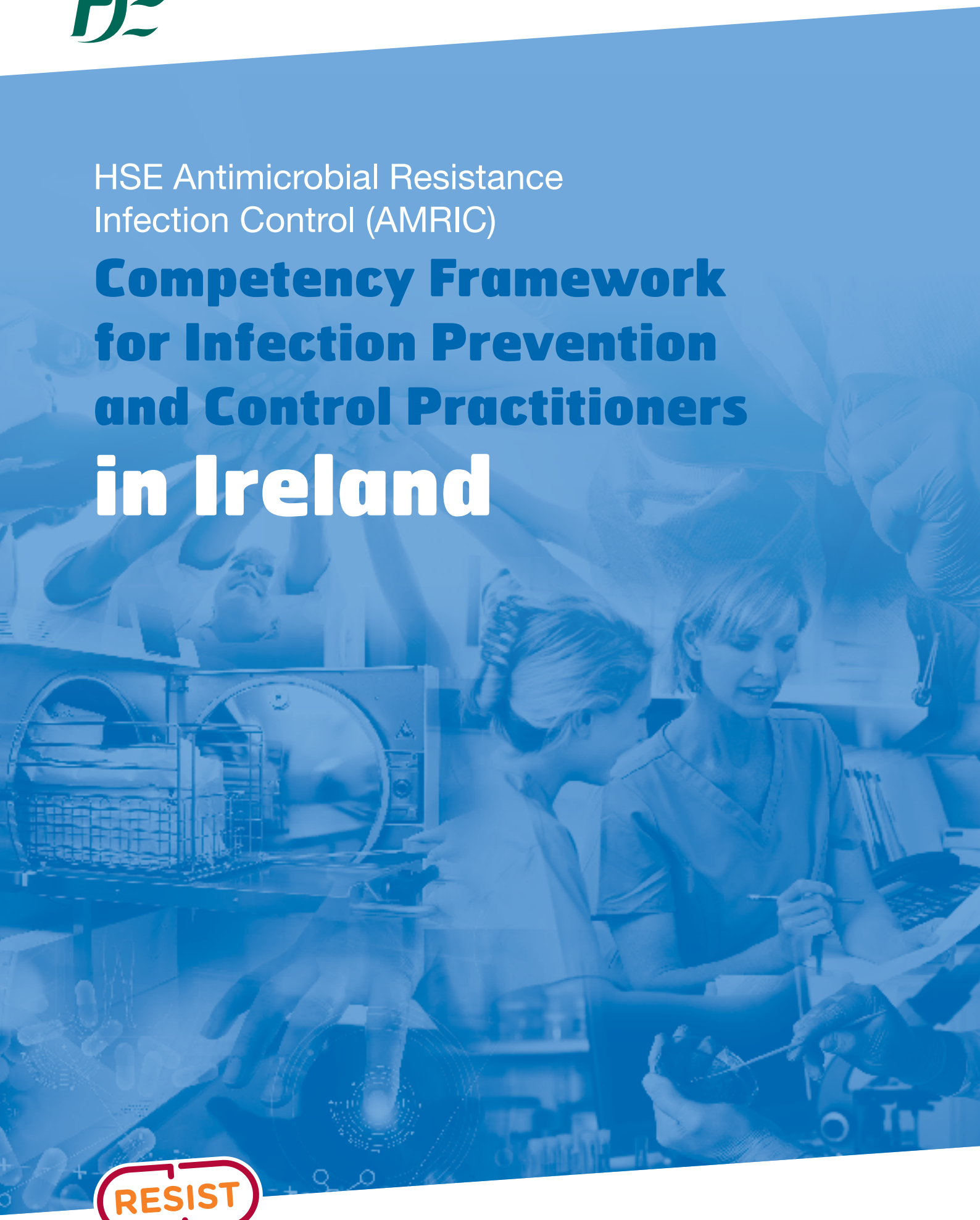
HSE Antimicrobial Resistance
Infection Control (AMRIC)

Competency Framework for Infection Prevention and Control Practitioners in Ireland



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Section 1

Introduction

Effective infection prevention and control (IPC) is central to providing clean, safe and high quality health and social care for people who use those services. It also protects those who deliver the services and the wider community.

The purpose of IPC practice is:

1. to support the timely delivery of health and social care that people need with the lowest practical risk of healthcare associated infection in the context of the facilities and resources available at the time
2. to identify areas for quality improvement and to advocate for the change in systems, practice, facilities and resources necessary to achieve that improvement

IPC is closely linked with antimicrobial stewardship (AMS) services. The importance of joint IPC and AMS working in the Health Service Executive (HSE) is reflected in the Antimicrobial Resistance and Infection Control (AMRIC) governance structure within the HSE that supports both IPC and AMS.

IPC teams are comprised of consultant microbiologists/infectious disease doctors, specialist IPC nurses, surveillance scientists and antimicrobial pharmacists. A fundamental requirement of effective IPC and AMS practice is an educated and skilled workforce to form the multidisciplinary IPC and AMS teams.

The pandemic of COVID-19 in 2020 highlighted gaps in IPC capacity in some services. This has resulted in an increase in demand for IPC expertise across healthcare organisations and all settings where healthcare is delivered. Healthcare services at every level must have basic IPC capacity within their core staff complement, and must also have access to higher-level expertise to support decision-making when necessary.

In response to a demand for more IPC expertise, the Department of Health (DOH) has provided additional funding for IPC specialists in acute and community settings. This has resulted in a welcome influx of new colleagues from the nursing, midwifery, medical and allied health professions.

This document on core competencies for IPC practitioners in Ireland has been developed to support health care professionals pursuing specialist careers in IPC. It will help in identifying and gaining the specific competencies they will require as an IPC practitioner. This will support the growth and development of a skilled IPC workforce in Ireland. Those who have already gained specialist IPC knowledge, skills, experience and qualifications through their training may find this a useful aid when reviewing their continuing training and development requirements.

Acknowledgement

This competency framework document is based on an adaptation of the World Health Organisation (WHO) Core Competencies for IPC Professionals (2020). The value of this document is gratefully acknowledged. The World Health Organisation (WHO) Core Competencies for IPC Professionals (2020) is available at the following link: https://www.who.int/publications/i/item/9789240011656

Document development

This document was developed by the HSE-AMRIC team (Appendix I). There was extensive consultation with key stakeholders (Appendix II). It has been adapted from the World Health Organisation (WHO) Core Competencies for IPC Professionals (2020). Adaptation has taken account of other international guidance and the experience and expertise of those who contributed to the development of the document.

Purpose of document

This document provides a competency framework to healthcare professionals, to review, assess and document their knowledge, skills and competence to work as IPC practitioners. It is not intended that all of these are requirements that must be fulfilled before commencing work as an IPC practitioner. Many competencies are gained through continuing professional development while working as an IPC practitioner.

This document aims to support managers, in growing and developing a skilled workforce as a basis for multidisciplinary teams within healthcare organisations.

This framework will:

- provide standardisation of the core competencies required for IPC practitioners in Ireland
- assist in curriculum design of post graduate training courses for IPC in Ireland
- support healthcare organisations in growing and developing skilled and educated IPC workforce
- support self-assessment of competence by the IPC practitioner
- assist and complement staff appraisal and professional development plan processes (PDP)

Scope

This document outlines the core competencies, knowledge, skills and ability required as an IPC practitioner in Ireland. The term IPC practitioner in the context of this document refers specifically to health care professionals pursuing a specialist career in IPC.

This framework document does not refer to professional grades, job specification requirements as set out by national and local HR departments, local governance and reporting relationships and staff management. It does not intend to replace the requirement to follow local procedures and policies for human resources management and is intended to be used as a tool to assist and complement these processes.

Higher Education Institutes (HEI) and professional training bodies are invited to consider this document to inform the development of curricula for the courses and training they deliver and qualifications they award.

Target audience

The target audience is healthcare professionals currently engaged in or considering a specialist career in IPC, and those who work in IPC education, training, evaluation, management and clinical service delivery.

Definitions of competency and core competencies

Competency: Proven ability to use knowledge, skills and personal, social and/or methodological abilities in work or study situations and in professional and personal development – what a professional should be able to do (ECDC 2013).

IPC Core competencies: the knowledge, skills and attitudes required for an IPC practitioner to practice with an in-depth understanding of situations, using reasoning, critical thinking, reflection and analysis to inform assessment and decision-making in the prevention and control of Healthcare associated infections (HCAI) and AMR (WHO 2020).

The competencies described in this document reflect the broad range of competencies that a proficient IPC practitioner is expected to gain. They may not reflect all the higher-level competencies required of an IPC practitioner who is managing the IPC service and not all the core competencies listed will be relevant to all IPC practitioner roles in all settings where healthcare is delivered.

Areas and Domains of core competencies for IPC practitioners

The 6 areas of IPC core competencies and 13 domains outlined in this document are:

1. Leadership in Infection Prevention and Control programme management
- IPC programme management and leadership
- Built environment in healthcare settings

2. Microbiology and Surveillance
- Basic microbiology
- Antimicrobial resistance prevention
- Healthcare associated infection surveillance

3. IPC in Clinical Practice
- Standard precautions
- Transmission-based precautions
- Decontamination of reusable invasive medical devices
- Prevention of healthcare associated infection
- Incident and outbreak management

4. Education
- IPC education and training

5. Quality, patient safety
- Quality and patient safety

6. Infection prevention and control related to occupational health
- Infection prevention and control practices related to occupational health

Assessment of core competencies

Assessment of competence can be self-assessment, in conjunction with line managers in professional development planning, and through local IPC team mentorship programmes. Self-assessment and plan of action tools have been developed to support self-assessment and competence development process for the areas and domains of core competencies for IPC practitioners (Section 2).

The following terms can be used to support assessment of competence:
- Working towards: Has acquired some experience of performing the skill, task or responsibility but still requires support or supervision.
- Competent: Able to perform the skill, task or responsibility as an autonomous practitioner. (IPS 2021)

Application of practical experience to complement core competencies

Practical IPC experience is fundamental to acquisition of required competence by an IPC practitioner. IPC practitioners should seek to gain broad experience of IPC service delivery in different settings such as specialist settings (operating theatres, intensive care, neonatal intensive care, renal, oncology and other specialist areas) and general clinical areas. It is useful to have some experience of both acute hospital and community settings. Practical experience in managing outbreaks and HCAI and AMR prevention strategies are essential. Experience working with clinical microbiology laboratory services, estates and facilities management, occupational health, public health, and senior management are valuable.

Professional expertise grows in a continuum. The speed of acquisition and completeness of knowledge and competencies depends on many different variables in particular the opportunities for experience and professional development in different settings. This means that the time required to gain a post-graduate qualification in IPC and for a practitioner to feel proficient and capable of practicing at an independent level will vary. Consideration must be given to the pace at which individual practitioners develop skills and are ready to take on additional

roles and responsibilities. Some people may be ready for additional roles and responsibilities more quickly and others may require longer. HR guidance and policies, governance, professional development planning and performance management strategies may support practitioners and line managers in identifying reasonable and achievable timelines to gain competence and practice at a level deemed appropriate by the healthcare organisation in which they work in.

How to use this document to assess your own competencies?

This document sets of a series of 6 areas of IPC core competencies and 13 domains of practice, for example the first area is Leadership in IPC programme management and leadership. Within each area are domains of practice with a section on knowledge and a section on skills and ability.

Knowledge (do I know about?)

The section on knowledge sets out topics that the IPC practitioner should have knowledge of under the following sub-headings such as (1) general principles (2) programmes, policy and guidance, (3) leadership and implementation (4) communication and advocacy (5) education and training and (6) quality. In considering this section, the practitioner should ask themselves do they know enough about each topic to support themselves in their practice and do they know how to access additional knowledge when they require it.

Skills and ability (am I able to?)

The section on skills and ability relates to the skill and ability of the IPC practitioner to apply the knowledge that they have or know how to access. The sub-headings correspond to the sub-headings in the preceding knowledge section. In considering this section, the practitioner should ask themselves do they have the skills and ability to apply their knowledge to fulfil their role in delivering the relevant area of IPC service.

The format of the section on knowledge and skills and ability can appear somewhat repetitive. The intention is to focus the practitioner's attention on the fact what they know (knowledge) is an essential foundation but that being able to use what they know (skills and ability) is critical to delivering on their role.

Self-assessment and plan of action (POA) tools have been developed to support self-assessment and competence development process (Section 2).

These tools are interactive, allowing user to download the file and input information as required, save, review and update throughout the self-assessment and competence development process.

Section 2

IPC core competencies - areas and domains

Leadership and IPC programme management

Domain: IPC programme management and leadership

Competency review:

- Use management strategies and leadership for development, planning and implementation of an IPC programme.
- Develop/plan/implement guidance, training resources, monitoring and audit tools (from national/international IPC standards and guidance).
- Provide IPC training and education for healthcare workers (HCWs).
- Undertake monitoring and feedback of compliance with national IPC standards/guidance.
- Use data and evidence for decision making for IPC interventions.
- Use leadership and communication skills in communicating with HCWs, teams, senior management, patients and their families.
- Advise and support IPC infrastructure, environmental monitoring, hygiene and IPC standards (national standards).
- Utilise change management strategies for implementing change in IPC service delivery.

Knowledge (do I know about?)
IPC Programme, policy and guidance
• National strategies, guidance and policies for AMRIC. • National healthcare quality standards on hygiene, decontamination and IPC and associated monitoring requirements. • Approaches to developing local IPC policies and procedures, strategic plans, standard operating procedure (SOPs), and monitoring/feedback and evaluation strategies. • IPC programme at local level with clearly defined objectives, functions and activities for preventing and managing HCAI and AMR. • The role, responsibilities and governance of the multidisciplinary IPC team and IPC/AMR committees at local and national levels.
Leadership and implementation
• The importance of leadership and coordination as a key role of the IPC practitioner. • Management strategies for the planning and implementing of an IPC programme and/or a team to achieve objectives, setting goals, prioritisation of work, project management, teamwork. • The elements of multimodal improvement strategies and their application to IPC interventions. • Quality improvement interventions including behavioural change approaches to implement national strategies and guidance documents. • Change management strategies IPC service delivery in health service delivery. • IPC knowledge of national and local procurement and tendering processes and the advisory role of the IPC practitioner.
Communications and advocacy
• Effective communication approaches and how they are used in IPC. • Advocating effectively the importance of IPC programmes and practices with key stakeholders. • Importance of communicating with patients/service users.

Education and training

- Knowledge of adult education and learning methods, including mentorship.
- IPC knowledge and skill required for pre-graduate, in-service and postgraduate IPC training.

Quality

- Local organisational governance and reporting structures.
- Knowledge of national key performance indicator (KPI) and reporting arrangements.
- Knowledge of risk assessment process and management of IPC risks.
- Knowledge of national quality standards monitoring programmes.
- Review and evaluation approaches to assess the effectiveness of IPC interventions and IPC programme and quality improvement strategies.

Skills and ability (am I able to?)

IPC programme, policy and guidance

- Work collaboratively to develop a written and measurable IPC programme (clear objectives, time frame, responsibilities, utilising multimodal strategies, update annually based on needs, risk assessment and the available resources of the IPC team).
- Work collaboratively to develop local or adapt national infectious diseases epidemic plans (clear objectives, time frame, responsibilities and update as required).
- Work collaboratively to develop local/adapt national IPC guidance on HCAI and AMR.
- Work collaboratively with key stakeholders in the healthcare organisation in developing strategy for compliance with IPC elements of national quality standards for healthcare Health information and Quality Authority (HIQA).
- Work collaboratively with local committees and facility wide departments such as sterile services department (SSD) and decontamination leads, hygiene services, facilities, estates advising on IPC standards and practices recommended in their specific areas of responsibility.

Leadership and implementation

- Use leadership skills to direct and implement IPC programme (evaluation & monitoring of programme results, planning, coaching, training, capacity building, etc).
- Work collaboratively with key stakeholders in implementing national IPC guidance on HCAI and AMR.
- Work collaboratively with key stakeholders in conducting facility wide IPC risk assessments, developing plans to manage risks as a strategy for compliance with IPC elements of national quality standards for healthcare (HIQA).
- Demonstrate problem solving and critical thinking skills when presented with situations involving infectious threats.
- Implement a hand hygiene multimodal improvement strategy and campaign in the local context.
- Implement IPC interventions working with multidisciplinary teams and using multimodal strategies and campaigning as required.
- Consult with and collaborate with local public health departments to help coordinate surveillance and the outbreak response (community/hospital/facility outbreaks), promote an exchange of information, and generate regular reports. Contribute to research activities as part of a team.
- Review, evaluate and report on local IPC initiatives.
- Implement quality improvement initiatives based on local resources, epidemiology and risk-based priorities with key stakeholders.
- Work with the microbiology laboratory service to support appropriate testing for infectious agents and application of results to support IPC.
- Use change management strategies to assist with changes in IPC service delivery.

Communications and advocacy

- Advocate for and facilitate synergy between IPC local and national programmes.
- Advocate for the involvement of the IPC team in local project development, the built environment, particularly in recommending specific layout and design, finishes, equipment, personnel and resources for the IPC programme.
- Advocate for communication with patients'/service users at all times.
- Use effective communication approaches to facilitate multidisciplinary interactions with key stakeholders.

Education and training

- Develop/adapt IPC training resource strategies and plans targeting different audiences.
- Conduct HCWs training in IPC using evidence-based and practical approaches, while supporting continuous education, including a mentorship role for other IPC professionals and clinical staff.

Quality

- Implement monitoring and reporting of national key performance indicators.
- Conduct product evaluation for equipment and supplies in alignment with national procurement guidance framework.
- Work collaboratively to present and disseminate IPC audit and surveillance findings, IPC recommendations, annual reports, policies and procedures, through local governance structures to relevant stakeholders (for example, individuals, committees, departments, units, academia).
- Work collaboratively with key stakeholders in monitoring compliance with IPC elements of national quality standards for healthcare (HIQA).
- Collaborate with risk management and quality improvement teams and other stakeholders in reviewing adverse events with IPC, identifying organisational IPC risks, current and additional control measures required, management of risks and healthcare organisations risk register.
- Work with others to monitor potential epidemics or influx of infectious disease through routine surveillance of admissions through scheduled and unscheduled care admission pathways, microbiological surveillance, including emerging and re-emerging pathogens.

Leadership and IPC programme management

Domain: The built environment in healthcare settings

Competency review:

- Implement IPC guidance (from national/international IPC guidance and standards) to prevent HCAI and AMR in the healthcare environment.
- Use a risk-based approach to assess the infection risks related to building design, construction and renovation, ventilation, water systems in healthcare, environmental hygiene, and provide guidance on IPC practices.
- Support healthcare organisations, local estates and facilities departments with IPC related training and education.

Knowledge (do I know about?)
Policy and guidance
• National and international guidance and standards on IPC in the built environment and the influence of facility design on healthcare associated infections. • The health care environment as a source of infection by air, water and contact with the physical environment. • How the built environment contributes to effective IPC - for example design//layouts/spacing/surface finishes/workplace design. • National and international guidance on water systems in healthcare facilities. • The IPC risk assessment criteria and key principles for pre-, during, post-construction and commissioning of a new building or for any demolitions or renovations, taking into consideration current building guidance and legislation. • Principles of hospital design related to layout, ventilation requirements and other aspects of general wards and specialised units, such as isolation rooms/facilities, (including neutral, negative and positive pressure systems), theatres and immediate pre- and postoperative areas, augmented care units, haemodialysis units, burns unit, sterile services department, endoscopy units. • Surface and material characteristics important for IPC. • Outcomes/indicators relating to IPC and water supply systems and environmental hygiene during the design, construction, and modification of the built environment. • Commissioning requirements including timelines for air sampling, water sampling, environmental hygiene requirements. • IPC standards and practices for the hospital/ facility/laundry to protect health workers from exposure to potentially infectious materials during the collection, handling and management of waste and linen which may be contaminated with blood and body fluids or other infectious material.

Skill and ability (am I able to?)
Policy and guidance
• Collaborate with local estates, facilities management and hygiene services, and contribute IPC advice and expertise in standard operating procedures related to a safe built environment, water systems in healthcare and environmental monitoring requirements, environmental cleaning and disinfection, healthcare waste management and safe handling of linen procedures.
Leadership and implementation
• Implement IPC requirements of national estates guidance. • Be involved and provide IPC advise at all stages of healthcare developments of new buildings, demolition and renovation projects. • Advise on key design features that minimise the transmission of infection such as isolation facilities, ventilation, water systems, appropriate workplace design, layout and spacing and storage as per national and international guidance and standards. • Complete IPC risk assessments and advise on IPC key measures for pre-, during, post-construction and commissioning of a new building or for any demolitions or renovations, taking into consideration current building guidance and legislation. • Advise on IPC commissioning requirements including timelines for new buildings and renovations including air sampling, water sampling and environmental hygiene requirements and auditing. • Support the local facilities department and hygiene services with IPC advice on cleaning standards and cleaning specifications for the healthcare environment.

Education and training

- Contribute to/develop IPC training resources, strategies and plans specifically for, estates and construction staff on IPC principles and practices related to their area of work.
- Plan, deliver and evaluate IPC related training programmes.

Communications and advocacy

- Advise on key IPC communication messages and tools (for example, reminders) tailored to different audiences about the importance of IPC in the built environment, water systems management and environmental monitoring, ventilation, hand hygiene and sanitary facilities management.
- Engage and collaborate with stakeholders such as estates, maintenance, facilities management, hygiene and other related staff to advocate for IPC in the built environment.

Quality

- Provide support with the monitoring of cleaning standards and advise on corrective action plans where standards are not met.
- Contribute to local environmental committees, identifying elements important for a safe care environment, such as ventilation, water systems in healthcare facilities, air quality and other factors relating to the built environment. and contribute to the monitoring programmes of these systems.
- Assess the infection risks of design, construction and renovation that may impact on patient care settings and provide recommendations to reduce the risk of infection.
- Audit and monitor implementation of IPC recommendations of pre-construction, during, and post-construction and commissioning of a new building or for any demolitions or renovations, report findings and advise on corrective actions.

Microbiology and surveillance

Domain: basic microbiology

Competency review: Know the microorganisms that commonly cause infections in humans, in particular in health care settings and in the context of the global, national and local epidemiology; understand their modes of transmission and antimicrobial resistance (AMR) patterns.

Knowledge (do I know about?)

General Principles

General classification of microorganisms (including bacteria, virus, fungus, prions, etc., in particular, those of epidemiological significance in the health care and community settings, those commonly found in the environment, and microorganisms likely to be associated with outbreaks) and their key characteristics including:

- Mode of transmission.
- Pathogenicity and virulence.
- Reservoirs or sources.
- Chain of infection.
- Incubation period and period of communicability.
- Survival in various environments.
- Most common clinical presentations of the infection.
- Appropriate diagnostic/surveillance test(s) for specific microorganisms.
- Different host-microorganism interactions (for example, colonisation versus infection, normal flora versus transient carriage, latency, commensal versus pathogens) and general concepts about AMR mechanisms.
- Human microbiome and its role in the transmission and prevention of disease.
- IPC measures to reduce or prevent transmission of microorganisms and infections, including vaccination.
- IPC elements of national public health emergency plans including infections that are common in the community and that can be transmitted in the health care setting.

Leadership and implementation

- Correct collection methods (correct microbiological samples at the correct time from the correct site and correct amount), handling, packaging, labelling and transport of specimens and biohazardous material.
- General methods for the detection and identification of microorganisms in the laboratory and when each is appropriate (for example, direct detection methods, culture, serology, molecular techniques).
- The role of the IPC programme, including specific interventions and AMS and their integration in AMR containment strategies.

Skills and ability (am I able to?)

Policy and guidance

- Support implementation of national/ local facility-adapted guidance on recommended microbiological investigations for routine and outbreak management of health care-associated infections and AMR.

Leadership and implementation

- Support national and facility-based efforts to minimise AMR, including diagnostic and AMS initiatives and reporting of multidrug-resistant microorganisms, according to local and national requirements.
- Work with the microbiology laboratory to identify the infectious agent and to establish an appropriate IPC strategy.
- Advise or participate in discussions on the microbiological specimens to be taken in specific infection cases and/or outbreaks, microorganisms potentially involved based on laboratory results, clinical presentation, epidemiological information, and modes of transmission.
- Take appropriate actions to provide advice and support in applying standard and transmission based precautions to healthcare workers caring for patients infected or colonised by epidemiologically-relevant microorganisms, depending on the modes of transmission and virulence patterns identified through microbiological tests.

Communication and advocacy

- Communicate in a timely and effective manner with stakeholders (for example, laboratory, Public Health Departments, operations, healthcare workers, clinical leaders) and target audiences (for example, patients /service users and families) about modes of transmission and risks of specific pathogens and necessary microbiological investigations.
- Support as IPC team members with diagnostic and antimicrobial stewardship programmes where required.

Education and training

- Identify relevant clinical microbiology topics and practical activities to be included in IPC training programmes and develop related training resources in collaboration with microbiology team.

Quality

- Contribute to the review of laboratory reports of epidemiology and AMR relevant to locally common microorganisms.
- Contribute as required in the review of the processes used to conduct diagnostic/laboratory tests for investigating HCAI (surveillance).

Microbiology and surveillance

Domain: Antimicrobial resistance

Competence review:

- Understand AMR mechanisms and methods for the detection and interpretation of results; understand basic concepts of AMR surveillance.
- Contribute to improve/sustain AMR surveillance protocols and systems including rapid alert/detection systems.
- Implement AMRIC national policies at health care facility level.
- Support training activities on AMR and IPC in healthcare.

Knowledge (do I know about?)
General principles
• Definition of AMR, concept of intrinsic and acquired resistance. • Factors contributing to the emergence and spread of AMR in health care facilities and communities, including human behaviour, the overuse/misuse of antimicrobials, water systems management and monitoring. • Main AMR mechanisms of the most common microorganisms causing HCAIs. • Global, national and local epidemiology of AMR and its implications on the burden of endemic HCAIs and in outbreaks. • Impact of AMR in terms of morbidity, mortality, complications and costs. • Common classes of antimicrobials and their mechanisms of action to prevent and control infections, including the role of antimicrobial prophylaxis. • Key principles of standard and transmission precautions and their effectiveness to reduce the spread of AMR. • Principles of the rational use of antimicrobials, including key elements of effective AMS programmes and their linkages to IPC.
Leadership and implementation
• Components of Ireland's national action plans (iNAP) for antimicrobial resistance and the role of IPC as a key intervention to combat AMR. • Antimicrobial management principles for prophylaxis and treatment. • IPC practices to prevent and control the spread of AMR in the healthcare setting. • The synergy of national and local IPC and AMS strategies to reduce AMR.
Communication and advocacy
• Behavioural change and communication approaches to support IPC and AMS to reduce AMR.

Microbiology and surveillance

Domain: Antimicrobial resistance

Skills and ability (am I able to)
Policy and guidance
• Contribute to develop or to improve/sustain AMR surveillance protocols and systems including rapid alert/ detection systems. • Contribute to develop or to improve/sustain evidence-based AMR prevention strategies and policies (national/local).
Leadership and implementation
• Collaborate in identifying factors contributing to the emergence and spread of AMR in health care facility. • Support the implementation of appropriate IPC measures for preventing the spread of AMR and specific transmission-based precautions for caring for people colonized or infected with resistant microorganisms. • Use multimodal strategies to implement IPC measures to curb AMR spread and reduce HCAI. • Participate in and support the activities of the AMS and IPC committees to develop and update plans to reduce AMR in healthcare, based on findings related to local AMR determinants and data including the consumption of antimicrobial agents.
Communication and advocacy
• Advocate continuous and strong support to enable effective implementation of IPC and AMS strategies to combat AMR. • Support communication strategies about the burden of AMR and the effectiveness and cost effectiveness of IPC and AMS measures using messages tailored to different audiences and stakeholders (for example senior management, healthcare workers, IPC committees, patients and the public).
Education and training
• Contribute to developing training resources on the importance of AMR and IPC and support AMS strategies to combat AMR. • Conduct or support training roll-out on AMR as part of IPC training, adapted to different healthcare worker groups.
Quality
• Work closely with the microbiology laboratory for the collection, interpretation and reporting of AMR data.

Microbiology and surveillance

Domain: Healthcare associated infection surveillance

Competence review:

- Understand basic concepts of epidemiology and surveillance.
- Contribute to develop or to improve/sustain HCAI surveillance protocols and systems at local level.
- Support implementation of HCAI surveillance, including AMR, considering the local context and other IPC processes.
- Work with a team to use surveillance data to identify IPC interventions to reduce the risk of HCAIs among patients and with the healthcare organisation.
- Conduct or support training activities.

Knowledge (do I know about?)
Basic principles
• Epidemiological concept of person, place and time in descriptive epidemiology. • Types of surveillance to target HCAIs and AMR microorganisms and other processes and the use of surveillance data to implement interventions to reduce the risk of HCAIs among patients'/service users and care providers and to improve adherence to IPC practice and reduce AMR. • Basic epidemiological and biostatistical principles and methods (for example, descriptive statistics). • Differences between HCAI surveillance definitions and clinical definitions for infectious syndromes. • The basic principles, advantages and disadvantages of different surveillance methodologies: incidence versus prevalence, passive versus active; prospective versus retrospective; hospital-wide versus targeted; laboratory versus patient-based; adjusted versus crude incidence rates. • The role of surveillance and feedback (prospective, benchmarking, identifying trends and patterns) and reporting to inform appropriate interventions and clinical practice. • Existing surveillance systems (local, regional, and national) and the most appropriate informatics support tools. • Best methods for targeted surveillance of common HCAIs, such as: *Clostridioides difficile (C. difficile)* infection, *Staphylococcus aureus* bloodstream infection (SABSI), surgical site infection (SSI), catheter-associated urinary tract infection (CAUTI), ventilator-associated pneumonia (VAP), multidrug resistant organism (MDRO), microorganisms that tend to be associated with outbreaks. • Best approaches, descriptive and visual to present surveillance data.

Skills and ability (am I able to?)
Policy and guidance
• Work with multidisciplinary IPC team to implement national protocols for a surveillance programme with clearly defined objectives and goals that are relevant for the target areas, procedure, population or event of interest.
Leadership and implementation
• Support surveillance systems in place, including relevant linkages with clinical/laboratory services. • Support implementation of facility IPC surveillance and notification systems. • Work with the wider IPC team and plan as appropriate to determine organisational priorities for surveillance, based on available evidence and resources, regulatory or other relevant contextual factors. • Work with the IPC team to develop a plan to collect data: choose surveillance protocol, create or adapt practical data collection forms, identify a data collection system, emphasise data quality. • Work with a team to develop recommendations for action based on the data and literature.
Education and training
• Contribute to developing training resources, strategies and plans to teach basic principles of HCAI and AMR surveillance. • Conduct or support training roll out adapting to different audiences.
Communications and advocacy
• Advocate the value of HCAI surveillance. • Communicate the surveillance data as required to different stakeholders to raise awareness of HCAI and motivate health workers to change their behaviour and improve IPC practices.
Quality
• Work with the IPC team to incorporate information technology systems and applications into the analysis and dissemination of data. • Contribute to data management, analysis and surveillance reporting. • Work with the IPC team to critically evaluate and interpret the HCAI surveillance results in the context of trends over time. Comparison with internal/external data sources and/or benchmarks and the achievements of the surveillance programme and any other relevant context. • Monitor the indicators of outcomes, process and structure following IPC interventions targeting HCAI.

IPC in clinical practice

Domain: Standard Precautions

Competency review:

- Implementation of standard precautions according to risk assessment for all patients in clinical services throughout the healthcare organisation, working with nursing teams, medical teams, specialist areas and other multi-disciplinary healthcare workers and senior management.
- Adapt policies and/or SOP, training resources and monitoring/audit tools on standard precautions; organise and provide training and education for healthcare workers on standard precautions in the context of broader IPC training; undertake audit, monitoring and feedback activities to assess compliance with standard precautions.

Knowledge required (do I know about?)

Policy and guidance

- National quality standards on hygiene, decontamination and infection prevention control and associated monitoring guidance.
- National/local guidance on standard precautions including IPC practices and measures to break the chain of disease transmission.
- The hierarchy of controls (replacement or removal of hazards, engineering and administrative controls, and personal protective equipment) to prevent and control the transmission of microorganisms in health care settings.
- Standard precautions as the basic IPC practices that apply at all times in all settings where health care is delivered.
  - Hand hygiene.
  - Appropriate use of personal protective equipment (PPE).
  - Safe injection practices.
  - Cleaning and disinfection of the healthcare environment and patient equipment.
  - Respiratory hygiene and cough etiquette.
  - Decontamination of reusable invasive medical devices.
  - Aseptic technique.
  - Waste management.
  - Handling of linen.
- The equipment, supplies and products needed for the implementation of standard precautions and their technical specifications as appropriate.

Leadership and implementation

- The roles and responsibilities of the organisation, departments and all HCWs to minimize the risk of exposure to, and transmission of infectious diseases in health care settings through the implementation of standard precautions.

Skills and ability (am I able to?)

Policy and guidance

- Adapt policies and standard operating procedures on standard precautions including guidance related to IPC practices and measures to break the chain of disease transmission.

Leadership and implementation

- Identify the existing gaps and apply multimodal strategies to implement standard precautions.
- Use standard precautions appropriately according to risk assessment.
- Collaborate with healthcare workers and other relevant departments to address issues related to the consistent application of standard precautions.
- Identify the appropriate technical specifications for personal protective equipment (gloves, masks, gowns, etc.) and other products (for example, disinfectants) that may be used for implementing standard precautions and support their timely procurement.

Education and training
• Develop training resources, strategies and plans for standard precautions in the context of broader IPC training and targeting different audiences. • Conduct or support HCW training on standard precautions using both evidence-based and practical approaches. • Inform and/or educate patients, families and visitors on standard precautions. • Evaluate training to assess its effectiveness.
Communications and advocacy
• Develop appropriate communication messages and tools (for example, reminders) about the importance of standard precautions to be applied for all patients, regardless of their infectious status. • Use national communications resources such as posters, key messgaes, information lealets about the importance of standard precautions. • Act as a role model and champion for the implementation of standard precautions to ensure quality of care and safety for both patients and HCWs.
Quality
• Work with a team to develop and implement monitoring and evaluation strategies for assessing compliance with standard precautions.

IPC in clinical practice

Domain: Transmission-based precautions

Competence review:

- Implementation of transmission-based precautions according to risk assessment and in relation to the suspected or confirmed microorganism(s), working with nursing teams, medical teams, specialist areas and other multi-disciplinary healthcare workers and senior management.
- Adapt policies and/or SOPs, training resources and monitoring/audit tools on transmission-based precautions, organise and provide training and education for healthcare workers on transmission-based precautions in the context of broader IPC training, undertake audit, monitoring and feedback activities to assess compliance with transmission-based precautions.

Knowledge (do I know about?)

Policy and guidance

- Definitions for use of transmission-based precautions.
- National guidelines regarding:
  - Isolation, including airborne, droplet or contact precautions, or a combination of the three precautions and required duration, based on the confirmed or suspected microorganism or conditions (for example, Ebola, SARS-CoV-2, MERS, multidrug-resistant *Candida species*, measles, tuberculosis, carbapenemase producing- organisms, and other multidrug resistant organisms), including personal protective equipment, patient preparation, and route of patient transit (ambulance, corridors, etc.)
  - Safe transport of patients/service users on isolation precautions-PPE requirements.
  - Criteria for placing and removing patients on transmission-based precautions (suspected, confirmed, or high-risk cases).
  - Criteria for cohorting patients'/service users with infectious diseases (same organism or disease).
  - Engineering and environmental controls supporting the application of transmission-based precautions.
- The equipment, supplies and products needed for the implementation of transmission-based precautions and their technical specifications as appropriate.

Leadership and implementation

- Working with a team to develop/implement strategies for implementation and compliance with transmission based precautions for healthcare workers.
- The roles and responsibilities of the organisation and health care workers to minimise the risk of exposure to, and transmission of infectious diseases in health care settings through implementation of transmission based precautions.

Skills and ability (am I able to?);

Policy and guidance

- Adapt policies and standard operating procedures for transmission-based precautions.
- Use nationally developed signage if available or link with national AMRIC team if transmission based precaution signage is to be further developed or reviewed.

Leadership and implementation

- Identify gaps and the need for additional precautions according to the modes of transmission of the confirmed or suspected microorganism.
- Implement the correct transmission-based precautions consistently throughout the facility by working together with nursing and medical teams, other multi-disciplinary healthcare workers and senior management (including the initiation and discontinuation of transmission-based precautions, patient transport, items/ equipment cleaning, waste management, visitor management, etc.).
- Assess the risk of transmission related to the clinical presentation, patient placement, required clinical procedures, etc.

Education and training
• Educate healthcare worker on the principles of transmission-based precautions, including types of precautions, transmission routes, implementation, duration and discontinuation of transmission-based precautions, correct and rational use of personal protective equipment and processes related to donning (putting on) and doffing (taking off) PPE, and specific waste disposal and management systems. • Utilise and promote national AMRIC web based elearning resources on transmission-based precautions, video and poster resources. • Inform and/or educate patients, families and visitors on IPC measures to prevent and control the transmission of infection in health care settings, including the specific features of transmission-based precautions. • Lead by example by accompanying other healthcare workers when they are caring for people with infections that required transmission-based precautions.
Communications and advocacy
• Work with a team to develop appropriate communication messages and tools (for example reminders) about implementation of transmission based precautions. • Use nationally developed AMRIC communication resources such as posters, videos and information leaflets about application of transmission based precautions. • Act as a role model and champion in implementing transmission-based precautions to ensure quality of care and patient and health care worker safety.
Quality
• Work with a team to develop and implement monitoring and evaluation strategies for assessing compliance with transmission-based precautions.

IPC in clinical practice

Domain: Decontamination of reusable invasive medical devices (RIMD)

Competency review:

- Collaborate with decontamination leads/sterile services department (SSD) /local decontamination committees and contribute (from IPC perspective) to strategies, guidelines/standard operating procedures and training resources on appropriate cleaning, disinfection and sterilisation processes and quality control for reusable invasive medical devices.
- Contribute to the healthcare organisations decontamination programme to meet national quality standards.

Knowledge (do I know about?)

Policy and guidance

- National recommendations for cleaning, disinfection and sterilisation processes for reusable invasive medical devices, national quality standards and monitoring guidance.
- Concepts of cleaning, disinfection and sterilisation.
- IPC risk related to specific high-risk pathogens (for example, Creutzfeldt-Jakob disease) and the appropriate handling and reprocessing or disposal of medical devices/equipment used on patients/service users identified with these pathogens.

- Standard methods for achieving effective sterilisation:
  - Quality assurance: documentation and monitoring for cleaning, disinfection (including high-level disinfection) and sterilisation processes.
  - Advantages and disadvantages of chemical agents used as chemical/high-level disinfectants, including level of action of chemical disinfectants (low, intermediate and high).

- Components of sterilisation validation:
  - Risk management in decontamination and sterilisation: processes to identify, manage and mitigate breaches in processes.

- Essential requirements for the SSD design:
  - Staffing, education and training, workflow and work environment.
  - How to monitor and evaluate practice, and monitor patient outcomes in order to identify failures in process and practice.
  - Structure of an SSD (for example design layout, utilities, surfaces).
  - Required air changes, negative pressure for decontamination, storage room and racks, temperature and humidity ranges for each working area.

- Preparation and holding of used medical devices at the point of use.
- Storage, handling and transportation of contaminated, clean and/or sterile supplies and medical devices to and from SSD (internal and external transport) including factors that affect the shelf life of sterile items.

Skills and ability (am I able to?)

Policy and guidance

- Collaborate with decontamination leads/ SSD and advice on IPC measures related to cleaning, disinfection and sterilisation processes for medical devices and equipment.
- Advise on IPC actions that are required to improve quality and safety when reprocessing medical devices/ equipment.

Leadership and implementation

- Provide IPC support, advice and guidance as a member of local decontamination committees.

Education and training
• Assist decontamination leads or designated other with developing or adapting training resources, strategies and plans on cleaning, disinfection and sterilisation processes and quality control for medical devices and equipment. • Provide IPC training (in all areas where reprocessing is carried out and for all staff involved).
Quality
• Collaborate with procurement framework and decontamination key stakeholders as required to assess medical equipment and devices under product evaluation (for purchase) for their ability to be safely reprocessed. • Collaborate with decontamination lead to initiate action/investigation if breaches in processes have been identified including equipment tracking, call back of sets, any harmed patient recalls. • Work with a team to interpret relevant surveillance data and consider the implications of decontamination activities as part of an improvement strategy for the reduction in spread of both HCAI and AMR.

IPC in clinical practice

Domain: Prevention of healthcare associated infections

Competency review:

- Understand the epidemiology, risk factors and burden of HCAI. Implement national strategies for the prevention and control of HCAI and guidelines/SOPs for their prevention.
- Adapt or improve a surveillance/ monitoring system to detect HCAIs, monitor compliance with preventive measures; review, interpret and use local data to inform preventive measures and provide regular and timely feedback on infection rates and compliance with best practices to all relevant audiences and stakeholders.
- Conduct or support training activities and develop and/or use effective communications to advocate for the prevention of harm due to healthcare associated infections.

Knowledge required (do I know about?)

Policy and guidance

- Definitions and classification of HCAI for surgical site infections (SSI), HCAI bloodstream infections (BSI) from invasive medical devices for example peripheral venous catheter (PVC), central venous catheter (CVC) and peripheral inserted central catheter (PICC), catheter related urinary tract infection (CAUTI), ventilator associated pneumonia (VAP), Healthcare associated *Clostridioides difficile* infection.
- Epidemiology, risk factors, burden, clinical presentation and complications of HCAIs.
- Causative microorganisms of HCAIs.
- Commonly used types of invasive devices such as PVCs and CVCs, and their potential associated risks.
- Multimodal strategies* (including care bundles ** and checklists) for the prevention of the HCAIs.

Quality

- Monitoring and evaluation methods for the surveillance of HCAI, methods for assessing compliance with measures to prevent them (for example insertion and maintenance bundles), including other indicators.
- HSE KPI for HCAI and how they are monitored.

Communications and advocacy

- Approaches to appropriate and effective communication about the prevalence of HCAIs and related preventive strategies, including targeting different audiences across all levels (national, local, unit specific).

Skills and ability

Policy and guidance

- Adapt national guidelines and/or local policies and SOPs related to the prevention of HCAIs.

Leadership and implementation

- Identify the existing gaps in practices and apply multimodal strategies* (including care bundles ** and checklists) for the prevention of HCAIs.

Education and training

- Work with a team to develop or contribute to developing training resources, strategies and plans on the prevention of HCAIs, with a focus on recommended best practices.
- Conduct or support training roll-out adapted to different audiences, including continuous education and the use of bedside training simulations and other practical approaches.

Communications and advocacy

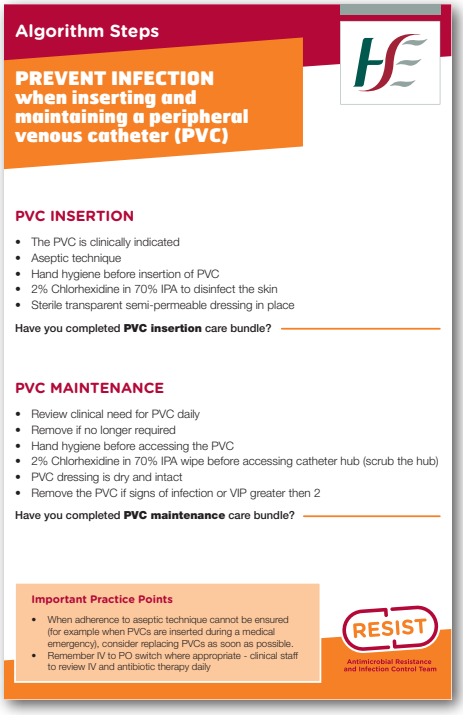
- Use nationally developed AMRIC communication resources such as posters, videos and information leaflets about prevention of healthcare associated infections.
- Engage with key stakeholders and identify and work with champions to advocate for the prevention of harm due to HCAIs.

Quality

- Work with a team to evaluate the local risk factors, epidemiology and burden of specific HCAIs, including at unit level.
- Work with a team to collect, critically review, interpret and use local data on specific HCAIs to inform preventive measures and to develop audit protocols for the regular monitoring of compliance with best practices.
- Work with a team to report on data required for the HSE national monitoring system.
- Identify barriers to compliance with recommended procedures and develop action plan to address non compliances.
- Provide regular and timely feedback on infection rates and compliance with best practices to all relevant audiences and stakeholders, including user-friendly methods (for example, displaying data on the unit board or providing results on smartphones).
- Conduct systems analysis, root cause analysis (RCA), incident review for HCAIs as required, identify areas of key learning and develop and implement key learning into prevention strategies.

*Multimodal implementation strategy: A strategy consisting of several elements or components (three or more; usually five) implemented in an integrated way with the aim of improving an outcome and changing behaviour. It includes tools, such as bundles and checklists, developed by multidisciplinary teams that take into account local conditions. The five most common components include: (i) system change (that is, availability of the appropriate infrastructure and supplies to enable IPC best practices); (ii) education and training of health care workers and key players (for example, managers); (iii) monitoring infrastructures, practices, processes, outcomes and providing data feedback; (iv) reminders in the workplace/communications; and (v) culture change with the establishment or strengthening of a safety climate. (WHO 2020).

**Bundle: An implementation tool aiming to improve the care process and patient outcomes in a structured manner. It comprises a small, straightforward set of evidence based practices (generally three to five) that have been proven to improve patient outcomes when performed collectively and reliably. (WHO 2020).


Algorithm Steps

PREVENT INFECTION when inserting and maintaining a peripheral venous catheter (PVC)

PVC INSERTION

- The PVC is clinically indicated
- Aseptic technique
- Hand hygiene before insertion of PVC
- 2% Chlorhexidine in 70% IPA to disinfect the skin
- Sterile transparent semi-permeable dressing in place

Have you completed **PVC insertion** care bundle?

PVC MAINTENANCE

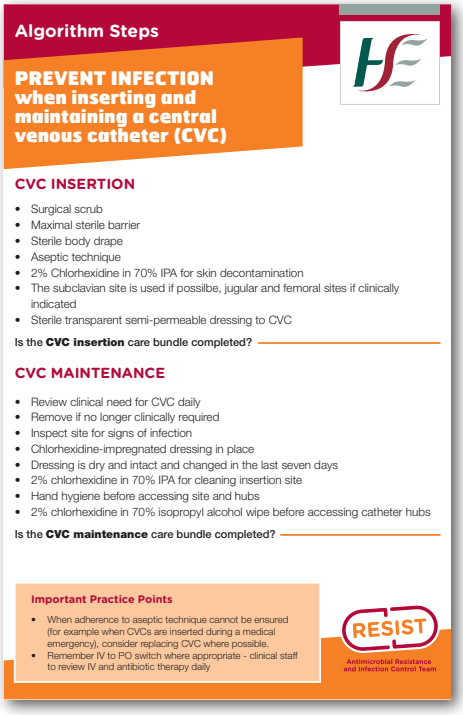
- Review clinical need for PVC daily
- Remove if no longer required
- Hand hygiene before accessing the PVC
- 2% Chlorhexidine in 70% IPA wipe before accessing catheter hub (scrub the hub)
- PVC dressing is dry and intact
- Remove the PVC if signs of infection or VIP greater then 2

Have you completed **PVC maintenance** care bundle?

Important Practice Points

- When adherence to aseptic technique cannot be ensured (for example when PVCs are inserted during a medical emergency), consider replacing PVCs as soon as possible.
- Remember IV to PO switch where appropriate - clinical staff to review IV and antibiotic therapy daily

RESIST Antimicrobial Resistance and Infection Control Team


Algorithm Steps

PREVENT INFECTION when inserting and maintaining a central venous catheter (CVC)

CVC INSERTION

- Surgical scrub
- Maximal sterile barrier
- Sterile body drape
- Aseptic technique
- 2% Chlorhexidine in 70% IPA for skin decontamination
- The subclavian site is used if possilbe, jugular and femoral sites if clinically indicated
- Sterile transparent semi-permeable dressing to CVC

Is the **CVC insertion** care bundle completed?

CVC MAINTENANCE

- Review clinical need for CVC daily
- Remove if no longer clinically required
- Inspect site for signs of infection
- Chlorhexidine-impregnated dressing in place
- Dressing is dry and intact and changed in the last seven days
- 2% chlorhexidine in 70% IPA for cleaning insertion site
- Hand hygiene before accessing site and hubs
- 2% chlorhexidine in 70% isopropyl alcohol wipe before accessing catheter hubs

Is the **CVC maintenance** care bundle completed?

Important Practice Points

- When adherence to aseptic technique cannot be ensured (for example when CVCs are inserted during a medical emergency), consider replacing CVC where possible.
- Remember IV to PO switch where appropriate - clinical staff to review IV and antibiotic therapy daily

RESIST Antimicrobial Resistance and Infection Control Team

IPC in clinical practice

Domain: Incident and outbreak management

Competency review:
- Prevent, detect, manage and control IPC related incidents and healthcare associated outbreaks.
- Conduct or support IPC training activities and develop and/or use effective communications during outbreaks in health care facilities.

Knowledge (do I know about?)
Policy and guidance
• Definitions and basic principles: levels of disease occurrence, definition of incidents, outbreak, cluster; types of outbreaks, including healthcare associated outbreaks and their possible sources. • National guidance related to incident and outbreak management. • Concepts of preparedness and readiness to respond to outbreaks and the role of IPC programmes in reducing the risk of health care-associated outbreaks, including those due to antimicrobial resistance. • The role of Public Health Departments, Medical officer of health (MOH) and HIQA in relation to outbreaks in specific settings.
Leadership and implementation
• Key steps for incident and outbreak investigation and management in healthcare settings, including production of line lists and charts to correlate events. • Processes for inpatient follow up and occupational health, HCW follow up. • Effective IPC measures to control transmission during a health care-associated outbreak. • The approach to a multidisciplinary collaboration between the IPC team and other stakeholders for preparedness and response to outbreaks. • Approaches to identify lessons learned from outbreak investigations to inform long-term IPC and quality improvement measures.
Communications and advocacy
• Collaborate and work with local communications manager on effective communications during outbreaks, targetting different audiences including media. • Work closely with the local communications manager on outbreaks. • Key messages to advocate for IPC as a pillar of outbreak preparedness, response and control.

Skills and ability (am I able to?)
Policy and guidance
• Adapt national/ local guidance related to the prevention, preparedness, response and control of healthcare associated outbreaks, including those due to antimicrobial resistance.
Leadership and implementation

• Collaborate with key stakeholders (for example, major emergency management, Public Health Departments to ensure that the healthcare facility has the minimum requirements in place so as to be prepared to effectively recognise and respond to an infectious disease threat (for example, pandemics, emerging infections), including planning and preparation, implementation, evaluation, communication and keeping up-to-date with new recommendations and directives.
• Work with a team to investigate outbreaks using appropriate methods and interpretation of outbreak findings, in particular by working with teams to:
  • Establishing the case definition.
  • Identifying the parameters of the investigation and the case-finding methodology.
  • Making hypotheses and identifying the source and mode of transmission.
  • Preparing and maintaining a line list and epidemic curve.
  • Work with outbreak control team to manage healthcare associated outbreaks by identifying, implementing, evaluating and updating outbreak management strategies with a focus on IPC measures.
  • Work closely with relevant departments (for example, microbiology laboratory, occupational health, health and safety, laboratory, patient care units) to identify outbreaks affecting patients/service users/ staff and ensure timely follow up for patients/service users and HCWs and for an effective exchange of information.

Education and training
• Contribute to developing training resources, strategies and plans related to IPC measures and minimum requirements to prevent, detect, manage and control outbreaks in healthcare facilities. • Conduct or support training roll-out adapted to different HCW audiences, including practical approaches, case studies and ensuring continuous education.
Communication and advocacy
• Communicate in a timely and effective manner with internal and external stakeholders (for example, laboratory, local public health units, operations, healthcare workers, medical leaders, occupational health, communications and media) regarding the existence and characteristics of the outbreak as well as actions for contact tracing and IPC measures.
Quality
• Contribute to analysing the outbreak data in order to understand the modes of transmission and the possible source and to assess the impact of the control measures implemented, including future measures for improvement and prevention. • Work with a team to organise and lead outbreak data and debrief sessions with different stakeholders and the broader scientific community to summarise the main findings of the outbreak, measures implemented, and lessons learned (for example, ward rounds, grand rounds, internal reports, conference abstracts, publications in scientific journals).

Education

Domain: IPC training and education

Competency review:

- Work with a team to develop IPC education and training resources based on the priority topics identified in the national guidance on IPC training requirements for all HCWs and local health care facility requirements.
- Work with a team to develop strategies and plans for IPC pre and postgraduate and local in-service training including strategies and tools for evaluation of the effectiveness of training programmes.
- Implement training for the different levels of trainees or HCWs, as well as for patients, service users, and their families and visitors, using adult learning principles and different educational methods.

Knowledge (do I know about?)

General principles

- Principles and methods of adult education and learning including team and task-based strategies that are participatory, including bedside and simulation training.
- Education programmes/lesson planning, analysis of learning needs, teaching strategies, evaluation of learning.
- Roles and processes related to coaching, mentoring, shadowing, consulting and preceptorship.
- The role of education in translating evidence into practice and promoting behavioural change.
- Means of identifying training needs and evaluating knowledge transfer.
- The role of training and education in multimodal IPC strategies.
- Priority IPC domains/topics to be included in training and education programmes according to the target audience and context.
- Best informatics resources/tools available to support effective delivery of IPC training.
- Use web based platforms/eLearning to support delivery of training.
- Methods to evaluate the effectiveness and impact of training programmes.

Skills and ability (am I able to?)

- Adapt IPC training programmes including pre and postgraduate and in-service training, depending on local needs, with curricula for all relevant target audiences, including at least (but not limited to) all HCWs involved in service delivery and patient care, other personnel that supports health service delivery (for example administration staff, cleaners).
- Work with a team to design a comprehensive strategy to provide appropriate IPC education to patients, family members, visitors and others included in the caregiving network.

Leadership and implementation

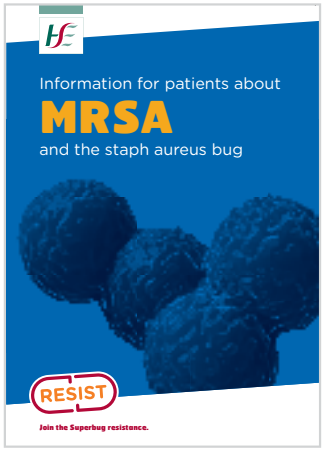
- Identify different learner needs, develop objectives that align with intended learning outcomes to meet identified needs and organisational objectives.
- Effectively implement planned training activities in a flexible and creative approach to meet learner needs and planned objectives in a variety of learning contexts (for example, group or individual, classroom or unit, online) using different methods (for example, participatory team and task based approaches and bedside and simulation training).
- Support continuous education, including for HCW orientation/new members of staff.
- Deliver rapid training refresher courses in the case of change of policies and/or in special situations, such as during the response to outbreaks and emergencies.
- Collaborate with other departments and stakeholders to coordinate and provide IPC training and promotional messages.
- Use facilitation and mentorship skills to promote learning, problem-solving and behavioural change.
- Use web based platforms such as eLearning to support delivery of training.

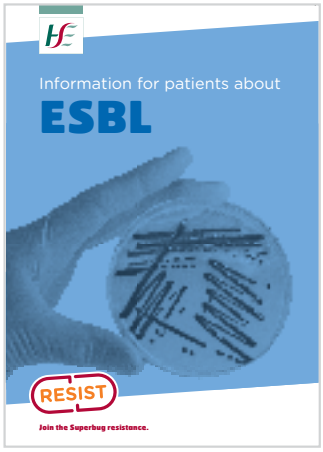
Communication and advocacy

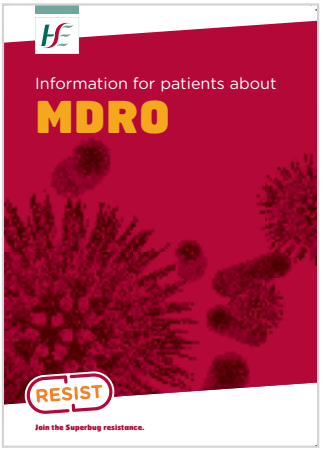
- Develop workplace reminders associated with IPC training and communications and key messages to advocate for support for educational activities.

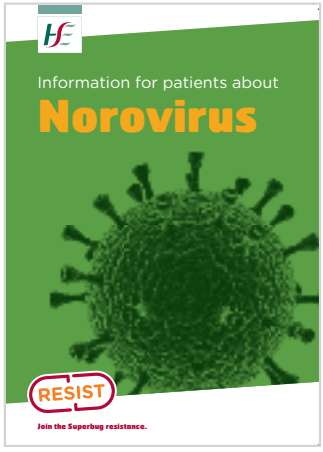
Quality

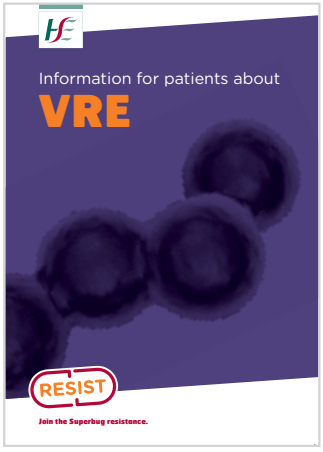
- Implement minimum requirements for IPC training and education for HCWs.
- Evaluate the effectiveness of teaching process and learning outcomes and use results for planning new or revised education modules to improve knowledge, skills and competence of the workforce.
- Effectively report on education provided, including relevant outcomes and recommendations for follow up; describe the steps for updating training resources and providing continuing education and training over the short, medium and long term.
- Self reflect and use methods to be assessed on strengths and limitations as an educator, and develop strategies for strengthening own knowledge, skills and practices.

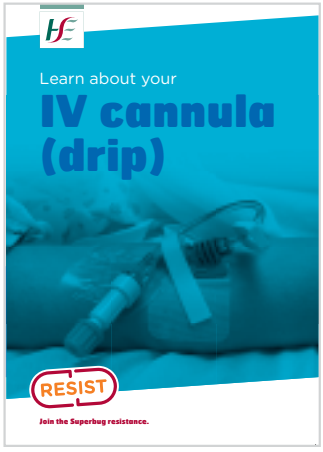


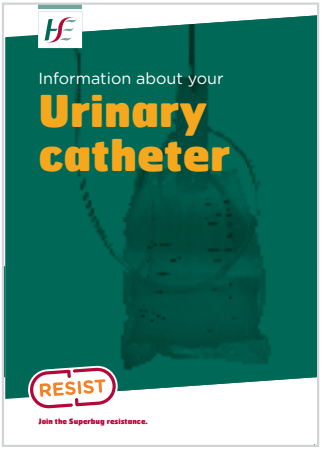


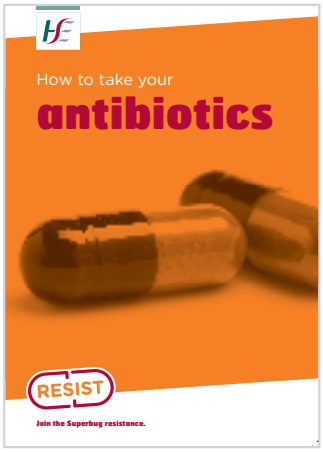


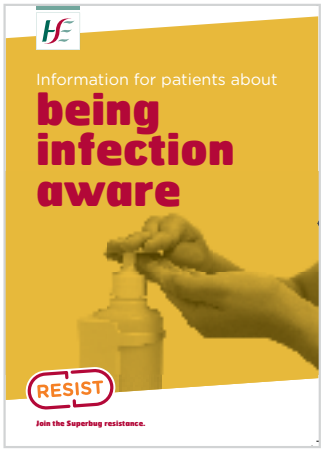












Quality and Patient Safety

Domain: Quality and patient safety

Competence review:

- Contribute to development, implementation and evaluation of IPC related quality improvement initiatives, patient safety programmes, national healthcare quality standards (monitoring, inspection, reporting) within healthcare organisations.
- Use multimodal strategies in the context of quality improvement and patient safety programmes to create structured change and translate IPC standards into practice.
- Contribute to linkages between IPC and national strategic direction on quality.

Knowledge (do I know about)

General principles

- HIQA standards relating to prevention and control of HCAIs for acute and community services, monitoring, inspection and reporting requirements.
- Definitions and understanding of quality and patient safety as defined by HSE Quality and Patient Safety Division, and the link between quality improvement with the role of IPC practitioners.
- Epidemiology, risk factors, burdens and causes of adverse events, near-misses, accidents, and dangerous incidents in healthcare as reported in healthcare organisations incident management system.
- Concepts of health systems' organisation and complexity of care delivery, organisational and safety culture, behavioural change, human factors, quality improvement and patient safety, and how these relate to each other and to IPC.
- Key concepts and processes for identifying, investigating and managing IPC related adverse events and IPC safety risks to patients and staff-incident and risk management systems.
- Key concepts related to national strategic direction on quality and the role of IPC within this context.

Leadership and Implementation

- Quality assurance and improvement programmes, including commonly used methods (for example, Plan, Do, Study, Act (PDSA), RCA and incident review tools) to promote the collection of IPC indicators and use of data to drive improvement.
- National and local organisational quality and patient safety standards and initiatives, including interventions to shape the system environment, reduce harm, improve clinical care, and engage patients, families and communities.
- Most effective quality improvement approaches to support the implementation of IPC practices contributing to improving quality of care.
- Developing and implementing communication strategies and improvement initiatives to promote front line ownership amongst healthcare staff.
- Adapt and implement national approaches locally to embed key IPC/AMR initiatives and also in collaboration with timelines associated with key national/international IPC/AMR/AMS awareness initiatives including RESIST Programme, WHO International Hand Hygiene Day and international Infection Prevention and Control week.
- Concepts and systems related to the engagement of patients, families and communities in healthcare.

Quality

- Approaches to adverse events documentation and reporting, data analysis and interpretation, feedback and learning, including integration with HCAI surveillance and IPC indicator monitoring systems.
- The HSE National Incident Management System (NIMS).
- HSE policies relating to quality and patient safety, for example open disclosure.
- Methods and systems for internal or external evaluation of the implementation of quality and patient safety standards, including accreditation of healthcare facilities.

Skills and ability (am I able to)
General Principles
• Demonstrate an understanding of HIQA national standards for the prevention and control of healthcare associated infections for acute and community services, monitoring, inspection and reporting requirements. • Demonstrate an understanding of the key principles of quality and patient safety and of the epidemiology, risk factors' burden and causes of adverse events, near-misses, accidents and dangerous incidents in health care. • Adapt resources and tools in line with national Quality and Patient Safety methodology and support to improve the institutional safety climate and quality of care in the context of IPC multimodal strategies.
Leadership and implementation
• Implement national standards for prevention and control of HCAIs your area. • Contribute to design quality improvement plans/projects according to gaps identified in IPC. • Implement interventions to improve the institutional safety climate and quality of care in the context of IPC multimodal strategies. • Provide expertise to other departments on quality improvement issues related to IPC (for example, hand hygiene and standard and transmission-based precautions. • Engage and liaise with facility leadership to shape service planning that prioritises IPC and quality (noting that these require system change and not just individual actions). • Collaborate with healthcare stakeholders, patients, service users' families and advocacy groups to identify, prevent or mitigate potential patient safety risks related to IPC. • Include standard and transmission-based precautions and antimicrobial resistance and patient safety as integral parts of IPC quality improvement. • Contribute to the integration of IPC activities within the healthcare organizations' quality and patient safety programmes.
Education and training
• Contribute to develop resources for and deliver training on quality of care and patient safety. • Demonstrate and share learning from practical efforts on quality improvement related to IPC to enhance sustained practice-based learning.
Communications and advocacy
• Effectively communicate, manage and escalate appropriately any risks that are identified. • Engage with patients, families and communities to understand their needs and ensure their active participation in IPC programmes to gain compliance with hand hygiene, standard and transmission-based precautions and other measures needed. • Advocate and enable integration of risk management concepts such as rapid reporting of adverse events or errors, and methods systems analysis, RCA, incident review in IPC activities within the healthcare organisation.
Quality
• Advise on IPC indicators, national KPIs to be included in quality and patient safety assessment tools and systems. • Contribute to conducting an assessment of services using quality and patient safety standards to identify and learn from gaps to enhance performance. • Conduct systems analysis, RCA, incident review for HCAIs as required, identify areas of key learning, and develop and implement key learning into prevention strategies • Contribute to provide clinical audit and feedback in the context of quality improvement projects, including the dissemination and spread of successful interventions. • Understand how to select and interpret quality indicators and use them to drive improvements in IPC and quality of care. • Actively participate in external evaluations, including accreditation/certification and develop action plans to meet standards and required organisational practices for IPC.

IPC related to Occupational Health

Domain: IPC related to Occupational Health

Competency review:

- Understand the infectious risks related to employment in healthcare and support the implementation of appropriate IPC preventive measures (standard and transmission-based precautions), monitor and investigate infectious diseases, assist in the provision of a safe working environment for staff to provide a safe environment and healthy work force.

Knowledge (do I know about?)

Policy and guidance

- Transmission, preventive measures and management of HCW exposure to the following infectioons/ infectious agents in the healthcare setting in the context of standard and transmission-based precautions:
  - Bloodborne pathogens such as human immunodeficiency virus, hepatitis B, hepatitis C, viral haemorrhagic fevers (Ebola, Lassa fever).
  - Influenza virus (including avian and swine) and influezae like illness.
  - SARS-CoV-2 and coronaviruses (severe acute respiratory syndrome (SARS) coronavirus 1, Middle East respiratory syndrome coronavirus (MERS-CoV).
  - Multidrug-resistant organisms (for example, methicillin-resistant *Staphylococcus aureus*).
  - Tuberculosis, meningitis, norovirus, rotavirus.
  - Vaccine preventable diseases such as: measles, rubella, mumps, tetanus, chickenpox.

- Occupational health measures that ensure staff protection such as:
  - Transmission-based precautions-PPE, respiratory protection.
  - Injection safety, best practices and sharps injury prevention.
  - Vaccination-COVID-19, influenza, hepatitis, other vaccine-preventable diseases, and the prevention of spread to patients'/service users in the healthcare setting.
  - Work restriction for HCWs exposed to or infected with an infectious disease of importance in healthcare settings.
  - Roles and responsibilities with respect to occupational health and health and safety within the healthcare organisation including occupational, HCW follow up and work restriction recommendations related to communicable diseases and/or exposures.

Skills and ability (am I able to?):

Policy and guidance

- Contribute to develop locally /adapt national guidance related to IPC practices (standard and transmission-based precautions) and other occupational health measures that protect HCWs from acquiring infection and prevent HCWs from transmitting an infection.

Leadership and implementation

- Collaborate as part of incident/outbreak management team with occupational health professionals, for IPC recommendations and follow-up of patients and occupational health, HCW follow up and work restriction recommendations related to communicable diseases and/or exposures.
- Support the implementation of HCW protection measures in the context of standard and transmission-based precautions.
- Provide the IPC related steps for occupational exposure management, for example sharps injury and blood or body fluid exposure incidents.

Communications and advocacy

- Support and advocate for all HCWs to take part in occupational vaccination programmes (for example seasonal flu vaccine).

Training and education

- Contribute to develop training resources, strategies and plans for training and education of HCWs regarding IPC measures and practices that protect HCWs (for example, post- exposure prophylaxis) and nosocomial transmission to patients (for example, vaccination programmes).

Quality

- Contribute to the development/improvement of a system for assessing and managing the risk of occupational exposure to infectious diseases; engineering controls for example, ventilation and environmental cleaning.
- Collaborate with occupational health professionals to evaluate local data on infections in HCWs and provide IPC recommendations on tailored surveillance, feedback and prevention strategies.
- Collaborate with occupational health professionals and health and safety staff to investigate and recommend IPC measures where a HCW has been exposed or potentially exposed to an infectious agent (for example, from another HCW or a patient) or is ill with a communicable disease or infection, including steps for prevention of a repeat occurrence.

IPC competency self- assessment tool

Name	Date of assessment

Area	Domain	Self-assessment of competence (Knowledge, skills and ability)	
		Working towards	Competent
Leadership and IPC programme management	IPC programme management and leadership		
	The built environment in healthcare settings		
Microbiology and surveillance	Basic microbiology		
	Antimicrobial resistance prevention		
	Healthcare associated infection surveillance		

Area	Domain	Self-assessment of competence (Knowledge, skills and ability)	
		Working towards	Competent
Infection prevention and control in clinical practice	Standard precautions		
	Transmission-based precautions		
	Decontamination of reusable invasive medical devices		
	Prevention of healthcare associated infections		
	Incident and outbreak management		

Area	Domain	Self-assessment of competence (Knowledge, skills and ability)	
		Working towards	Competent
Education	IPC training and education		
Quality and patient safety	Quality and patient safety		
IPC related to occupational health	IPC practices related to occupational health		

Additional comments/actions

IPC competency development plan of action tool

Name	Date of assessment

Area	Domain	Actions	Supports required	Date to be achieved
Leadership and IPC programme management	IPC programme management and leadership			
	The built environment in healthcare settings			
Microbiology and surveillance	Basic Microbiology			
	Antimicrobial resistance prevention			
	Healthcare associated infection surveillance			

Area	Domain	Actions	Supports required	Date to be achieved
IPC in clinical practice	Standard precautions			
	Transmission based-precautions			
	Decontamination of reusable invasive medical devices			
	Prevention of healthcare associated infections			
	Incident and outbreak management			

(Adapted from HSE Professional Development Plan for Nurses and Midwives (2018))

Area	Domain	Actions	Supports required	Date to be achieved
Education	IPC training and education			
Quality and patient safety	Quality and patient safety			
IPC related to occupational health	IPC related to occupational health			

Additional comments/actions

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Appendices

Appendix 1
Membership of AMRIC Governance Groups

AMRIC Oversight Group

The membership is set out below:

- Dr. Colm Henry, Chief Clinical Officer (chair)
- Prof. Martin Cormican, Clinical Lead, AMRIC
- Dr. Lorraine Doherty, National Director, Health Protection
- Dr. Kevin Kelleher, Assistant National Director, Public Health
- Liam Woods, National Director, Acute Operations
- Yvonne O'Neill, National Director, Community Operations
- Dr. Siobhan Ni Bhriain, Lead Integrated Care, Office of Chief Clinical Officer
- Shirley Keane, Programme Manager, AMRIC
- Josephine Galway, Director of Nursing, AMRIC

AMRIC Implementation Team

The membership is set out below:

- Prof. Martin Cormican, Clinical Lead AMRIC (chair)
- Dr. Eimear Brannigan, Deputy Clinical Lead AMRIC
- Shirley Keane, Programme Manager, AMRIC
- Dr. Anne Sheahan, Public Health Specialist, AMRIC
- Marie Philbin, Chief Antimicrobial Pharmacist, AMRIC
- Surveillance Scientist (vacant), AMRIC
- Audrey Lambourn, Communications Lead, AMRIC
- Josephine Galway, Director of Nursing, AMRIC
- Donna McNena, Administrative Support, AMRIC
- Dr. Nuala O'Connor, GP Lead AMRIC (nomination from Irish College of General Practitioners)
- Margaret Brennan, Assistant National Director, Quality and Patient Safety, Acute Operations
- Therese Dalchan, General Manager, Antimicrobial Resistance and Infection Control Acute Operations
- JP Nolan, Head of Quality and Patient Safety, Community Operations
- Aileen O'Brien, General Manager, Antimicrobial Resistance and Infection Control Community Operations

AMRIC Team (Core Team)

The membership is set out below:

- Prof. Martin Cormican, Clinical Lead AMRIC (chair)
- Dr. Eimear Brannigan, Deputy Clinical Lead AMRIC
- Shirley Keane, Programme Manager, AMRIC
- Dr. Anne Sheahan, Public Health Specialist, AMRIC
- Marie Philbin, Chief Antimicrobial Pharmacist, AMRIC
- Ellen Martin, Antimicrobial Pharmacist, AMRIC
- Surveillance Scientist (vacant), AMRIC
- Audrey Lambourn, Communications Lead, AMRIC
- Josephine Galway, Director of Nursing, AMRIC
- Eimear O'Donovan, Assistant Director of Nursing, AMRIC
- Donna McNena, Administrative Support, AMRIC
- Dr. Nuala O'Connor, GP Lead AMRIC (nomination from Irish College of General Practitioners)
- Dr. Edel Doorley, GP Lead AMRIC
- Dr. Paul Ryan, GP Lead AMRIC
- Deirdre Mullins, Project Manager, AMRIC
- Margaret Culliton, Project Manager, AMRIC

Appendix 2 Stakeholder consultation list

- Acute Operations
- Antimicrobial Resistance Infection Control Core Team
- Antimicrobial Resistance Infection Control Implementation Team
- Antimicrobial Resistance Infection Control Oversight Group
- Community Operations
- Health and Social Care Professions
- Health Protection Surveillance Centre
- Health Service Executive National HR
- Infection Prevention and Control Lead Nurses
- Infection Prevention Control Ireland
- Infection Prevention Society
- Infectious Diseases Society of Ireland
- Irish Society Clinical Microbiologists
- National Patient Safety Office Department of Health
- Office of the Nursing and Midwifery Services Director

Appendix 3 Abbreviations used

AMR - Antimicrobial Resistance
AMRIC - Antimicrobial Resistance and Infection Control
AMS - Antimicrobial Stewardship
BSI - Blood Stream Infection
CVC - Central Venous Catheter
ECDC - European Centre for Disease Prevention and Control
HCAI - Healthcare Associated Infections
HCW - Healthcare Worker
HEI - Higher Education Institutions
HIQA - Health Information and Quality Authority
HPSC - Health Protection Surveillance Centre
HR - Human Recources
HSCP - Health and Social Care Professionals
HSE - Health Service Executive
iNAP - Ireland's National Action Plan
IPC - IPC
IPCP - IPC Practitioner
MOH - Medical Officer of Health
NMBI - Nursing and Midwifery Board of Ireland
PDP - Professional Development Plan
PICC - Peripherally Inserted Central Catheter
PPE - Personal Protective Equipment
PVC - Peripheral Venous Catheter
OCT - Outbreak Control Team
ONMSD - Office of the Nursing and Midwifery Services Director
RCA - Root Cause Analysis
SABSI - *Staphylococcus aureus* bloodstream infection
SOP - Standard Operating Procedure
SSD - Sterile Services Department
SSI - Surgical Site Infection
VAP - Ventilator Associated Pneumonia
WHO - World Health Organisation

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