THE NATIONAL INFECTION PREVENTION AND CONTROL STANDARDS FOR ACUTE HEALTHCARE FACILITIES

Revised 2022

TABLE OF CHANGE

Date of issuance / Revision	Description of Change
07 May 2019	• Issued as a *one-year-in-use* consultation document.
12 August 2022	• Editorial and minor content changes. • Amended *Element 1.3.4* to *Core* element. • Added *Element 2.1.3.* There should be appointed IPC liaison personnel in high-risk designated work areas (e.g. ICUs, inpatient wards etc) [Expected element] • Removed *Element 2.4.4* The hospital is compliant with mandatory reporting requirements for novel and suspected emerging diseases, and notifiable outbreaks. [Core element] • Amended *Element 4.1.4* to *Core* element. • Removed *Element 8.2.6* Antiseptic bathing is implemented and meets requirements stipulated in the National IPC Guidelines [Expected element] • Added *Element 9.1.4* Critical results can be communicated on a 24-hour basis. [Core element]

INTRODUCTION

This document presents the standards for an infection prevention and control (IPC) programme in acute healthcare facilities in Singapore. The National Infection Prevention and Control Committee was commissioned by the Ministry of Health to develop the standards in consultation and collaboration with the IPC community.

Purpose of the standards

The purpose of the standards is to provide (i) a quality assurance mechanism to ensure relevant systems are in place and (ii) a quality improvement mechanism to realise aspirational or developmental goals. This document serves as a checklist for self-assessment of the performance of an acute healthcare facility. The standards closely model the '*National Infection Prevention and Control Guidelines for Acute Healthcare Facilities'* and is aligned with the broad regulatory requirements for infection prevention and control. Recommendations from the World Health Organisation's 'Guidelines on core components of Infection Prevention and Control Programmes at the National and Acute Health Care Facility Level' have also been incorporated into the standards. This document is applicable for all acute healthcare facilities in Singapore (with the exception of the Institute of Mental Health which is more similar to a long-term care facility).

How to use the standards?

The standards are grouped into the following components:

a) Governance and management
b) Human resource
c) Infection Prevention and control structures, systems, and processes
d) Surveillance
e) Outbreak management
f) Hand hygiene
g) Environmental and facilities management
h) Antimicrobial resistance
i) Microbiological support
j) Emergency preparedness and response.

Each standard is made up of "core" and "expected" elements. Core elements define activities fundamental for the IPC programme. Expected elements identify good-to-have activities where healthcare facilities can work towards to improve their IPC programme. The expected elements may develop into core elements in future. The IPC standards will be regularly reviewed. During future reviews new core/expected elements may be introduced.

Accompanying the set of standards is a workbook that can be used as a tool to review the existing IPC programme. The workbook is available in Annex A.

ACKNOWLEDGEMENT

The Revised National Infection and Prevention Standards for Acute Healthcare Facilities is endorsed by the National Infection Prevention and Control Committee (NIPC). The composition of the NIPC is provided in Table 0.1.

Table 0.1: Composition of NIPC

S/N	Name	Role	Designation
1	Prof Dale Fisher (Chairperson)	Chairperson	Group Chief of Medicine, National University Health System (NUHS)
2	A/Prof Brenda Ang	Members	Clinical Director, Department of Infection Prevention and Control, TTSH & NCID
3	A/Prof Ling Moi Lin	Members	Director, Infection Prevention and Epidemiology, SGH
4	Adj Asst Prof Kalisvar Marimuthu	Members	Senior Consultant, Department of Infectious Diseases, TTSH & NCID
5	Asst Prof Surinder Pada	Members	Director and Senior Consultant, Infectious Diseases, NTFGH
6	Dr Louisa Sun	Members	Consultant, Infectious Diseases, AH
7	Dr Tan Si Huei	Members	Senior Consultant, Laboratory Medicine, CGH
8	A/Prof Thoon Koh Cheng	Members	Head and Senior consultant, Infectious Disease Service and Infection Control Committee Chair, KKH
9	Ms Sharon Wong	Members	Senior Nurse Clinician, Infection Prevention and Control, SKH
MOH Representatives and NIPC Secretariat			
10	Dr Kok Mun Foong	MOH Representative	Director, Clinical Quality, Performance and Value Division, MOH
11	Dr Adelina Young	MOH Representative	Deputy Director, Patient Safety and Quality Improvement Branch, Clinical Quality, Performance and Value Division, MOH
12	Ms Luisa Tan	Secretariat	Assistant Director, Patient Safety and Quality Improvement Branch, Clinical Quality, Performance and Value Division, MOH
13	Ms Ong Xin Yi	Secretariat	Senior Manager, Patient Safety and Quality Improvement Branch, Clinical Quality, Performance and Value Division, MOH

CONTENTS

CHAPTER 1. GOVERNANCE AND MANAGEMENT

Intent

This chapter stipulates the standards for effective governance and management of an IPC programme. The intention of the set of standards in this chapter is to ensure:

a) Reporting structure is linked with healthcare quality, clinical governance, medical board;

b) Clear lines of accountability and responsibility for providing a safe, effective, and clean environment which minimises and reduces the risk of infection among service users, staff and visitors; and

c) The number of staff, including the number of IPC Staff, are at levels that provide the highest levels of safety for the service user. The number/ratio of IPC staff in health and social care facilities should represent the highest levels of quality and safety to service users. It is recommended that all health and social care facilities ensure that the ratio of IPC staff meets national and international best practice.

Standard 1.1. The licensee of the hospital is accountable for hospitals for the overall management, implementation, and monitoring of the IPC programme.

This standard comprises the following elements:

Element 1.1.1. Licensee of the hospital ensures that the IPC programme responsibilities, goals, and functions are clearly defined. [Core element]

Element 1.1.2. Licensee of the hospital ensures IPC programme is integrated into the overall corporate plan of the hospital and includes IPC outcomes as a KPI in the balanced scorecard for the hospital. [Core element]

Element 1.1.3. Continuing support for the IPC programme is an organisational priority. [Core element]

Element 1.1.4. Licensee of the hospital ensures that evaluation of the performance of the IPC programme is performed in a blame free institutional culture (culture where no blame is ascribed to individual actors, and most errors are viewed largely as system based. It does not exclude accountability when traceable to truly negligent actions). [Expected element]

Standard 1.2. The Governing Board of the hospital regularly receives information relating to rates of infection across the respective facilities in order to measure the management of healthcare-associated infections (HAIs).

This standard comprises the following element:

Element 1.2.1. State of the IPC goals and strategies and the impact of the IPC activities are regularly reported to the Board of Directors. [Core element]

Element 1.2.2. Regular reports on surveillance indicators are shared with the Board of Directors. This information is dealt with and responded to in a timely and efficient manner in order to prevent, control and reduce the risk of the spread of infection. [Core element]

Element 1.2.3. Regular reports on outbreaks and outbreak threats are shared with the Board of Directors. This information is dealt with and responded to in a timely and efficient manner in order to contain the outbreaks. [Core element]

Standard 1.3. Financial and manpower resources are allocated to organise and execute the IPC programme.

This standard comprises the following elements:

Element 1.3.1. There is an annual budget to support the IPC programme. [Core element]

Element 1.3.2. An IPC department / unit (operational team) is set up for the overall management, implementation and monitoring of the IPC programme in the hospital. [Core element]

Element 1.3.3. IPC medical staffing[1] levels (at least 0.1 FTE per 100 beds) is responsible for leading the IPC department/unit (operational team), implement IPC programme recommendations; intervene when clinical or other practices pose risks. [Core element]

Element 1.3.4. IPC practitioner staffing[2] levels (at least 1 FTE per 115 acute care beds OR 1 FTE per 100 acute care beds if there are high risk activities e.g. dialysis) [Core element]

Element 1.3.5. A multi-disciplinary IPC Committee is appointed with clearly defined terms of reference and lines of accountability and reports to senior management. The committee's responsibilities include annual goal setting and programme evaluation. It is comprised of members from a variety of disciplines; The goal of this interdisciplinary task force is both to bring together individuals with expertise in different areas of healthcare and ensure involvement of the senior management. The IPC Committee supports the implementation and execution of the IPC programme by the IPC department / unit staff. [Core element]

[1] IPC medical staff refers to doctors.
[2] IPC practitioner refers to infection control nurses (ICNs) and / or executives who are trained in IPC and involved in the day-to-day activities of the IPC unit / department.

CHAPTER 2. HUMAN RESOURCE MANAGEMENT

Intent

This chapter stipulates the standards to ensure adequate IPC training and education is provided to IPC staff, infection control link officers/nurses (ICLO/N), general staff, patients and their families, and occupational health programme is in place. The intention of the set of standards is to reduce infection rates by:

a) The provision of a continuous and ongoing education programme for IPC staff as well as all staff to increase awareness of Infection Prevention and Control issues and improve service user safety; and

b) Staff health and safety should also be protected with the provision of an occupational health service to deal with occupational incidents in a prompt and effective manner.

Standard 2.1. All staff of the IPC team[3] are trained and qualified to manage the IPC programme for the hospital's size, complexity of activities, and level of risks, as well as the programme's scope. Their qualification(s) may be met through education; training; experience; and certification or licensure.

This standard comprises the following elements:

Element 2.1.1. The person(s) charged with directing the IPC programme is qualified and trained in IPC (e.g. completion of Certification in Infection Control (CIC), Asia Pacific Society of Infection Control (APSIC), Society for Healthcare Epidemiology of America (SHEA) training courses) [Core element]

Element 2.1.2. The IPC staff received both initial and periodic specialised training in IPC. Staff should receive formal IPC training within 2 years of hire (e.g. successful completion of CIC, APSIC, SHEA training courses or its equivalent). [Core element] (e.g. any of above courses or its equivalent)

Element 2.1.3. There should be appointed IPC liaison personnel[4] in high-risk designated work areas (e.g. ICUs, inpatient wards etc) [Expected element]

Element 2.1.4 IPC liaison personnel[4] have received training to perform their roles. [Core element] (e.g. in-house training)

Element 2.1.5 Financial resources are provided for continuing professional education of the IPC staff. [Core element]

[3] This shall include all IPC medical staff and IPC practitioners.
[4] IPC liaison personnel refers to infection prevention & control liaison nurses / officers who are appointed as IPC champions in designated work areas.

<u>Standard 2.2.</u> The hospital provides basic education about IPC to all staff and other professionals. The staff education includes policies, procedures, and practices of the IPC programme.

This standard comprises the following elements:

Element 2.2.1. Both initial and periodical basic training on IPC principles and practices for all health care personnel are provided regularly. Orientation programmes include IPC component for all new staff and appropriate use of PPE. [Core element]

Element 2.2.2. Staff education includes hospital-specific IPC policies and procedures. There is a system for monitoring and improving staff compliance with IPC policies and procedures and is linked to educational programmes. [Core element]

Element 2.2.3. Continuing education address IPC needs of the organisation with regard to content, target audience and timing of the education (e.g. scheduled continuing education, special education based on specific needs such as outbreak). Periodic staff education is provided in response to significant trends in infection data. [Core element]

Element 2.2.4. IPC education is evaluated to ensure that it is current, relevant, and effective. [Core element]

Element 2.2.5. Resources are allocated to conduct IPC education to achieve the educational goals of the programme (includes IT support). [Core element]

<u>Standard 2.3.</u> The hospital provides education about infection prevention and control to patients and families.

This standard comprises the following elements:

Element 2.3.1. Patients and families can describe how this education is provided (e.g. information included in the admission or discharge packet, video, signage, in-person training). [Core element]

Element 2.3.2. A hospital policy is in place to enable patients and families in compliance with IPC practices. [Core element]

<u>Standard 2.4.</u> Staff health and safety in relation to IPC is protected.

This standard comprises the following elements:

Element 2.4.1. At time of employment, staff are evaluated for conditions relating to communicable diseases that can be spread in healthcare setting. [Core element]

Element 2.4.2. There is easy access to PPE that is appropriate to the task. [Core element]

Element 2.4.3. The hospital follows immunity requirements and recommendations of MOH for immunisation of healthcare personnel[5]. [Core element]

Element 2.4.4. There is a policy for post-exposure management of infectious diseases encountered at work. [Core element]

Element 2.4.5. Institutions should have a mechanism for monitoring and preventing occupational biological risks[6]. [Core element]

[5]To refer to the "*National IPC Guidelines for Acute Healthcare Facilities"* and the latest MOH circulars on immunisation of healthcare workers, and Licensing Terms and Conditions under PHMCA/HCSA for the recommended vaccination list and immunity requirements.
[6]Occupational biological risks may include sharps and needlesticks injuries, exposure to chemical disinfectants etc.

CHAPTER 3. INFECTION PREVENTION AND CONTROL PROCESSES

Intent

This chapter stipulates the standards to ensure structures are in place to effectively implement a comprehensive IPC programme to reduce the risks of HAIs in patients and health care workers. The intention of the set of standards is to ensure:

a) Risk based approach to run programmes to reduce risks of HAIs;

b) Strategy to deal with urgent critical issues and plans for enhancement over years; and

c) There is a comprehensive programme that crosses all levels of the hospital, to reduce the risk of healthcare-associated infections in patients and healthcare workers.

Standard 3.1. The IPC programme is based on current scientific knowledge, accepted practice guidelines, and Singapore's laws and regulations.

This standard comprises the following elements:

Element 3.1.1. IPC policies and guidelines meet the requirements of the national IPC guidelines. [Core element]

Element 3.1.2. IPC policies and guidelines are reviewed and updated as required on a regular basis. [Core element]

Standard 3.2. Infection control risks are identified annually, and an annual plan is developed with risk-reduction goals and measurable objectives.

This standard comprises the following elements:

Element 3.2.1. The IPC programme includes an annual infection risk assessment that evaluates and prioritises potential risks for infections, contamination, and exposures and the programme's preparedness to eliminate or mitigate such risks, based on the demographic profile of the population. [Core element]

Element 3.2.2. The priorities identified from the risk assessment are incorporated into the annual IPC work plan. [Core element]

Element 3.2.3. Infection control strategies are implemented to reduce the rates of infection for the identified priorities. Initiatives are planned in accordance with identified priorities to reduce HAI. [Core element]

Element 3.2.4. The IPC programme is reviewed at least once a year to reassess the organisation's needs and to determine which elements are required to continue to meet the goals of the programme for that healthcare setting. [Core element]

Element 3.2.5. Strategic actions are taken to improve the programme. [Core element]

Element 3.2.6. Annual goals are set to strategically enhance the programme over time. Relevant KPIs are defined and monitored. [Core element]

Element 3.2.7. Annual IPC goals are shared with all relevant stakeholders. [Core element]

Standard 3.3. The IPC Department / Unit has the responsibility and authority to monitor and advises on the implementation of the IPC Programme.

This standard comprises the following elements:

Element 3.3.1. The IPC department / unit ensures that the IPC programme meet current national standards and requirements as well as the requirements of the organisation. [Core element]

Element 3.3.2. The IPC Department / Unit meets at least monthly to review performance against IPC programme goals. [Core element]

Element 3.3.3. The IPC Department / Unit conducts prospective outcome indicator measurement for signal surveillance, process indicator measurement, or point prevalence surveillance. [Core element]

Element 3.3.4. Regular reports on surveillance results are sent to the senior management, board, and relevant stakeholders (e.g. quarterly). [Core element]

Element 3.3.5. Regular audits are done systematically to evaluate efficacy of implementation of IPC policies and procedures; and timely feedback is given to hospital management and relevant stakeholders for follow-up action, and for use in hospital's education programmes. [Core element]

Standard 3.4. The IPC programme is coordinated involving physicians and nurses, and others and the IPC professionals.

This standard comprises the following elements:

Element 3.4.1. Regular meetings are held between IPC department / unit and the multi-disciplinary ICC. [Core element]

Element 3.4.2. Regular meetings are held between IPC department / unit and the IC liaison personnel. [Core element]

<u>Standard 3.5.</u> Information management systems support the infection prevention and control programme.

This standard comprises the following elements:

Element 3.5.1. IT support is available to support IPC education and training. [Core element]

Element 3.5.2. IT support is available to support IPC surveillance activities. [Core element]

Element 3.5.3. IT support is available to support IPC audit activities. [Core element]

CHAPTER 4. SURVEILLANCE PROGRAMME

Intent

The overall purpose of Surveillance is to reduce the incidence of HAIs and therefore reduce the associated morbidity, mortality, and costs. A Surveillance Programme also provides useful data on incidence and types of infections which can be used to determine the efficacy of IPC practices but also to better identify future preventative practices and risk factors. Surveillance followed by action for improvement can have a significant impact on rates of HAIs. This chapter stipulates a set of standards to ensure HAIs and antimicrobial resistance are monitored, audited and reported through a systematic Surveillance Programme.

Standard 4.1. There is a defined and documented Surveillance Programme. Information is used to evaluate and support the activities of the IPC Programme.

This standard comprises the following elements:

Element 4.1.1. There is a surveillance programme in line with national guidelines to monitor incidence of epidemiologically important organisms (e.g. CP-CRE) and targeted HAIs. [Core element]

Element 4.1.2. Surveillance data is used to implement corrective actions rapidly when transmission of epidemiologically important organisms (e.g. CP-CRE) or increased rates or persistently elevated rates of HAIs are detected. [Core element]

Element 4.1.3. Information from the surveillance programme is reported on at least a 6-monthly basis to Senior Management and Board of Directors of the hospital. [Core element]

Element 4.1.4. Professionals responsible for surveillance activities are trained in basic epidemiology, surveillance, and IPC within 12 months of work commencement. [Core element]

Element 4.1.5. IPC team has sufficient time to perform surveillance activities e.g. 10 or more hours per week for every 100 beds. [Expected element]

Element 4.1.6. Surveillance is conducted with active data collection methods and standardised case definitions (Data collection is active when data are actively sought out, e.g. gathered by surveillance personnel by reviewing medical records and laboratory data on a regular basis. Surveillance is passive when the receiving side just waits for data reports to be sent in). [Core element]

Element 4.1.7. Surveillance data is analysed and disseminated to all interested parties (Reports contain both analysis and recommendations, up-to-date information is available and known in all departments involved in surveillance). [Core element]

CHAPTER 5. OUTBREAK MANAGEMENT

Intent

The efficient detection and management of outbreaks is essential for minimising the impact of an outbreak on all implicated persons. This chapter stipulates a set of standards to ensure infection outbreaks are detected, managed and controlled in a timely, efficient and effective manner in order to reduce and control the spread of infection.

Standard 5.1. Outbreaks are managed in a systematic manner.

This standard comprises the following elements:

Element 5.1.1. There is an Outbreak Management Policy. [Core element]

Element 5.1.2. Prompt notification systems are in place for suspected or confirmed outbreaks. [Core element]

Element 5.1.3. MOH is informed of:

a) Any patient or staff with a notifiable disease under the Infectious Diseases Act (IDA) or any other diseases as required by MOH for the purposes of surveillance, outbreak investigation and response within stipulated time; and
b) Outbreaks of hospital acquired infections that fulfil MOH's criteria for reporting within stipulated time.

[Core element]

Element 5.1.4. Outbreak reports are compiled at end of the outbreak management where these reports include lessons learnt and recommendations to enhance the IPC programme, where relevant. [Core element]

Standard 5.2. The Outbreak Management Policy includes escalation of reporting to the appropriate institutional leadership, and the Ministry of Health.

This standard comprises the following elements:

Element 5.2.1. There are established systems to notify MOH and the appropriate institutional leadership of outbreaks that fulfil MOH's criteria for reporting within required time frame. [Core element]

Standard 5.3. In the event of an outbreak, the IPC Team / Outbreak Control Team liaises directly with the appropriate head of services – this should lead to the development of a clear, documented and well communicated operational plan (including resource consequences) for managing and containing the outbreak. This should include appropriate monitoring mechanisms.

This standard comprises the following elements:

Element 5.3.1. Respective heads and supervisors are notified promptly of outbreaks at their clinical areas upon identification by the IPC team. [Core element]

Element 5.3.2. Outbreaks are closely monitored, and regular updates are given to relevant stakeholders and hospital leaders. [Core element]

CHAPTER 6. HAND HYGIENE

Intent

Hand hygiene is recognised internationally as the single most important preventative measure in the transmission of infection, particularly in health and social care facilities. Hand hygiene refers to the use of soap / disinfectant and water as provided at a wash-hand basin, and also the use of alcohol hand gels which can be used to decontaminate hands if not visibly dirty or soiled. This chapter stipulates a set of standards to ensure:

a) Hand Hygiene practices that prevent, control and reduce the risk of the spread of HAIs are in place; and

b) A culture of Hand Hygiene is embedded in the facility.

Standard 6.1. A multidisciplinary, multifaceted hand hygiene programme must be developed and implemented in all health care settings.

This standard comprises the following elements:

Element 6.1.1. There is a competency-based training programme for hand hygiene for all staff. [Core element]

Element 6.1.2. A self-assessment on current hand hygiene activities is done annually (e.g. using the WHO Hand Hygiene Self-Assessment Framework). The results are used to develop initiatives to enhance hand hygiene compliance. [Expected element]

Standard 6.2. The WHO multimodal strategy is used to develop initiatives for improvement.

This standard comprises the following elements:

Element 6.2.1. Alcohol based handrub is easily available at the point of care. [Core element]

Element 6.2.2. There is mandatory training[7] of all staff at time of employment and at least ongoing education on hand hygiene annually. [Core element]

Element 6.2.3. Direct observation of hand hygiene is monitored every 3 months or more often. [Core element]

[7] Refers to any form of trainings including on-line training, self-learning programs etc.

Element 6.2.4. Hand hygiene information is easily available in the hospital. [Core element]

<u>Standard 6.3.</u> There are policies, procedures and systems for hand hygiene practices to reduce the risk of the spread of infection.

This standard comprises the following elements:

Element 6.3.1. Hand hygiene policy promote preferential use of alcohol-based hand rub over soap and water except when hands are visibly soiled (e.g. blood, body fluid). [Core element]

Element 6.3.2. WHO 5 moments for hand hygiene is understood by staff. [Core element]

Element 6.3.3. Staff are aware and practise hand hygiene after removal of gloves. [Core element]

<u>Standard 6.4.</u> Hand hygiene practices and policies are regularly monitored and evaluated. The information collected is used to improve the service provided.

This standard comprises the following elements:

Element 6.4.1. Regular hand hygiene audits are done on compliance to hand hygiene. [Core element]

Element 6.4.2. Feedback on hand hygiene performance is given to staff. [Core element]

CHAPTER 7. ENVIRONMENT AND FACILITIES

Intent

The risk of the spread of infection is significantly reduced when the physical infrastructure and environment of the facility are at levels described in various national and international documents. It is therefore vital that the physical environment is planned and maintained to maximise service user safety and the needs of the community it serves. It is also essential that high levels of cleanliness and hygiene are maintained to ensure the safety and well-being of its service users and staff. This chapter stipulates a set of standards to ensure the physical environment, facilities and resources are managed to minimise the risk of infection to service users, staff and visitors.

Standard 7.1. Adequate resources must be devoted to Housekeeping Services in all health care settings.

This standard comprises the following elements:

Element 7.1.1. There is at least a single individual who is responsible for overseeing housekeeping for each institution. [Core element]

Element 7.1.2. There are written procedures for cleaning and disinfection of care areas and equipment. [Core element]

Element 7.1.3. All housekeeping staff are trained on use of PPE, type of disinfectants and method of cleaning. [Core element]

Standard 7.2. Cleaning schedules are developed, with frequency of cleaning reflecting whether surfaces are high-touch or low-touch, the type of activity taking place in the area and the infection risk associated with it; the vulnerability of the client/patients/residents housed in the area; and the probability of contamination.

This standard comprises the following elements:

Element 7.2.1. There is a table of cleaning schedule for various parts of the hospital. [Core element]

Element 7.2.2. Clear responsibilities are defined amongst healthcare workers on cleaning of the work area. [Core element]

Standard 7.3. There should be a process in place to measure the quality of cleaning in the health care setting.

This standard comprises the following elements:

Element 7.3.1. Methods of auditing include both visual assessment and if possible one of the following tools: residual bio burden or environmental marking[8]. [Core element]

Element 7.3.2. Results of cleaning audits are collated and analysed with feedback to staff. [Core element]

Element 7.3.3. There is a competency-based training programme for environmental cleaning. [Core element]

Standard 7.4. An environmental action plan should be developed to identify and correct cleaning deficiencies.

This standard comprises the following element:

Element 7.4.1. An annual environmental hygiene plan as described in the '*National IPC Guidelines for Acute Healthcare Facilities*' is developed in consultation with relevant stakeholders. [Core element]

Standard 7.5. The structural design and layout of each hospital complies with evidence based best practice for IPC, risk management and other specialised design specifications for healthcare facilities.

This standard comprises the following elements:

Element 7.5.1. There are at least 1:10 beds with hand washing sinks hospital-wide and 1:1 in isolation rooms and ICUs. [Core element]

Element 7.5.2. There is physical separation for storage of clean and dirty items. [Core element]

Element 7.5.3. There is a minimum clearance of at least 1.5 m between edges of bed to another bed in multiple patient bedrooms. [Core element]

Element 7.5.4. Isolation rooms should have a minimum size of 25m^2 to meet the isolation needs. [Expected element]

Element 7.5.5. Negative pressured isolation rooms are at negative pressure (at least -2.5 kPA) to adjacent areas and corridor (check display panel). [Core element]

Standard 7.6. The IPC Team is consulted at all stages of the planning and implementation process and during all, new builds, environmental / systems repairs and refurbishments.

[8] For further details on auditing methods, to refer to the '*Technical Manual for Surveillance of National IPC indicators*' and/or the '*National IPC Guidelines for Acute healthcare Facilities*'.

This standard comprises the following element:

Element 7.6.1. The IPC Team is represented in committees responsible for construction and renovation planning. [Core element]

Standard 7.7. The possible spread of infection is minimised during construction / renovation / demolition.

This standard comprises the following element:

Element 7.7.1. The hospital implements IC measures relevant to construction, renovation, demolition, and repairs including performance of an IPC risk assessment before a project is started. [Core element]

Standard 7.8. Safe handling of linen is required to prevent exposure of environmental services workers and laundry staff to infection risk.

This standard comprises the following elements:

Element 7.8.1. Used linen soiled with blood, body fluids, secretions and excretions are handled, transported and processed in a manner that prevents skin and mucus membrane exposure. [Core element]

Element 7.8.2. There is clear segregation of clean and contaminated linen. [Core element]

Element 7.8.3. Clean linen is packaged, stored, and transported in such a way as to protect it from contamination. [Core element]

Standard 7.9. Disposal of infectious waste and body fluids is managed to minimise infection transmission risk.

This standard comprises the following element:

Element 7.9.1. Biohazardous waste is discarded into biohazard bins. [Core element]

Standard 7.10. The handling and disposal of blood and blood components are managed to minimise infection transmission risk.

This standard comprises the following elements:

Element 7.10.1. Safety devices are used to mitigate risk for sharps injuries amongst healthcare workers. [Core element]

Element 7.10.2. Training is provided to all staff who prepare and/or administer injections and parenteral infusions. [Core element]

<u>Standard 7.11.</u> The hospital identifies and implements practices to reduce the risk of injury and infection from the handling and management of sharps and needles and waste.

This standard comprises the following elements:

Element 7.11.1. A sharps injury prevention programme is implemented in the hospital. [Core element]

Element 7.11.2. Baseline information on sharps injuries, along with the weaknesses identified in the assessment of programme operation processes is used to determine priority areas in prevention programme. [Core element]

Element 7.11.3. There is a plan for providing employee education and training on blood-borne pathogen prevention at the time of hire, as well as on an annual basis. [Core element]

Element 7.11.4. Safety devices are assessed for appropriate use in the hospital. [Core element]

Element 7.11.5. Policies on medical waste management are defined. [Core element]

Element 7.11.6. Multi-dosing is per patient use, if practised. [Expected element].

<u>Standard 7.12.</u> The hospital prepares food and nutrition products using proper sanitation and temperature.

This standard comprises the following elements:

Element 7.12.1. Regular audits are done to ensure a clean environment during food preparation. [Core element]

Element 7.12.2. Safe water for consumption is available. [Core element]

<u>Standard 7.13.</u> All catering areas are effectively managed and maintained to minimise the possible spread of infection.

This standard comprises the following elements:

Element 7.13.1. Raw meat, fish and uncooked vegetables do not come in contact with food which is to be served without further heat-treatment. [Core element]

Element 7.13.2. Regular monitoring is done to ensure proper storage of food in chillers and freezers. [Core element]

<u>Standard 7.14.</u> Surgical and medical equipment, instruments, appliances and materials necessary for patient care are effectively managed and clean to minimise the possible spread of infection.

This standard comprises the following elements:

Element 7.14.1. There are written policies and procedures for the appropriate cleaning of medical equipment that clearly defines the frequency and level of cleaning, and which assigns responsibility for the cleaning. [Core element]

Element 7.14.2. IPC department / unit is involved in product evaluation of items that may pose infection control issues during implementation of its use. [Core element]

<u>Standard 7.15.</u> Ventilation and isolation policies are effective to minimise the possible spread of infection.

This standard comprises the following elements:

Element 7.15.1. Permanent environmental ventilation in patient care areas is available. The ventilation system can be natural ventilation, mechanical ventilation, or mixed-mode (e.g. natural ventilation and exhaust fan). [Core element]

Element 7.15.2. Policies for placement of patient under isolation precautions in health care settings are defined. [Core element]

CHAPTER 8. ANTIMICROBIAL RESISTANCE

Intent

Healthcare institutions worldwide are increasingly faced with the emergence and transmission of multidrug-resistant organisms (MDROs). Patients can be harmed by MDRO infections. Left unchecked, the spread of MDROs will also increase the burden on healthcare infrastructure e.g. isolation rooms, as well as increase healthcare costs. The inappropriate use of antimicrobials (antibiotics) is associated with the emergence and rising levels of antimicrobial resistance. The emergence of antimicrobial resistance can be controlled with an antimicrobial stewardship programme (ASP). This chapter stipulates a set of standards to ensure that there are systems in place to reduce and control antimicrobial resistance.

Standard 8.1. All healthcare institutions, whether a hospital or a non-acute hospital, are to perform an MDRO Risk Assessment annually.

This standard comprises the following elements:

Element 8.1.1. The baseline incidence and / or prevalence MDRO rates for the whole healthcare hospital or for specific unit(s) in the hospital is established. [Core element]

Element 8.1.2. High-risk populations and / or units based on incidence and/or prevalence rates, local demographic risk data, and known risk factors from scientifically based evidence are identified. [Core element]

Element 8.1.3. MDRO data for the hospital and/or the specific unit(s) over time to characterise MDRO prevalence or transmission rates is evaluated to determine if enhanced interventions are needed. [Core element]

Element 8.1.4. Appropriate surveillance for MDROs, taking into account the above risk factors and MDRO data, is conducted in order to identify MDRO cases early for infection control precautions to be taken. [Core element]

Element 8.1.5. Clusters in MDRO transmission in the patient population and/or unit(s) are identified to determine if enhanced interventions are needed. [Core element]

Standard 8.2. Precautionary measures (e.g. the MDRO Bundle) are used to manage patients known to be colonised or infected with MDROs.

This standard comprises the following elements:

Element 8.2.1. Active surveillance for MDROs meet the requirements stipulated in the National IPC guidelines. [Core element]

Element 8.2.2. Contact precautions are implemented for patients identified with MDROs. [Core element]

Element 8.2.3. Hand hygiene is practised in accordance with institutional guidelines. [Core element]

Element 8.2.4. Environmental hygiene is practised in accordance with institutional guidelines. [Core element]

Standard 8.3. There are policies, procedures and outcomes for the evidence based best usage of antimicrobials and the reduction of antimicrobial resistance.

This standard comprises the following elements:

Element 8.3.1. Antimicrobial management, including antimicrobial stewardship programmes (ASP), are in place. [Core element]

Element 8.3.2. The hospital has a policy that requires prescribers to document an indication for all antimicrobials in the medical record or during order entry. [Core element]

Element 8.3.3. The hospital has antimicrobial guidelines based on local antibiogram to assist with antimicrobial selection for common clinical conditions. [Core element]

Element 8.3.4. There is a standard operating procedure (SOP) for clinicians to review the appropriateness of antimicrobial at or after 48 hours from initial orders. [Core element]

Standard 8.4. An Antimicrobial Stewardship Committee is in place to oversee antimicrobial stewardship programme.

This standard comprises the following elements:

Element 8.4.1. A multidisciplinary Antimicrobial Stewardship Committee oversees the antimicrobial stewardship programme. [Expected element]

Element 8.4.2. IPC is represented in the Antimicrobial Stewardship Committee. [Expected element]

Standard 8.5. There are clear lines of communication and cooperation between the hospital's Drugs and Therapeutics Committee/Antimicrobial Stewardship Committee, the Infection Prevention and Control Team, Pharmacy & Therapeutic (P&T) Committees.

This standard comprises the following element:

Element 8.5.1. IPC Team collaborates with ASP Committee and P&T Committee to control MDRO development in the hospital. [Expected element]

<u>Standard 8.6.</u> Local antibiograms with pathogen-specific susceptibility data are updated at least annually (e.g. using The Clinical and Laboratory Standards Institute (CLSI) methodology) and trends in resistance are detected and reviewed.

This standard comprises the following element:

Element 8.6.1. The microbiology laboratory produces at least an annual updated antibiogram from isolates sent by the hospital. [Core element]

<u>Standard 8.7.</u> Overall antimicrobial use is audited annually. The data should include dose, duration and indication and route of antibiotic therapy. All data collected is reviewed and used to improve the quality of the service provided.

This standard comprises the following elements:

Element 8.7.1. An audit on antimicrobial utilisation is done annually. [Core element]

Element 8.7.2. Audit includes dose, duration and indication and route of antimicrobial therapy. [Core element]

Element 8.7.3. Audit results are used to improve the antimicrobial stewardship programme. [Core element]

Element 8.7.4. Prescribers receive feedback on how they can improve their antimicrobial prescribing. [Core element]

CHAPTER 9. MICROBIOLOGICAL LABORATORY SUPPORT

Intent

Microbiological services are required to support the functions of an effective IPC service. The service is needed to support best practice for clinical decisions, surveillance of HAI and antimicrobial resistance and outbreak detection and control. The level of microbiological support required will depend on a number of factors such as the type and size of service provided and the level of risk to the service user. This chapter stipulates a set of standards to ensure that microbiological services are available in a timely and effective manner to support IPC services.

Standard 9.1. There is daily support by an accredited Microbiology Laboratory (recognised by MOH).

This standard comprises the following elements:

Element 9.1.1. There is a recognised accredited microbiology laboratory serving the hospital. [Core element]

Element 9.1.2. Laboratory biosafety standards are implemented. [Core element]

Element 9.1.3 Systems are in place to consult the microbiologist when needed. [Core element]

Element 9.1.4 Critical results can be communicated on a 24-hour basis. [Core element]

Standard 9.2. There are systems in place for the rapid reporting of epidemiologically important organisms to the IPC Team.

This standard comprises the following elements:

Element 9.2.1. Timely reporting of epidemiologically important organisms is made to the IPC department / unit for their necessary action to be taken to prevent HAI. [Core element]

Element 9.2.2. Microbiological data on HAI agents are available for surveillance and IPC activities (There is a clinical microbiology lab or a contact with external provider of microbiological support). [Core element]

Element 9.2.3. The institution has capability to identify pathogens most relevant for IPC, including e.g. aerobic bacteria to species level in blood cultures and sterile sites, viral agents, M. tuberculosis, Candida sp. etc). [Core element]

<u>Standard 9.3.</u> The Microbiology Department has the ability or has arrangements (where appropriate) made for the molecular typing of epidemiologically important strains.

This standard comprises the following element:

Element 9.3.1. Molecular typing of organisms is done to help confirm outbreaks, where required. [Core element]

CHAPTER 10. EMERGENCY PREPAREDNESS AND RESPONSE

Intent

Emergencies are unpredictable. An emergency will cause major disruptions at our health care provider offices, hospitals, transportation systems, suppliers and other public services. Hence, preparedness plans should be in place for a hospital to respond promptly to prevent spread of the infectious disease of concern. The primary goal is to protect the safety and well-being of staff, patients and visitors in the healthcare setting. The secondary goal is to ensure the ability to continue the essential functions of the hospital in delivering care to other patients. This chapter stipulates a set of standards to ensure preparedness plans are in place to respond to communicable public health emergency.

Standard 10.1. There is a written plan to manage emerging infectious disease outbreaks of national concern.

This standard comprises the following elements:

Element 10.1.1. A detailed written plan is developed to manage response to an emerging infectious disease outbreak that is of national concern. [Core element]

Element 10.1.2. This plan is accessible to all staff. [Core element]

Element 10.1.3. The plan is aligned with the national preparedness plan. [Core element]

Standard 10.2. Systems are in place to validate the written preparedness plan.

This standard comprises the following elements:

Element 10.2.1. Tabletop exercises or drills are conducted with sufficient regularity to validate the written preparedness plan. [Core element]

ANNEX A. THE NATIONAL IPC STANDARDS WORKBOOK STANDARDS

This workbook has been developed for individuals within the healthcare facility who are responsible for the IPC programme as a tool to review the existing IPC programme and plan for measures to mitigate gaps in the existing programme.

1	GOVERNANCE AND MANAGEMENT OF IPC PROGRAMME	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
1.1	**Standard: The licensee of the hospital is accountable for the overall management, implementation and monitoring of the Infection Prevention and Control (IPC) programme.**				
1.1.1	Licensee of the hospital ensures that the IPC programme responsibilities, goals, and functions are clearly defined.	Core element			
1.1.2	Licensee of the hospital ensures IPC programme is integrated into the overall corporate plan of the hospital and includes IPC outcomes as a KPI in the balanced scorecard for the hospital.	Core element			
1.1.3	Continuing support for the IPC programme is an organisational priority.	Core element			
1.1.4	Licensee of the hospital ensures that evaluation of the performance of the IPC programme is performed in a blame free institutional culture (culture where no blame is ascribed to individual actors, and most errors are viewed largely as system-based. It does not exclude accountability when traceable to truly negligent actions).	Expected element			
1.2	**Standard: The Governing Board of the hospital regularly receives information relating to rates of infection across the respective facilities in order to measure the management of healthcare-associated infections (HAIs).**				
1.2.1	State of the IPC goals and strategies and the impact of the IPC activities are regularly reported to the Board of Directors.	Core element			

1	GOVERNANCE AND MANAGEMENT OF IPC PROGRAMME	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
1.2.2	Regular reports on surveillance indicators are shared with the Board of Directors. This information is dealt with and responded to in a timely and efficient manner in order to prevent, control and reduce the risk of the spread of infection.	Core element			
1.2.3	Regular reports on outbreaks and outbreak threats are shared with the Board of Directors. This information is dealt with and responded to in a timely and efficient manner in order to contain the outbreaks.	Core element			
1.3	**Standard: Financial and manpower resources are allocated to organise and execute the IPC programme.**				
1.3.1	There is an annual budget to support the IPC programme.	Core element			
1.3.2	An IPC department/unit (operational team) is set up for the overall management, implementation and monitoring of the IPC programme in the hospital.	Core element			
1.3.3	IPC medical staffing levels (at least 0.1 FTE per 100 beds) is responsible for leading the IPC department/unit (operational team), implement IPC programme recommendations; intervene when clinical or other practices pose risks.	Core element			
1.3.4	IPC practitioner staffing levels (at least 1 FTE per 115 acute care beds OR 1 FTE per 100 acute care beds if there are high risk activities e.g. dialysis)	Core element			
1.3.5	A multi-disciplinary IPC Committee is appointed with clearly defined terms of reference and lines of accountability and reports to senior management. The committee's responsibilities include annual goal setting and programme evaluation. It is comprised of members from a variety of	Core element			

1	GOVERNANCE AND MANAGEMENT OF IPC PROGRAMME	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
	disciplines; The goal of this interdisciplinary task force is both to bring together individuals with expertise in different areas of healthcare and ensure involvement of the senior management. The IPC Committee supports the implementation and execution of the IPC programme by the IPC department/unit staff.				

2	HUMAN RESOURCE MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
2.1	**Standard: All staff of the IPC team are trained and qualified to manage the IPC programme for the hospital's size, complexity of activities, and level of risks, as well as the programme's scope. Their qualification(s) may be met through education; training; experience; and certification or licensure.**				
2.1.1	The person(s) charged with directing the IPC programme is qualified and trained in IPC (e.g. completion of Certification in Infection Control (CIC), Asia Pacific Society of Infection Control (APSIC), Society for Healthcare Epidemiology of America (SHEA) training courses).	Core element			
2.1.2	The IPC staff received both initial and periodic specialised training in IPC. Staff should receive formal IPC training within 2 years of hire (e.g. successful completion of CIC, APSIC, SHEA training courses or its equivalent).	Core element			
2.1.3	There should be appointed IPC liaison personnel in high-risk designated work areas (e.g. ICUs, inpatient wards etc)	Expected element			
2.1.4	IPC liaison personnel have received training to perform their roles. (e.g. in-house training)	Core element			
2.1.5	Financial resources are provided for continuing professional education of the IPC staff.	Core element			
2.2	**The hospital provides basic education about IPC to all staff and other professionals. The staff education includes policies, procedures, and practices of the IPC programme.**				
2.2.1	Both initial and periodical basic training in IPC for all health care personnel is provided regularly. Orientation programmes include IPC component for all new staff and appropriate use of PPE	Core element			
2.2.2	Staff education includes hospital-specific IPC policies and procedures. There is a system for monitoring and improving staff compliance with IPC policies and	Core element			

2	HUMAN RESOURCE MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
	procedures and is linked to educational programmes.				
2.2.3	Continuing education address IPC needs of the organisation with regard to content, target audience and timing of the education (e.g. scheduled continuing education, special education based on specific needs such as outbreak). Periodic staff education is provided in response to significant trends in infection data.	Core element			
2.2.4	IPC education is evaluated to ensure that it is current, relevant, and effective.	Core element			
2.2.5	Resources are allocated to conduct IPC education to achieve the educational goals of the programme (includes IT support).	Core element			
2.3	**The hospital provides education about infection prevention and control to patients and families.**				
2.3.1	Patients and families can describe how this education is provided (e.g. information included in the admission or discharge packet, video, signage, in-person training).	Core element			
2.3.2	A hospital policy is in place to enable patients and families in the compliance with IPC practices.	Core element			
2.4	**Staff health and safety in relation to IPC is protected.**				
2.4.1	At time of employment, staff are evaluated for conditions relating to communicable diseases that can be spread in healthcare setting.	Core element			
2.4.2	There is easy access to PPE that is appropriate to the task.	Core element			
2.4.3	The hospital follows immunity requirements and recommendations of MOH for immunisation of healthcare personnel.	Core element			

2	HUMAN RESOURCE MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
2.4.4	There is a policy for post-exposure management of infectious diseases encountered at work.	Core element			
2.4.5	Institutions should have a mechanism for monitoring and preventing occupational biological risks.	Core element			

3	INFECTION PREVENTION AND CONTROL PROCESSES	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
3.1	**The IPC programme is based on current scientific knowledge, accepted practice guidelines, and Singapore's laws and regulations.**				
3.1.1	IPC policies and guidelines meet the requirements of the national IPC guidelines.	Core element			
3.1.2	IPC policies and guidelines are reviewed and updated as required on a regular basis.	Core element			
3.2	**Infection control risks are identified annually, and an annual plan is developed with risk-reduction goals and measurable objectives.**				
3.2.1	The IPC programme includes an annual infection risk assessment that evaluates and prioritises potential risks for infections, contamination, and exposures and the programme's preparedness to eliminate or mitigate such risks, based on the demographic profile of the population.	Core element			
3.2.2	The priorities identified from the risk assessment are incorporated into the annual work plan.	Core element			
3.2.3	Infection control strategies are implemented to reduce the rates of infection for the identified priorities. Initiatives are planned in accordance to identified priorities to reduce HAI.	Core element			
3.2.4	The IPC programme is reviewed at least once a year to reassess the organisation's needs and to determine which elements are required to continue to meet the goals of the programme for that healthcare setting.	Core element			
3.2.5	Strategic actions are taken to improve the programme.	Core element			

3	INFECTION PREVENTION AND CONTROL PROCESSES	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
3.2.6	Annual goals are set to strategically enhance the programme over time. Relevant KPIs are defined and monitored.	Core element			
3.2.7	Annual IPC goals are shared with all relevant stakeholders.	Core element			
3.3	**The IPC Department / Unit has the responsibility and authority to monitor and advises on the implementation of the IPC Programme.**				
3.3.1	The IPC department / unit ensures that the IPC programme meet current national standards and requirements as well as the requirements of the organisation.	Core element			
3.3.2	The IPC Department / Unit meets at least monthly to review performance against IPC programme goals.	Core element			
3.3.3	The IPC Department / Unit conducts prospective outcome indicator measurement for signal surveillance, process indicator measurement, or point prevalence surveillance.	Core element			
3.3.4	Regular reports on surveillance results are sent to the senior management, board and relevant stakeholders (e.g. quarterly).	Core element			
3.3.5	Regular audits are done systematically to evaluate efficacy of implementation of IPC policies and procedures; and timely feedback is given to hospital management and relevant stakeholders for follow-up action, and for use in hospital's education programmes.	Core element			
3.4	**IPC programme is coordinated involving physicians and nurses, and others and the IPC professionals.**				

3	INFECTION PREVENTION AND CONTROL PROCESSES	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
3.4.1	Regular meetings are held between IPC department / unit and the multi-disciplinary ICC.	Core element			
3.4.2	Regular meetings are held between IPC department / unit and the IC liaison personnel.	Core element			
3.5	**Information management systems support the infection prevention and control programme.**				
3.5.1	IT support is available to support IC education and training.	Core element			
3.5.2	IT support is available to support IC surveillance activities.	Core element			
3.5.3	IT support is available to support IC audit activities.	Core element			

4	SURVEILLANCE PROGRAMME	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
4.1	**There is a defined and documented surveillance programme. Information is used to evaluate and support the activities and effectiveness of the IPC Programme.**				
4.1.1	There is a surveillance programme to monitor incidence of epidemiologically important organisms (e.g. CP-CRE) and targeted HAIs.	Core element			
4.1.2	Surveillance data is used to implement corrective actions rapidly when transmission of epidemiologically important organisms (e.g. CP-CRE) or increased rates or persistently elevated rates of HAIs are detected.	Core element			
4.1.3	Information from the surveillance programme is reported on at least a 6-monthly basis to Senior Management and Board of Directors of the hospital.	Core element			
4.1.4	Professionals responsible for surveillance activities are trained in basic epidemiology, surveillance, and IPC within 12 months of work commencement.	Core element			
4.1.5	IPC team has sufficient time to perform surveillance activities e.g.10 or more hours per week for every 100 beds.	Expected element			
4.1.6	Surveillance is conducted with active data collection methods and standardised case definitions (Data collection is active when data are actively sought out, e.g. gathered by surveillance personnel by reviewing medical records and laboratory data on a regular basis. Surveillance is passive when the receiving side just waits for data reports to be sent in.)	Core element			

4.1.7	Surveillance data is analysed and disseminated to all interested parties (Reports contain both analysis and recommendations, up-to-date information is available and known in all departments involved in surveillance).	Core element			

5	OUTBREAK MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
5.1	**Outbreaks are managed in a systematic manner.**				
5.1.1	There is an Outbreak Management Policy.	Core element			
5.1.2	Prompt notification systems are in place for suspected or confirmed outbreaks.	Core element			
5.1.3	MOH is informed of: a) Any patient or staff with a notifiable disease under the Infectious Diseases Act (IDA) or any other diseases as required by MOH for the purposes of surveillance, outbreak investigation and response within stipulated time; and b) Outbreaks of hospital acquired infections that fulfil MOH's criteria for reporting within stipulated time.	Core element			
5.1.4	Outbreak reports are compiled at end of the outbreak management where these reports include lessons learnt and recommendations to enhance the IPC programme, where relevant.	Core element			
5.2	**The Outbreak Management Policy includes escalation of reporting to the appropriate institutional leadership, and the Ministry of Health.**				
5.2.1	There are established systems to notify MOH and the appropriate institutional leadership of outbreaks that fulfil MOH's criteria for reporting within required time frame.	Core element			
5.3	**In the event of an outbreak, the IPC Team / Outbreak Control Team liaises directly with the appropriate head of services – this should lead to the development of a clear, documented and well communicated operational plan (including resource consequences) for managing and containing the outbreak. This should include appropriate monitoring mechanisms**				
5.3.1	Respective heads and supervisors are notified promptly of outbreaks at their	Core element			

5	OUTBREAK MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
	clinical areas upon identification by the IPC team.				
5.3.2	Outbreaks are closely monitored, and regular updates are given to relevant stakeholders and hospital leaders.	Core element			

6	HAND HYGIENE	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
6.1	**A multidisciplinary, multifaceted hand hygiene programme must be developed and implemented in all health care settings.**				
6.1.1	There is a competency-based training programme for hand hygiene for all staff.	Core element			
6.1.2	A self-assessment on current hand hygiene activities is done annually (e.g. using the WHO Hand Hygiene Self-Assessment Framework). The results are used to develop initiatives to enhance hand hygiene compliance.	Expected element			
6.2	**The WHO multimodal strategy is used to develop initiatives for improvement.**				
6.2.1	Alcohol based handrub is easily available at the point of care.	Core element			
6.2.2	There is mandatory training of all staff at time of employment and at least ongoing education on hand hygiene annually.	Core element			
6.2.3	Direct observation of hand hygiene is monitored every 3 months or more often.	Core element			
6.2.4	Hand hygiene information is easily available in the hospital.	Core element			
6.3	**There are policies, procedures, and systems for hand hygiene practices to reduce the risk of the spread of infection.**				
6.3.1	Hand hygiene policy promote preferential use of alcohol-based hand rub over soap and water except when hands are visibly soiled (e.g. blood, body fluid).	Core element			
6.3.2	WHO 5 moments for hand hygiene is understood by staff.	Core element			

6.3.3	Staff are aware and practise hand hygiene after removal of gloves.	Core element			
6.4	**Hand hygiene practices and policies are regularly monitored and evaluated. The information collected is used to improve the service provided.**				
6.4.1	Regular hand hygiene audits are done on compliance to hand hygiene.	Core element			
6.4.2	Feedback on hand hygiene performance is given to staff.	Core element			

7	ENVIRONMENT AND FACILITIES MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
7.1	**Adequate resources must be devoted to housekeeping services in all health care settings.**				
7.1.1	There is at least a single individual who is responsible for overseeing housekeeping for each institution.	Core element			
7.1.2	There are written procedures for cleaning and disinfection of care areas and equipment	Core element			
7.1.3	All housekeeping staff are trained on use of PPE, type of disinfectants and method of cleaning.	Core element			
7.2	**Cleaning schedules are developed, with frequency of cleaning reflecting whether surfaces are high-touch or low-touch, the type of activity taking place in the area and the infection risk associated with it; the vulnerability of the client/patients/residents housed in the area; and the probability of contamination.**				
7.2.1	There is a table of cleaning schedule for various parts of the hospital.	Core element			
7.2.2	Clear responsibilities are defined amongst healthcare workers on cleaning of the work area.	Core element			
7.3	**There should be a process in place to measure the quality of cleaning in the health care setting.**				
7.3.1	Methods of auditing include both visual assessment and if possible one of the following tools: residual bio burden or environmental marking.	Core element			
7.3.2	Results of cleaning audits are collated and analysed with feedback to staff.	Core element			
7.3.3	There is a competency-based training programme for environmental cleaning.	Core element			
7.4	**An environmental action plan should be developed to identify and correct cleaning deficiencies.**				
7.4.1	An annual environmental hygiene plan as described in the 'National IPC	Core element			

7	ENVIRONMENT AND FACILITIES MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
	Guidelines for Acute Healthcare Facilities' is developed in consultation with relevant stakeholders.				
7.5	**The structural design and layout of each hospital complies with evidence based best practice for IPC, risk management and other specialised design specifications for acute healthcare facilities.**				
7.5.1	There are at least 1:10 beds with hand washing sinks hospital-wide and 1:1 in isolation rooms and ICUs.	Core element			
7.5.2	There is physical separation for storage of clean and dirty items.	Core element			
7.5.3	There is a minimum clearance of at least 1.5 m between edges of bed to another bed in multiple patient bedrooms.	Core element			
7.5.4	Isolation rooms should have a minimum size of $25m^2$ to meet the isolation needs.	Expected element			
7.5.5	Negative pressured isolation rooms are at negative pressure (at least -2.5 kPA) to adjacent areas and corridor (check display panel).	Core element			
7.6	**The IPC Team is consulted at all stages of the planning and implementation process and during all, new builds, environmental / systems repairs and refurbishments.**				
7.6.1	The IPC Team is represented in committees responsible for construction and renovation planning.	Core element			
7.7	**The possible spread of infection is minimised during construction/renovation / demolition.**				
7.7.1	The hospital implements IC measures relevant to construction, renovation, demolition, and repairs including performance of an IPC risk assessment before a project is started.	Core element			

7	ENVIRONMENT AND FACILITIES MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
7.8	**Safe handling of linen is required to prevent exposure of environmental services workers and laundry staff to infection risk.**				
7.8.1	Used linen soiled with blood, body fluids, secretions and excretions are handled, transported, and processed in a manner that prevents skin and mucus membrane exposure.	Core element			
7.8.2	There is clear segregation of clean and contaminated linen.	Core element			
7.8.3	Clean linen is packaged, stored and transported in such a way as to protect it from contamination.	Core element			
7.9	**Disposal of infectious waste and body fluids is managed to minimise infection transmission risk.**				
7.9.1	Biohazardous waste is discarded into biohazard bins.	Core element			
7.10	**The handling and disposal of blood and blood components are managed to minimise infection transmission risk.**				
7.10.1	Safety devices are used to mitigate risk for sharps injuries amongst healthcare workers.	Core element			
7.10.2	Training is provided to all staff who prepare and / or administer injections and parenteral infusions.	Core element			
7.11	**The hospital identifies and implements practices to reduce the risk of injury and infection from the handling and management of sharps and needles and waste.**				
7.11.1	A sharps injury prevention programme is implemented in the hospital.	Core element			
7.11.2	Baseline information on sharps injuries, along with the weaknesses identified in the assessment of programme operation processes is used to determine priority areas in prevention programme.	Core element			

7	ENVIRONMENT AND FACILITIES MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
7.11.3	There is a plan for providing employee education and training on blood-borne pathogen prevention at the time of hire, as well as on an annual basis.	Core element			
7.11.4	Safety devices are assessed for appropriate use in the hospital.	Core element			
7.11.5	Policies on medical waste management are defined.	Core element			
7.11.6	Multi-dosing is per patient use, if practised.	Expected element			
7.12	**The hospital prepares food and nutrition products using proper sanitation and temperature.**				
7.12.1	Regular audits are done to ensure a clean environment during food preparation.	Core element			
7.12.2	Safe water for consumption is available.	Core element			
7.13	**All catering areas are effectively managed and maintained to minimise the possible spread of infection.**				
7.13.1	Raw meat, fish and uncooked vegetables do not come in contact with food which is to be served without further heat-treatment	Core element			
7.13.2	Regular monitoring is done to ensure proper storage of food in chillers and freezers.	Core element			
7.14	**Surgical and medical equipment, instruments, appliances and materials necessary for patient care are effectively managed and clean to minimise the possible spread of infection.**				
7.14.1	There are written policies and procedures for the appropriate cleaning of non-critical medical equipment that clearly defines the frequency and level of cleaning, and	Core element			

7	ENVIRONMENT AND FACILITIES MANAGEMENT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
	which assigns responsibility for the cleaning.				
7.14.2	IPC department/unit is involved in product evaluation of items that may pose infection control issues during implementation of its use.	Core element			
7.15	**Ventilation and isolation policies are effective to minimise the possible spread of infection.**				
7.15.1	Permanent environmental ventilation in patient care areas is available. The ventilation system can be natural ventilation, mechanical ventilation, or mixed mode (e.g. natural ventilation and exhaust fan).	Core element			
7.15.2	Policies for placement of patient under isolation precautions in health care settings are defined.	Core element			

8	ANTIMICROBIAL RESISTANCE	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
8.1	**All healthcare institutions, whether a hospital or a non-acute hospital, are to perform an MDRO Risk Assessment annually.**				
8.1.1	The baseline incidence and/or prevalence MDRO rates for the whole healthcare hospital or for specific unit(s) in the hospital is established.	Core element			
8.1.2	High-risk populations and/or units based on incidence and/or prevalence rates, local demographic risk data, and known risk factors from scientifically based evidence are identified.	Core element			
8.1.3	MDRO data for the hospital and/or the specific unit(s) over time to characterise MDRO prevalence or transmission rates is evaluated to determine if enhanced interventions are needed.	Core element			
8.1.4	Appropriate surveillance for MDROs, taking into account the above risk factors and MDRO data, is conducted in order to identify MDRO cases early for infection control precautions to be taken.	Core element			
8.1.5	Clusters in MDRO transmission in the patient population and/or unit(s) are identified to determine if enhanced interventions are needed.	Core element			
8.2	**Precautionary measures (e.g. the MDRO bundle) are used to manage patients known to be colonised or infected with MDROs.**				
8.2.1	Active surveillance for MDROs meet the requirements stipulated in the National IPC guidelines.	Core element			

8	ANTIMICROBIAL RESISTANCE	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
8.2.2	Contact precautions are implemented for patients identified with MDROs.	Core element			
8.2.3	Hand hygiene is practised in accordance with institutional guidelines	Core element			
8.2.4	Environmental hygiene is practised in accordance with institutional guidelines	Core element			
8.3	**There are policies, procedures and outcomes for the evidence based best usage of antimicrobials and the reduction of antimicrobial resistance.**				
8.3.1	Antimicrobial management, including antimicrobial stewardship programmes (ASP), are in place.	Core element			
8.3.2	The hospital has a policy that requires prescribers to document an indication for all antimicrobials in the medical record or during order entry.	Core element			
8.3.3	The hospital has antimicrobial guidelines based on local antibiogram to assist with antimicrobial selection for common clinical conditions.	Core element			
8.3.4	There is a standard operating procedure (SOP) for clinicians to review the appropriateness of antimicrobial at or after 48 hours from initial orders.	Core element			
8.4	**An Antimicrobial Stewardship Committee is in place to oversee antimicrobial stewardship programme.**				
8.4.1	A multidisciplinary Antimicrobial Stewardship Committee oversees the antimicrobial stewardship programme.	Expected element			

8	ANTIMICROBIAL RESISTANCE	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
8.4.2	IPC is represented in the Antimicrobial Stewardship Committee.	Expected element			
8.5	**There are clear lines of communication and cooperation between the hospital's Drugs and Therapeutics Committee / Antimicrobial Stewardship Committee, the Infection Prevention and Control Team, Pharmacy & Therapeutic (P&T) Committees.**				
8.5.1	IPC Team collaborates with ASP Committee and P&T Committee to control MDRO development in the hospital.	Expected element			
8.6	**Local antibiograms with pathogen-specific susceptibility data are updated at least annually (e.g. using The Clinical and Laboratory Standards Institute (CLSI) methodology) and trends in resistance are detected and reviewed.**				
8.6.1	The microbiology laboratory produces at least an annual updated antibiogram from isolates sent by the hospital.	Core element			
8.7	**Overall antimicrobial use is audited annually. The data should include dose, duration and indication and route of antibiotic therapy. All data collected is reviewed and used to improve the quality of the service provided.**				
8.7.1	An audit on antimicrobial utilisation is done annually.	Core element			
8.7.2	Audit includes dose, duration and indication and route of antimicrobial therapy.	Core element			
8.7.3	Audit results are used to improve the antimicrobial stewardship programme.	Core element			
8.7.4	Prescribers receive feedback on how they can improve their antimicrobial prescribing.	Core element			

9	MICROBIOLOGICAL SUPPORT	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
9.1	**There is daily support by an accredited Microbiology Laboratory (recognised by MOH).**				
9.1.1	There is a recognised accredited microbiology laboratory serving the hospital.	Core element			
9.1.2	Laboratory biosafety standards are implemented	Core element			
9.1.3	Systems are in place to consult the microbiologist when needed.	Core element			
9.1.4	Critical results can be communicated on a 24-hour basis.	Core element			
9.2	**There are systems in place for the rapid reporting of epidemiologically important organisms to the IPC Team.**				
9.2.1	Timely reporting of epidemiological important organisms is made to the IPC department/unit for their necessary action to be taken to prevent HAI.	Core element			
9.2.2	Microbiological data on HAI agents are available for surveillance and IPC activities (There is a clinical microbiology lab or a contact with external provider of microbiological support).	Core element			
9.2.3	The institution has capability to identify pathogens most relevant for IPC, including e.g. aerobic bacteria to species level in blood cultures and sterile sites, viral agents, M. tuberculosis, Candida sp. etc)	Core element			
9.3	**The Microbiology Department has the ability or has arrangements (where appropriate) made for the molecular typing of epidemiologically important strains.**				
9.3.1	Molecular typing of organisms is done to help confirm outbreaks, where required.	Core element			

10	EMERGENCY PREPAREDNESS AND RESPONSE	ELEMENT TYPE	MET	NOT MET	ACTION PLAN
10.1	**There is a written plan to manage emerging infectious disease outbreaks of national concern.**				
10.1.1	A detailed written plan is developed to manage response to an emerging infectious disease outbreak that is of national concern.	Core element			
10.1.2.	This plan is accessible to all staff.	Core element			
10.1.3	The plan is aligned with the national preparedness plan.	Core element			
10.2	**Systems are in place to validate the written preparedness plan.**				
10.2.1	Tabletop exercises or drills are conducted with sufficient regularity to validate the written preparedness plan.	Core element			