

NATIONAL INFECTION PREVENTION & CONTROL POLICY AND FRAMEWORK



MINISTRY OF HEALTH
REPUBLIC OF MALDIVES



World Health
Organization
Maldives

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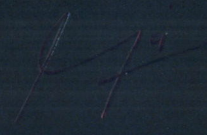
NATIONAL INFECTION PREVENTION AND CONTROL POLICY AND FRAMEWORK

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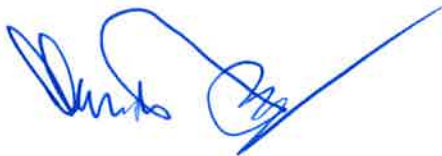
Forward by Minister of Health

Healthcare Associated Infections (HAI) are a major public health problem with increased morbidity and mortality. Hundreds of millions of patients are affected by health care-associated infections worldwide each year, leading to significant mortality and financial losses for health systems. They may prolong hospital stay, overwhelm health professionals and cause economic burden to the healthcare system. However, HAIs are preventable through vigilant Infection Prevention and Control (IPC) measures. IPC is a practical approach which prevents patients and healthcare workers from being harmed by avoidable infectious agent (WHO, 2022).

In line with the national priorities and global development goals, the National Health Master Plan reaffirms ensuring availability of quality assured care and responsive to changing health needs of the population. While the government of Republic of Maldives is committed to provide Quality and Safe Healthcare to all citizens, implementation of good practice in infection and prevention control would bring about a drastic change in service delivery.

I urge all our health care professionals, facility managers, and other staff who access healthcare to provide their utmost support for the implementation of this guideline. The collaborative effort will enhance policy decisions, increase productivity, and reduce the burden of HAIs, where by increasing patient safety.

I take this opportunity to congratulate Quality Assurance and Regulations Division of Ministry of Health for taking the initiative in making this guideline for the Maldives. I am confident that IPC guidelines will formulate pathways for all level of healthcare providers on prevention and control of infection and enhance healthcare delivery.



Ahmed Naseem

Minister of Health

Forward by WHO Representative to the Maldives

It is my privilege to write this foreword for the National Infection Prevention and Control (IPC) guidelines and Healthcare Associated Infections (HAI) guidelines prepared in coordination with both Maldives Food and Drug Authority (MFDA) as well as the Quality Assurance and Regulatory Division (QARD) of Ministry of Health, Maldives.

Antimicrobial resistance (AMR) continues to be one of the biggest threats to global health, food security, and development which can affect anyone, anywhere. Though antibiotic resistance may occur naturally, misuse of antibiotics in humans and animals coupled with poor infection prevention and control is seen accelerating the process as it is rising to dangerously high levels in all parts of the world.

Healthcare Associated Infections (HAI) or Nosocomial infections are one of the most common adverse events in delivery of care and a major public health problem with an impact on morbidity, mortality, and quality of life. These infections also present a significant economic burden for the health system. However, a large percentage of HAIs are preventable through effective IPC measures. Infection prevention and control is also important to prevent the occurrence and spread of infections, thereby reducing the need for antibiotics. These guidelines are intended to support hospitals and other healthcare facilities to establish their IPC protocols to provide safer healthcare services to the people.

The new National Guidelines for IPC in Healthcare Facilities will enhance the patient safety and the capacity of health workers to prevent and control infections in Maldives hospitals. The document is intended to assist Healthcare providers to adhere to best practices in the control of infections within the hospital. It will provide basic principles of infection control, role of health care providers, waste management and elaborates on the steps for effective infection control in hospital settings.

Further, these guidelines shall prevent current and future threats from not just COVID-19, but also from evolving pathogens and infectious diseases, and will help in strengthening health system resilience, AMR and improve the overall quality of healthcare delivery.

WHO Country Office for Maldives considers it a matter of great privilege for extending technical support to the Ministry of Health for development of the National IPC and HAI guidelines, which in long term shall minimize the burden on our health system, while safeguarding our healthcare providers. As a trusted and reliable partner, I assure continued support of WHO in the capacity building as well as implementing these guidelines.

Dr. Nazneen Anwar

WHO Representative

ACKNOWLEDGEMENT

The 2022 National Infection Prevention and Control Guideline will provide and support guidance on Infection prevention and Control initiatives, its developments and actions in healthcare setting across the country. The guidelines looks into IPC practices comprehensively and have been kept simple for adaptation in every healthcare facility.

It is always a challenge to meet the standards of good IPC practices and it cannot be achieved overnight. Cooperation and compliance to standards, nationally and internationally accepted practices are required from all the cadres of health service providers and institutions, including policy makers, facility managers and those who access health services.

Infection prevention and control (IPC) is fundamental to the delivery of safe, quality, efficient and effective healthcare and provide a safe environment for both patients and healthcare workers (HCWs) across the continuum of care. Lack of adherence to safe practices can lead to significant morbidity and mortality in patients and HCWs alike. Provision of a safe physical environment, adequate resources including competent human resources, safe and quality equipment, instruments, machineries and consumables and the use of safe clinical practices is integral to achieve healthcare goals, build trust in the system and ultimately reduce healthcare spending.

In order to mitigate incidences related to infection, including hospital acquired infections, spread of communicable diseases within the healthcare workforce a mechanisms for reporting events that result from an unsafe environment or practice is critical. Basic, standards and transmission based precautions in any healthcare setting is critical element in interrupting the transmission. Major components addressed in guideline includes minimum IPC program requirements, standard and transmission based precautions, surveillance of HAIs amongst others. A structured and rational introduction and enhancement of the IPC practices and standards laid out in these guidelines are important to all healthcare setting, where health care delivery and medical hygiene standards can be negatively compromised by secondary infections.

My sincere appreciation is extended to Dr Nazla Mustafa, who has worked as a WHO consultant to develop these guidelines in consultation with relevant stakeholders. I would like to acknowledge WHO for their continuous support and technical assistance to develop and publish this latest infection prevention and control guidelines and all related IPC resources.

Through these guidelines there is opportunity to enhance the capacity of healthcare workers to develop and implement effective interventions to prevent current and future threats of hospital acquired infections. It will also build resilient health services, help fight antimicrobial resistance (AMR) and improve the overall quality of health care delivery for patients, health care workers and the community at large. With the support and collaboration of all healthcare workers, we look forward to implementing these guidelines and help ensure that we truly realize a quality health care delivery.

Thasleema Usman

Commissioner of Quality Assurance

1. INTRODUCTION

1.1 BACKGROUND

Infection prevention and control (IPC) is acknowledged as a vital component of a thorough and comprehensive approach to patient and healthcare worker safety, quality improvement, and improved health outcomes. In addition, the emerging infectious disease necessitates increased awareness and attention to IPC. Addressing gaps in IPC such as improved hygiene conditions, appropriate use and availability of personal protective equipment (PPE), improved healthcare waste management etc., is critical to prevent spread of infection, reduce healthcare associated infections, burden of disease, social and economic implications and to build a strong health system with a focus on safety and quality culture and infrastructure.

The development of national guidelines on IPC is a priority. The national IPC policy will provide a framework for the development and implementation of guidelines and standard operating procedures (SOPs) to establish a culture of safety in healthcare facilities. With technical support the Ministry has developed National IPC Guidelines to provide comprehensive and standardised recommendations for an improved IPC culture and infrastructure in the Maldives

1.2 RATIONALE

IPC is concerned with patient and healthcare worker safety and is part of a multidisciplinary approach to strengthening the healthcare system. HAIs, also termed nosocomial infections, are infections occurring in a patient during the process of care in a hospital or other healthcare facility, which was not present at the time of admission, typically more than 48 hours after admission. This includes infections acquired in the healthcare system that appear after discharge, and occupational infections among facility staff. Due to limitations in surveillance and subsequent lack of data, the disease burden and economic impact of HAIs in developing countries are not well understood. However, it is understood that HAIs are a very real threat to patient and healthcare worker safety and need to be the subject of surveillance and investigation. A comprehensive IPC system

with national evidence-based IPC guidelines and strategies is critical to ensure IPC practices and procedures are implemented and adhered to with the aim of reducing HAIs, achieving best health outcomes, and preventing future outbreaks.

1.3 SITUATION

Assessment conducted by QARD using Maldives Healthcare Quality Improvement Standards (MHQS) during 2021 highlighted that IPC including Quality Improvement and Patient Safety are key areas for improvement and action.

1.4 PURPOSE

The key purpose of the National IPC policy is to protect patients and healthcare workers, maintain and sustain a culture of quality and safety, prevention and surveillance of HAIs and combatting Antimicrobial Resistance (AMR). The National IPC Guidelines are written as a reference document for IPC best practices and are intended to be used by all healthcare providers as part of an overall policy to assure effective and safe practices and promote a culture of continuous IPC improvement at all healthcare facilities.

1.5 SIGNIFICANCE

The policy and guidelines under this policy are intended to be used by all healthcare professionals under the guidance of Infection Prevention Control Focal Point (IPC-FP) and / or Infection Prevention Control Nurse (IPCN). These documents will be periodically assessed by Quality Assurance and Regulation Division (QARD) of Ministry of Health (MoH). Further, national surveillance will be conducted by QARD. The National IPC Coordinator at QARD will be responsible for managing the review process of documents. In order to ensure full compliance to IPC certain conditions should be met, this includes but not limited to, access to the right equipment and supplies, and an environment that is designed and planned to facilitate the guideline recommendations, a program of routine training, education, and periodic retraining for all personnel involved, a program of regular supervision and feedback is in place in relation to the guideline recommendations including a surveillance program and reinforced through awareness raising and managers

and leaders at every level of the healthcare facility should show their visible support for the National IPC Guidelines' recommendations to help foster, develop and reinforce a culture of patient safety and IPC.

1.6 GENERAL POLICY STATEMENT

Summary of the problem:

MHQS assessments highlighted the vulnerabilities at every level of the healthcare system related to IPC infrastructures and practices that contribute to the ongoing threat to the health and safety of patients and healthcare workers, including the threat of HAIs. HAIs are a significant threat to patient and healthcare worker safety and there is a need to improve health outcomes and establish a culture of safety in healthcare facilities.

Available evidence:

Situational analyses, evidence, and lessons gathered from inspections, assessments and scores of MHQS assessments. The WHO Core Components for Infection Prevention and Control are considered in the development of this guideline.

Policy Direction:

1. Publishing a national guideline on IPC is taken as a priority to address to address the deficits in IPC across the entire health system with the aim of improving the safety of patients and healthcare workers.
2. Training and re-training of healthcare workers on the guideline including HAI surveillance
3. Implementation of measures such as improved hygiene conditions, appropriate management of potentially infectious patients, making available minimum equipment and items including use and availability of personal protective equipment (PPE), improved healthcare waste management and the safe use of injections, invasive devices, blood transfusions etc
4. Assessing recommended instructions and practices in the guideline are important components for patient and healthcare worker safety.
5. Making the Guidelines readily available for healthcare workers, patients, and communities and to update regularly.

6. Maximizing the dissemination and implementation of the Guidelines across all levels of the healthcare system.

Responsibility and Authority:

The Ministry of Health has the responsibility to ensure that the healthcare workforce, patients and the community are protected from all healthcare related infections. The Ministry therefore recognized and ensures that:

1. All healthcare facilities adhere to the guidelines
2. Develop national guidelines, standards, operating procedures pertaining to IPC
3. Establish and support IPC programs at all levels
4. Establish a system for monitoring, evaluating and reporting key IPC indicators
5. Institutionalize a governance structure as defined in the national IPC framework.

1.7 THE CORE COMPONENTS OF INFECTION AND PREVENTION

1. IPC program
2. Development, dissemination and implementation of evidence-based guidelines
3. IPC education and training
4. HAI Surveillance
5. Multimodal strategies for implementing IPC activities
6. Monitoring, audit, and feedback of IPC practices
7. Workload, staffing and bed occupancy
8. Appropriate environment, WASH services and materials and equipment for IPC

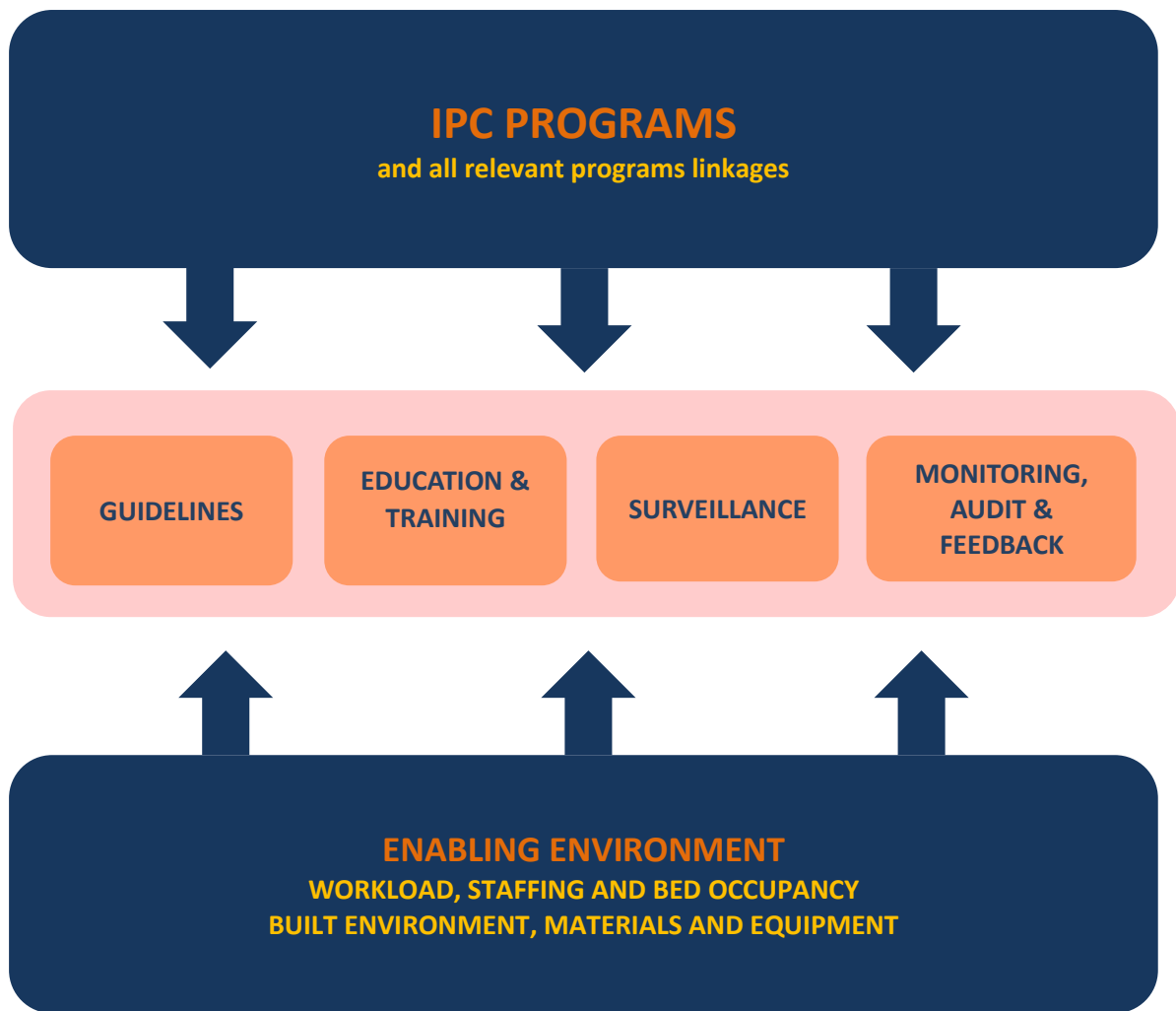


Figure 1: Core components of IPC programs

1.8 OBJECTIVES

IPC programs should cover defined activities. As a minimum, these include:

1. Minimize risk of infection to patients, visitors and health care workers'
2. Development or adaptation of guidelines and standard operating procedures(SOPs) for prevention and control of infection;
 - Standard and transmission based precaution
 - Aseptic techniques
 - Sterilization and disinfection of medical devices
 - Waste management
3. Outbreak prevention and response, including triage, screening, and risk assessment especially during community outbreaks of communicable disease.

4. Health care worker education and practical training.
5. Maintaining effective aseptic techniques for health care practices.
6. Assessment and feedback of compliance with IPC practices.
7. Assurance of continuous procurement of adequate supplies relevant for IPC practices, including innovative equipment when necessary, as well as functioning water, sanitation and Hygiene (WASH) services that include water and sanitation facilities and a health care waste disposal infrastructure.
8. Assurance that patient care activities are undertaken in a clean and hygienic environment and supported by adequate infrastructures with compliance of proper biomedical waste disposal
9. Surveillance of HAIs and Antimicrobial resistance (AMR).

1.9 STRUCTURE OF NATIONAL IPC PROGRAM

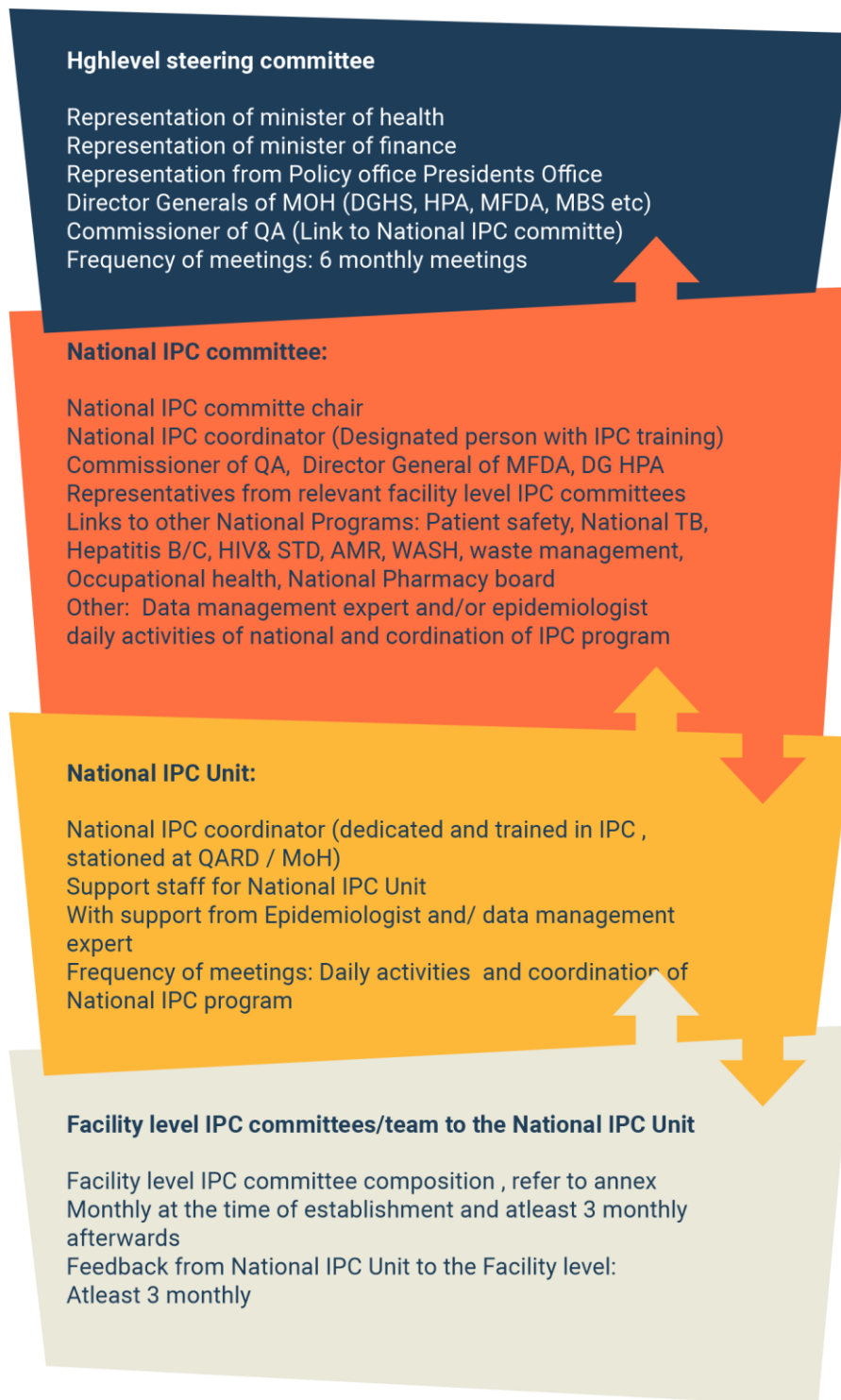


Figure 2: National IPC program structure

Linkage of National IPC Committee with other programs

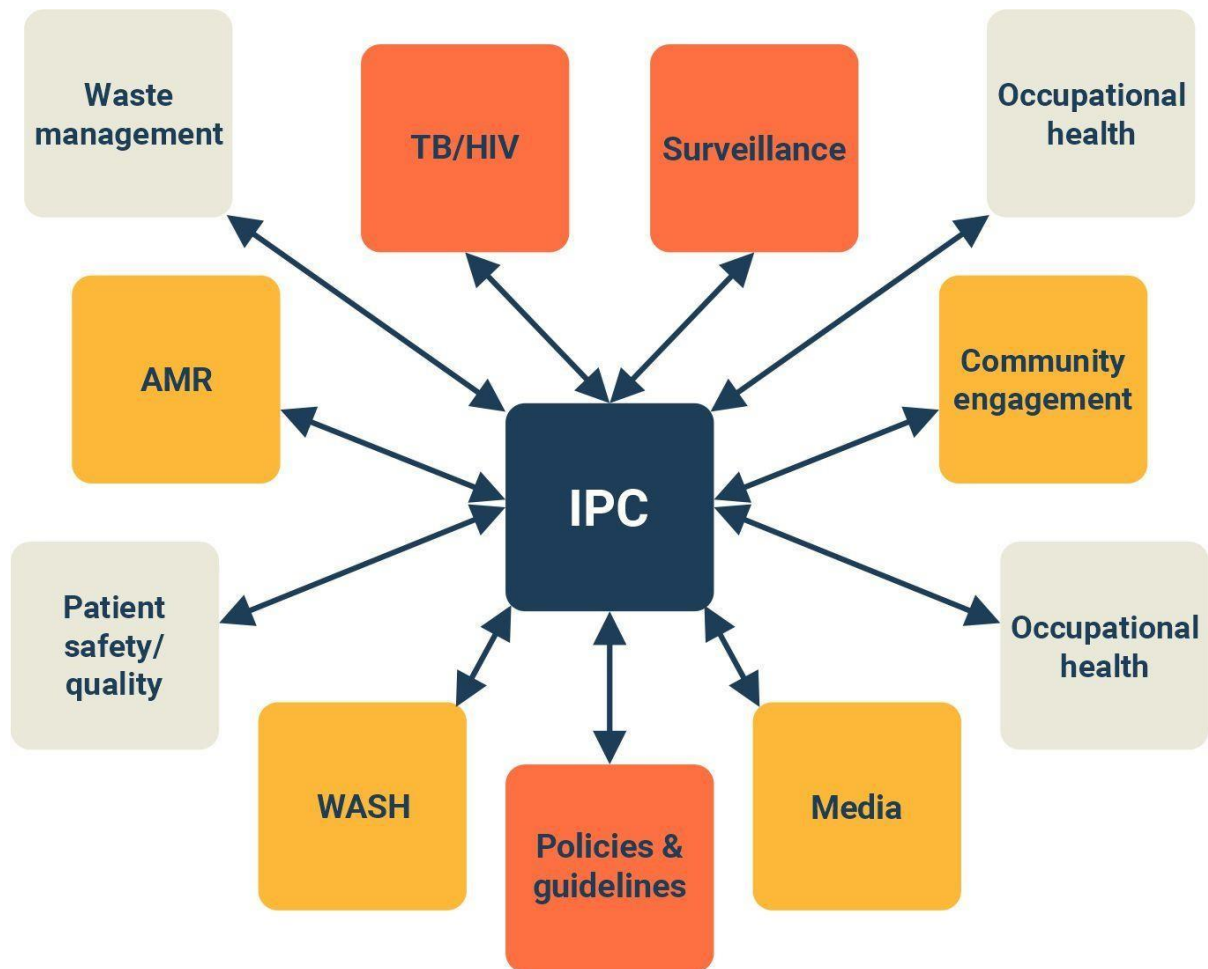


Figure 3: Linkage of National IPC program with other programs

1.10 ESTABLISHMENT TIMELINE OF NATIONAL LEVEL IPC PROGRAM

Activity	Responsible person	Timeline
<ul style="list-style-type: none"> Establish formal IPC leadership team IPC committee IPC and HAI support team 	Medical director/Hospital Manager	One month
<ul style="list-style-type: none"> Develop and finalize IPC, HAI and antibiotic stewardship guidelines. Start awareness training and disseminate guidelines. 	IPC committee/ IPC team	2-3 months 1-2 months
Start HAI surveillance	IPC team and IPC and HAI support team (clinical FP and link nurses)	One month trial and analyse Start within 2-3 months
Feed back from IPC team to IPC committee	IPC team	Monthly
Reports/updates from IPC committee to Atoll/Regional IPC team whereby reports are forwarded to the National IPC committee	IPC committee	Monthly
Reports/updates from IPC committee to IPC leadership team and relevant stakeholders	IPC committee	3 monthly

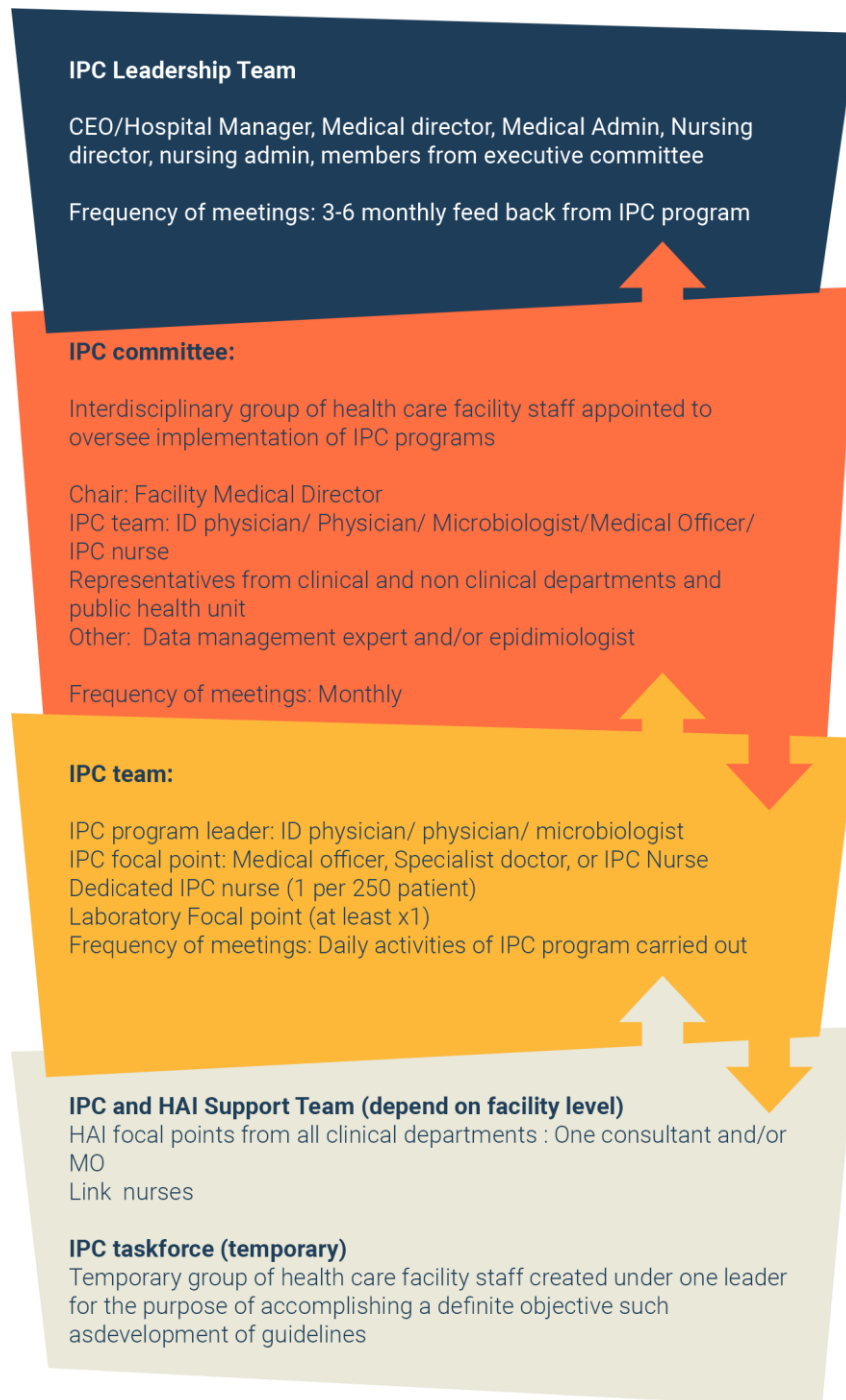
Table 1: Establishment timeline of national level IPC Program.

Note: Further details of National IPC program with definite roles and responsibilities summarized in Annex 2

1.11 ESTABLISHMENT OF FACILITY LEVEL IPC PROGRAM

There should be an IPC program in each health care facility and the program structure would depend on the departments and services given by the health facility.

Structure and Organization of Facility Level IPC program



Timeline of establishment of facility level IPC program

Activity	Responsible person	Timeline
<ul style="list-style-type: none"> Establish formal IPC leadership team IPC committee IPC and HAI support team 	Medical director/Hospital Manager	One month
<ul style="list-style-type: none"> Develop and finalize antibiotic stewardship guidelines. Start awareness training and disseminate guidelines 	IPC committee/ IPC team	2-3 months 1-2 months
Start HAI surveillance	IPC team and IPC and HAI support team (clinical FP and link nurses)	One month trial and analyse Start within 2-3 months
Feed back from IPC team to IPC committee	IPC team	Monthly
Reports/updates from IPC committee to Atoll/Regional IPC team whereby reports are forwarded to the National IPC committee	IPC committee	Monthly
Reports/updates from IPC committee to IPC leadership team and relevant stakeholders	IPC committee	3 monthly

Table 2: Facility level IPC program establishment timeline

1.12 COMPONENTS OF AN EFFECTIVE INFECTION PREVENTION AND CONTROL PROGRAM AT FACILITY LEVEL

1. Infection Control Committee with defined composition, roles and responsibilities.
2. Infection Control Manual with policies, guidelines, recommendations and working protocols including activities and practices under the program with hand hygiene and Standard Precautions as key components.
3. A strategic facility wide plan for infection prevention control with annual review
4. Have an Antimicrobial Management programs or Antimicrobial Stewardship programs.
5. Ongoing educational program for all HCWs in the use of such policies and guidelines.
6. Incorporate infection prevention and control into the objectives of the facility's patient and occupational safety programs
7. Provide administrative support, including fiscal and human resources, for maintaining infection prevention and control programs
8. Provide adequate staff training and protective clothing and equipment, and arrange workplace conditions and structures to minimise potential hazards.
9. Controlling environmental risks for infection.
10. Surveillance of infections, identifying and controlling outbreaks.

1.13 HOSPITAL INFECTION PREVENTION AND CONTROL COMMITTEE (IPCC)

The hospital IPCC is an integral component of the patient safety programme of the health care facility, and is responsible for establishing and maintaining infection prevention and control, its monitoring, surveillance, reporting, research and education. This committee should include wide representation from all relevant disciplines or departments in the facility. The committee has one elected chairperson who is the hospital administrator or person who has direct access to the head of the hospital. The infection control officer is the member secretary of the committee.

The Committee is responsible for establishing and maintaining infection prevention and control, its monitoring, surveillance, reporting, research and education. This committee should have key personnel who are in decision-making positions from the various health care facility departments:

1.14 STRUCTURE OF IPC COMMITTEE

1. Chairperson: (Medical Director)
2. Infection Control team leader and/ officer (Medical Microbiologist/ID physician/physician)
3. Infectious control nurse (One dedicated nurse per 250 patient)
4. Representative from Nursing Department
5. Relevant Medical facilities (Internal Medicine, Surgery, Obstetric and Gynaecology, Paediatrics and other clinical departments).
6. Support Services: (OT/CSSD, House-keeping/Sanitation, Engineering, Pharmacist, Store Officer / Public Relations Management)

An IPC leadership team may be formed involving CEO/Medical Director with medical admin and Nursing director and nursing administration to give additional support to the IPC committee with regular feedback from IPC committee to the leadership team (at least 3 to 6 monthly)

Relevant departments

1. Administration,
2. Central Supply and Sterilization,
3. Clinical Laboratory, Dental, Dietary,
4. Epidemiology if available
5. Data management expert (if available)
6. Equipment Technicians,
7. Housekeeping,
8. Laundry,
9. Medicine,
10. Microbiology,
11. Mortuary,
12. Nursing department and ward in charge,
13. Operating Theatre,
14. Public Health (Public Health Nurses and Environmental Health Officers),
15. Pharmacy,
16. Quality Assurance,
17. Transport Services,
18. X-ray, and other departments.
19. Biomedical department
20. Waste management

The Infection control team

Infectious control team should comprise of at minimum an infection control officer, a microbiologist (if not available a laboratory technologist with training in microbiology), and infection control nurse/nurses (a minimum ratio of one full-time or equivalent infection preventionist (nurse or doctor) per 250 beds should be available). The Infection control team takes daily measures for the prevention and control of infection in hospital.

Infection Control Officer

Infection control officer is usually an Infectious Disease physician, microbiologist or a medical epidemiologist or any other physician with training in ICP.

Infection Control Meetings

Periodic meetings at least once in a month of Infection Control Committee shall take place and minutes of meeting documented with clear action points and responsibility to implement on the medical/nursing/operational personnel. A review of last minutes and implementation shall be a part of the next meeting.

INFECTION CONTROL RESPONSIBILITY OF DIFFERENT STAKEHOLDERS

Role of Hospital Administration

The administration and/or medical management of the hospital must provide leadership by supporting the hospital infection program and has important role in formulating infection prevention and control activities. For this, the head of the hospital should establish a hospital infection control committee (HICC).HICC should appoint Infection control Team (ICT) for carrying out the day to day activities as formulated by the HICC.

Responsibilities of the Hospital administrator

- Establish a multidisciplinary Infection Control Committee.
- Identify appropriate resources for the program to monitor infections and apply the most appropriate methods for preventing infection.
- Supporting an organizational culture that promotes individual responsibility for infection prevention and control among all staff and values the IPC program contribution to the safety of patients, healthcare workers and others—this support includes ensuring availability of appropriate infrastructure, financial and human resources staffing levels for IPC program and incorporating responsibility for infection prevention and control into every staff member's job description

- Periodically review the status of nosocomial infections and effectiveness of interventions to contain them.
- Approve and review policies and guidelines for infection control practices formulated by the
- Authorizing infection control professionals to:
 - Implement IPC program recommendations
 - Intervene when clinical or other practices pose infection risks (e.g. halt building and construction activities, close units during outbreaks and guide patient placement for isolation or cohorting)

Responsibilities of the Hospital Infection Prevention and Control Committee

- Formulating Hospital Infection Prevention and Control Policy. It should be reviewed and updated once a year.
- Analysis of the surveillance data for health care associated infections (including identifying common sources and routes of entry of infections) on a monthly basis and identifying at-risk patients and taking appropriate actions and implementing recommendations where necessary.
- Reviewing the levels of HCAI and their trends regularly and compare the rates of infections with other health set ups wherever feasible.
- Verifying the effectiveness of the recommendations implemented for infection prevention and control.
- Assessing on an ongoing basis whether recommended precautions are being adhered to, i.e., hand washing, decontamination, disinfection and sterilization through audits and quality control activities of infection prevention and control.
- Planning and conducting ongoing training program in order to ensure that all members of staff are sensitized to measures to prevent the transmission of infections.
- Investigating the spread of infection outbreaks in collaboration with medical, nursing and other staff.

- Establish antibiotic stewardship Program
- Ensure provision of water, sanitation, health care waste management, hygiene and environmental cleaning infrastructure, and services across all parts of a facility (WASH).
- Establish Health care workers safety Program – immunization & PEP.
- Establish appropriate patient safety practices

Responsibilities of the Infection Control Team

- Develop a manual of policies and procedures for aseptic, isolation and antiseptic techniques.
- Carry out targeted surveillance of HAIs, data analysis for presentation in HICC meeting and take corrective steps.
- Advise staff on all aspects of infection control and maintain a safe environment for patients and staff.
- Supervise and monitor cleanliness and hygienic practices.
- Oversee sterilization and disinfection and monitor the use and quality control of disinfectants.
- Advise management of at risk patients and supervision of isolation procedures.
- Investigate outbreaks of infection and take corrective measures for control and prevention of outbreak.
- Waste management.
- Provide relevant information on infection problems to management.
- Assist in training of all new employees as to the importance of infection control and the relevant policies and procedures.
- Organize regular training programs for the staff to ensure implementation of infection control practices.
- Audit infection control procedures and antimicrobial usage.
- Monitors Health care workers safety Program.
- Ensure the appropriate notifiable communicable diseases guidelines from HPA are being followed.

Responsibilities of Infection Control Officer

- Prepare guidelines for infection control practices.
- Initiates hospital infection surveillance activities and analyzes the surveillance data.
- Provide trends of HAI to the different patient care units.
- Analyze and report data regarding organisms isolated and their resistance pattern (antibiograms).
- Monitor rational use of antimicrobials.
- Investigate the outbreak, if any and advise about control measures.
- Ensure appropriate reporting of notifiable communicable diseases from all units
- Organize regular educational and training activities for HCWs.
- Organize IPCC meetings regularly.

Role and responsibilities of the microbiologist

- Handling patient and staff specimens to maximize the likelihood of a microbiological diagnosis.
- Developing guidelines for appropriate collection, transport, and handling of specimens.
- Ensuring safe laboratory practices to prevent infections among laboratory staff.
- Rapidly diagnose infections, identify pathogens and perform antimicrobial susceptibility testing of isolated pathogens following standard methods.
- Timely communication of results to the Infection Control Committee.
- Analyze and report antimicrobial resistance pattern of relevant pathogens in different units and in different specimens.
- Analyze and report hospital infection rates and trends over a period of time.
- Monitoring sterilization, disinfection and the environment where necessary.
- Conducts epidemiological typing to trace sources and reservoirs of infection during outbreaks and whenever necessary.

Role and responsibilities of the Infection Control Nurse (ICN)

A full time senior nursing staff should be appointed as ICN and to support her adequate full time or part time nursing. The duties of the ICN are primarily associated with ensuring the practice of infection control measures by healthcare workers. Thus the ICN is the link between the HICC and the wards/ICUs etc. in identifying problems and implementing solutions.

- The ICN conducts Infection control rounds daily and tracks all positive culture cases and maintains the surveillance data.
- The ICN is involved in education and training of HCWs under the supervision of infection control officer.
- Ensures compliance to hospital's BMW policy.
- Maintains data of Sharps/Needle stick injuries and Post-exposure prophylaxis.
- Ensure Health care workers immunization and Post exposure prophylaxis is being implemented. In case of suspected exposure of any hospital worker PEP is undertaken in consultation with Infectious control officer.

Role of the physician

Physicians have unique responsibilities for the prevention and control of hospital infections:

- By providing direct patient care using practices which minimize infection
- By following appropriate practice of hygiene (e.g. hand washing, isolation)
- Serving on the Infection Control Committee as required
- Supporting the infection control team.
- Specifically, physicians are responsible for:
 - Protecting their own patients from other infected patients and from hospital staff who may be infected
 - Complying with the practices approved by the Infection Control Committee
 - Obtaining appropriate microbiological specimens when an infection is present or suspected

- Notifying cases of hospital-acquired infection to the team, as well as the admission of infected patients
- Report notifiable communicable diseases of public health importance to Health Protection Agency (HPA) and order for appropriate sample collection
- Complying with the recommendations of the Antimicrobial Use Committee regarding the use of antibiotics & complying to the antibiotic policy.
- Advising patients, visitors and staff on techniques to prevent the transmission of infection.
- Instituting appropriate treatment for any infections they themselves have, and taking steps to prevent such infections being transmitted to other individuals, especially patients.

Role of the nursing staff

Implementation of patient care practices for infection control is the role of the nursing staff. Nurses should be familiar with practices to prevent the occurrence and spread of infection, and maintain appropriate practices for all patients throughout the duration of their hospital stay.

a) The senior nursing administrator is responsible for:

- Participating in the meetings of Infection Control Committee.
- Promoting the development and improvement of nursing techniques, and ongoing review of aseptic nursing policies, with approval by the Infection Control Committee.
- Developing training programs for members of the nursing staff.
- Supervising the implementation of techniques for the prevention of infections in specialized areas such as the operating suite, the intensive care unit, the maternity unit and newborns.
- Monitoring of nursing adherence to policies.
- Documentation, reliable reporting and maintenance of records of cases suspected to be suffering from HAI, as per records from ward cases notes, laboratory reports and information collected in routine visits and discussions with staff.

- Empowering nurse-in charge for implementation, monitoring and adherence to IPC practices.

b) The nurse in charge of a ward is responsible for

- Maintaining hygiene, consistent with hospital policies and good nursing practice on the ward.
- Monitoring aseptic techniques, including hand washing and use of isolation.
- Reporting promptly to the attending physician any evidence of infection in patients under the nurse's care.
- Initiating patient isolation and ordering appropriate specimens from any patient showing signs of a communicable disease, if the physician is not available.
- Make sure the notifiable communicable diseases get reported to HPA on time.
- Limiting patient exposure to infections from visitors, hospital staff, other patients, or equipment used for diagnosis or treatment.
- Maintaining a safe and adequate supply of ward equipment, drugs and patient care supplies (including cold chain maintenance of vaccines if stored in hospital).
- Participating in training of personnel.
- Participating in outbreak investigation.
- Participate in Infection Control Team

Role of the hospital pharmacist (depending on the level of training/qualification)

Pharmacist should be an active member of the hospital antibiotic stewardship program.

The hospital pharmacist is responsible for:

- Obtaining, storing and distributing pharmaceutical preparations using practices which limit potential transmission of infectious agents to patients.

- Dispensing anti-infectious drugs and maintaining relevant records (potency, incompatibility, conditions of storage and deterioration).
- Obtaining and storing some vaccines or sera, and making them available as appropriate.
- Maintaining records of antibiotics distributed to the medical departments.
- Providing the Antimicrobial Use Committee and Infection Control Committee with summary reports and trends of antimicrobial use.
- Having available the following information on disinfectants, antiseptics and other anti-infectious agents:
 - Active properties in relation to concentration, temperature, length of action, antibiotic spectrum;
 - Toxic properties including sensitization or irritation of the skin and mucosa;
 - Substances that are incompatible with antibiotics or reduce their potency, physical conditions which unfavorably affect potency during storage (temperature, light humidity).
- Harmful effects on materials.

Role of the central sterilization service

A central sterilization department serves all hospital areas, including the operating suite. An appropriately qualified individual must be responsible for management of the program. Responsibility for day-to-day management may be delegated to a nurse or other individual with appropriate qualifications, experience, and knowledge of medical devices. The responsibilities of the central sterilization service are to clean, decontaminate, test, prepare for use, sterilize, and store aseptically all sterile hospital equipment. It works in collaboration with the Infection Control Committee and other hospital programs to develop and monitor policies on cleaning and decontamination of:

- Reusable equipment
- Contaminated equipment including:
 - Wrapping procedures, according to the type of sterilization
 - Sterilization methods, according to the type of equipment
 - Sterilization conditions (e.g. temperature, duration, pressure, humidity)

The in-charge of CSST must:

- Oversee the use of different methods like physical, chemical, and bacteriological so as to monitor the sterilization process.
- Ensure technical maintenance of the equipment according to national standards
- and manufacturers' recommendations.
- Report any defect to administration, maintenance, infection control and other appropriate personnel.
- Maintain complete records of each autoclave run, and ensure long-term availability of records.
- Collect or have collected, at regular intervals, all outdated sterile units.
- Communicate, as needed, with the Infection Control Committee, the nursing service, the operating suite, the hospital transport service, pharmacy service, maintenance, and other appropriate services.

Role of the laundry service

The laundry is responsible for:

- Selecting fabrics for use in different hospital areas, developing policies for working clothes in each area and group of staff, and maintaining appropriate supplies.
- Distribution of working clothes and, if necessary, managing changing rooms.
- Developing policies for the collection and transport of dirty linen.
- Defining, where necessary, the method for disinfecting infected linen, either before it is taken to the laundry or in the laundry itself.
- Developing policies for the protection of clean linen from contamination during transport from the laundry to the area of use.
- Developing criteria for selection of site of laundry services.
- Ensuring appropriate flow of linen, separation of "clean" and "dirty" areas.
- Recommending washing conditions (e.g. temperature, duration).

- Ensuring safety of laundry staff through prevention of exposure to sharps or laundry contaminated with potential pathogens.

Role of the housekeeping service

The housekeeping service is responsible for the regular and routine cleaning of all surfaces and maintaining a high level of hygiene in the facility in collaboration with the Infection Control Committee. It is responsible for:

- Classifying the different hospital areas by varying need for cleaning.
- Developing policies for appropriate cleaning techniques.
- Procedure, frequency, agents used, etc., for each type of room, from highly contaminated to the most clean and ensuring that these practices are followed.
- Developing policies for collection, transport and disposal of different types of waste (e.g. containers, frequency).
- Ensuring that liquid soap and paper towel dispensers are replenished regularly.
- Informing the maintenance service of any building problems requiring repair: cracks, defects in the sanitary or electrical equipment, etc.
- Caring for flowers and plants in public areas.
- Pest control (insects, rodents).
- Providing appropriate training for all new staff members and, periodically, for other employees, and specific training when a new technique is introduced.
- Establishing methods for the cleaning and disinfection of bedding (e.g. mattresses, pillows).
- Determining the frequency for the washing of curtains, screening curtains between beds, etc.
- Reviewing plans for renovations or new furniture, including special patient beds, to determine feasibility of cleaning.
- There should be a continuing program for staff training. Program should stress personal hygiene, the importance of frequent and

careful washing of hands, and cleaning methods.

- Sequence of rooms, correct use of equipment, dilution of cleaning agents, etc.).
- Staff must also understand causes of contamination of premises, and how to control this.
- If cleaning staff is having illness of respiratory tract or digestive tract or skin infection including wounds & cuts they must report the same to health staff.

Role of maintenance

Maintenance is responsible for:

- Collaborating with housekeeping, nursing staff or other appropriate groups in selecting equipment and ensuring early identification and prompt correction of any defect.
- Inspections and regular maintenance of the plumbing, heating, and refrigeration equipment, and electrical fittings and air conditioning; records should be kept of this activity.
- Developing procedures for emergency repairs in essential departments.
- Ensuring environmental safety outside the hospital, e.g. waste disposal, water sources.
- Additional special duties includes:
 - Participation in the choice of equipment if maintenance of the equipment requires technical assistance.
 - Inspection, cleaning and regular replacement of the filters of all appliances for ventilation and humidifiers. Testing autoclaves (temperature, pressure, vacuum, recording mechanism) and regular maintenance (cleaning the inner chamber, emptying the tubes).
 - Monitoring the recording thermometers of refrigerators in pharmacy stores, laboratories, the

blood bank and kitchens.

- Regularly inspecting all surfaces of walls, floors, ceilings so as to ensure they are kept smooth and washable & monitor repairing of any opening or crack in partition walls or window frames.
- Maintaining hydrotherapy appliances & notify to infection control in charge of any anticipated interruption of services such as plumbing or air conditioning.

1.15 RECOMMENDATIONS AND GUIDELINES

The Infection Control Program and its constituent committee in a healthcare setup should cover all areas of the health care setup and deliberate upon the following aspects of infection control in particular, providing policies, recommendations, guidelines, protocols for:

- Disinfection and sterilization processes
- Safe Infection Control Practices including
- Provision of hand hygiene and practices and protocols related to it.
- Environmental cleaning and decontamination
- Endoscopes and bronchoscopes- usage and care.
- Indwelling medical device usage and care.
- Clean and safe preparation and dispensing of medication.
- Safe transportation of patients.
- Management of spills of body fluids and blood and Microbiology cultures.
- Management of needle-stick injury, accidental inoculation and percutaneous mucus membrane exposure to blood and body fluid substances.
- Linen and Laundry.
- Dialysis practices.
- All relevant engineering processes including mechanical, heat ventilation and air conditioning of OT, ICU and other critical areas and patient and staff areas etc.
- Construction, demolition including emergency works and renovation of areas within the organization.
- Food and Beverages processes and hygienic kitchen management including food procurement, segregation, storage, preparation and handling and distribution.

- Care of patients with communicable diseases and care of bleeding patients, Protection of immunosuppressed and immunocompromised patients, Isolation protocols and procedures, Barrier and Reverse Barrier Nursing.
- Waste management and procedures on discarding and disposal of hospital waste including sharps and needles and waste management in patient care areas, Laboratory Services, Transfusion Medicine, Radio diagnosis, Nuclear Medicine and Radiotherapy and Physiotherapy units.
- Emerging community based communicable diseases and specific recommendation cases of epidemics and disasters in the community.
- Outbreak response
- Provision and appropriate usage of personal protective equipment including gloves, gowns, masks, goggles/visors etc. in prevention and control of infections. Restricted antimicrobials and antimicrobial prophylaxis guidelines including surgical prophylaxis.
- Mortuary and handling of cadavers.
- Visitors', attendants' and vendors' protocols.

1.16 INFECTION CONTROL MANUAL

The infection prevention manual should be developed and updated by the infection control team, with review and approval by the committee. It must be made readily available for patient care staff, and regularly updated. An Infection Control Manual shall have all written protocols, policies, guidelines and recommendations as outlined above.

Contents of IPC Manual

- Standard precautions
 - Hand hygiene
 - Use of personal protective equipment
 - Sterilization and medical devices decontamination
 - Safe handling of linen and laundry
 - Health care waste management
 - Patient placement
 - Respiratory hygiene and cough etiquette
 - Environmental cleaning
 - Principles of asepsis
 - Prevention of injuries from sharp instruments and post-exposure prophylaxis
- Transmission-based precautions
- Outbreak response
- Environmental controls in IPC
- Hospital Acquired Infection (HAI)

1.17 NOTIFICATION

All relevant information as required by law on communicable diseases would be notified as appropriate to Health Protection Agency (HPA). In case of specific reports from public health agencies requiring action on their recommendations, appropriate action should be taken.

1.18 ANTIMICROBIAL MANAGEMENT PROGRAM

Antimicrobial Management Program shall form another main focus of the Infection Prevention and Control Program. This shall include all components of antimicrobial stewardship so as to stress upon advocacy of safe use of antimicrobials which shall be strengthened with periodic review of antimicrobial guidelines and implementation locally in each of the health care setups.

1.19 EDUCATIONAL PROGRAMS AND STRATEGIES

Appropriate educational material should be made available to all. This would be augmented by periodic CME/CNE or educational interactive programs and awareness drives. Local Health care setup should provide antimicrobial susceptibility patterns, appropriate usage of antimicrobials and have updates on antimicrobials communicated to all relevant personnel in patient care, locally and periodically. Specific infectious diseases and their prevention and control awareness should be made available as and when required to relevant staff locally and may be extended to community if so desired by the health departments of that district/city/area.

1.20 RISK ASSESSMENT

A risk-based approach should be used in establishing the focus of the infection prevention program. Procedures and processes associated with risk of infection to patient and staff should be based upon assessing the risk in the organization.

1.21 ANNUAL PLAN

Based on the Risk Assessment Matrix, an annual plan of action should be charted out at the end of current year and ratified by the Infection Control Committee. Targets to be achieved on the lines of aims and objectives of the program and strategies to be implemented to achieve these would be emphasized upon.

Resources:

Guidelines on core components of infection prevention and control programs at the national and acute health care facility level. Geneva: World Health Organization; 2016. <https://www.who.int/publications/i/item/9789241549929>

Improving infection prevention and control at the health facility: Interim practical manual supporting implementation of the WHO Guidelines on Core Components of Infection Prevention and Control Programs. Geneva: World Health Organization; 2018 (WHO/HIS/SDS/2018.10). <https://apps.who.int/iris/bitstream/handle/10665/279788/WHO-HIS-SDS-2018.10-eng.pdf>

Ministry of Health Maldives, 2020. National Antibiotic Stewardship Program.

National Health and Medical Research Council (2019). Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra: <https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019>

Indian Centre for Disease Control, 2020. National Guidelines for Infection Prevention and Control in Healthcare Facilities. <https://www.mohfw.gov.in/pdf/National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

2. BASICS OF INFECTION PREVENTION AND CONTROL

2.1 INTRODUCTION

Most infectious agents are microorganisms which exist naturally everywhere in the environment (some can be the body's normal flora). These microorganisms such as bacteria, viruses, fungi and parasites can be involved in either colonisation or infection, depending on the susceptibility of the host:

- In colonisation, there is a sustained presence of replicating infectious agents on or in the body, without the production of an immune response or disease.
- With infection, invasion of infectious agents into the body results in an immune response, with or without symptomatic disease. Many infectious agents are present in healthcare settings.

2.2 CHAIN OF INFECTION

Transmission of infectious agents within a healthcare setting requires the following elements: Source or reservoir of infectious agents, mode of transmission and a susceptible host.

Source or reservoir of infectious agents

Patients and healthcare workers are most likely to be sources of infectious agents and are also the most common susceptible hosts. Other people visiting and working in health care may also be at risk of both infection and transmission. In some cases, HAIs are serious or even life threatening. Infectious agents transmitted during health care come primarily from human sources, including patients, healthcare workers and visitors.

Source individuals may be actively ill, may have no symptoms but be in the incubation period of a disease, or may be temporary or chronic carriers.

Other sources of transmission include:

- Endogenous flora of patients (e.g. bacteria residing in the respiratory or

gastrointestinal tract)

- Environmental sources such as air, water, medications or medical equipment and devices that have become contaminated.

2.2.1.1 Portal of Exit

Is the place from where the micro-organism can leave the reservoir (e.g. through the mouth from the respiratory tract, via the hands from contact with a patient).

2.2.1.2 Portal of Entry

Is the entry point from where the microorganism is allowed to gain access to a new person (host).

2.2.1.3 Modes of transmission

Mode of transmission is how the microorganism moves from one person to another. In healthcare settings, the main modes for transmission of infectious agents are; contact (including blood borne), droplet and airborne.

2.2.1.4 Contact transmission

Transmission occurs by either direct or indirect contact

- Direct: involves close contact with a colonised / infected patient with transfer of the organism to the susceptible host, usually in the course of patient care activities e.g. turning a patient.
- Indirect: occurs if an infectious agent is transferred via a contaminated intermediate object (fomite) or person e.g. when contaminated patient-care devices are shared between patients without
- cleaning and / or disinfection between patients or for example, a healthcare worker's hands transmitting infectious agents after touching an infected body site on one patient and not performing hand hygiene before touching another patient, or a healthcare worker coming into contact with fomites (e.g. bedding) or faeces and then with a patient. Examples of infectious agents transmitted by contact include multi-resistant organisms (MROs),

- Clostridium difficile, norovirus and highly contagious skin infections/infestations(e.g. impetigo, scabies).

2.2.1.5 Droplet transmission

Transmission occurs through large (i.e. >5 microns in size) respiratory droplets that are generated by an infected person who is coughing, sneezing or talking. Respiratory droplets transmit infection when they travel directly from the respiratory tract of the infected person to susceptible mucosal surfaces (nasal, conjunctivae or oral) of another person, generally over short distances. The droplets do not remain suspended in the air and are propelled a short distance from the source (approximately 1 metre). Droplets can also be transmitted indirectly to mucosal surfaces (e.g. via hands). Examples of organism transmitted by droplets include influenza virus and meningococcal

2.2.1.6 Airborne transmission

Transmission occurs by small (i.e. <5microns) respiratory droplets which are carried through the air. The droplets can remain suspended in the air for long periods and can be dispersed by air currents. Certain procedures, particularly those that induce coughing, can promote airborne transmission. These include diagnostic sputum induction, bronchoscopy, airway suctioning, endotracheal intubation, positive pressure ventilation via face mask and high-frequency oscillatory ventilation. Aerosols containing infectious agents can be dispersed over long distances by air currents (e.g. ventilation or air conditioning systems) and inhaled by susceptible individuals who have not had any contact with the infectious person. These small particles can transmit infection into small airways of the respiratory tract.

2.2.1.7 Vector born transmission

Vector-borne transmission occurs when vectors such as mosquitoes, flies, rats and other vectors transmit micro-organisms. Vector born transmission (mechanical or biological) : mosquitoes, fleas, and ticks may carry an infectious agent through purely mechanical means or may support growth or changes in the agent. vector born mechanical transmission are flies carrying Shigella on their appendages and fleas carrying Yersinia pestis, the causative agent of plague, in their gut. In contrast, in biologic transmission, the causative agent of undergoes maturation in an intermediate host before it can be

transmitted to humans (malaria or guinea worm disease).

Vector-borne transmission refers to transmission by vectors and is prevented by appropriate health care facility construction and maintenance, closed or screened windows, and proper housekeeping.

2.2.1.8 Other modes of transmission

Vehicles that may indirectly transmit an infectious agent include food, water, biologic products (blood), and fomites (inanimate objects such as handkerchiefs, bedding, or surgical scalpels). A vehicle may passively carry a pathogen — as food or water may carry hepatitis A virus. Alternatively, the vehicle may provide an environment in which the agent grows, multiplies, or produces toxin — as improperly canned foods provide an environment that supports production of botulinum toxin by *Clostridium botulinum*.

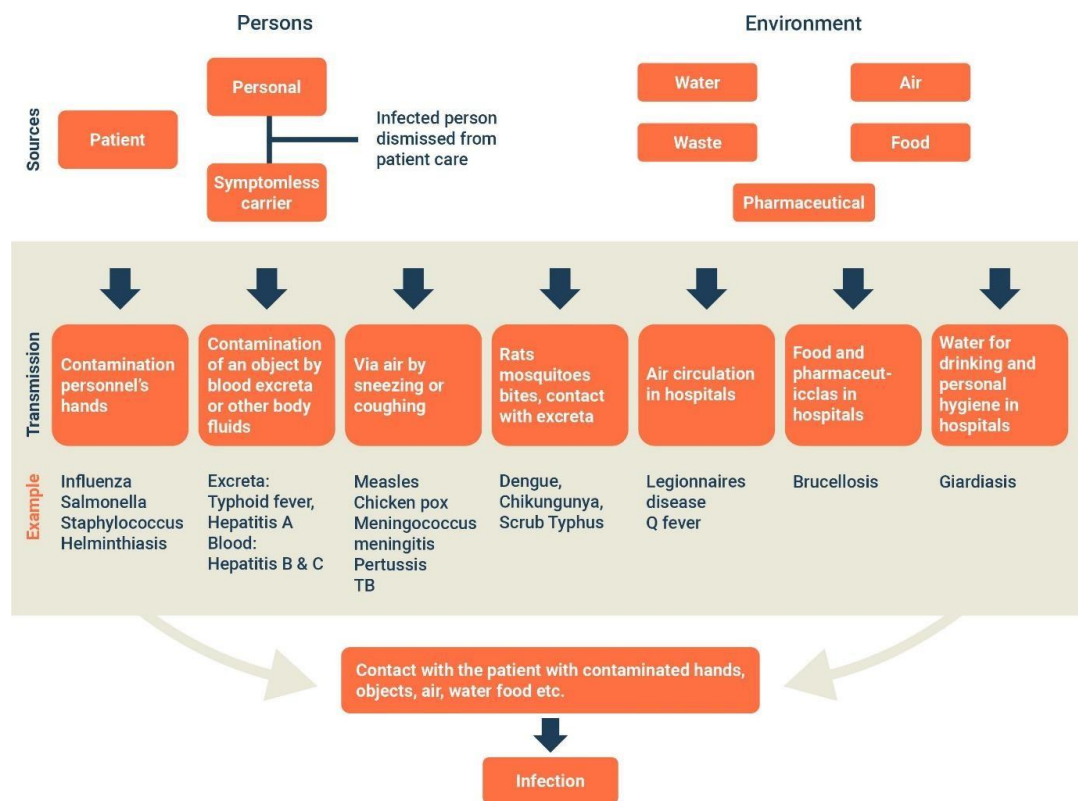


Figure 4: Spread of nosocomial infections

2.2.1.9 Susceptible host

Infection is the result of a complex interrelationship between a host and an infectious agent and people vary in their response to exposure to an infectious agent:

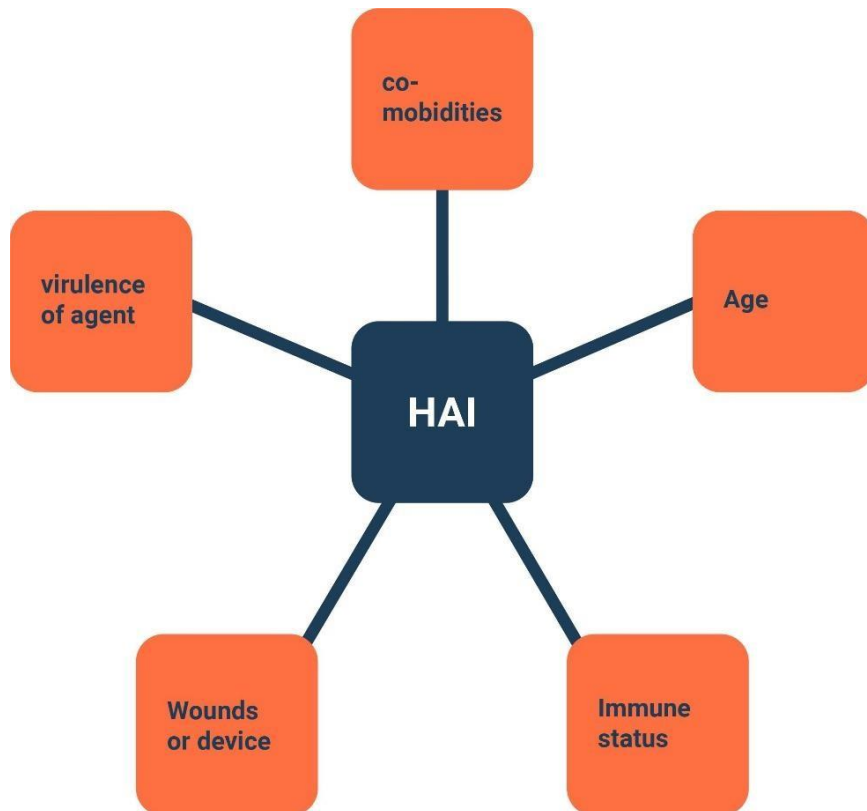


Figure 4: Factors influencing HAIs

Important predictors of an individual's outcome after exposure include his or her:

- Immune status at the time of exposure (including whether immune status is compromised by medical treatment such as immunosuppressive agents or irradiation)
- Age (e.g. neonates and elderly patients are more susceptible)
- Health status (e.g. when a patient has other underlying disease such as diabetes or is a smoker);

- The virulence of the agent
- Other factors that increase the risk of transmission of infection (e.g. undergoing surgery, requiring an indwelling device such as a catheter, or remaining in hospital for lengthy periods).

To prevent the transmission of infectious agents a two-tiered approach, which includes standard precaution (at all times) and transmission based precaution (when standard based precaution may not be sufficient) may be used.

2.3 RISK MANAGEMENT IN INFECTIOUS PREVENTION AND CONTROL

In the context of this policy, 'risk' is defined as the possibility of acquisition or infection of patients or healthcare workers arising from activities within a healthcare facility.

2.3.1.1 What is Risk management in infection prevention and control (IPC)

Risk management (RM) is a structured method to identify, evaluate, avoid or reduce hazards in healthcare. RM assists with prioritising risks and is an essential part of the quality management program.

2.3.1.2 What is the purpose of performing risk management in IPC?

- There are many reasons for performing RM in healthcare including:
- To improve clinical practices
- To increase safety of patients, healthcare workers and visitors
- To reduce rates of healthcare-associated infections (HAI).

2.3.1.3 Which elements are needed for successful risk management in IPC?

- The following key elements will help to produce successful RM projects:
- An active IPC committee: assists with risk assessment and implementation of IPC measures
- Robust policies and procedures: lay the foundation for good institutional IPC

practice

- Effective healthcare leadership: commitment, clinical role-models and the provision of the resources to implement RM interventions
- Clinician ownership: ensures that staff support RM processes and are accountable
- Education and in-service training: are essential parts of any RM intervention.
- Risk assessment (RA) is a process that identifies, evaluates and establishes ways to eliminate or control harms arising from health care associated infection.
- Identifies hazard (danger)
 - What can go wrong?
- Evaluates the risk associated with that hazard
 - How bad could it be?

2.3.1.4 How often might it happen?

- Determines appropriate ways to eliminate or control the hazard.
 - What actions should be taken?
 - How do we avoid this problem in the future?
- In other words, RA is a detailed examination of potential or existing hazards in healthcare:
- To identify factors (policies, environment, practices, processes) that may cause harm to patients, staff and/or visitors.
- To evaluate how likely the event is and how serious the hazard is.
- Then decide what steps should be taken to prevent or control the harm from happening.

2.4 WHAT ARE THE KEY STEPS IN PERFORMING A RISK

ASSESSMENT IN IPC?

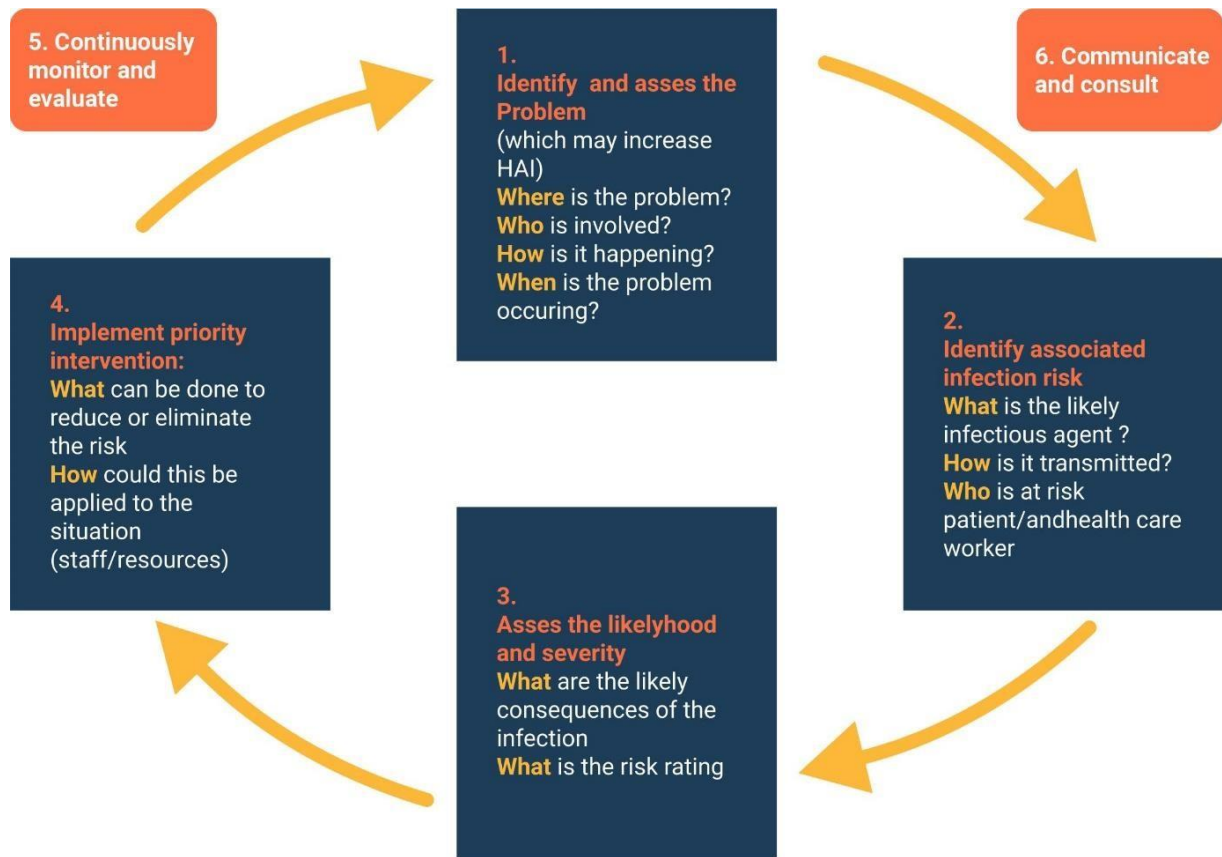
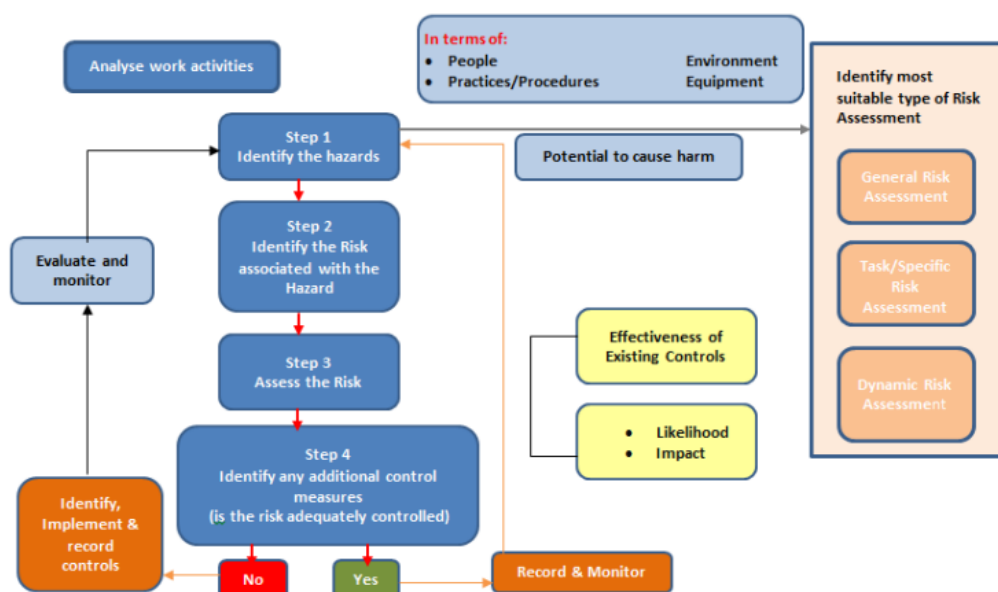


Figure 5: IPC risk assessment flow chart

2.4.1 Risk assessment/flow chart



2.4.1.1 Identify and assess a problem, hazard or threat which may increase risk of HAI

What is the problem?

For example, high rates of needle stick injuries (NSI) among staff. Get data on the rate of NSI, the type of NSI, which staff were affected, when, where and how the injuries happened (in theatre, while recapping a needle etc).

2.4.1.2 Identify associated infection risks (use a structured approach)

What is/are the likely infectious agent/agents transmitted e.g. Hepatitis B, HIV and HCV. How is it transmitted? For example, identify all points of risk for NSI, e.g. when taking blood from uncooperative patients; when staff are tired (post-call); no eye protection in casualty, etc

Who is at risk e.g. health care worker in NSI

2.4.1.3 Assess the likelihood of occurrence and severity of infection

What are the likely consequences of infection and what is the risk rating. For example, Needle Stick Injury is a frequent occurrence at your facility and your patient population has a hepatitis B prevalence, so consequences of infection would be severe.

Table A2.1: Risk analysis matrix

Likelihood	Consequences				
	Negligible	Minor	Moderate	Major	Extreme
Rare	Low	Low	Low	Medium	High
Unlikely	Low	Medium	Medium	High	Very high
Possible	Low	Medium	High	Very high	Very high
Likely	Medium	High	Very high	Very high	Extreme
Almost certain	Medium	Very high	Very high	Extreme	Extreme

Low risk	Manage by routine procedures.
Medium risk	Manage by specific monitoring or audit procedures.
High risk	This is serious and must be addressed immediately.
Very high risk	The magnitude of the consequences of an event, should it occur, and the likelihood of that event occurring, are assessed in the context of the effectiveness of existing strategies and controls.
Extreme risk	

Table 3: Risk analysis matrix

2.4.1.4 Determine and implement priority interventions to manage the risk

For example, priority interventions for the facility: training of all staff in sharps management, sharps containers in all rooms or ensure eye shields available in casualty/obstetrics.

2.4.1.5 Continually monitor the risk and evaluate the success of your interventions

Monitoring and review is an essential component of the risk-management process. This ensures that:

- Risk treatment is implemented effectively. For example, keep records of all NSI before, during and after the interventions, monitor how well the interventions were implemented, improve policies and re-train staff periodically.
- Continue at least annual review.

- Analysis of risk is verified against new data if possible and new risk is identified.

2.4.1.6 Communication and consultation are also key elements of clinical risk management. An interactive

Communication occurs between clinicians, managers and reception staff to ensure that all understand why protocols and procedures are in place and that there is a clear understanding of how to apply them control, identification of risks before they arise and prompt management of risks as they occur. Exchange of information between management, healthcare workers, patients and other stakeholders provides the basis for increased awareness of the importance of infection prevention and control.

Example: Give feed back to the hospital staff on the NSI rates before and after intervention or asses the knowledge of staff before and after training on proper handling of sharps/ response to a NSI etc.

2.4.2 When should risk assessment in IPC be performed?

Risk assessment should be performed when:

- A problem in IPC practice, policy or related issue is identified
- A new IPC service is established (looking specifically at standard precautions, transmission-based precautions, infection surveillance, cleaning, laundry and waste management, reprocessing of re-usable instruments, and renovation projects)
- A new piece of clinical equipment or instrument is procured
- A new procedure or diagnostic test is implemented
- At least annually to re-evaluate the priorities for your facility's IPC programme.

2.5 PATIENT-CENTERED APPROACH IN IPC

As infection prevention and control is ultimately about people, it is important to involve patients and care givers in the IPC system. Effective infection prevention and control is central to providing high quality, patient-centred health care.

Putting patients at the centre of infection prevention and control and enabling them to participate in the care process is not just about explaining the risks of treatments, but involves considering patients' needs at every level.

2.5.1 Ways to implement patient centered care in IPC

- Take patients' perspectives into account when developing policies and programs
- familiarise patients and care givers with the infection prevention and control strategies that are employed in healthcare facilities to protect them, the people caring for them and the healthcare environment
- Discuss with patients the specific risks associated with their medical and/or surgical treatment
- Encourage patients and visitors to disclose their health or risk status if there is a potential risk or source of infection to healthcare workers or others within the healthcare facility
- Provide opportunities for patients to identify and communicate risks and encourage them
- To use feedback procedures for any concerns that they have about infection prevention and control procedures
- Provide educational materials about infection prevention and control using a variety of media (e.g. posters in waiting rooms, printed material and educational videos)
- Inform patients about the protocols for protecting their privacy and confidentiality (according to hospital protocol).

2.3.1.1 Patient care tip in Standard and transmission based precaution Healthcare

Workers should ensure that their patients understand why certain practices are being undertaken, and that these practices are in place to protect everyone from infection. Patients and visitors should also be aware of their role in minimising risks by following basic hand hygiene and respiratory hygiene and cough etiquette and informing staff about aspects of their care or services if necessary.

2.3.1.2 Tips on improving hand hygiene:

- Educate patients to be worried about the risks their hands represent including acquiring hospital acquired infections or transmitting infection from themselves to others. Increased awareness may promote patient hand hygiene compliance.
- It is important to make hand hygiene easy for patients. Provide bedside access to hand sanitizer or disinfectant wipes with meals.
- Measure ongoing patient hand hygiene within the overall quality improvement plan and find out factors hindering compliance to hand hygiene by patients (example after using toilet).

Resources:

National Health and Medical Research Council (2019). Australian Guidelines for the Prevention and Control of Infection in Healthcare, Canberra:

<https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019>

Indian Centre for Disease Control, 2020. National Guidelines for Infection Prevention and Control in Healthcare Facilities.

<https://www.mohfw.gov.in/pdf/National%20Guidelines%20for%20IPC%20in%20HCF%20-%20final%281%29.pdf>

APPENDIX 1 - HEALTH FACILITY IPC PROGRAM

Appendix 1.1 Core components for different levels of health facilities

Table 4: Core components of IPC program at facility level

IPC program at Health Facility level:		WHAT is required?	
CORE COMPONENTS	Primary (Health Center)	Atoll Hospital /Secondary care	Referral hospitals/ tertiary care
1. IPC PROGRAM	<p>IPC trained health care officer</p> <ul style="list-style-type: none"> Trained IPC link person with at least 50% of work time dedicated to IPC (doctor, nurse or health worker) at each primary health care facility. One IPC-trained health care officer (doctor, nurse or microbiologist) at the atoll level to supervise the IPC link professionals in primary health care facilities. 	<p>Functional IPC programme</p> <ul style="list-style-type: none"> Trained IPC focal point (one full-time trained IPC focal point [nurse or doctor]) as per the recommended ratio of 1:250 beds with dedicated time to carry out IPC activities in all facilities (for example, if the facility has 120 beds, one 50% full-time equivalent dedicated officer). Dedicated budget for IPC implementation. Access to microbiology lab with microbiology and IPC trained technicians 	<p>Functional IPC programme</p> <ul style="list-style-type: none"> At least one full-time trained IPC focal point (nurse or doctor) with dedicated time per 250 beds. IPC programme aligned with the national programme and with a dedicated budget. Multidisciplinary committee/team. Access to microbiology laboratory lead by a microbiologist with IPC training Option to include infectious disease specialist
2. EVIDENCE BASED GUIDELINES	Facility-adapted standard operating procedures (SOPs) and their monitoring	<ul style="list-style-type: none"> All requirements as for the primary health care facility level, with additional SOPs on: <ul style="list-style-type: none"> Standard precautions 	

	<ul style="list-style-type: none"> • Evidence-based facility-adapted SOPs based on the national IPC guidelines. • At a minimum, the facility SOPs should include: - <ul style="list-style-type: none"> ○ hand hygiene ○ decontamination of medical devices and patient care equipment ○ environmental cleaning - health care waste management ○ injection safety ○ HCW protection (for example, post exposure prophylaxis, vaccinations) ○ aseptic techniques ○ triage of infectious patients ○ basic principles of standard and transmission-based precautions. • Routine monitoring of the implementation of at least some of the IPC guidelines/ SOPs. 	<ul style="list-style-type: none"> • Transmission-based precautions (for example, detailed, specific SOPs for the prevention of airborne pathogen transmission); • Aseptic technique for invasive procedures, including surgery; • Specific SOPs to prevent the most prevalent HAIs based on the local context/ epidemiology; • Occupational health (specific detailed SOP). 	
3. TRAINING AND EDUCATION	<ul style="list-style-type: none"> • IPC training for all front-line clinical staff and cleaners upon hiring • All front-line clinical staff and cleaners must receive education and training on the facility IPC guidelines/SOPs upon employment. • All IPC link persons in primary care facilities and IPC focal 	<ul style="list-style-type: none"> • IPC training for all front-line clinical staff and cleaners upon hire • All front-line clinical staff and cleaners must receive education and training on the facility IPC guidelines/SOPs upon employment. 	<ul style="list-style-type: none"> • IPC training for all front-line clinical staff and cleaners upon hire and annually • All front-line clinical staff and cleaners must receive education and training on the facility IPC guidelines/SOPs upon employment and annually. • All IPC staff need to receive specific IPC training.

	points at the district level (or other administrative level) need to receive specific IPC training.	<ul style="list-style-type: none"> All IPC staff need to receive specific IPC training 	
4. HAI SURVEILLANCE	<ul style="list-style-type: none"> Detection and reporting of communicable diseases according to HPA requirements Establish mechanism for transporting required cultures and follow the results. From Atoll microbiological culture facilities available report the priority AMR organisms and their susceptibility (laboratory based surveillance) <p>WHO: HAI surveillance is not required as a minimum requirement at the primary facility level, but should follow national or sub-national plans, if available (for example, detection and reporting of outbreaks affecting the community is usually included in national plans)</p>	<ul style="list-style-type: none"> Detection and reporting of communicable diseases according to HPA requirements AMR surveillance of the priority organisms (laboratory based) HAI surveillance depending on the facility 	<p>Functional HAI surveillance</p> <ul style="list-style-type: none"> Active HAI surveillance should be conducted according to the national HAI and AMR surveillance guidelines. <ul style="list-style-type: none"> Enabling structures and supporting resources need to be in place (dependable laboratories, medical records, trained staff), Timely and regular feedback needs to be provided to key stakeholders in order to lead to appropriate action, in particular to the hospital administration and the national level according to the HAI surveillance guideline.
5. MULTIMODAL STRATEGIES	<ul style="list-style-type: none"> Use of multimodal strategies – at the very least to implement interventions to improve <ul style="list-style-type: none"> Hand hygiene, Safe injection practices, Decontamination of medical instruments and devices Environmental cleaning. If microbiological laboratory facility available to report priority organisms for AMR surveillance. 	<ul style="list-style-type: none"> Use of multimodal strategies – at the very least to improve <ul style="list-style-type: none"> Each item of standard and transmission-based precautions Triage Laboratory based AMR surveillance 	<ul style="list-style-type: none"> Use of multimodal strategies to implement interventions to improve <ul style="list-style-type: none"> Each item of standard and transmission-based precautions Triage, HAI prevention and surveillance* (CA-UTI, CLABSI, VAP and SSI) AMR surveillance of priority organism**

<p>6. MONITORING AUDITING AND FEED BACK</p>	<ul style="list-style-type: none"> Monitoring of IPC structural and process indicators according to the national guideline. 	<ul style="list-style-type: none"> A person responsible for the conduct of the periodic or continuous monitoring of selected indicators for process and structure, informed by the priorities of the facility or the country. Hand hygiene is an essential process indicator to be monitored. Timely and regular feedback needs to be provided to key stakeholders in order to lead to appropriate action, particularly to the hospital administration and national levels according to the national IPC guidelines.
<p>7. WORKLOAD, STAFFING AND BED OCCUPANCY</p> <ul style="list-style-type: none"> Bed occupancy should not exceed the standard capacity of the facility; HCW staffing levels should be adequately assigned according to patient workload 	<p>To reduce overcrowding:</p> <ul style="list-style-type: none"> A system for patient flow, a triage system with proper management of cases and referral on time according to the national guidelines <p>To optimize staffing levels:</p> <ul style="list-style-type: none"> Assessment of appropriate staffing levels, depending on the categories identified when using WHO/national tools (national norms on patient/staff ratio), and development of an appropriate plan. 	<p>To standardize bed occupancy:</p> <ul style="list-style-type: none"> Establish a system to manage the use of space in the facility and to establish the standard bed capacity for the facility Hospital administration enforcement of the system developed No more than one patient per bed Spacing of at least one metre between the edges of beds Overall occupancy should not exceed the designed total bed capacity of the facility. <p>To optimize staffing levels:</p> <ul style="list-style-type: none"> assessment of appropriate staffing levels, depending on the categories identified when using WHO/national tools (national norms on patient/staff ratio), and development of an appropriate plan.
<p>8. BUILT ENVIRONMENT, MATERIALS AND EQUIPMENT FOR IPC</p>	<ul style="list-style-type: none"> Water should always be available from a source on the premises (such as a well or a treated, safely managed piped water supply) to perform basic IPC measures, including hand hygiene, environmental cleaning, laundry, decontamination of medical devices and health care waste management according to national guidelines. 	<ul style="list-style-type: none"> A safe and sufficient quantity of water should be available for all required IPC measures and specific medical activities, including for drinking, and piped inside the facility at all times - at a minimum to high-risk wards (for example, maternity ward, operating room/s, intensive care unit). A minimum of two functional, improved sanitation facilities that safely contain waste available for outpatient wards should be available and one per 20 beds for inpatient wards; all should be equipped with menstrual hygiene facilities. Functional hand hygiene facilities should always be available at points of care, toilets and service areas (for example, the decontamination unit), which include ABHR and soap, water and single-use towels (or if unavailable, clean reusable towels) at points of care and service areas, and soap, water and single-use towels(or if unavailable, clean reusable towels) within 5 metres of toilets.

	<ul style="list-style-type: none"> • A minimum of two functional, improved sanitation facilities should be available on-site, one for patients and the other for staff; both should be equipped with menstrual hygiene facilities. • Functional hand hygiene facilities should always be available at points of care/toilets and include soap, water and single-use towels (or if unavailable, clean reusable towels) or alcohol-based handrub (ABHR) at points of care and soap, water and single-use towels (or if unavailable, clean reusable towels) within 5 metres of toilets. • Sufficient and appropriately labelled bins to allow for health care waste segregation should be available and used (less than 5 metres from point of generation); waste should be treated and disposed of safely via autoclaving, high temperature incineration, and/or buried in a lined, protected pit, according to 	<ul style="list-style-type: none"> • Sufficient and appropriately labelled bins to allow for health care waste segregation should be available and used (less than 5 metres from point of generation) and waste should be treated and disposed of safely via autoclaving, incineration (850° to 1100°C), and/or buried in a lined, protected pit as per the national health care waste disposal guidelines. • The facility should be designed to allow adequate ventilation (natural or mechanical, as needed) to prevent transmission of pathogens. • Sufficient and appropriate supplies and equipment and reliable power/energy should be available for performing all IPC practices, including standard and transmission-based precautions, according to minimum requirements/SOPs; reliable electricity should be available to provide lighting to clinical areas for providing continuous and safe care, at a minimum to high-risk wards (for example, maternity ward, operating room/s, intensive care unit). • The facility should have a dedicated space/area for performing the decontamination and reprocessing of medical devices (that is, a decontamination unit) according to minimum requirements/SOPs. • The facility should have adequate single isolation rooms or at least one room for cohorting patients with similar pathogens or syndromes, if the number of isolation rooms is insufficient
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	<p>the national waste management guideline.</p> <ul style="list-style-type: none">• The facility layout should allow adequate natural ventilation, decontamination of reusable medical devices, triage and space for temporary cohorting/isolation/physical separation if necessary.• Sufficient and appropriate IPC supplies and equipment (for example, mops, detergent, disinfectant, personal protective equipment (PPE) and sterilization) and power/energy (for example, fuel) should be available for performing all basic IPC measures according to minimum requirements/SOPs, including all standard precautions, as applicable; lighting should be available during working hours for providing care.	
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Appendix 1.2: Facility level IPC program at different levels of health care institutes

Table 5: Details of Facility level IPC Core components

Facility level IPC Core components: WHO? HOW? WHY?			
1. IPC program	Primary level	Secondary level	Tertiary level
WHO	<ul style="list-style-type: none"> From Central IPC program/ key players mandate the establishment of IPC focal points and IPC committees at the health care facility level and of IPC focal points at the next administrative level (At Atoll level/Regional level). Medical director or health facility manager/ in charge Head of nursing Chief financial officer of the facility Existing IPC (or similar e.g. patient safety/ quality assurance/ public health units) committee at the facility or next administrative level Local partners WHO and other UN agencies 		
HOW	<ul style="list-style-type: none"> A trained IPC link person, with dedicated time is available in each primary health care facility (doctor and or nurse). Linked public health unit and other programs at health facility level Establish link to microbiology lab offsite at next administrative level/beyond as available IPC interventions included in the facility annual plan. A trained IPC health care officer is available at the next administrative level (for example, atoll) to supervise the IPC link professionals. 	<ul style="list-style-type: none"> Infection prevention and control assessment framework tool (IPCAF) – 1.1: an IPC programme exists. IPCAF – 1.3: at least one full-time trained IPC focal person (nurse or doctor) is in place per 250 beds. IPCAF – 1.4: the IPC focal point has dedicated time for IPC activities in all facilities regardless 	<ul style="list-style-type: none"> IPCAF – 1.1: an IPC programme exists. IPCAF – 1.3: at least one full-time trained IPC focal person (nurse or doctor) is in place per 250 beds. IPCAF – 1.6: there is a multidisciplinary IPC committee actively supporting the IPC team. IPCAF – 1.9: there is a dedicated budget specifically for the IPC programme, that is, covering IPC activities, including salaries. IPCAF – 1.10: the IPC programme has access to a microbiological laboratory, either present on- or off-site for routine day-to-day use.

		<p>of the number of beds.</p> <ul style="list-style-type: none"> • IPCAF – 1.9: there is a dedicated budget specifically for the IPC programme, that is, covering IPC activities, including salaries. • Link to Microbiology lab (onsite or off site) • Linked public health unit and other programs at health facility level 	
WHY	<ul style="list-style-type: none"> • The primary health care level is the first main point of entry of infectious pathogens to the health system and it is where IPC is usually weakest. • It is critical to establish at least a basic level of IPC and triage in primary care (that is, the minimum requirements) to avoid infection and AMR spread through the health system, including health care associated outbreaks caused by human-to-human transmission of emerging or re-emerging pathogens. • It is important to have professionals in charge of IPC at different levels (facility and at the next administrative level) to support a programmatic approach based on coordination, supervision and accountability through monitoring and evaluation. • The existence of an IPC programme and practices at the primary care level will contribute to patient safety and quality of care and facilitate linkages to the community and dissemination of basic 	<ul style="list-style-type: none"> • A comprehensive and functioning IPC programme should be in place in all acute health care facilities because evidence demonstrates a large effect on HAI reduction. • The existence of an IPC focal point and budget are necessary conditions for building an IPC programme with objectives and plans, and the necessary premise for any IPC action. • The number of staff needed depends on patient acuity and the complexity of care in the facility, as well as the multiple roles and responsibilities of IPC professionals. 	

	<p>prevention principles among families, as well as patient and family engagement.</p> <ul style="list-style-type: none"> • The link person should be a staff member at the primary health care facility level, trained in IPC and with dedicated time (part-time). • In facilities with more than 10 HCWs, the IPC link person should be in charge of the following functions: <ul style="list-style-type: none"> ○ advising on procurement and maintenance of equipment and consumables for IPC ○ monitoring and supervising IPC activities ○ liaising with the relevant next administrative level IPC coordinators on the implementation of IPC activities ○ liaising with the regular disease notification system for the reporting of unusual events. • In facilities with less than 10 HCWs, the link person could have some of the above-mentioned functions but, overall, more support from the Atoll focal point officer will be needed, especially for monitoring activities 		
2. IPC guideline	Primary	Secondary	Tertiary level
WHO	<ul style="list-style-type: none"> • Trained IPC link person, with dedicated (part-) time and/or support from an appointed IPC person at the next administrative level. • If the expertise at the facility and next administrative level is limited, external support should be sought. 	<ul style="list-style-type: none"> • The IPC focal point is responsible for writing and adapting the SOPs, promoting their adoption and monitoring adherence. If the expertise of the IPC focal point is limited, external support should be sought. • The development and implementation of the SOPs requires a functioning IPC programme and associated expertise to ensure that local recommended procedures refer to national or international evidence-based guidelines and standards and are adapted to the context. • Relevant stakeholders (for example, link nurse or doctors, leading doctors, nurses, health care facility managers, champions, quality managers) should be involved in the development and adaptation of the SOPs. • Involvement of front-line HCWs should be considered in the development and implementation of SOPs. 	

		<ul style="list-style-type: none"> The IPC focal point should also be responsible for organizing staff training on the SOPs and for monitoring adherence to the recommended procedures, in collaboration with others who may be in charge of training and assessment at the local level.
HOW	<ul style="list-style-type: none"> IPCAF – 2.2: facility-adapted SOPs are available for hand hygiene, decontamination of medical devices and patient care equipment, environmental cleaning, health care waste management, injection safety, HCW protection (for example, at least post-exposure prophylaxis, vaccinations), aseptic techniques, triage, basic principles of standard and transmission-based precautions. IPCAF – 2.3: The guidelines/SOPs are consistent with national/ international IPC guidelines (if they exist). IPCAF – 2.8: Routine monitoring of the implementation of at least some of the guidelines/SOPs is undertaken. 	<ul style="list-style-type: none"> IPCAF – 2.2: facility-adapted SOPs/guidelines are available for hand hygiene, decontamination of medical devices and patient care equipment, environmental cleaning, health care waste management, injection safety, HCW protection (for example, at least post-exposure prophylaxis, vaccinations), aseptic technique for invasive procedures, including surgery, triage, standard and transmission-based precautions, specific SOPs to prevent the most prevalent HAIs based on local context/epidemiology, and occupational health. IPCAF – 2.3: the guidelines/SOPs are consistent with national/ international IPC guidelines (if they exist). IPCAF – 2.8: routine monitoring of the implementation of at least some of the SOPs is undertaken.
WHY	<ul style="list-style-type: none"> At the facility level, it is not necessary to have the expertise required to develop evidence-based guidelines. It is important to develop SOPs for the implementation and monitoring of available national or international guidelines. IPC link professionals at the facility level should work with the IPC focal points at the next administrative level (for example, district) to develop adapted SOPs based on the national (or international) guidelines for primary care. Monitoring adherence to SOP implementation is essential to evaluate its adoption and effectiveness to achieve the desired outcomes and to assist with adjustments and improvements of the implementation strategies. IPC monitoring and supervision should be assured by the health care officer in charge of IPC at the next administrative level (for example, district). 	<ul style="list-style-type: none"> See all points indicated for the primary health care facility level. A higher level of IPC expertise is required to develop SOPs in secondary and tertiary health care facilities due to the increase in acuity and complexity of care provided. Facility-adapted SOPs should be prioritized locally, based on the most frequent practices and/or with practices associated with an increase in the risk of HAI and adapted to local circumstances (for example, use of indwelling catheters and other devices, surgery and other invasive procedures)

	<ul style="list-style-type: none"> Adaptation to local conditions should be considered for the most effective uptake and implementation. 		
3. IPC education and training	Primary	Secondary	Tertiary
WHO	<ul style="list-style-type: none"> Trained IPC focal point at the next Atoll/Regional level is responsible for training IPC link persons, front-line HCWs and cleaners in primary care facilities, according to a plan and strategy developed and monitored at the national level. IPC focal point at the next administrative level (for example, Atoll/Regional) should be trained by the national or sub-national level. IPC expertise is required to lead IPC training. If the expertise at the next administrative level is limited, support should be sought from national level or partners. IPC link persons should provide on-the-job supervision/ mentorship to HCWs and cleaners in their facility. 	<ul style="list-style-type: none"> The IPC focal point (or IPC team if it exists) is responsible for training front-line HCWs and cleaners. IPC expertise is required to lead IPC training. If the expertise of the IPC focal point is limited, external support should be sought, for example, at the regional or national level. In addition, non-IPC personnel with adequate skills (for example, link nurses/practitioners or champions and opinion leaders) could play a role of mentorship to refresh IPC principles and champion IPC practices at the ward level. 	
HOW	<ul style="list-style-type: none"> All new front-line HCWs receive orientation education and training on IPC guidelines/SOPs. All new cleaning staff receive orientation education and training on IPC guidelines/SOPs. Specific IPC training/education is offered for IPC link professionals in primary care facilities. Specific IPC training/education is offered for IPC staff at the district level. 	<ul style="list-style-type: none"> IPCAF – 3.3: all new front-line HCWs receive orientation education and training on IPC guidelines/SOPs. IPCAF – 3.4: all new cleaning staff receive orientation education and training on IPC guidelines/SOPs. IPCAF – 3.10: specific IPC training/education is 	<ul style="list-style-type: none"> IPCAF – 3.3: all new front-line HCWs receive orientation and at least annual education and training on IPC guidelines/SOPs. IPCAF – 3.4: all new cleaning staff receive orientation and at least annual education and training on IPC guidelines/SOPs. IPCAF – 3.10: specific IPC training/education is offered for IPC professionals.

		offered for IPC professionals.	
WHY	<ul style="list-style-type: none"> • IPC education and training are critical to developing a competent and skilled workforce. At a minimum, an emphasis on a basic level of IPC and triage in primary care to avoid infection and AMR spread through the health system, including health care-associated outbreaks. • Basic concepts of multimodal strategies implementation should be included in the training of IPC link professionals and IPC staff. • Ensuring an orientation upon employment will provide a baseline knowledge to all front-line staff and cleaners, while recognizing that ongoing educational opportunities are the gold standard. • Patient and visitor education remains an important consideration. In particular, whenever family members assume care activities, they should receive tailored IPC training in order to protect themselves and their loved ones and thus minimize any possibility of cross transmission. Patient and family education at the facility level can also stimulate the use of appropriate hygiene measures in the community, such as handwashing with soap 	<ul style="list-style-type: none"> • IPC education that involves front-line HCWs in a practical, hands-on approach and incorporates individual experiences is associated with decreased HAI and increased hand hygiene compliance. • Three categories of human resources were identified as targets for IPC training and requiring different strategies and training content: <ul style="list-style-type: none"> ○ IPC specialists; ○ all HCWs involved in service delivery and patient care; ○ other personnel that support health service delivery (administrative and managerial staff, auxiliary service staff, cleaners, etc.). • The IPC focal person/team should be specifically trained on the use of multimodal strategies for implementing IPC interventions. • Patient and family education remains an important consideration (see above). • In particular for tertiary care facilities, providing training refreshers annually is a minimum requirement. 	
4. HAI surveillance	Primary	Secondary	Tertiary
WHO	IPC link / Focal point <ul style="list-style-type: none"> • Communicable disease outbreak • Laboratory based AMR surveillance in places with culture facility 		<ul style="list-style-type: none"> • The IPC focal point (or IPC team/committee if existing) is responsible for putting together a team for HAI/AMR ** surveillance, and then planning and conducting surveillance, and analysing, interpreting and disseminating the collected data. • The team should be multidisciplinary, ideally including epidemiologists, statisticians, infection control, data managers and

		<p>information technology experts with the appropriate capacity. At least some of this expertise should be available.</p> <ul style="list-style-type: none"> • The IPC focal point should be trained in basic epidemiology and surveillance methods. • Linkage to other relevant surveillance programmes should be established, in particular alignment with surveillance of AMR.
HOW	Communicable disease surveillance: - coordinated by HPA surveillance unit AMR surveillance laboratory based and monitored at national level	<ul style="list-style-type: none"> • IPCAF – 4.1: active surveillance is a defined component of the IPC programme • IPCAF – 4.2: do you have personnel responsible for surveillance activities? • IPCAF – 4.3: staff responsible for surveillance activities have been trained in basic epidemiology, surveillance and IPC (that is, capacity to oversee surveillance methods, data management and interpretation). • IPCAF – 4.5: a prioritization exercise is used to determine the method of surveillance according to the local context (that is, identifying infections that are major causes of morbidity and mortality in the facility). • IPCAF – 4.8: reliable surveillance case definitions (defined as numerator and denominator according to international definitions, for example, CDC National Healthcare Safety Network/European Centre for Disease Prevention and Control) are used or adapted through an evidence-based adaptation process and expert consultation. • IPCAF – 4.14: timely and regular feedback (for example, quarterly/half-yearly/annually) is provided to key stakeholders in order to lead to appropriate action, in particular to the hospital administration.

		<ul style="list-style-type: none"> • Enabling structures and supporting resources (for example, EQAS microbiological reference laboratory, medical records with sufficient clinical information to determine HAI case definitions, dedicated staff time) are in place to support HAI surveillance. • Active surveillance is conducted for colonization or infections caused by multidrug-resistant pathogens according to the local epidemiological data. 	
WHY	<ul style="list-style-type: none"> • The detection and reporting of outbreaks affecting the community to national authorities should be included in national or sub-national plans. 	<ul style="list-style-type: none"> • Given the low level of specialized care, HAI surveillance in secondary care was not strictly considered by expert consensus as a minimum requirement; monitoring of IPC indicators was considered more important. • Some secondary facilities may decide to conduct surveillance of relevant HAIs, such as surgical site infections, depending on the type of care delivered and the facility's capacity and prioritization of the core components. 	<ul style="list-style-type: none"> • HAIs and AMR are a burden in intensive care units and other highly specialized units/wards where invasive interventions carry more risks for HAIs and patients have a higher risk of death due to these infections. • For this reason, targeted HAI surveillance is necessary at tertiary health care level. • To ensure implementation of the national surveillance plan, a HAI surveillance team should be in place in every tertiary hospital. • Prioritization is also the responsibility of the IPC team, and a prioritization exercise should be conducted in line with national recommendations. • The team should develop a surveillance strategic plan according to present capacities including: - purpose; - target sample and infection outcomes; - identification of a national reference laboratory and quality assurance capacities; - development/careful adaptation of case definitions. • Timely feedback to hospital leadership and front-line HCWs is considered as one of the most critical parts of surveillance and monitoring. Facilities should consider defining the timeliness of feedback (for example, monthly or bi-monthly).

		<ul style="list-style-type: none"> Reporting outbreaks in the health care facility or affecting the community to national authorities should be included in national or sub-national plans. 	<ul style="list-style-type: none"> The IPC focal team should tailor its surveillance methodology to available resources and priorities in line with national recommendations.
5. Multimodal strategy	Primary	Secondary	Tertiary
WHO	<ul style="list-style-type: none"> Trained IPC link person with the support of an IPC-focal point at the Atoll/ Regional level are responsible for using a multimodal approach for the implementation of IPC interventions/SOPs. Successful multimodal strategies include the involvement of champions or role models. Collaboration with colleagues in quality improvement and patient safety to develop and promote multimodal strategies should be addressed IPC program in health facilities would be monitored and guided by the National IPC program 		
HOW	<ul style="list-style-type: none"> IPCAF – 5.1: multimodal strategies are used to implement priority IPC interventions (at the very least to improve hand hygiene, safe injection practices, decontamination of medical instruments and devices and environmental cleaning). 	<ul style="list-style-type: none"> IPCAF – 5.1: multimodal strategies are used to implement priority IPC interventions (at the very least to implement interventions to improve standard and transmission-based precautions and triage). 	<ul style="list-style-type: none"> IPCAF – 5.1: multimodal strategies are used to implement all IPC interventions and to improve standard and transmission based precautions, triage, and those targeted at the reduction of specific infections in high-risk areas/vulnerable patient groups, in line with local health priorities.
WHY	<ul style="list-style-type: none"> Multimodal strategies should be used for any IPC intervention at all levels of the health care system because their effectiveness is supported by strong evidence. However, it is recognized that multimodal strategies are complex approaches to be put in place. Thus, the interventions included in the minimum requirements are the priority ones among those 	<ul style="list-style-type: none"> Multimodal strategies should be used for any IPC intervention at all levels of the health care system in order to provide safe and effective health care delivery. Complexity of care and human resources (including in the IPC team) vary across secondary and tertiary care facilities and the scope of the minimum requirements may vary according to the local context. Specialized/complex services are provided in tertiary care facilities. 	

	that should be included in SOPs and training for the primary health care level (see minimum requirements for core components 2 and 3).	<ul style="list-style-type: none"> In tertiary care facilities, there is an increased potential for transmission of infection due to prolonged hospital stay, more complex procedures being performed and the admission of high-risk vulnerable populations. Compelling evidence is available on the effectiveness of multimodal strategies to reduce infections in high-risk areas/patient groups. 	
6. Monitoring, Audit and Feedback	Primary	Secondary	Tertiary
WHO	<ul style="list-style-type: none"> Trained IPC link person/focal point/ (or IPC committee/team if existing) are responsible for audit and feedback and should be trained in auditing technique plans 		
HOW	<ul style="list-style-type: none"> IPCAF – 6.2: a well-defined monitoring plan with clear goals/ objectives, targets and activities focused on IPC structural and process indicators (including tools to collect data in a systematic way) is in place based on IPC priorities identified in the other components and, importantly, informed by decisions at the national level and implementation support at the sub-national level 	<ul style="list-style-type: none"> IPCAF – 6.1: A trained person responsible for conducting periodic or continuous monitoring/audit of selected indicators for process (for example, hand hygiene) and structure is in place and informed by the priorities of the facility or country. Monitoring of hand hygiene compliance is undertaken using the WHO hand hygiene observation tool or equivalent. IPCAF – 6.4: monitoring of hand hygiene strategies is undertaken using the WHO Hand Hygiene Self-Assessment Framework Survey. • IPCAF – 6.5: timely and regular feedback of auditing reports (for example, feedback on hand hygiene compliance data or other processes) on the state of IPC activities/performance is provided to key stakeholders, in order to lead to appropriate action, particularly to the hospital management and senior administration. 	
WHY	<ul style="list-style-type: none"> IPC monitoring is critical to identify improvement action needed and should be in line with national recommendations and priorities. Monitoring of indicators of IPC practices, processes and infrastructures should be feasible at the primary care level, whereas HAI surveillance is not applicable. Hand hygiene infrastructure (for example, hand hygiene stations at the point of care or ABHR consumption) could be considered as a first step to monitoring. 	<ul style="list-style-type: none"> IPC monitoring is critical to identify improvement action and should be combined with HAI surveillance and in line with national recommendations and priorities. Principles and minimum requirements for monitoring and auditing should not change between secondary and tertiary care; more indicators might be monitored in tertiary care. It is important to monitor both process indicators (prone to limitations related to observation bias) and infrastructure indicators. Hand hygiene (including compliance monitoring and/or infrastructure indicators) is considered a crucial indicator according to WHO recommendations. This activity should be decided upon at national level and according to the highest standards to avoid any misrepresentation of compliance levels. 	

	<ul style="list-style-type: none"> • Hand hygiene compliance monitoring according to the WHO observation method is considered the gold standard. • In many primary care facilities, one person responsible for the monitoring of indicators should be identified and this activity requires support at the sub-national level (for example, district). • The selection of indicators to be monitored should be driven at national level, with input at regional/sub-national level. • Any decision should be in line with decisions on other core components. 	<ul style="list-style-type: none"> • Timely feedback to hospital leadership and front-line HCWs is one of the most effective parts of surveillance and monitoring. Facilities should consider defining the timeliness of feedback. <p>Requirements</p> <ul style="list-style-type: none"> • Regular monitoring/auditing of practices and other indicators should be according to IPC standards and include timely feedback to: <ul style="list-style-type: none"> ○ all audited persons and relevant staff (individual change) ○ hospital management and senior administration (organizational change); ○ IPC team and committee (or quality of care committees). • Monitoring extends to the evaluation of the facility IPC programme to: <ul style="list-style-type: none"> ○ assess if objectives are met; ○ assess if goals/objectives are accomplished; ○ assess whether the IPC activities are being performed according to requirements; ○ identify aspects that may need improvement. • Important information that may be used for this purpose includes: <ul style="list-style-type: none"> ○ the results of the assessment of compliance with IPC practices; ○ other process indicators (for example, training activities); ○ dedicated time by the IPC team; ○ resource allocation. • Monitoring should include regular assessments of staff knowledge about IPC. 	
7. Workload, Staffing and Bed occupancy	Primary	Secondary	Tertiary
WHO	<ul style="list-style-type: none"> • Decisions regarding workload, staffing and bed occupancy are not directly within the responsibility of the IPC link person, focal point or programme, but rather lie with senior managers and directors. Nevertheless, the IPC link nurse, focal point or programme should understand the evidence supporting this core component in order to be able to help influence decision-makers at the facility and ministry level, with the assistance of an IPC-trained health care officer at the next administrative level. Therefore, the development of IPC skills in negotiation and advocacy are important considerations. • The successful implementation of this core component should be supported by a national plan for human resource development. 		
HOW	<ul style="list-style-type: none"> • Systems are in place to reduce overcrowding (for example, a system for patient flow, a triage system including a referral system, and a system for the 	<ul style="list-style-type: none"> • IPCAF – 7.3: appropriate staffing levels are assessed according to patient workload using national/international standards or staffing needs assessment tools and action plans developed based on results. 	

	<p>management of consultations) according to existing guidelines/SOPs.</p> <ul style="list-style-type: none"> • IPCAF – 7.3: appropriate staffing levels are assessed according to patient workload using national/international standards or staffing needs assessment tools and action plans developed based on results. 	<ul style="list-style-type: none"> • IPCAF – 7.4: the design of wards is in accordance with international standards regarding bed capacity. • IPCAF – 7.5: bed occupancy in the facility is kept to one patient per bed. • IPCAF – 7.7: adequate spacing of more than 1 metre between patient beds is ensured in the facility. • IPCAF – 7.8: a system is in place, including clear lines of responsibility, to assess and respond when adequate bed capacity exceeds the designed total bed capacity of the facility (for example, the hospital administration/management assume responsibility). 	
WHY	<ul style="list-style-type: none"> • Overcrowding and lack of triage and patient flow systems are recognized as a public health issue that can lead to disease transmission. 	<ul style="list-style-type: none"> • Bed occupancy exceeding the standard capacity of the facility is associated with an increased risk of HAI in acute care facilities, in addition to inadequate HCW staffing levels. • Intended capacity may vary from original designs and across facilities and countries. For these reasons, the original ward/unit design regarding bed capacity should be adhered to and in accordance with standards. • In exceptional circumstances where bed capacity is exceeded, hospital management should act to ensure appropriate staffing levels that meet patient demand and an adequate distance between beds. These principles apply to all units and departments with inpatient beds, including emergency departments. • The WHO Workload Indicators of Staffing Need method provides health managers with a systematic way to determine how many HCWs of a particular type are required to cope with the workload of a given health facility and decision making. • It is recognized that in special circumstances, adherence to this recommendation may need to be balanced against the immediate need to provide clinical care to as many patients as possible. 	
8. Build Environment, Materials and Equipment	Primary	Secondary	Tertiary
WHO	<ul style="list-style-type: none"> • Trained IPC link person/focal point (see minimum requirements for core component 1), • Facility manager/in-charge • Facility financial officer/in charge 	<ul style="list-style-type: none"> • Trained IPC link person/focal point (see minimum requirements for core component 1) and district/local WASH environmental health officer. • Facilities manager and ward • Department leads/in-charge staff. 	

	<ul style="list-style-type: none"> • Ancillary staff <ul style="list-style-type: none"> ○ Cleaning staff (equipment and environment) ○ Maintenance • Local council 	<ul style="list-style-type: none"> • Financial manager at the facility level, • Local councils • Health Facility engineers/ biomedical in charge? • Head of procurement division <p>At the national level:</p> <ul style="list-style-type: none"> ○ National IPC lead/focal point and IPC committee, MFDA and QA IPC focal point, MOH other relevant divisions ○ Ministry of Environment, Ministry of Housing and Urban Development ○ National technical group for the implementation of IPC and WASH requirements for all health care facilities and implementation tools (ideally, the technical group should include clinicians, engineers, environmental health officers and procurement managers). <ul style="list-style-type: none"> • Ministry of finances at the national level.
HOW	<ul style="list-style-type: none"> • IPCAF – 8.1: water services available at all times and of sufficient quantity for all uses (for example, hand washing, drinking, personal hygiene, medical activities, sterilization, decontamination, cleaning and laundry). • IPCAF – 8.3: functioning hand hygiene stations (that is, ABHR or soap and water and clean single-use towels) available at all points of care. • IPCAF – 8.4: there are more than or equal to four toilets or improved latrines available for outpatient settings or more than or equal to one per 20 users for inpatient settings. • Modified IPCAF – 8.5: sufficient energy/power supply available at least during working hours for all uses (for example, pumping and boiling water, sterilization and decontamination, incineration or alternative treatment technologies, electronic medical devices, general lighting of areas where health care procedures are performed to ensure safe provision of health care and lighting of toilet facilities and showers). 	<ul style="list-style-type: none"> • Hygiene – 3.1: essential indicator 1. Functioning hand hygiene stations are available at all points of care (yes/no). Stations present, but no water and/or soap or ABHR present (yes/no). • Hygiene – 3.2: essential indicator 2. Hand hygiene promotion materials clearly visible and understandable at key places (yes/at some places, but not all/none). • Hygiene – 3.3: advanced indicator 1. Functioning hand hygiene stations are available in service areas (yes/stations present, but no water and/or soap or ABHR present). • Hygiene – 3.4: advanced indicator 2. Functioning hand hygiene stations available in waste disposal area (yes/stations present, but no water and/or soap present). • Hygiene – 3.5: advanced indicator 3. Hand hygiene compliance activities are undertaken regularly (yes/compliance activities in facility policy, but not carried out with any regularity/no compliance activities).

	<ul style="list-style-type: none"> • IPCAF – 8.6: functioning environmental ventilation (natural or mechanical) available in patient care areas. • IPCAF – 8.8: appropriate and well-maintained materials for cleaning (for example, detergent, mops, buckets, etc.) available. • IPCAF – 8.9: single patient rooms or rooms for the cohorting/physical separation of patients with similar pathogens or syndrome if the number of isolation rooms is insufficient (for example, tuberculosis, measles, cholera, Ebola, severe acute respiratory syndrome). • IPCAF – 8.10: PPE is available at all times and in sufficient quantity for all uses for all HCWs. • IPCAF – 8.11: functional waste collection containers for non-infectious (general) waste, infectious waste and sharps waste in close proximity to all waste generation points. • IPCAF – 8.15: a dedicated decontamination area and/or sterile supply department (either present on- or off-site and operated by a licensed decontamination management service) for the decontamination and sterilization of medical devices and other items/equipment. • IPCAF – 8.16: sterile and disinfected equipment ready for use and reliably available. 	
WHY	<ul style="list-style-type: none"> • Adequate infrastructures and availability of adequate WASH support are essential to perform any health care services and IPC activities (for example, water is absolutely critical for hand hygiene, cleaning and key services such as delivery). • Improved water sources are those which by nature of their design and construction have the potential to protect water from external contamination (for example, microorganisms, dirt). Water from improved sources may better facilitate performing 	<ul style="list-style-type: none"> • It is critical for water to be available 24 hours on-site from an improved source and piped into the facility to clinical areas, at a minimum to high-risk wards (for example, maternity ward, operating room/s, intensive care unit), points of care and service areas (for example, sterile services department) as patients in these areas may require 24-hour clinical care where water-related IPC is critical (for example, hand hygiene, environmental cleaning, reprocessing of medical devices). • The use of safe water (according to WHO drinking-water quality standard, that is, no Escherichia coli detectable in 100 mL and/or 0.5 mg/L free chlorine residual) for water-related IPC interventions minimizes the risk of direct and indirect exposure to water-related pathogens of enteric and

	<p>IPC measures according to guidelines/SOPs, for example, water from groundwater sources that is non-turbid can generally enable the effective preparation of disinfectant solutions for environmental cleaning and decontamination of medical devices. The chlorine concentration in all disinfectant solutions should be regularly monitored and the dose adjusted as necessary to meet chlorine concentration targets.</p> <ul style="list-style-type: none"> • Improved sanitation facilities are those designed to hygienically separate human excreta from human contact, which is critical for reducing the transmission risk from enteric pathogens and, in addition to menstrual hygiene facilities, help maintain a hygienic environment; separate toilets for patients and staff also helps to minimize indirect contact between patients and staff that may pose an infection risk. • When there is a risk of soiling, ABHR is not a substitute for soap and water for hand hygiene after toileting or when hands are visibly soiled (for example, while assisting childbirth). • If ABHRs are available, it is essential to have these accessible at all points of care, given the proven advantages of ABHRs over soap and water, but it is also essential that soap, water and single-use towels are available in clinical services. • Adequate ventilation throughout the facility contributes to maintaining a hygienic environment and can be minimally accomplished via the presence of functional windows (preferably equipped with insect traps) and doors, that allow at least 6-8 air changes per hour for natural ventilation (for example, by opening opposite windows). • Sufficient energy/power and a stand-by 'back-up' arrangement (including solar, wind, stand-by generator or others) and fuel should be available 	<p>environmental origin (for example, Pseudomonas, Legionella) and should be available.</p> <ul style="list-style-type: none"> • Sufficient quantities of water are required to ensure that all water-related IPC interventions can be performed. • Ensuring an adequate quantity of toilets for inpatient users to prevent crowding and overuse and ensuring regular cleaning are critical to maintain a hygienic environment and minimize the transmission risk from enteric pathogens, at a minimum in the ratio defined previously. • Positive mechanical ventilation is needed for clean areas such as operating rooms and clean areas in decontamination units and the sterile services department, while negative pressure ventilation may be required for isolation facilities, for example, multidrug-resistant tuberculosis. The requirement for mechanical ventilation is most applicable to tertiary care facilities. • Reliable power means that a constant (that is, 24-hour) source of power and/or back-up power is available for high-risk wards (for example, maternity ward, operating room/s, intensive care unit). Without reliable power, it is not possible to operate decontamination (sterilization) equipment and waste treatment equipment when needed, or to have lighting in clinical areas in order to provide continuous and safe care. • Reliable power can be achieved via an on-site source of energy/power and fuel (for example, wind, solar, stand-by generator/s) to provide back-up as needed. • Given the increased risk for HAIs and AMR at secondary and tertiary health care facilities, there should be at least one isolation room per 20-bedded ward in secondary care facilities, and 1:10 in the tertiary level as a minimum. • Cohorting can be carried out in a dedicated area of a general ward. It can be done in any well-ventilated area as long as hand hygiene and transmission-based precautions are strictly adhered to. As improving access to WASH services and IPC materials and equipment is resource intensive, the first step (minimum requirement) is to establish a multidisciplinary technical group to develop standards and implementation tools. • This group will have the task of: - reviewing the requirements for WASH services, environmental hygiene, and IPC materials and equipment, according to the national context; - developing a monitoring plan and
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	<p>onsite for lighting clinical practices and basic IPC measures (for example, for performing decontamination of medical devices, if needed).</p> <ul style="list-style-type: none"> • If the facility performs any procedures (for example, deliveries or other basic gynaecological procedures) requiring reusable medical devices (for example, vaginal specula), at a minimum it is essential to create dedicated areas that allow proper workflow from dirty to clean for performing the decontamination and reprocessing of medical devices. • A small space to assess patients regarding the disease/reason for accessing the facility (that is, triage), including any infectious disease transmission risk, and to allow them to be directed to different areas according to priority and type of disease can be accomplished with minimal resources. • Adequate space for temporary cohorting/isolation can also be accomplished with minimal resources by the creation of a physical separation or barrier between suspected/infected patients and other patients, staff and visitors, and is critical for ensuring transmission-based precautions. If resources allow, a room should be designated for this function. 	<p>reporting mechanism for assessing and improving WASH services and IPC materials and equipment in all health care facilities against national standards; use of existing tools (for example, WASH FIT or WHO/UNICEF JMP indicators for WASH in health care facilities) may be of help in these efforts; - identifying roles and responsibilities for the implementation and management of WASH services, environmental hygiene and IPC materials and equipment at the facility level at all health care facilities.</p> <ul style="list-style-type: none"> • The national level could also consider the development of a policy/regulations to mandate WASH services in facilities, according to the minimum requirements specified above and country context.
	<p>Additional Information on full core component 8 requirements:</p> <ul style="list-style-type: none"> • Central government and national IPC and WASH programmes should develop standards and national action plans to ensure adequate WASH services, a hygienic environment, and the availability of IPC materials and equipment in all health care facilities, including primary care. • Ensuring an adequate hygienic environment should be the responsibility of senior facility managers and local authorities. • To implement the full requirements of the core component 8, all health care facilities should provide the following: - <ul style="list-style-type: none"> ○ water from an improved source located on premises with sufficient water available at all times for drinking, hand washing, food preparation, personal hygiene, medical activities, cleaning and laundry; - ○ improved sanitation facilities located on premises that are functional with safe management of sewage/faecal waste, including the use of well managed septic tanks and leach fields, disposal into functioning sewers or off-site removal, and 	

	<p>include at least one toilet designated for women/ girls to manage menstrual hygiene needs, at least one separated for staff, and at least one meeting the needs of people with limited physical disabilities; also, sanitation facilities for infants and children that are adapted for their use (with for example, smaller seats, child-sized bed pans), segregated by sex for older children, appropriately lit and accessible to people with limited mobility;</p> <ul style="list-style-type: none"> ○ adequate drainage of storm and wash water to prevent vector breeding; ○ continuous access to hand hygiene facilities equipped with ABHRs and (where appropriate) with water, soap and disposable or clean towels at the point of care, within 5 metres of toilets, and other areas such as the sterile services departments, laboratories and mortuaries; ○ continuous adequate supply of sharps' containers and containers for segregating other types of health care waste and equipment to ensure that health care waste is treated and disposed of safely, including autoclaving, incineration or removal for off-site treatment; ○ continuous adequate supplies to ensure regular cleaning of examination rooms, waiting areas, surfaces and toilets; ○ continuous adequate supply of appropriate PPE for both clinical care and health care waste handling and cleaning; ○ adequate ventilation to meet comfort requirements and reduce the risk of transmission of airborne pathogens; ○ adequate power for sterilization, incineration and medical devices; sufficient energy for pumping water, sterilization and operating health care waste equipment (that is, incinerators); ○ well-lit areas where health care procedures are performed and in toilet facilities, including at night. <ul style="list-style-type: none"> ● The IPC team or committee should be involved in planning all these activities and systems and in the design of buildings and infrastructures and construction in health care facilities. ● Practical actions to improve WASH in health care facilities should include: - conduct situational analysis and assessment - define roadmap and set targets - establish national standards and accountability mechanisms - improve and maintain infrastructure - monitor and review data - develop health workforce - engage communities and - conduct operational research and learning.
	<p>SECONDARY AND TERTIARY CARE (in addition to primary care)</p> <ul style="list-style-type: none"> ● A dedicated centralized decontamination area and/or sterile supply department for the decontamination and sterilization of medical devices and other items/equipment should be available and supplied with sufficient water and power. ● A dedicated clean storage area for patient care items and equipment, including sterile material, and a separate area for the storage of clean linen should be available according to the national guidelines and as outlined in the WHO manual on decontamination and reprocessing of medical devices for health-care facilities. ● An adequate number of single rooms (with private toilet facilities and including some rooms with negative pressure mechanical ventilation system) and/or rooms suitable for patient cohorting for the isolation of suspected /infected patients, including those with tuberculosis, other airborne pathogens and multidrug-resistant organisms, should be available to prevent transmission to other patients, staff and visitors. ● Proper ventilation systems should be available in general and in the operating room, including either negative or positive air pressure conditions, depending on the situation. ● Risk assessment systems and measures should be developed to ensure protection during building and renovation work for patients, their families and staff, especially in high-risk areas, such as units where severely immunocompromised patients (transplant, patients with profound neutropenia, etc.) are managed, as well as in intensive care, neonatal and burn units and operating rooms.

Note:

Tools:

- Monitoring tools:
 - Infection Prevention and Control Assessment Framework at the Facility Level (IPCAF), WHO. <https://www.who.int/infection-prevention/tools/core-components/IPCAF-facility.PDF?ua=1>
 - Water and Sanitation for Health Facility Improvement Tool (WASH FIT) <https://apps.who.int/iris/bitstream/handle/10665/254910/9789241511698-eng.pdf?sequence=1>
- Patient care “Bundles” maybe implemented at the health care facility under guidance from the National IPC program (Refer to the section on HAI prevention): A bundle is an implementation tool aiming to improve the care process and patient outcomes in a structured manner (e.g. CLABSI prevention bundle or VAP prevention bundle). It comprises a small, straightforward set of evidence-based practices (generally 3 to 5) that have been proven to improve patient outcomes when performed collectively and reliably

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Priority areas for HAI surveillance are: CA-UTI, CLABSI, VAP and SSI (depending on the health facility)

AMR surveillance priority organism: Carbapenem Producing Enterobacteriaceae (E. coli, Klebsiella sp., Enterobacter sp., Serratia sp. etc.), Carbapenem producing Acinetobacter spp. and Carbapenem producing Pseudomonas spp, Vancomycin resistant Enterococcus (VRE), Methicillin Resistant Staphylococcus Aureus (MRSA)

Appendix 1.3: National IPC program

Table 6: Core components of National IPC program

NATIONAL LEVEL IPC PROGRAMMES MINIMUM REQUIREMENTS				
1. IPC PROGRAM	Full core component requirement: <ul style="list-style-type: none"> Active, national IPC program with clearly defined objectives, functions and activities. Technical trained IPC team (medical and nursing professionals) with allocated time, budget and authority to make decisions. Strong linkages of the national IPC programs with other relevant national programs and professional organizations. Supported by at least one national external quality assurance system (EQAS) microbiological reference laboratory. Supported by an official multidisciplinary IPC committee. 			
REVIEW	WHAT	WHO is responsible	HOW to measure progress	WHY (rationale and additional details on the minimum requirements)
Details	<ul style="list-style-type: none"> One full-time dedicated National IPC coordinator trained in IPC. A dedicated budget for implementing IPC strategies/plans Form National IPC unit with support staff to the IPC focal point 	<ul style="list-style-type: none"> National IPC committee (by the National Patient Safety and Infection Control Committee): Commissioner of QA, Director General of MFDA, DG HPA, National IPC coordinator Leads from relevant other health facilities Link to other national programs where links can be useful for synergistic action Patientsafety, National TB, Hepatitis B/C, HIV& STD, AMR, WASH, waste management, Occupational health, National Pharmacy board 	<ul style="list-style-type: none"> IPC assessment tool 2 (IPCAT2) – 1.1.1: an active national IPC program exists. IPCAT2 – 1.1.2: an appointed infection prevention focal person in charge of the IPC program can be identified. IPCAT2 – 1.1.4: the appointed infection prevention focal person has undergone training in IPC in the prevention of HAI. IPCAT2 – 1.1.7: there is a dedicated budget allocated to the IPC programs. 	<ul style="list-style-type: none"> At least one dedicated professional (nurse or doctor) must be given the responsibility of IPC at the national level “National IPC coordinator”. <ul style="list-style-type: none"> He/she should have at least basic knowledge and training on IPC (ideally, an IPC postgraduate certificate) and some practical experience. Once the person is in place, having some resources (budget) is essential to operate. Based on this, the objectives, functions and activity plan will be developed by the IPC focal point in collaboration with other national programs and institutions, as well as external partners. National IPC Unit (maybe integrated into National Patient Safety functions) and support the National IPC coordinator Commissioner QA will act as the Link between the National high level steering

		<ul style="list-style-type: none"> • Other: Data management expert and/or epidemiologist <p>Support given to the National IPC Program from National High Level IPC steering Committee</p> <ul style="list-style-type: none"> • Representation of Minister of Health, Director General of health Services, DG HPA, DG MFDA, Commissioner QA • Representation of Minister of Finance • Presidents office: Representatives from Presidents office Social Council 		committee and the National IPC committee
<p>https://www.who.int/infection-prevention/tools/core-components/ICPAT2.pdf?ua=1</p>				
2. NATIONAL EVIDENCE BASED GUIDELINES	<p>Full core component requirement:</p> <ul style="list-style-type: none"> • Development of national guidelines and related implementation strategies are a function of the national IPC team or focal point and require IPC expertise. • Requirements (which are under the responsibility of the national programme) for developing and implementing effective national IPC guidelines: - <ul style="list-style-type: none"> ○ IPC expertise for development or adaptation; ○ local prioritization; 			

	<ul style="list-style-type: none"> ○ providing resources, infrastructures and supplies for enabling implementation ○ HCW education on recommended practices ○ monitoring implementation and adherence ○ regular updates. ● To fully accomplish core component 2, guidelines on all the following topics should be developed at the national level <ul style="list-style-type: none"> ○ standard precautions: ○ hand hygiene ○ use of PPE ○ sterilization and medical device decontamination ○ safe handling of linen and laundry ○ health care waste management ○ patient placement ○ respiratory hygiene and cough etiquette ○ environmental cleaning ○ injection safety ○ triage ○ HCW protection, safety and post-exposure prophylaxis. ○ transmission-based precautions; - ○ aseptic technique and device management for clinical procedures; - ○ specific guidelines to prevent the most prevalent HAIs, ● Early engagement and participation of stakeholders in the development and production of guidelines is vital to ensure consensus and better buy-in. 			
REVIEW	WHAT	WHO is responsible	HOW to measure progress	WHY (rationale and additional details on the minimum requirements)
DETAILS	<ul style="list-style-type: none"> ● Evidence-based, ministry-approved guidelines adapted to the local context and reviewed at least every five years. 	<ul style="list-style-type: none"> ● National IPC coordinator and national IPC committee ● External IPC technical support as needed for initial guideline development/ review. ● Inputs from Health Protection Agency and other Institutes such as MNU 	<ul style="list-style-type: none"> ● IPCAT2 – 2.1.1: the national IPC coordinator has a mandate to work with key players to produce guidelines for the prevention and control of HAI. ● IPCAT2 – 2.1.6: the national IPC coordinator actively addresses guideline adaptation to reflect local conditions. 	<ul style="list-style-type: none"> ● The availability of national guidelines contributes to a reduction in the risk of HAIs and AMR, especially when implemented in combination with HCW education and training. ● The development of IPC guidelines/protocols/SOPs and related implementation strategies is a key function of the national IPC coordinator (or IPC team/programme if they exist). ● National guidelines are necessary to indicate the IPC standards and measures that should be adhered to and monitored,

			<ul style="list-style-type: none"> • IPCAT2 – 2.1.3: the guidelines are reviewed at least every 5 years and updated to reflect the current evidence base. 	<p>including the appropriate training of HCWs at all levels.</p> <ul style="list-style-type: none"> • National IPC guidelines should be evidence-based (that is, based on systematic reviews of the scientific literature and other existing guidelines) and ideally refer to/adapted from international standardized guidelines, if available. • Guideline content should be prioritized locally, based on the most frequent practices and/or types of HAI and adapted to local circumstances. However, at a minimum, the guidelines should cover the topics as given above: • Development and implementation of strategies for training on and dissemination of the IPC guidelines are part of the minimum requirements. • Regular updates (that is, at least every 5 years) are required to ensure that the guidelines reflect current evidence and remain topical and practical to the evolution of health care delivery
3. TRAINING AND EDUCATION	<p>Full core component requirement: The national IPC programme should:</p> <ul style="list-style-type: none"> • Develop IPC pre- and postgraduate and in-service curricula in collaboration with relevant councils and MNU and other local academic institutions for: <ul style="list-style-type: none"> ○ IPC specialists ○ all HCWs involved in service delivery and patient care ○ other personnel (administrative and managerial staff, auxiliary service staff, cleaners); • Develop some standardized training tools to support curricula implementation, aligned with national technical guidelines and international IPC standards. • In addition to the curricula and tool development, appropriate steps should be undertaken for the approval, adoption and roll-out of the curricula by all health faculties (for example, medicine, nursing, midwifery, dentistry, laboratory, etc.). 			

	<ul style="list-style-type: none"> • Clear career pathways for IPC professionals should be established at the national level. • Consideration should be given to the teaching methods and modalities and grounded in adult education principles. The following training methods could be included: problem-based learning; hands-on workshops; focus groups; peer-to-peer training; classroom-based simulation; and bedside training. 			
REVIEW	WHAT	WHO is responsible	HOW to measure progress	WHY (rationale and additional details on the minimum requirements)
DETAILS	<ul style="list-style-type: none"> • National policy that all HCWs are trained in IPC (in-service training). • An approved IPC national curriculum aligned with national guidelines and endorsed by the appropriate body. • National system and schedule of monitoring and evaluation to check on the effectiveness of IPC training and education (at least annually). 	<ul style="list-style-type: none"> ☐ IPC focal point and IPC committee at the ministry of health, relevant representatives from MFDA, HPA ☐ Other Senior leads in key positions at the ministry level QID, RAS etc, Ministry of Education (school health) /Medical and dental council, Nursing council and Allied health council, pharmacy? ☐ MNU and other universities, ☐ External IPC technical support as needed for initial IPC curriculum development and implementation maybe sort. 	<ul style="list-style-type: none"> • IPCAT2 – 3.1.1: the national IPC programme provides guidance and recommendations for in-service training at the facility level (for example, frequency, expertise required, requirements for new employee orientation, monitoring and evaluation approaches). • IPCAT2 – 3.1.2: the national IPC programme provides content and support for IPC training of all HCWs at the facility level. • IPCAT2 –3.2.5: IPC training is integrated into continuing medical, nursing and allied health professional education and training. • IPCAT2 – 3.3.1: a national system and schedule of monitoring and evaluation is in place to check on the effectiveness of training and education, annually. 	<ul style="list-style-type: none"> • Together with national IPC guidelines, training contributes to a reduction in HAI and AMR and a more skilled health workforce. • Supporting and facilitating training at all levels should be considered an important indicator for assessing the impact of IPC programmes. • The IPC focal point and team should be specifically trained on the use of multimodal strategies for implementing IPC interventions. • Training and curricula content should be based on the national guidelines and SOPs and then prioritized locally, based on the most frequent practices and/or types of HAI.

			Possible additional indicators <ul style="list-style-type: none"> • National policy on HCW training developed. • National IPC curriculum for HCWs developed, approved and endorsed by the relevant council 	
4. HAI SURVEILLANCE	Full core component requirement: <ul style="list-style-type: none"> • A national HAI surveillance program and networks that include mechanisms for the timely feedback of monitoring and evaluation data feedback should be established, with the potential to be used for benchmarking purposes. • Surveillance programs should be supported by: <ul style="list-style-type: none"> ○ engaged governments and other respective authorities; ○ allocated human and financial resources; ○ microbiology and laboratory capacity (at least one national reference laboratory), with standardized definitions and laboratory methods ○ an informatics system for data collection and analysis. • Surveillance programs should meet the following criteria: <ul style="list-style-type: none"> ○ Demonstrate clear objectives, a standardized set of case definitions, methods for detecting HAIs (numerators) and the exposed population (denominators), including a process for the analysis of data and reports and a method for evaluating the quality of the data ○ Establish clear regular reporting lines of HAI surveillance data from the local facility to the national level ○ Adapt international guidelines on HAI definitions at country level before implementing them ○ Include a national training program for performing surveillance to ensure the appropriate and consistent application of national surveillance guidelines and protocols ○ Provide data to guide the development and implementation of effective control interventions. 			

	<ul style="list-style-type: none"> • The surveillance program should provide data on infections: <ul style="list-style-type: none"> ○ That may become epidemic in the health care facility (for example, Influenza, gastroenteritis outbreaks) ○ Commonly observed in vulnerable populations (for example, neonates, burn patients, patients in intensive care units and immunocompromised hosts) ○ That may cause severe outcomes, such as high case fatality and patient morbidity and suffering ○ Caused by resistant microorganisms with an emphasis on multidrug- resistant pathogens ○ Associated with selected invasive devices or specific procedures, such as the use of intravascular devices, indwelling urinary catheters and surgery ○ That may affect HCWs (for example, hepatitis B and C and human immunodeficiency virus). 			
REVIEW	WHAT	WHO is responsible	HOW to measure progress	WHY (rationale and additional details on the minimum requirements)
DETAILS	<p>IPC surveillance and monitoring technical group</p> <ul style="list-style-type: none"> • Establishment by the national IPC coordinator of a technical group for HAI surveillance and IPC monitoring that: <ul style="list-style-type: none"> ○ Is multidisciplinary ○ Develops a national strategic plan for HAI surveillance and IPC monitoring and, for IPC indicators monitoring 	<p>The national IPC coordinator (and IPC committee) at the ministry of health; MFDA and QA should take action to convene the technical group for HAI surveillance and IPC monitoring.</p> <ul style="list-style-type: none"> • Ideally, the technical group should include microbiologists, clinicians, laboratory technicians, epidemiologists, professionals working in other surveillance systems, statisticians, data managers and information technology experts, and monitoring and evaluation experts. • Linkage to other relevant surveillance programmes should be established, in particular alignment with surveillance of AMR. 	<ul style="list-style-type: none"> • A multidisciplinary technical group for HAI surveillance is established at the national level. • A national strategic plan for HAI surveillance (with a focus on priority infections based on the local context) is in place. • IPCAT2 – 4.1.3: the national IPC programme (or collaborating partner) leads are designated to coordinate the national HAI surveillance programme and network. 	<p>HAI surveillance is the first step (minimum requirement) to assess the magnitude of the burden of disease by the systematic collection of data in targeted wards/unit. As a first step, when a HAI surveillance system is not in place, a multidisciplinary technical group should develop a plan for surveillance.</p> <ul style="list-style-type: none"> • This group will identify: <ul style="list-style-type: none"> ○ priorities and methods for surveillance; ○ a comprehensive surveillance plan for HAIs and IPC monitoring; ○ a centralized, national reporting mechanism; ○ a minimum set of data (outcomes, indicators or other information) for surveillance, including providing a baseline assessment; ○ roles and responsibilities for the implementation of HAI surveillance at facility level. ○ Prioritization should not only be based on vertical systems (for example, human immunodeficiency virus, tuberculosis, influenza, Salmonella spp., etc.), but should consider essential targets of HAI prevention, for example,

				<p>reduction of the number of surgical site or bloodstream infections.</p> <ul style="list-style-type: none"> ○ The national level could also consider the development of a policy/ regulations to mandate HAI surveillance in facilities, according to the minimum requirements specified below. ○ Surveillance of HAIs should be aligned with the priorities of the AMR national action plan.
5. MULTIMODAL STRATEGIES	<p>Full core component requirement:</p> <ul style="list-style-type: none"> • It is the mandate of the national IPC program to ensure that all IPC interventions are implemented using multimodal strategies. • The national IPC program should facilitate the use of multimodal strategies by ensuring that the following elements are in place to support their use: <ul style="list-style-type: none"> ○ expertise and necessary resources including policies, regulations and tools ○ overall organizational culture change to achieve an enhanced patient safety climate ○ coordination and teamwork ○ linkages with quality improvement initiatives and health facility accreditation ○ local adaptation 			
REVIEW	WHAT	WHO is responsible	HOW to measure progress	WHY (rationale and additional details on the minimum requirements)
DETAILS	<p>National IPC programs should coordinate and facilitate the implementation of IPC activities through multimodal strategies on a nationwide or subnational level. Ref</p>	<ul style="list-style-type: none"> • The IPC focal point and IPC committee, at MOH; MFDA and QA <ul style="list-style-type: none"> ○ Senior leads in key positions at the ministry of Health: PS of MOH, HPA, RAS, PIH • National patient safety committee, MTAGI, National programs of HIV, TB, Hepatitis B, STDs, EPI, Dengue, Surveillance department in HPA, RHC programme, National 	<ul style="list-style-type: none"> • IPCAT2 – 5.1.1: the appointed IPC focal point is trained and competent in implementation science and multimodal behaviour change strategies. • IPCAT2 – 5.1.2: promotion of multimodal strategies through the inclusion of the approach in the development of IPC guidelines, education and training. 	<ul style="list-style-type: none"> • According to the available scientific evidence, multimodal strategies are the most effective approach to implement hand hygiene programs and other IPC interventions in order to achieve the key elements for success that support IPC progress and, ultimately, a measurable impact that benefits patients and HCWs, such as system change, creation of an enhanced patient safety climate and HCW behavioural change. • The IPC focal point/team should be specifically trained on the use of multimodal strategies for the implementation of IPC interventions.

		<p>Outbreak response team, thalassemia center</p> <ul style="list-style-type: none"> • Representative from tertiary hospitals: IGMH, Hulhumale hospital, Tree top hospital, tertiary/referral hospitals- infection control focal point, Microbiologists • Ministry of: education, Finance, Environment, high Education and Social council health advisor • MNU, FHS • Councils: Medical and dental, Nursing and allied health council • Island: Local Councils, hospitals/facility and public health units in charge. Island development corporations • Associations: Medical association, Nursing association, Dental Association, Laboratory / allied health worker's association, public health, pharmacy, psychologists • NGOs: Red crescent, Diabetic society, involve social media groups moms.mv? kidney / COPD • Communication: Maldives Broadcasting Commission, representatives from 		<ul style="list-style-type: none"> • Multimodal strategies for implementing IPC interventions should be explicitly indicated in the national IPC action plans, including all 5 key elements identified by WHO as needed for each IPC intervention selected and according to the local context. • The national IPC focal person or team should develop a national multimodal strategy framework to facilitate implementation of the prioritized IPC interventions at facility level in the context of quality improvement.
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		behavioral science and Communication.		
6. MONITORING AUDITING AND FEED BACK	<p>Full core component requirement:</p> <ul style="list-style-type: none"> • Establishment of a national IPC monitoring and evaluation program with goals, objectives and defined performance indicators for: <ul style="list-style-type: none"> ○ IPC standards ○ IPC activities ○ Hand hygiene compliance monitoring and feedback (strongly recommended as a national performance indicator). • National level monitoring and evaluation should have mechanisms in place that: <ul style="list-style-type: none"> ○ Provide regular reports on the state of national goals (outcomes and processes) and strategies ○ Regularly monitor and evaluate the WASH services, IPC activities and structure of the health care facilities through audits or other officially recognized means ○ Promote the evaluation of the performance of local IPC programs in a non-punitive institutional culture. ○ National IPC program gather data from MOH QA department on? (ADDED) <ul style="list-style-type: none"> ▪ Workload, staffing and bed occupancy at facility levels ▪ Built environment, materials and equipment for IPC at facility level 			
REVIEW	WHAT	WHO is responsible	HOW to measure progress	WHY (rationale and additional details on the minimum requirements)
	<p>IPC surveillance and monitoring technical group ref to section</p> <ul style="list-style-type: none"> • Establishment by the national IPC coordinator of a technical group for HAI surveillance and IPC monitoring that: - <ul style="list-style-type: none"> ○ Is multidisciplinary ○ Develops a national strategic plan for HAI 	<p>The national IPC coordinator (and IPC committee) at the ministry of health; MFDA and QA should take action to convene the technical group for HAI surveillance and IPC monitoring (same group as component 4).</p> <ul style="list-style-type: none"> • Ideally, the technical group should include microbiologists, clinicians, laboratory technicians, epidemiologists, professionals working in other surveillance systems, statisticians, data managers and information technology experts, and 	<ul style="list-style-type: none"> • A multidisciplinary technical group for IPC monitoring is established at the national level. • IPCAT2 – 6.2: A well-defined plan focusing on IPC outcomes, processes and strategies, with clear goals, targets and operational plans is in place. • IPC indicators integrated with national monitoring systems, for example, health management information systems. 	<ul style="list-style-type: none"> • Setting up national monitoring of indicators of IPC practices, processes and infrastructures is usually more feasible than establishing HAI surveillance as a first step for gathering data to inform IPC action. • The technical group indicated as the minimum requirement for core component 4 should be the same group responsible for core component 6. • Monitoring IPC practices and providing feedback to concerned stakeholders are critical to achieve behaviour change or other process modifications that improve the quality of care and reduce HAIs and AMR.

	<p>surveillance and IPC monitoring and, for IPC indicators monitoring: ·</p> <ul style="list-style-type: none"> ○ Develops recommendations for minimum indicators (for example, hand hygiene); · <ul style="list-style-type: none"> ▪ Develops an integrated system for the collection and analysis of data (for example, protocols, tools) · provides training at the facility level to collect and analyse these data. ○ Monitor that the health facilities maintain the recommended standards: <ul style="list-style-type: none"> ▪ Workload, staffing and bed occupancy 	<p>Monitoring and evaluation experts.</p> <ul style="list-style-type: none"> • Liaison should be ensured with: - senior leads in key positions at the ministry level (HPA/RAS/PIH); - team members of all other relevant programs and national actors who are involved in the implementation and monitoring of the IPC program (Infection control and QA units). 	<ul style="list-style-type: none"> • A mechanism to train national and local auditors is in place. • Hand hygiene compliance monitoring and feedback is identified as a minimum indicator, at the very least for reference hospitals. • Other indicators: <ul style="list-style-type: none"> ○ WASH indicators ○ HAI ○ AMR ○ Antibiotic utilization rates 	<ul style="list-style-type: none"> • Monitoring and feedback are also aimed at engaging stakeholders, creating partnerships and developing working groups and networks. • Consideration should be given to policies that create incentives (positive or negative) tied to indicators in order to generate buy-in from hospital administrators. • Data from existing data sources (for example, Joint External • Evaluation or Service Availability and Readiness Assessment) should be considered, particularly at the beginning when identifying priorities. • If possible, integration with existing national health information systems and routine facility monitoring would be critical for streamlining data collection and making linkage/correlations. • Hand hygiene (including compliance monitoring and/or infrastructure indicators) is considered a crucial indicator according to WHO recommendations. This activity should be decided upon at national level according to the highest standards to avoid any misrepresentation of compliance levels. • Surveillance of other structure and process indicators should be considered, prioritizing those that drive action. • Other indicators to be monitored should also provide information on IPC enablers (for example, related to WASH, availability of structures) and be considered as basic essentials for IPC.
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	<ul style="list-style-type: none"> ▪ built environment, materials and equipment for IPC 			<ul style="list-style-type: none"> • Data gathered through IPC monitoring should guide priority setting in the national IPC strategic plan. • Based on all these considerations, a plan for regular monitoring at the facility level should be developed at the national level, including plans for feedback and for supervision to assist in the development and implementation of improvement plans.
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NATIONAL INFECTION PREVENTION AND CONTROL POLICY



MINISTRY OF HEALTH
REPUBLIC OF MALDIVES



World Health
Organization
Maldives