
    - Catheter-associated urinary tract infection (CAUTI)
    - Surgical site infection (SSI)
    - Central line-associated bloodstream infection (CLABSI)
    - Ventilator-associated pneumonia (VAP)
- Interruption of infection transmission (breaking the chain of infection) through:
    - Use of specific care bundles
    - Patient isolation and quarantine within health care settings
    - Aseptic techniques during medical procedures
    - Implementation of IPC standard precautions during delivery of care
- Rational antibiotic use through:
    - Adoption and implementation of antibiotic stewardship guidelines
    - Compliance with appropriate antibiotic use
- Blood safety practices, including:

- Standard operating procedures (SOPs) to guide necessity of transfusions
- Mobilization, recruitment, and collection of blood from safe donors
- Banking, manufacturing, and cold chain
- Appropriate screening practices for blood and blood products for transfusion-transmissible infections
- Transfusion, clinical practice, and hemovigilance
- Safety of technologies and devices in infusion and injection therapy

- Safe injection practices through:
  - Implementation of injection safety policy, guidelines, and SOPs to guide the necessity of injections vs. other treatment options
  - Safe administration of injections and needle disposal
  - Safe blood collection practices
  - Use of safety engineered injection devices
  - Sterilization and disinfection practices for clinical areas and equipment

2.1.2. IPC as an element of occupational health and safety practices in health care settings

Within health care settings, IPC is seen as an element of health and safety interventions and practices, which include:

- Promotion of healthy and safe work environment and organization
- Protection and promotion of worker health by preventing and controlling occupational infections through:
  - Appropriate vaccinations such as hepatitis B, influenza, yellow fever, typhoid etc.
  - Use of personal protective equipment (PPE)
  - Pre-placement and periodic medical examination
  - Appropriate hand hygiene practices
  - Injection and infusion safety
  - Promotion of reporting and documentation of occupational incidences

2.1.3. IPC as an element of environmental health within the health care setting

This focuses on medical waste management practices and WASH in health care settings. These should include the availability of:

- Water services at all times and of sufficient quantity
- Adequate and functional ablution blocks with adequate hand hygiene facilities
- An effective waste management program
- Functional hand hygiene stations with adequately displayed posters in key places
- Environmental cleaning and disinfection program
- Facility management and leadership in support for WASH and IPC programs

2.1.4. IPC as an element of clinical and public health surveillance

The practices and interventions related to IPC as an element of surveillance include:

- Infectious diseases surveillance
  - Accurate diagnosis of infectious diseases through good clinical and lab diagnostic practices
  - Complete and appropriate notifications and reporting of infective conditions/incidents
  - Prompt action and mitigation measures for all infections
- AMR surveillance
  - Laboratory surveillance for AMR
  - Rational practices for antibiotic use (prescribing and treatment adherence)
  - Strengthening governance and regulatory mechanisms for antibiotic use
- HAI surveillance and hospital and community outbreak investigations
  - Capacity building for HAI and CAI surveillance
  - Institutionalizing HAI and CAI surveillance and reporting
  - Hospital and community outbreak investigations

2.1.5. Supplies, equipment, and infrastructure as critical elements of IPC

The following components are necessary for an effective IPC program:

- Appropriate budgetary allocation for IPC supplies and commodities
- Strengthening the roles of IPC teams in technical support and planning of health care infrastructure designs and development
- Develop a catalogue of essential infection control equipment and supplies
- Ensure IPC commodities are included in all health care activities as part of quality improvement
- Strengthening commodity management (forecasting, quantification, inventory control, and stock management)
- Availability and accessibility of appropriate IPC equipment and infrastructure
- In collaboration with regulatory authorities, set standards and guidelines for IPC equipment, commodities, and infrastructure requirements

2.1.6. IPC as an element of monitoring and evaluation

M&E is key in tracking and assessing the performance of IPC programs. It includes:

- Routine monitoring and regular evaluation of IPC program implementation at national and county levels
- Updating tools for IPC audits and assessments
- Developing IPC M&E reporting frameworks that include indicators for IPC

2.1.7 IPC as an element of community health

The community is a key entry point for IPC practices, hence the need for:

- Health education and promotion including capacity building of community health volunteers, community health extension workers, and community health assistants

- Infection diseases surveillance at the community level
- Promoting WASH programs

2.2. Implementation experiences of IPC interventions in health care settings in Kenya

The MOH, in collaboration with other development and implementing partners and stakeholders, has carried out several IPC activities and interventions in an effort to address the problem of HAIs and CAIs. Several successes and challenges have been experienced in the implementation of these activities. This section highlights some of these key IPC implementation successes and challenges experienced at both policy and front-line implementation levels.

2.2.1. National/policy level experiences in the implementation of IPC activities

Key successes

- Development of Kenya national IPC policies, strategies, and guidelines: In the past 10 years, the health sector has been able to develop several policy and guideline documents to guide the implementation of IPC activities in Kenya.
- The MOH has established an IPC program within the division of patient and health worker safety in its organizational hierarchy as a way of recognizing the importance of the IPC agenda and the need for better coordination of IPC within the health sector.
- Improvement in profiling and positioning of IPC as a policy agenda in the health sector.
- Owing to the efforts of several actors both within and outside the MOH at the national level, IPC champions have been identified in the health sector at the national and county level. Over the past 10 years, these champions have played a significant role in driving the IPC agenda at both the policy and implementation level.
- HAI surveillance is included in the strategic objectives of the IPC policy. A few facilities in Kenya have established an SSI and AMR surveillance program.
- Training of multidisciplinary health workers on basic IPC.
- Identification and mentorship of IPC model sites.
- Establishment of county and hospital IPC teams.
- Monitoring of occupational exposures to bloodborne pathogens (e.g., care for the carer application).
- Formation of Infection Prevention Network–Kenya (IPNET-Kenya), which augments the work of the national structures. This is a professional body that has been providing technical support and lobbying for quality health care, amongst the other health professional bodies and the MOH. It has succeeded in hosting national/regional IPC conferences that were important forums for advocacy, raising awareness, and knowledge transfer.
- Institutionalized safe phlebotomy practices in all counties, including reporting of sharp injuries.
- Established injection/infusion safety training and introduction of new technologies in the counties, such as safety engineered devices and ultrasound-guided venous access.

Challenges/areas in need of strengthening

Amidst the successes highlighted above, the implementation of IPC activities has faced several challenges. Key among these are:

- The national HAI surveillance system should be fully implemented.

- A national reporting system for HAIs is needed for correct monitoring of surveillance activities and results.
- Strong capacity-building activities for HCWs should be performed to promote correct implementation of IPC programs for HAIs.
- Under-resourcing of the IPC national coordination mechanisms by the government: The MOH has not been able to allocate direct resources to facilitate the national IPC coordination mechanisms. This has led to the MOH IPC program relying on donor and partner support to undertake its activities, leading to donor dependence.
- Coordination of implementation and reinforcement of IPC legal and regulatory frameworks is still challenging. There have been several efforts to develop policies and guidelines for guiding the roll-out of IPC interventions in the country. However, there lacks key legal frameworks and mechanisms to reinforce the implementation of these policies and guidelines.
- Lack of prioritization of IPC activities by frontline health managers at county and facility levels.
- Inadequate IPC specialists in the country.
- Instituting WASH programs in health care facilities.

2.2.2 County/facility experiences in the implementation of IPC interventions

Key successes

- Training of multidisciplinary HCWs on basic IPC Increasing uptake of different elements of IPC activities in health care settings: Several partners have supported the implementation and scale up of IPC interventions including injection safety, medical waste management, biosafety/biosecurity, AMR and safe phlebotomy.
- Identification and mentorship of IPC model sites is ongoing.
- Monitoring of occupational exposures to bloodborne pathogens is ongoing
- Progressive emergence of IPC-champions and success stories in at the county and several health care facilities. have played a key role in the implementation of several IPC ‘best practices’ at different levels.
- The recognition of importance of IPC at facility level has led to establishment of county and facility IPC committees that have been instrumental in improving services. Such committees have carried out IPC audits, surveillance and several refresher trainings and orientation of new staff at facility level.

Challenges/areas in need of strengthening

The implementation of IPC interventions in health facilities has been faced with many challenges. Key among those challenges are:

- Strong capacity-building activities for HCWs should be performed to promote correct implementation of IPC programs for HAIs.
- HCW and frontline manager attitudes toward IPC initiatives.
- Inadequate staffing in health care settings makes it difficult to implement appropriate IPC activities.
- Insufficient SOPs, job aids, and guidelines and their implementation for IPC procedures in clinical areas.
- Poorly designed clinical area infrastructure, making it difficult to implement IPC measures. Most health facilities are faced with:

- Lack of hand-washing facilities in clinical areas
- Poor ventilation in clinical areas
- Lack of clinical isolation areas both in outpatient and inpatient settings
- Lack of appropriate incinerators in several health facilities
- Poor maintenance of existing infrastructure
- Lack of adequate equipment and PPE supplies in most facilities
- Crowding in most clinical areas
- Lack of prioritization of IPC activities by frontline health managers at county and facility levels
- Poor traffic flow and activity patterns in health care settings
- Lack of budget allocation at the county/facility to procure IPC supplies/commodities and support other IPC activities

2.3. Stakeholder analysis

Several actors in the health sector have played a key role in the implementation of IPC initiatives at different levels of the health care system, as summarized in Table 1 below.

Table 1: Stakeholder analysis matrix

Stakeholder	Roles and Interests	Strategic Implications
MOH: IPC Unit, NASCOP, DRMH, NPHL, National Blood Transfusion Service, DDSR, NLTP, Division of Environmental Health, KNH, KMTC	▪ Policy and guideline development ▪ Training and capacity building ▪ Coordination ▪ Surveillance ▪ Resource mobilization ▪ Implementation oversight	▪ Appropriate stewardship for IPC ▪ across all levels ▪ Profiling the IPC policy agenda ▪ Lobbying for resources
Kenya Medical Research Institute	▪ Research and surveillance ▪ Manufacturing IPC commodities including ABHR, hepatitis test	▪ Enhanced evidence-based decision making for IPC services
County governments (Departments of Health)	▪ Resource mobilization and funding ▪ Coordination of county/facility level implementation ▪ Supervision of health facilities	▪ Resource allocation for IPC ▪ interventions ▪ Enhanced implementation of IPC ▪ Initiatives
Health facilities	▪ Frontline implementation of IPC activities	▪ Enhanced implementation of IPC ▪ Interventions
UN partners: WHO, UNICEF, UNFPA, country offices	▪ Provision of funding for IPC activities ▪ Provision of technical assistance to MOH for policy and guideline development ▪ Supports capacity building of HCWs	▪ Enhanced evidence-based decision making for IPC services
Centers for Disease Control and Prevention	▪ Provision of technical assistance to MOH and other partners ▪ Research and surveillance ▪ Policy and guideline development ▪ Supports capacity building of HCWs	▪ Enhanced evidence-based decision making for IPC services ▪ Lobbying for resources and promotion of IPC activities
IPNET	▪ Provision of technical assistance ▪ Resource mobilization and funding	▪ Enhanced evidence-based decision making for IPC services

Stakeholder	Roles and Interests	Strategic Implications
	▪ Raise awareness of IPC interventions nationally ▪ Promote research and development ▪ Support M&E of IPC practices	▪ Resource mobilization and promotion of IPC activities
Regional Society for Blood Transfusion Kenya	▪ Capacity building of HCWs on IPC in the context of blood safety ▪ Screening of blood for safe use ▪ Development of policies and guidelines	▪ Enhanced evidence-based decision making for blood safety
Global Antibiotic Resistance Partnership	▪ Provision of technical assistance ▪ Capacity building of HCWs on surveillance ▪ Policy and protocol development ▪ Research ▪ AMS advocacy	▪ Reduction of AMR
USAID MTaPS	▪ Provide technical assistance to MOH for development, review, and implementation of IPC policies and guidelines ▪ Strengthen governance of IPC coordination at the national, county, and facility level ▪ Support county, sub-county, and facility-level IPC activities ▪ Support development of IPC guidance documents in the context of COVID-19	▪ Strengthened IPC governance structures ▪ Strengthened institutional and human resource capacity to manage and enhance IPC as well as disaster preparedness and management ▪ Improvement of IPC practices and services
Aga Khan University Hospital	▪ Capacity building of HCWs on IPC ▪ Surveillance and research in IPC	▪ Improved IPC practices in healthcare facilities ▪ Reduced HAIs ▪ Enhanced evidence-based decision making for IPC services
mHealth Kenya	▪ Provide technological assistance and support for occupational exposures surveillance	▪ Technology-enhancing surveillance, M&E ▪ Increased post-exposure prophylaxis uptake ▪ National HCW immunization and post-exposure prophylaxis database
BD (Becton, Dickinson, and Company)	▪ Research and development of safe injection, infusion, and phlebotomy ▪ Technical assistance in policy development and training materials ▪ Resource mobilization to support HCW hepatitis b immunization program ▪ Technical assistance to counties on safe infusion and prevention of sharp injuries ▪ Support accreditation of medical laboratories through mentorship and technical assistance	▪ Reduction of needle stick injuries ▪ Prevention of blood borne infections
Pharm Access	▪ Support to counties on quality improvement, including IPC	▪ Strengthened IPC programs at county level

2.4. SWOT analysis

A comprehensive analysis of the health sector environment, within which IPC is implemented, was carried out using the strengths, weaknesses, opportunities, and threats (SWOT) analytical framework. This analysis aimed at identifying key health sector internal strengths and weaknesses (SW) and external opportunities and threats (OT) factors that affect and/or influence implementation of IPC interventions to identify appropriate strategies

for capitalizing on strengths and opportunities (SO) or managing/mitigating weaknesses and threats (WT). The 7S analytical tool was used to complement the internal environmental analysis, and political, economic, social, technological, environmental, and legal analysis to complement the external environment analysis of the SWOT. Annex 1 highlights the key issues identified in the SWOT, while Tables 2 and 3 in Annex 1 show a detailed matrix presenting the SWOT analysis findings and their respective strategic implications.

Key SWOT Findings

Strengths	**Weaknesses**
■ Existence of national policy, guidelines, strategic plan, curriculum for IPC, and audit tools for implementation ■ Availability of IPC champions at different levels ■ Existence of IPC Training-of-Trainers across the country ■ Existence of IPC component in the KQMH ■ Increased capacity-building efforts by many partners ■ IPC as an objective in the National Action Plan for AMR ■ Existence of IPC program coordination mechanism at all levels	■ Knowledge, attitude, and practice gaps in IPC by frontline managers ■ Policies and guidelines have not reached all the facilities ■ Lack of IPC buy-in and ownership by leadership and HCWs ■ Lack of awareness on IPC among political leaders ■ Lack of political goodwill ■ Unavailability of appropriate infrastructure in health care settings for practice of IPC ■ Inadequate resources ■ Coordination challenges between national and county government roles ■ Behavior and attitude ■ Lack of coordination and collaboration with different stakeholders
Opportunities	**Threats**
■ Political goodwill and conducive environment ■ Devolved governments systems encourage accountability in health service delivery by HCWs ■ Multiple partners and stakeholders interested in improvement of IPC initiatives at all levels ■ Enhancement of adoption of IPC standards by UHC agenda ■ Leverage on technology ■ Integration of IPC in other training modules ■ Incorporation of IPC component in pre-service training curriculum targeting medical tertiary institutions ■ Leveraging efforts to improve IPC in the community	■ Emerging and re-emerging infections ■ Technology misuse

CHAPTER THREE: STRATEGIC FOCUS

3.1. Vision statement

A globally competitive health care system free from HAIs and other infections through coordinated IPC practices that promote safety to patients, clients, HCWs, and the community.

3.2. Mission statement

The mission of this strategic plan is to promote high standards of IPC to reduce the risk of HAIs and other infections to improve the safety of patients, clients, HCWs within health care settings, and the community.

3.3. Focus priority areas

From the situation analysis undertaken, and the deliberations at the stakeholders' workshop, seven key themes emerged as priority areas on which to focus strategies to deliver the IPC agenda in the Kenyan health sector. These themes include:

- Management, leadership, and governance of IPC services
- Advocacy, behavior change, and communication for IPC
- Health worker education and capacity building for IPC
- Patient and HCW safety in the health care settings
- Availability of IPC supplies, equipment, and infrastructure
- IPC surveillance, notification, and research
- M&E for IPC programs

3.4. Strategic priorities

3.4.1. Strategic Priority 1: Management, leadership, and governance of IPC services

Objective 1: Strengthen the management and coordination of IPC activities across all levels of the health care system.

Activities:

- Strengthen and resource the MOH IPC program through a specific budgetary allocation at the national level.
- Strengthen a national IPC TWG to continuously monitor and review the implementation of the strategy, and regularly update the IPC policy, strategic plan, and guidelines.
- Establish and resource county IPC coordination units and committees through a specific budget allocation in all counties to coordinate the roll-out of IPC interventions in the counties.
- Appoint and build the capacity of IPC focal persons to oversee coordination and implementation of IPC activities at the national, county, and health facility level.

Objective 2: Strengthen leadership skills for IPC at all levels of the health care system.

Activities:

- Promote leadership role for IPC services at MOH and ownership across all levels of the health system.
- Promote understanding of the national IPC agenda across the MOH management hierarchy at national and county levels.
- Build capacity of national and county leadership on IPC for buy-in and sustainability.

Objective 3: Strengthen policy, governance, and regulatory structures and mechanisms for IPC.

Activities:
- Develop, review, and update legal frameworks relevant to the implementation of IPC at national and county levels.
- Harmonize the coordination mechanisms for the implementation of all legal frameworks relevant to IPC.
- Review and update the IPC policy in line with the KHP.
- Strengthen IPC stakeholder coordination mechanism at all levels of the health system.
- Engage with the private sector and explore opportunities for public-private partnership initiatives in support of IPC activities.

3.4.2. Strategic Priority 2: Advocacy, communication, and social mobilization for IPC

Objective 1: Strengthen advocacy for IPC and manage behavior change and communication by actors at all levels of the health system, including the community.

Activities:
- Advocacy and promotion of IPC practices to the community though activities such as mass media campaigns; community dialogue; information, education, and communication (IEC) materials; marking national and global events including but not limited to the Global Hand Washing Campaign; and integrating IPC in community strategy.
- Develop behavior change and communication strategy for IPC practices.
- Reinforce positive behavior and practices to HCWs through:
    - Provision of IEC materials in strategic places within health care settings
    - Provision of job aids and SOPs in clinical settings
    - Recognition and appreciation of IPC champions at all levels of the health care system
    - Continuous training and updates of IPC practices
    - Recognition of best practices, supervision, and mentorship
- Reinforce positive behavior for frontline health care managers through the inclusion of IPC indicators and targets in their annual staff appraisal systems.
- Integrate the advocacy behavior change TWG under the National Antimicrobial Stewardship Interagency Committee and IPC TWG to advocate for IPC.

3.4.3. Strategic Priority 3: Health worker education and capacity building for IPC

Objective 1: Establish training, capacity-building strategies, and programs on IPC for all HCWs.

Activities

- Work with all training institutions, professional regulatory bodies, the Commission for University Education, and all other stakeholders in the country to review and update their pre-service training curriculum, with appropriate IPC curriculum.
- Incorporate IPC into the in-service curriculum for HCWs. Develop an IPC training curriculum for all HCW training institutions and professional and regulatory bodies in the country to establish a course for IPC specialists at possibly the higher diploma or master's degree level.
- Integrate blended learning, innovative eLearning, and other facilitated training methodologies to enhance adult learning.
- Develop a standard comprehensive IPC package for refresher training for all HCWs, both multidisciplinary and specialties, to enhance behavior change in health facilities.
- Establish guidelines for post-training follow-up and support supervisions at all levels of the health care system to encourage and support behavior change.
- Adopt appropriate technologies that aid in capacity building of the HCWs, to include but not limited to certified online courses, apps, blogs, and social media.

3.4.4. Strategic Priority 4: Patient and HCW safety in the health care setting

Objective 1: Reduce risk of occupational exposures for HCWs and acquisition of HAIs for patients, clients, and the community.

Activities:

- Appoint trained IPC practitioners at facility level based on bed capacity.
- Provide administrative and material support to IPC practitioners at all levels.
- Establish SOPs for patient isolation in clinical settings.
- Reduce HAIs through implementation of IPC practices and care bundles (IPC guideline, 2015).
- Ensure safety in the use of blood and blood products by adhering to blood supply chain protocols as per blood transfusion policy (national standards for blood transfusion, 2007).
- Ensure injection safety practices through:
    - Advocacy for use of alternative treatment regimens
    - Ensure availability of non-reusable injection devices in clinical settings
    - Ensure proper disposal of sharps
    - Advocacy for use of safety engineered devices
- Minimize contamination and cross infections through dissemination and implementation of SOPs for disinfection and sterilization of clinical areas and reusable medical equipment.
- Provide appropriate PPE for HCWs and ensure adherence to their use.
- Promote occupational safety and health programs in health care facilities.
- Provide recommended vaccinations and other prophylaxis.

- Enhance implementation of post-exposure prophylaxis policy.
- Establish facilities for cohorting and isolation of infectious patients in health care settings.
- Advocate for decongestion of health care settings.

3.4.5. Strategic Priority 5: Availability of IPC supplies, equipment, and infrastructure

Objective 1: Improve the availability and accessibility of appropriate IPC equipment and infrastructure in all health care systems.

Activities:

- Adopt norms, standards, and guidelines for IPC equipment and infrastructure for all health care levels, including:
    - Hand hygiene facilities in all health care settings
    - Appropriate health care waste management facilities
    - Appropriate laboratory infrastructure and equipment
    - Appropriate engineering controls for all health care settings
    - Appropriate patient isolation facilities in both in-patient and outpatient areas
    - Appropriate sterilization equipment and process monitoring for health care settings
- Implement standards for care and maintenance of IPC equipment and infrastructure.

Objective 2: Improve the availability of IPC commodities and supplies in all health care systems.

Activities:

- Ensure appropriate planning, procurement, and distribution plans for IPC supplies and commodities at county and health facility levels.
- Ensure appropriate budgetary allocations for IPC supplies and commodities at county and health facility levels.

3.4.6. Strategic Priority 6: Surveillance and notification system and research

*Objective 1***:** Establish and strengthen a surveillance and notification system for HAIs, CAIs, AMR, and hospital outbreaks in health care settings.

Activities:

- Strengthen the role and ability of the AMR Secretariat to coordinate the nationwide management and sharing of data regarding IPC and AMR.
- Strengthen the capacity of the NPHL for management and coordination of all microbiology data on AMR.
- Scale up sentinel surveillance sites for HAIs an AMR to at least 20 sites by 2023.
- Conduct baseline assessment for new sites.
- Conduct annual assessment on HAIs and AMR surveillance network.
- Build capacity of HCWs on HAIs, AMR surveillance, and hospital outbreaks.

- Adopt SOPs for surveillance, reporting, and notification of all HAIs, AMR, and hospital outbreaks in health care settings.
- Institutionalize the surveillance of HAIs, AMR, and hospital outbreaks as quality-of-care indicators.

Objective 2: Strengthen prevention and management of HAIs

Activities:
- Ensure adherence to IPC practices.
- Implement SOPs for management of occupational exposures in health care settings including post-exposure prophylaxis for HIV exposure and hepatitis b vaccination.
- Develop and implement SOPs for managing HCWs and clients who acquire HAIs in all health care settings.
- Implement SOPs for appropriate patient isolation and management procedures in all health care settings.

Objective 3: Strengthen and implement staff health policies at facility and community levels.

Activities:
- Implement pre- and post-exposure prophylaxis treatment guidelines in health care settings.
- Promote WASH practices at workplaces.
- Provide appropriate screening and vaccinations for all HCWs.
- Strengthen and adhere to IPC practices while undertaking home base care at the community level.
- Strengthen referral system between the community and link facility on HAIs.

Objective 4: Strengthen handling and processing of clinical samples.

Activities:
- Implement SOPs for transportation of clinical samples for investigations.
- Adherence to biosafety biosecurity measures.
- Monitoring sample referral system.

Objective 5: Strengthen research on IPC elements and the utilization of research evidence in routinely updating IPC policies and guidelines.

Activities:
- Partner with local research institutions and encourage local research and surveillance for HAIs and AMR.
- Partner with international research institutions for technical support.
- Establish information sharing platforms for IPC, AMR, and HAI research findings.
- Establish formal mechanisms for routine research evidence synthesis and utilization during the process of updating IPC policies and guidelines.

3.4.7. Strategic Priority 7: Monitoring and Evaluation for IPC

Objective 1: Strengthen routine monitoring and regular evaluation of IPC program implementation.

Activities:

- Develop and adopt audit tools for IPC interventions for all levels of the health care system in the country.
- Capacity building on data management (collection, analysis, and utilization of tools).
- Undertake annual facility assessment and appraisal on implementation of IPC programs.
- Develop M&E plan for implementation status of the national IPC strategic plan.
- Undertake mid-term and end-term evaluation of the implementation of the national IPC strategic plan.
- Develop a feedback mechanism for IPC interventions.
- Develop reporting structures at the national and county level.
- Include IPC components in the DHIS 2.
- Include key IPC indicators.

CHAPTER FOUR: IMPLEMENTATION PLAN

4.1. Coordination structures for implementation

To effectively fulfil. the aspirations of this strategic plan, the health sector will set up several key institutions to facilitate its implementation. Some of the proposed key institutions shall include:

- **National IPC Advisory Committee (NIPCAC):** This shall be chaired by the director general of health and will bring together heads of directorates, departments, other relevant programs, and development partners supporting IPC. The head of the Patient and Health Care Worker Safety Division will serve as the secretary to the committee. The committee will be charged with the responsibility of overall policy, strategy, and guideline development for IPC services for health care services in the country.

- **National IPC TWG:** This will comprise selected technical players in academia, research, implementation, and industry selected from public, private, and faith-based institutions. They will be charged with the responsibility of evidence gathering and synthesis to inform national IPC policy and strategy. The team will also plan, monitor, and evaluate the national IPC program. The IPC program shall provide/undertake a secretariat coordinating role for this TWG.

- **MOH IPC Program:** The IPC secretariat in the program will be charged with the responsibility of coordination, development, and review of policy, guidelines, training materials, and SOPs for IPC services in Kenya. It will also provide technical support to the counties on IPC matters.

- **County-Level IPC Advisory Committee:** This shall be chaired by the county director of health and will be comprised of designated members of the CHMT. They shall be charged with the overall responsibility of matters pertaining to IPC within the county. The County Department of Health will appoint an IPC focal person who will coordinate IPC activities and shall be the secretary of this committee.

- **Sub-county IPC coordination**: The sub-county health management team shall designate an IPC focal person who shall coordinate IPC matters at the health care facilities within the sub-county.

- **Hospital (levels 4 to 6) IPC committee:** This committee will be chaired by a clinical senior member of the institution with knowledge in this area. The membership shall be multidisciplinary at the level of decision making. They will be charged with the responsibility of planning, budgeting, implementing, and monitoring of all IPC interventions at the facility level. The facility IPC coordinator will be the secretary of the committee. It is critical for a functioning IPC programme to have a dedicated, full time and trained IPC focal person (Nurse or clinician) in a hospital with a capacity of 150 beds.

- **Facility (level 2 and 3) IPC coordination:** The facility health management team shall appoint an IPC focal person to coordinate implementation of IPC activities at the facility level. The facility health management team shall appoint an IPC focal person to coordinate implementation of IPC activities at the facility level. It is critical for a functioning IPC programme to have a dedicated, full time and trained IPC focal person (Nurse or clinician) in a hospital with a capacity of 150 beds.

4.2. Implementation matrix

Different priority activities under each of the strategic priority areas and objectives of this strategic plan shall be implemented within a specific timeline, over the five-year implementation period. Table 4 in Annex 2 shows an overview of the implementation matrix for this strategic plan. This matrix will provide guidance for the development of detailed implementation and work plans at different levels of the health sector.

4.3. Resourcing and resource mobilization

To deliver on this strategy, the MOH, together with its partners, will have to strategize to achieve an increased funding allocation internally from government resources and externally from development and implementation partners, private partnerships, and philanthropists.

Some of the key resource mobilization strategies include:

- MOH budgetary allocation for the IPC unit at the national level and county, integrated development plan, and annual allocation plan.
- MOH existing programs dealing with infectious diseases (e.g., HIV/AIDS, TB, malaria control, DDSR programs) to include budgetary allocation for IPC activities.
- Engage with private sector and industry stakeholders to develop co-financing strategies for relevant IPC activities through public-private partnerships (e.g., the manufacturing and production of IPC consumables), advocacy initiatives, and HCW capacity-building initiatives.
- Sensitize national, county, and facility level health managers to include IPC budget line items during their regular planning, budgeting processes, and annual strategic plan.
- Strengthen logistical management of all IPC resources from the Government of Kenya to improve efficiencies in use.
- Strengthen coordination of partner- and donor-supported IPC initiatives to enhance resource maximization.
- Use the existing IPC data to develop indicators to lobby for financing of IPC activities from partners and MOH.

4.4. Monitoring and evaluation

In undertaking its coordination role, the MOH IPC Unit at the central level shall have the overall responsibility for continuously monitoring and periodically reviewing the implementation status of this strategic plan. This will be achieved through integrating the monitoring of key IPC indicators across different levels of the health care system in the country and running specific IPC unit M&E initiatives. Some of the IPC-specific M&E initiatives to be undertaken will include:

- Annual facility assessment and appraisal on implementation of IPC programs.
- Mid-term and end-term evaluation of the implementation of the national IPC strategic plan.

ANNEX 1

Table 2: Internal Environment Scan

Variable	Strengths	Strategic Implication	Weaknesses	Strategic Implication
Strategic focus	Existence of national policies and guidelines for IPC implementation	Providing strategic directions for IPC services in the country	▪ Policy and guideline documents have not been updated ▪ Policy and guidelines have not reached some of the lower level facilities ▪ Inadequate sensitization on the existing guidelines ▪ Some HCWs not referring to the existing guidelines to guide implementation of activities	Difficulty in implementation of appropriate IPC interventions in health facilities
Structure for implementation	▪ IPC Unit – for overall coordination of IPC activities in the country established at the national level ▪ National IPC Secretariat –partner coordination mechanism ▪ Some counties have active IPC committees ▪ Strengthened collaboration with faith-based organizations and the private sector	Improved coordination of IPC activities at national level	▪ Lack of clarity on coordination roles of some IPC elements (e.g., OSH) ▪ OSH Act (2007) to address industrial health with minimal focus on HCWs ▪ Dissemination of the OSH guidelines and policies ▪ Some counties lack IPC committees ▪ Some have IPC committees, but they are inactive	Inability to implement IPC initiatives in health facilities
Systems to support implementation	▪ Decentralized role of health service delivery ▪ Include IPC in the annual operational plans including budgets ▪ Online IPC virtual training ▪ Continuous quality improvement ▪ Availability of a digital platform for IPC capacity building	Local level priority setting in health has been brought closer to implementation	▪ Inadequate IPC infrastructure in health facilities ▪ Inadequate supplies to facilitate IPC activities ▪ County health system structures not fully established ▪ Inadequate budgetary allocation for IPC activities ▪ Reliance on donors and partners to support IPC activities ▪ Lack of support for sustainability plan ▪ Lack of HAIs surveillance systems ▪ Limited coverage of the digital platforms	Poor implementation of IPC interventions
Shared values within the health sector	▪ Availability of IPC champions at different levels ▪ Improved recognition of IPC in the policy arena within the MOH	Enhances behavior and attitude change	▪ Knowledge, attitude, and practice gaps in IPC by frontline managers ▪ Incorporating IPC curriculum in pre- and in-service training in health care courses	Poor uptake/implementation of IPC activities

Variable	Strengths	Strategic Implication	Weaknesses	Strategic Implication
	▪ Strengthened partnerships in IPC ▪ IPC institutionalized into UHC ▪ Improved care at service delivery points ▪ Availability of information-sharing platform (e.g., conference) ▪ Incorporating IPC curriculum in pre- and intra-service training		▪ Lack of political goodwill ▪	
Style of management/ leadership	▪ MOH stewardship and inclusive approach to coordination of IPC ▪ A well-established NIPCAC ▪ IPC anchored as a performance indicator for patient and HCW safety ▪ Existence of IPC TWGs at county and hospital levels	Improved coordination of IPC activities at national level	▪ Lack of recognition of IPC role in health care facilities by the management ▪ Lack of IPC buy-in and ownership by the HCWs ▪ Lack of a good feedback mechanisms by the IPC focal persons to the top management for decision making	Poor uptake/ implementation of IPC activities
Staffing	▪ Increasing efforts by many actors to improve staffing levels in the health system ▪ Most facilities have appointed IPC focal persons	Improved implementation of IPC interventions	▪ Reduced staff-to-patient ratio in many facilities ▪ Lack of staff retention and motivation ▪ IPC issues not part of performance target ▪ High turnover of staff ▪ Other HCWs abandon IPC activities to the IPC focal persons and champions ▪ Outsourced support staff (e.g., cleaners, morticians) not integrated into IPC activities ▪ Lack of private and faith-based facility participation in IPC activities	Difficulty implementing appropriate IPC interventions in health facilities
Skills amongst staff	▪ Increased capacity building efforts by many partners ▪ Use of multiple platforms to capacity build HCW	Enhance knowledge on IPC issues	▪ Inadequate knowledge and skills on IPC by many frontline HCWs ▪ Low coverage of IPC issues in pre-service training ▪ Lack of refresher courses on IPC in-service ▪ Few specialists in IPC in Kenya	Inability to implement IPC initiatives in health facilities

Table 3: External Environment Scan

	Opportunities	Strategic Implication	Threats	Strategic Implication
Political issues	▪ Devolved government structure ▪ Political goodwill ▪ Enhancement of adoption of IPC standards by UHC agenda ▪ Political stability	Health care service responsive to community needs	▪ Perception of independence between national and county governments, affecting health service delivery and coordination ▪ Political interference with service delivery ▪ Priorities and allocation of funds to health care sector ▪ Strikes ▪ Key stakeholders not understanding the UHC agenda in IPC	Disruption in implementation of health /IPC interventions
Economic issues – funding environment	▪ Decentralized funding at the county level ▪ Donor and partner support for IPC intervention ▪ Public-private partnership ▪ Social health insurance ▪ Health economic models to support IPC advocacy and planning	Potential resources available for IPC services in the periphery	▪ Reduced funding to health sector ▪ Reduced funding for IPC interventions ▪ Lack of priority for IPC funding ▪ Lack of proper surveillance system on HAIs ▪ No existing policy on government rebates specifically on HAIs	Reduced funding for IPC activities
Sociological issues – societal/HCW values and elements affecting IPC	▪ Community mobilization and engagement on health matters (e.g., community health volunteers) ▪ Integration of IPC modules in the curriculum in medical training institutions	Enhanced knowledge of IPC in community	Cultural practices (e.g., caring for the sick)	Poor IPC practices by communities
Technological issues	▪ Availability of improved technological innovations in the market to facilitate IPC interventions ▪ Availability of different tools to disseminate IPC information (e.g., social media, radio) ▪ Accessibility of equipment and spare parts (e.g., macerators, incinerators)	Efficient IPC interventions	▪ Poor planning of preventive maintenance ▪ Lack of knowledge in new technologies ▪ Outdated technologies ▪ Vulnerability to data manipulation	▪ Low uptake of new IPC technology ▪ Poor practices of IPC
Ecological issues	▪ Established disaster preparedness and management system ▪ OSH Act 2007 ▪ Environmental Management and Coordination Act 1999	Prompt response to disaster	Lack of implementation and enforcement of existing guidelines and laws	▪ Pollution ▪ Poor waste management ▪

	Opportunities	Strategic Implication	Threats	Strategic Implication
Legislative issues – legal framework	▪ Presence of county assembly to make bills and approve on IPC ▪ Existence of the Directorate on Standards and Regulations at the national level (structure) ▪ Already existing legal and regulatory frameworks under different acts	Legal backing for implementing IPC	▪ Lack of essential legal framework for enforcing all aspects of IPC (e.g., AMR) ▪ Weak law enforcement system on IPC matters ▪ Lack of policies and guidelines regulating donations ▪ Fragmented essential legal framework for reinforcing certain IPC aspects	Inability to reinforce IPC implementation
Industry issues	▪ Increased investment in research of medical devices ▪ Inclusion of medical device manufacturers and innovators to IPC programs	Increased innovation	▪ Increased counterfeit availability in the market ▪ Sustainability	▪ Poor diagnosis ▪ High cost of treatment ▪ Drug resistance

ANNEX 2: IMPLEMENTATION OVERVIEW

Table 4: Implementation Overview Matrix

Strategic objectives	Strategies	Timeline					Responsibility
		2020/21	2021/22	2022/23	2023/24	2024/25	
Management, leadership, and governance of IPC services							
Strengthen the management and coordination of IPC activities across all levels of the health care system	Strengthen and resource the national level MOH IPC program through a specific budgetary allocation at national level	X	X	X	X	X	National
	Strengthen National IPC Committee to continuously monitor and review the implementation of the strategy and regularly update the IPC policy, strategic plan, and guidelines	X	X	X	X	X	National
	Establish and resource IPC coordination units and TWGs through a specific budget allocation in all counties to coordinate the roll-out of IPC interventions in the counties	X	X	X	X	X	County
	Capacity building at facility level IPC focal persons to oversee the coordination of IPC activities at the health facility level	X	X	X	X	X	County, facility
	Designate skilled focal persons for IPC at the county and facility levels	X					County
Strengthen leadership skills for IPC at all levels of the health care system	Train IPC program officer on leadership for IPC services at MOH and ownership across all levels of health system	X	X	X	X	X	National, county, facility
	Promote the understanding of the national IPC agenda across the MOH management hierarchy at national and county levels	X	X	X	X	X	National, county
	Build capacity of national and county leadership on IPC for buy-in and sustainability	X	X	X	X		National, county
Strengthen policy, governance, and regulatory structures and mechanisms for IPC	Develop legal frameworks relevant for the implementation of IPC at national and county levels	X	X				National, county
	Review and update legal frameworks for the implementation of IPC at national and county levels, as need arises	X	X	X	X	X	National, county
	Develop a coordination mechanism for the implementation of all legal frameworks relevant to IPC	X	X	X	X	X	National, county
	Review and update the IPC policies and guidelines in line with the KHP 2014-2030	X	X				National
	Strengthen IPC stakeholders' coordination mechanism at all levels of the health care system	X	X	X	X	X	National, county

Strategic objectives	Strategies	Timeline					Responsibility
		2020/21	2021/22	2022/23	2023/24	2024/25	
	Engage with private sector and explore opportunities for public-private partnership initiatives in support of IPC activities (e.g., manufacture of appropriate IPC commodities)	X	X	X	X	X	National, county
Advocacy, communication, and social mobilization for IPC							
Strengthen advocacy for IPC and manage behavior change, communication, and social mobilization by actors at all levels of the health system, including the community	Develop behavior change and communication strategy for IPC practices	X					National, county, facility
	Advocacy and promotion of IPC practices to the community though activities such as mass media campaigns, community dialogue, IEC materials, marking national and global events including but not limited to the Global Hand Washing Campaign, and integrating IPC in community strategy	X	X	X	X	X	National, county, facility
	Reinforce positive behaviors and practices to HCWs (e.g., recognition of best practices, supervision, and mentorship)	X	X	X	X	X	County, facility
	Reinforce positive behavior for frontline health care managers through the inclusion of IPC indicators and targets in their annual staff appraisal systems	X	X	X	X	X	County, facility
	Integrate the advocacy behavior change TWG under the National Antimicrobial Stewardship Interagency Committee and IPC TWG to advocate for IPC	X	X	X	X	X	National, county
Health worker education and capacity building for IPC							
Establish training, capacity building strategies, and programs for all HCWs on IPC	Work with all training institutions, professional and regulatory bodies, the Commission for University Education, and other stakeholders in the country to review and update their pre-service training curriculum with appropriate IPC modules	X	X	X	X	X	National
	Incorporate IPC into the in-service training for HCWs	X	X	X	X	X	National
	Develop an IPC training curriculum for all HCW training institutions and professional and regulatory bodies in the country to establish a course for IPC specialists at possibly higher diploma or master's degree level	X	X				National
	Develop a standard comprehensive IPC package for refresher training for all HCWs, both multidisciplinary and specialties, to enhance behavior change in health facilities	X	X				National
	Integrate blended learning, innovative eLearning, and other facilitated training methodologies to enhance adult learning	X	X	X	X	X	National, county, facility
	Establish guidelines and tools for post-training follow-up, support supervisions, and mentorships at all levels of the health care system to	X	X	X	X	X	National, county, facility

Strategic objectives	Strategies	Timeline					Responsibility
		2020/21	2021/22	2022/23	2023/24	2024/25	
	encourage and support behavior change standards (e.g., Infection Control Assessment Tool, Kenya Quality Model for Health						
	Adopt appropriate technologies that aid in capacity building of HCWs to include, but not limited to, certified online courses, apps, blogs, social media	X	X	X	X	X	National, county, facility
Patient and HCW safety in the clinical care settings							
Reduce risk of occupational exposures for HCWs and acquisition of HAIs for patients, clients, and the community	Appoint trained IPC practitioners at facility level based on bed capacity	X					County, facility
	Provide administrative and material support to IPC practitioners at all levels	X	X	X	X	X	National, county, facility
	Advocate for HAI surveillance	X	X	X	X	X	National, county, facility
	Review SOPs for patient isolation in clinical settings	X	X	X	X	X	National, county, facility
	Reduce HAIs through implementation of care bundles (i.e., SSI VAP, CAUTI, CLABSI) (refer to IPC guideline 2015)	X	X	X	X	X	Facility
	Ensure safety in the use of blood and blood products by ensuring blood supply chain protocols are adhered to as per blood transfusion policy (refer to national standards for blood transfusion, 2007)	X	X	X	X	X	National, county, facility
	Ensure safe injection practices through advocacy for use of alternative treatment regimens, ensuring availability of non-reusable injection devices in health care settings, use of safety engineered devices, and ensuring proper disposal of sharps	X	X	X	X	X	Facility
	Minimize contamination and cross infections through dissemination and implementation of SOPs for disinfection and sterilization of clinical areas and reusable medical equipment	X	X	X	X	X	Facility
Minimize risk of acquisition of HAIs for HCWs	Provide appropriate PPE for HCWs and ensure adherence to their use	X	X	X	X	X	County, facility
	Provide appropriate vaccinations for all HCWs	X	X	X	X	X	National, county, facility
	Establish facilities for isolating infectious patients (e.g., TB) and create awareness on isolation-based precautions	X	X	X	X	X	Facility
Availability of IPC supplies, equipment, and infrastructure							
Improve the availability and accessibility of appropriate IPC equipment and infrastructure in all health care settings	Adopt norms, standards, and guidelines for IPC equipment and infrastructure for all health care levels	X	X	X	X	X	National, county facility
	Implement standards for care and maintenance of IPC equipment and infrastructure	X	X	X	X	X	County, facility

Strategic objectives	Strategies	Timeline					Responsibility
		2020/21	2021/22	2022/23	2023/24	2024/25	
Improve the availability of IPC commodities and supplies in all health care settings	Enhance appropriate planning, procurement, and distribution for IPC supplies and commodities at county and health facility levels	X	X	X	X	X	County, facility
	Ensure appropriate budgetary allocation for IPC supplies and commodities at county and health facility levels	X	X	X	X	X	National, county facility
Improve the availability of IPC commodities and supplies in all health care settings	Enhance appropriate planning, procurement, and distribution for IPC supplies and commodities at county and health facility levels	X	X	X	X	X	County, facility
	Ensure appropriate budgetary allocation for IPC supplies and commodities at county and health facility levels	X	X	X	X	X	National, county, facility
IPC surveillance, notification, and research							
Establish and strengthen a surveillance and notification system for HAIs, CAIs, and AMR in health care settings	Task NPHL network with the responsibility of coordinating all microbiology data regarding AMR and HAIs across the nation	X	X	X	X	X	National
	Scale up sentinel surveillance sites for HAIs and AMR within microbiology labs—at least 20 sites by 2023	X	X	X	X	X	County
	Conduct assessment (baseline and periodic) on HAIs and AMR surveillance network	X	X	X	X	X	National, county
	Build microbiology capacity of laboratories in the sentinel sites	X	X	X	X	X	National, county
	Build capacity of HCWs on HAI and AMR surveillance	X	X	X	X	X	National, county
	Adopt SOPs and tools for surveillance, reporting, and notification of all HAIs	X	X	X	X	X	National, county
	Adopt other innovative technologies for reporting and data management Harmonize diagnostic and reporting tools	X	X	X	X	X	National, county
Strengthen prevention and management of HAIs	Ensure adherence to IPC practices	X	X	X	X	X	National, county
	Implement SOPs for management of occupational exposures in health care settings including post-exposure prophylaxis for HIV exposure	X	X	X	X	X	National, county
	Develop and implement SOPs for managing HCWs and clients who acquire HAIs in all health care settings	X	X	X	X	X	Facility
	Implement SOPs for appropriate patient isolation and management procedures in all health care settings	X	X	X	X	X	National, county
Strengthen and implement staff health policies at facility and community level	Implement pre- and post-exposure prophylaxis treatment guidelines in health care settings	X	X	X	X	X	Facility
	Promote WASH practices at workplaces	X	X	X	X	X	Facility
	Provide regular appropriate vaccinations for all HCWs	X	X	X	X	X	Facility
	Strengthen and adhere to IPC practices while undertaking home base care at community level	X	X	X	X	X	County, facility

Strategic objectives	Strategies	Timeline					Responsibility
		2020/21	2021/22	2022/23	2023/24	2024/25	
	Strengthen referral system between the community and link facility on HAIs	X	X	X	X	X	County, facility
Strengthen handling and processing of clinical samples	Implement SOPs for packaging, transportation, and processing of clinical samples and specimens for microbiology investigations	X	X	X	X	X	National, county, facility
	Strengthen the sample referral system	X	X	X	X	X	National
	Provide consistent supplies of laboratory reagents for timely processing of samples	X	X	X	X	X	National, county
	Implement laboratory standards and accreditation procedures	X	X	X	X	X	National, county
	Partner with local research institutions and encourage local research and surveillance for HAIs and AMRs in the country	X	X	X	X	X	National, county, facility
Strengthen research on IPC elements and the utilization of research evidence in routinely updating IPC policies and guidelines	Provide information-sharing platforms for IPC AMR and HAI research findings	X	X	X	X	X	National, county, facility
	Establish a mechanism of supporting researchers to conduct and disseminate their research findings	X	X	X	X	X	National, facility
	Coordinate and collate information and data on infectious diseases generated by national institutions	X	X	X	X	X	National
	Establish formal mechanism for routine research evidence synthesis and utilization during the process of updating IPC policies and guidelines by the IPC TWG	X	X	X	X	X	National, county
Monitoring and evaluation for IPC programs							
Strengthen routine monitoring and regular evaluation of IPC program implementation	Capacity building on data management (collection, analysis, and utilization of tools)	X	X	X	X	X	National
	Monitor indicators and adopt audit tools for IPC interventions for all levels of the health care system in the country	X	X	X	X	X	County, facility
	Undertake annual facility assessment and appraisal on implementation of IPC programs	X	X	X	X	X	National
	Undertake mid-term and end-term evaluation of the implementation of the national IPC strategic plan	X	X	X	X	X	National, county
	Develop a feedback mechanism for IPC interventions	X	X	X	X	X	National, county, facility
	Develop M&E and reporting plan for IPC	X	X				National

ANNEX 3: LIST OF CONTRIBUTORS

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