Core Infection Prevention and Control Knowledge and Skills

A Framework Document

May 2015

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Foreword
(Dr. Eoghan O'Neill)

On behalf of the Health Service Executive (HSE), Healthcare-associated Infection (HCAI) and Antimicrobial Resistance (AMR) committees, I would like to express sincere thanks to all members of our subcommittee, chaired by Mr Kevin James, in developing this document which clearly outlines core infection prevention and control (IPC) knowledge and skills that are required by health and social care staff in Ireland.

Prevention of HCAI and AMR is clearly multi-factorial; however a basic and fundamental aspect of IPC is education and training of healthcare staff. Such education and training in IPC raises awareness of HCAI and enables healthcare staff to make informed and evidence based decisions on how to protect their patients, colleagues and themselves. In Ireland, education in IPC varies considerably across the healthcare sector depending on resources, infrastructure, etc. and can take the form of didactic lectures and tutorials, practical teaching and e-learning programs given to a wide variety of staff groups with varying levels of experience and knowledge. This document, for the first time in Ireland, defines and standardises the essential IPC education and skills required by a variety of healthcare staff who have direct patient contact or who have a risk of exposure of blood or body fluids, and provides a consensus on what IPC knowledge and skills healthcare staff should have to provide safe care to their patients. This provides a valuable framework for individual healthcare staff and service managers to identify what IPC training is required and will allow IPC educators evaluate and update current education and training programs to meet the requirements as set out in this document.

Dr Eoghan O'Neill
Consultant Microbiologist Connolly Hospital/Royal College of Surgeons in Ireland (RCSI) and Chair HSE Dublin North East (DNE) HCAI/AMR Committee

Foreword
(Dr. Fidelma Fitzpatrick)

HCAI are not an inevitable consequence of providing patient care. There is an increasing evidence base, that many are preventable. In many cases, the interventions described involve improving basic infection prevention and control practices in a reliable and consistent fashion. While not all HCAI are due to antimicrobial resistant organisms, many are, therefore, when we apply good standards of IPC practice, we also prevent AMR cross infection.   The national clinical programme for the prevention and control of HCAI & AMR has focused on the 'get back to basics' approach, supporting the consistent and reliable implementation of three basic measures to prevent HCAI & AMR transmission, namely, hand hygiene, antimicrobial stewardship and the prevention of infections associated with medical devices such as intravascular lines and urinary catheters.

As healthcare staff, an essential element of being able to apply basic IPC practices is education and training. We should all have the knowledge and skills necessary to carry out effective IPC practices. Not only does education heighten an awareness of the problems associated with HCAI & AMR prevention and control, education also provides the basis for informed decision-making and the framework to develop and maintain competency. However, HCAI & AMR prevention also requires behaviour change in many instances and education alone is not sufficient to change behaviour. Rather education should be an essential component of a range of measures including establishing an institutional safety climate with visible support from senior management, individual active participation and a culture of HCAI prevention excellence in the institution, system changes (making it easy to do the right thing) to enable staff to readily comply with best practices and audit & feedback linked to quality improvement strategies.

One of the important aspects of IPC education is defining what core knowledge and skills are required for different groups of healthcare staff. This document categorizes staff for the first time in Ireland, by the degree of contact with patients and/or blood or body fluids and thereafter sets out the core recommended knowledge and skills required to enable staff to adopt best IPC practices in their area of work. I would like to thank Mr. Kevin James for his leadership and chairmanship of the HSE- Dublin North East subcommittee and acknowledge the dedication and commitment of Ms. Joan Balfe, Ms. Marian Brennan, Ms. Sheila Donlon, Ms. Margaret Nadin, Ms. Teresa O'Callaghan, Ms. Ann O'Connor, Ms. Gwen Regan, and Ms. Aisling Tinsley. I would also like to thank Ms Cornelia Stuart in her sponsoring of the group and supporting the group throughout the process. This document will assist healthcare managers to identify what training is required for their staff and healthcare educators to evaluate and update current undergraduate and postgraduate education and training programmes.

Dr Fidelma Fitzpatrick
Consultant Microbiologist, Beaumont Hospital and Health Protection Surveillance Centre.

Foreword
(Dr. Niamh O'Sullivan)   -5-

As the chairperson of the HCAI AMR Clinical Programme CAG (Clinical Advisory Group) I would like to express sincere thanks to all the members of the Dublin North East (HSE DNE) HCAI and AMR committee for developing this document and permitting us to put it out for consultation and subsequently adopt it as a national document. A consultation period began on 11/07/2014 and concluded on 14/08/2014. See Appendix one for a full list of organisations and committees consulted by the HCAI AMR CAG in order to adopt it as a national document.

This valuable framework has been endorsed and signed off by the CAG in November 2014 and we are pleased that it is now available for use nationally.

Dr Niamh O'Sullivan
Consultant Microbiologist Our Lady's Hospital for Sick Children, Crumlin (OLHSCH) and Chair of the Royal College of Physicians of Ireland (RCPI) CAG

Glossary of Terms and Definitions

Antimicrobial Resistance: The ability of a microorganism to withstand an antimicrobial agent.

Community: Populations, diseases or health services outside of acute hospitals

Healthcare settings: All health and social care settings including acute hospitals, long term care facilities, primary care and care delivered in a patient's home

Pathogen: A microorganism capable of causing disease

Patient: Users of health and social care services, this includes service users, clients and residents

Staff: Health and social care staff employed by the HSE and all staff with service level agreements to the HSE

Transmission: Passing infectious disease from one person to another or a plasmid from one bacterium to another.

Glossary of Abbreviations

AMR	Antimicrobial Resistance
BBF	Blood or Body Fluids
CAG	Clinical Advisory Group
DNE	Dublin North East
HCAI	Healthcare Associated Infection
HSE	Health Service Executive
IPC	Infection Prevention and Control
OLHSC	Our Lady's Hospital for Sick Children, Crumlin
RCPI	Royal College of Physicians of Ireland
RCSI	Royal College of Surgeons in Ireland

1. Introduction

A fundamental requirement of effective infection prevention and control (IPC) and antimicrobial stewardship practices is an educated workforce. (1-6) IPC education is delivered to staff by a range of methods including undergraduate, post graduate and vocational development programmes, on commencement of employment (induction) and ongoing training in health and social care facilities. Access to IPC education in healthcare facilities varies depending on resources including educational facilities, infrastructure (e.g., access to the internet) and the availability of staff to both provide and attend training. To provide an additional training option for staff, the Health Services Executive Dublin North East (HSE DNE) Healthcare-associated Infection and Antimicrobial Resistance Committee developed a hand hygiene e-learning programme in 2011. In 2013, this committee convened a sub group to develop additional IPC e-learning programmes. To ensure that resources were targeted effectively, it was agreed that this group would first define what core IPC knowledge and skills are required by health and social care staff.

2. Background

Healthcare-associated infections (HCAI) are defined as infections acquired as a result of healthcare treatment in any setting ,e.g., hospital, long term care facility, primary care. (3) Recent studies have shown that approximately 5% of hospital inpatients or residents in long-term care facilities may have an infection acquired in that institution at any given time. (7-9) These infections can result in significant morbidity and mortality and increased costs for healthcare providers. Infections acquired by staff in the course of their work (occupationally acquired) are also classified as HCAIs and can result in minor or severe illness. Effective IPC is a critical component of quality patient care and staff safety to reduce or prevent, where possible, HCAI.

There is a very diverse group providing care in a broad variety of settings and the activities undertaken by specific staff groups can vary widely between facilities and services. Depending on the risk to patients and to the staff, different knowledge and skills are required. In Ireland, there is no consensus on what IPC knowledge and skills staff should have to provide safe care to their patients[1].

The subgroup identified three key documents to determine what core IPC knowledge and skills are required by staff. (10-12) Carrico *et al* and "Skills for Health" advised different knowledge and skills depending on contact with patients and their activities, e.g., exposure to blood and body fluids. (10,12) Henderson *et al* advised a core set of IPC competencies for all staff who have direct patient care but did not address the needs of staff who have no patient contact. (11)

When determining what core IPC knowledge and skills are required for all staff, the subgroup agreed that the following should be considered:

- The diversity of staff roles in the health service.
- The risks to patients including those from invasive procedures.
- The risk to staff from direct contact with patients and/or blood or body fluids.
- The statutory obligation on employers to educate workers (e.g., health and safety regulations). (13-20)

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[1] Patient refers to resident/client or service user in this document

3. Aim and Objectives

The aim of this framework document is to:

- Define and standardise the core IPC knowledge and skills required by staff employed by or contracted to the HSE who have direct patient contact or who have a risk of exposure of blood or body fluids.

The objectives are to:

- Provide a framework for prioritising the development of IPC training and education programmes (e.g., elearning resources).

- Provide a resource which supports:

  □ Service managers to evaluate staff IPC training and education requirements.

  □ Educational providers (internal and external to the HSE) and employers to develop standardised IPC education programmes.

  □ Evaluation and benchmarking of existing IPC training and education programmes.

4. Scope

This document applies to:

- All staff working in HSE who have direct patient contact or a risk of exposure to blood or body fluids.
- Service managers.
- Providers of education and training for staff and students.
- Service level agreements with HSE funded services, affiliates and private agencies with contractual arrangements.

This document does not address:

- Specific IPC knowledge and skills required for staff working in specialist areas or roles (e.g., sterile services, operating theatres, hygiene services, haemodialysis, oncology departments and laboratories).

- Food hygiene.

- Specifically who should deliver this education and training. However, formal academic institutions are best placed to determine the suitability of educators in relation to designing, delivering and evaluating courses. With regard to programmes delivered at local level, service managers in conjunction with IPC teams (where available) should determine who is best positioned to deliver the training (e.g., infection prevention and control teams, occupational health, waste managers, senior nurses both acute, residential or community based).

Team working, dress code, personal hygiene and staff acting within the limits of their competence and authority are components of a safe and effective workforce but are not addressed within this document as they are not exclusive to IPC.

5. Core IPC knowledge and skills

The core IPC knowledge and skills required by staff depends on their contact with and the type of care they deliver to patients and /or their risk of exposure to blood or body fluids (BBF). To address the varying training needs, staff are categorised determined by the degree of contact with patients and/or BBF as follows:

- **Direct patient contact with care and perform invasive procedures:**
  - □ Staff who have face-to-face contact with patients, deliver care and undertake invasive procedures[2] (e.g., nurse/midwives, doctors, allied health professionals).

- **Direct patient contact with care but no invasive procedures performed:**
  - □ Staff who have face-to-face contact with patients, deliver care but do not undertake invasive procedures (e.g. **c**are assistants, porters, social care workers and play therapists).

- **Direct patient contact in a support role or no patient contact with a BBF exposure risk:**
  - □ Staff who have face-to-face contact with patients in a supportive role, but do not deliver care (e.g., ward clerks, receptionists, medical engineering, volunteers and chaplaincy).
  - □ Staff who have no face-to-face patient contact but are at high risk of occupational percutaneous or mucosal exposure to BBF (e.g., staff who handle waste).

The core IPC knowledge and skills required for each of the groups above are listed in Table 1.

The proposed core IPC knowledge and skills have been divided into three subject areas:
1. Basic microbiology.
2. Standard and transmission-based precautions.
3. Clinical assessment skills.

An overview of the content for each subject area and the expected learning outcomes of a training programme are listed in Appendix 2.

> Categorising staff into three groups is a challenge given the diverse range of activities undertaken by staff in healthcare and social care services. The development group acknowledges that the three categories and their associated list of IPC knowledge and skills may not be a perfect fit for all services. To use this document effectively, service mangers should assess the activities undertaken by their staff and adjust the training requirements accordingly.

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[2]An invasive procedure is defined as a procedure in which the skin or natural body opening (e.g., mouth, rectum) body is entered by a needle, tube, device or scope. Invasive procedures can include anything from the simple needle prick for a blood test, to inserting a tube, device or scope, to major surgery

Table 1: Core Infection Prevention and Control knowledge and skills

IPC Core Knowledge and Skills	Content	Staff Categories[1]		
		Direct patient care and invasive procedures	Direct patient care but no invasive procedures	Direct patient contact in a support role *or* No patient contact with a BBF exposure risk
Basic Microbiology	Chain of infection	√	√	√
	Healthcare-associated infections	√	√	√
	Antimicrobial resistance	√	√	√
	Infectious disease regulations	√	x	x
	Reservation/obtaining laboratory specimens	√	√	x
	Handling and transporting laboratory specimens	√	√	x
	Principles of clean to dirty workflow	√	√	√
Standard and transmission-based precautions	Introduction to standard and transmission-based precautions	√	√	√
	Hand hygiene including use of different agents, technique	√	√	√
	Respiratory hygiene and cough etiquette	√	√	√
	Management of blood or body fluid exposure	√	√	√
	Vaccination to prevent infections	√	√	√
Standard and transmission-based precautions	Infectious conditions that may require absence from work or work restrictions	√	√	√
	Personal protective equipment	√	√	√
	Safe use and disposal of sharps including use of safety devices to minimise their use	√	x	x
	Management of waste including safe disposal of sharps	√	√	√
	Environmental hygiene and management of spillages	√	√	√
	Patient care equipment/instruments and devices	√	√	√[2]
	Management of linen	√	√	x
	Safe injection practices and procedures for lumbar punctures	√	x	x
	Aseptic technique	√	x	x
	Patient placement	√	x	x
	Patient transfer	√	√	x
	Transmission-based precautions including PPE and instituting precautions based on signs and symptoms	√	√	√[2]
Clinical Assessment Skills	Awareness of how to access authoritative sources of IPC	√	x	x
	Identifying incidents and risks relating to IPC	√	√	√
	Communication relating to IPC	√	√	x

Table adapted with permission from Carrico *et al*. IPC competencies for hospital-based health care personnel. Am J Infect Control 2008 Dec; 36(10):691-701
√: This element is generally required for staff in this category. **x**: This element is not generally required for staff in this category

[1] Due to the diversity of roles within individual healthcare facilities/services, service managers may need to adjust the core knowledge and skills listed
[2] This element is not required for staff who have no direct patient contact

6. Conclusion

Education and training is essential to ensure that staff have the knowledge and skills to protect patients, visitors, their colleagues and themselves. This framework document defines for the first time in Ireland, the core IPC knowledge and skills required for staff taking into account the risks to patients and to staff. Defining the core knowledge and skills will assist service managers to identify what training is required and educators to evaluate and update current education and training programmes. In addition, it will also assist the process to prioritise the development of elearning resources. While elearning programmes are a useful tool for educating staff, it is the opinion of the development group that elearning alone is insufficient for those staff with no previous IPC education.

Reference List

(1)   Australian Commission on Healthcare Safety. Australian Guidelines for the Prevention and Control of Infection in Healthcare. 2010. http://www.nhmrc.gov.au/node/30290

(2)   Austrialian Infection Control Association Inc. Infection Control Standards. 2006.

(3)   Health Information and Quality Authority. National Standards for the Prevention and Control of Healthcare Associated Infection. Dublin: Heath Information and Quality Authority; 2009.

(4)   National Institute for Health and Clinical Excellence. Infection Prevention and Control of Healthcare-associated Infections in Primary and Community Care. 2012.

(5)   New Zealand Ministry of Health. Health and Disability Services (Infection Prevention and Control) Standards. 2008.

(6)   O'Grady NP, Alexander M, Dellinger EP, Gerberding JL, Heard SO, Maki DG, et al. Guidelines for the Prevention of Intravascular Catheter-related Infections. Infect Control Hosp Epidemiol 2002 Dec;23(12):759-69.

(7)   Health Protection Surveillance Centre. European Point Prevelance Survey of healthcare-associated Infections in Longterm Care Facilities. 2010.

(8)   Health Protection Surveillance Centre. Second National Prevelance Survey of Healthcare- associated Infection in Irish Long-term Care Facilities. 2011. 17-10-2011.

(9)   Health Protection Surveillance Centre. European Prevelance Survey of Hospital-acquired Infection and Antimicrobial Use May 2012: Irish National Report November 2012.

(10)   Carrico RM, Rebmann T, English JF, Mackey J, Cronin SN. Infection Prevention and Control Competencies for Hospital-based Healthcare Personnel. Am J Infect Control 2008 Dec;36(10):691-701.

(11)   Henderson E et al . Infection Prevention and Control Core Competencies for Health Care Workers: A Consensus Document. 2004.

(12)   Skills for Health. Infection Prevention and Control: Staff Working Together. 2011.

(13)   Government of Ireland. Health and Welfare at Work (Biological Agents) Regulations (S.I. No. 146 of 1994) (as amended by S.I. 248 of 1998). 1994.

(14)   Government of Ireland. Waste Management (Movement of Hazardous Waste) Regulations, S.I. No. 147 of 1998.

(15)   Government of Ireland. The Safety, Health and Welfare Act (S.I. No. 10 of 2005). 2005.

(16)   Government of Ireland. Health and Welfare at Work (General Application) Regulations (S.I. No. 299 of 2007). Chapter 3 of Part 2: Personal Protective Equipment.   2007.

(17)   Government of Ireland. The Carriage of Dangerous Good by Road Regulations, 2007 (S.I. No. 288/289 of 2007).

(18)   Government of Ireland. The Waste Management (Collection Permit) Regulations, 2007 (S.I. No. 820 of 2007).

(19)   Government of Ireland. The Carriage of Dangerous Good by Road Act 1998 (no. 43 of 1988).

(20)   The Council of the European Union. COUNCIL DIRECTIVE 2010/32/EU of 10 May 2010 implementing the Framework Agreement on prevention from sharp injuries in the hospital and healthcare sector concluded by HOSPEEM and EPSU. 2010. 2-12-2013.

Appendices

Appendix 1
Consultation list

Full list of organisations, committees consulted by the HCAI AMR CAG in order
to adopt it as a national document on 11/07/2014 and concluded on 14/08/2014.

Deans of Universities

Nursing and Midwifery Board of Ireland

Medical Council of Ireland

Royal College of Physians in Ireland

Royal College of Surgeons in Ireland

Dental Council

Health and Safety Authority

Health and Social Council of Ireland

Fetac

Health Information Quality Authority

Infectious Dissase Society of Ireland

Infection Prevention Society

Irish Society of Clinical Microbiologists

Nursing Home Ireland

Office of Nursing and Midwifery Services

Athlone Institute of Technology

Carlow College

Dublin Institute of Technology

Dundalk Institute of Technology

Galway - Mayo Institute of Technology

Institute of Technology Blanchardstown

Institute of Technology Tralee

Letterkenny Institute of Technology

Limerick Institute of Technology

Waterford Institute of Technology

Appendix 2:
Content overview and learning outcomes for each subject area

Subject area	Content	Overview of content	Learning outcomes

Basic Microbiology	Chain of Infection	In order for an infection to develop six related events must happen. This process is known as the chain of infection. All IPC activities are designed to break this chain.	An understanding of:
			● The concept of the chain on infection and how the transmission of infection can be broken by breaking any one element of the chain.
			  □ The different types of microorganisms.
			  □ The reservoir of microorganisms.
			  □ The portal of exit.
			  □ The routes of transmission.
			  □ The portal of entry.
			  □ A susceptible host including the use of vaccination to reduce risk.
			● Risk assessment and the chain of infection.
			● The difference between endogenous and exogenous infection.

	Healthcare-associated Infection	Preventing (where possible) HCAI is a key patient safety goal.	An understanding of: ● The definition of HCAI. ● The difference between colonisation and infection. ● The different types of HCAI. ● The impact of HCAI on patients and health services. ● Factors that increase the risk of a HCAI. ● The role of vaccination in preventing HCAI. ● The role of staff in preventing (where possible) and minimising HCAI. ● National standards relating to HCAI.
Basic Microbiology	Antimicrobial Resistance	Antimicrobial resistance is a growing threat to population health and patient safety.	An understanding of: ● The benefits of effective antimicrobials for population health and healthcare. ● The consequences of antimicrobial resistance for population health and patient safety. ● The modes of antimicrobial resistance. ● The appropriate use of antimicrobials. ● Commonly occurring multi-resistant microorganisms/infectious diseases. ● The importance of IPC and appropriate antimicrobial use to minimise the spread of antimicrobial resistance.
	Infectious Disease Regulations	Outbreaks, specific infectious diseases and unusual clusters are required by law to be notified to the local Public Health Department.	An understanding of: ● The infection disease regulations. ● The infectious diseases, outbreaks and unusual clusters which must be notified. ● Identifying an outbreak/unusual cluster of infection/colonisation. ● Who and how to notify infectious diseases, outbreaks and unusual clusters. ● The immediate appropriate action to take in an outbreak situation.
Basic Microbiology	Handling and Transporting Laboratory Specimens	Safe handling and transporting (internally and externally) of laboratory samples is necessary to ensure accurate diagnosis and the safety of patients and staff.	An understanding of: ● The principles of safe handling, internal and external transport of specimens including the safe use of automated systems. ● The regulations that govern the external transport of specimens.
	Reservation of/ or Obtaining Laboratory Specimens	Appropriate and safe procedure for obtaining laboratory specimens is necessary to insure accurate diagnosis and appropriate use of antimicrobials	Demonstrate the correct procedure to reserve or obtain specimens appropriate to the staff member's role.

	Separation of Clean and Dirty	Separation of clean and dirty is a key principle to prevent contamination of clean areas/surfaces/equipment.	An understanding of:
			● Why separation of clean and dirty is a key principle of safe care which includes:
			  □ Physical separation of clean and dirty areas/equipment/ materials (e.g., sluice room, clean utility, clean linen store).
			  □ Working from clean to dirty (e.g., when attending to a patient's personal hygiene, environmental hygiene, aseptic technique).
			  □ The difference between clean and aseptic procedures.

Subject area	Content	Overview of content	Learning outcomes
Standard and Transmission-based Precautions	Introduction to Standard and Transmission-Based Precautions	Standard precautions are the core practices and measures undertaken for all patients in all settings to prevent the transmission of infectious agents. Transmission-based precautions are used in addition to standard precautions to prevent the transmission of highly infectious microorganisms.	An understanding of: • The background to standard precautions. • The elements of standard precautions. • The rationale for implementing standard precautions at all times for all patients. • Infection agents which require transmission-based precautions to interrupt transmission in healthcare settings. • Their individual role and responsibilities and the responsibilities of others. • How and when to report issues that are outside your own job role. • The need to advise visitors of IPC requirements such as hand hygiene and cough etiquette. • The health and safety regulations and their relevance to standard precautions.
	Hand Hygiene	Hand hygiene is the single most important practice in reducing the spread of microorganisms.	**1.** An understanding of: • The scientific evidence base supporting the effectiveness of hand hygiene in preventing infection. • When hand hygiene is required. • The appropriate use of hand hygiene products. • How to undertake hand hygiene. • The importance of skin care and the need to report problems promptly to occupational health/General Practitioner (GP). **2.** Demonstrate an effective hand hygiene technique.
Standard and Transmission-based Precautions	Respiratory Hygiene and Cough Etiquette	Respiratory hygiene and cough etiquette are measures that minimise the transmission of respiratory infections.	An understanding of: • The importance of control measures to contain respiratory secretions to prevent droplet and contact transmission of respiratory infections. • What cough etiquette and respiratory hygiene is. • The need to educate patients and visitors to practice cough etiquette and respiratory hygiene. • The additional measures that may be implemented in healthcare facilities during seasonal outbreaks of viral respiratory tract infections (e.g., influenza, respiratory syncytial virus etc) in the community.
	Personal Protective Equipment	The wearing of personal protective equipment (PPE) is an infection prevention and control measure to protect healthcare workers and their patients.	**1.** An understanding of: • The health and safety regulations and their requirements relevant to PPE. • The risks and control measures relating to the use of latex. • The different types of PPE. • How to apply a risk assessment to determine when and what type of PPE is required. • How to don PPE. • When and how PPE should be removed. • The rationale for preventing self contamination when removing PPE. • Why hand hygiene is required after removing PPE. • Why gloves do not replace the need for hand hygiene. • How to safely remove PPE. **2.** Demonstrate donning & doffing of PPE safely.

Subject area	Content	Overview of content	Learning outcomes
Standard and Transmission-based Precautions	Infectious Conditions that may Require Absence from Work or Work Restrictions	To prevent infections being transmitted to patients or to colleagues, some infectious diseases/conditions may require absence from work or work restrictions.	An understanding: ● Of the need to report personal episodes of illness and infection to line management. ● Of the requirement to seek advice from occupational health team or GP regarding work restrictions/absence. ● That an episode of infection in close social contacts may have work implications and that advice should be sought from occupational health team or GP. ● Of the requirement for staff who undertake exposure prone procedures to have testing for blood borne viruses and that work restrictions may apply depending on the results.
	Management of Blood or Body Fluid Exposure	Exposure to blood and other body fluids poses a potential risk of infection from bacteria and viruses.	An understanding of: ● What a blood or body fluid exposure is. ● The precautions and safe working practices which should be applied to minimise the risk of exposure to blood and other body fluids. ● The first aid management that should be initiated following a blood or body fluid exposure. ● The importance of reporting a blood or body fluid exposure as soon as possible. ● The need for medical assessment and the possibility of post exposure prophylaxis.
Standard and Transmission-based Precautions	Vaccinations	Vaccinations provide protection against infectious diseases.	An understanding of: ● How vaccines prevent infection. ● The benefits of vaccination. ● Common side effects of vaccines. ● The vaccines recommended for the general population and those at higher risk from infection. ● Health and safety regulations and worker vaccination. ● The different vaccines advised depending on the activity undertaken by an individual staff member rather than their job title. ● The need for an assessment to determine if additional vaccines are required if activity or role changes. ● The role of an occupational health team/GP in relation to employee health and when to contact for advice.
	Safe Use and Disposal of Sharps Including Use of Safety Devices	Staff are at risk of serious infections through injuries with contaminated needles and other sharps. The majority of these injuries are preventable by applying safer working procedures, safety-engineered medical devices and staff training.	An understanding of: ● Undertaking a risk assessment to minimise the use of sharps. ● The safe use of needle free/needle safe devices. ● The safe use of sharps. ● The responsibility of the person using a sharp to ensure its safe disposal. ● The EU Directives and national regulations pertaining to the safe use and safe disposal of sharps.

Subject area	Content	Overview of content	Learning outcomes
Standard and Transmission-based Precautions	Management of Waste	Segregation at the point of origin is vital in enabling different forms of waste be handled, transported and disposed of in a safe manner.	**1.** An understanding of: • Waste management regulations. • Undertaking a risk assessment to prevent blood or body fluid exposure from waste. • The correct classification, segregation, handling and transportation of waste. • Safe disposal of sharps. • The actions to take if spillages of waste occur. • When and how to report any adverse events, incidents or accidents concerning healthcare waste. **2.** Demonstrate the correct method to assemble a sharps bin (depending on the staff member's role).

	Environmental Hygiene including Management of Spillages	Minimising environmental contamination by adequate cleaning and disinfection (where appropriate) is critical to reduce the transmission of microorganisms.	**1.** An understanding of:
			• The role of environmental contamination in the transmission of microorganisms.
			• The difference between cleaning and disinfection.
			• Undertaking a risk assessment of the environment to determine the following:
			   □ Frequency of cleaning.
			   □ Method of cleaning and disinfection if required.
			   □ Appropriate product choice.
			• The management of cleaning equipment.
			• The health and safety regulations relating to the storage of chemicals.
			• The management of blood and body fluid spillages.
			• The safe work practices to prevent exposure to blood, body fluid and chemicals.
			• The requirement to address decontamination prior to purchasing equipment/furniture etc.
			
			2. Demonstrate the correct method of decontaminating the environment (where applicable to role).

Standard and Transmission-Based Precautions	Patient care Equipment/ Instruments and Devices	The safe decontamination of re-usable non-invasive equipment (e.g., glucometers, X-ray machines, drip stands, beds and toys) and invasive instruments/ devices (e.g., surgical instruments) is critical to prevent transmission of microorganisms.	1. An understanding of : • The role of equipment/instruments and devices contamination in the transmission of microorganisms. • The difference between decontaminating invasive and non-invasive equipment/instruments and devices. • The terms 'single use' and 'single patient use'. • The importance of following manufactures' instructions for decontamination of equipment/instruments and devices. • Cleaning, disinfection, high level disinfection and sterilisation. • The implications of damaged equipment/instruments/devices for adequate decontamination. • The EU Directives and national regulations pertaining to the decontamination of reusable invasive medical devices. • The requirement to address decontamination prior to purchasing equipment/instruments/devices. 2. Demonstrate the correct method to decontaminate equipment relevant to role.
	Management of Linen	The safe handling and decontamination of soiled or used linen and the storage of clean linen is essential to prevent the transmission of microorganisms.	An understanding of: • The role of contaminated linen in the transmission of microorganisms. • How clean linen should be stored. • The appropriate PPE to use when handling used or soiled linen. • Segregation of different categories of used or soiled linen. • How soiled and used linen should be decontaminated including in the domiciliary setting where appropriate.

Subject area	Content	Overview of content	Learning outcomes
Standard and Transmission-Based Precautions	Aseptic technique	Aseptic technique is critical to prevent HCAI.	1. An understanding of: • What aseptic technique is. • Undertaking a risk assessment to determine when aseptic technique is required. • The role of aseptic technique to minimise the risks of HCAI. • The key principles of aseptic technique including a clean and dirty workflow. 2. Demonstrate the application of aseptic technique.

	Safe injection practices, and procedures for lumbar punctures	The safe handling of injections and procedures for lumbar punctures are critical to prevent HCAI associated with invasive procedures.	1. An understanding of:
			• The role of poor injection practices on the transmission of microorganisms.
			• The control measures that minimise the risk including the;
			  □ Safe use of needles, syringes, infusion fluid, administration sets and multi-dose vials.
			  □ Provision of a designated clean area for drawing up injections and a separate dirty area for discarding waste, handling samples etc.
			• Why a surgical mask should be worn when placing a catheter or injecting material into the spinal canal or subdural space (i.e., during myelograms, lumbar puncture and spinal or epidural anesthesia.

Standard and Transmission-Based Precautions	Patient Placement	Appropriate patient placement is a core component of standard and transmission-based precautions.	An understanding of: • The importance of ongoing risk assessment to determine where patients are placed to minimise the potential risk of cross infection. • The key factors applicable to this risk assessment when considering patient placement.
	Patient Transfer	Ensuring the safe transfer of patients (internally and externally) is a core component of standard and transmission-based precautions.	An understanding of: • Why the safe transfer of patients (internal and external) is important. • The importance of providing adequate information to transport personal and receiving department or facility.

	Transmission-based Precautions	Transmission-based precautions are required when standard precautions are not sufficient to interrupt transmission of microorganisms.	An understanding of:
			• The importance of applying standard precaution at all times.
			• Transmission-based precautions.
			• When transmission-based precautions should be applied:
			  □ Based on assessment of presenting signs and symptoms.
			  □ Based on a suspected or confirmed infection/colonisation.
			• The importance of instituting transmission-based precautions promptly.
			• When transmission-based precautions can be discontinued.
			• The psychological impact of isolation on patients and how staff can minimise this risk.
			• The application of transmission-based precautions in non-acute settings.

Subject area	Content	Overview of content	Learning outcomes
Clinical Assessment skills	How to access authoritative sources of infection prevention and control information	It is critical that staff are aware of how to access authoritative sources relating to IPC.	An understanding of: • How to contact local infection prevention and control nurse/team (where available), local public health department and occupational health. • Where to access authoritative sources relating to IPC at local, national and international level including regulatory bodies where appropriate.
	Identifying incidents and risk relating to IPC	In order to prevent and control infections, it is necessary that staff are aware of the importance of early identification and reporting of incidents and risks.	An understanding of: • Why it is important to report incidents or risks relating to IPC. • Who to report these incidents or risks (based on local processes). • The signs and symptoms of local and systemic infection. • The importance of reporting signs and symptoms of local and systemic infection. • Appropriate risk assessment to prevent and control infection relevant to role and setting (e.g., recognition of an outbreak, environmental hygiene).
	Communication relating to IPC	To ensure patient and staff safety it is imperative that staff communicate IPC issues/concerns across all services.	An understanding of: • The importance of communicating IPC information internally and externally to all care providers (e.g., GPs, public health nurses, ambulance staff, acute and community services). • The importance of maintaining patient confidentially and dignity. • The importance providing appropriate advice/literature to patients relating to their condition.

Appendix 3
The members of HSE DNE HCAI/AMR Committee Subgroup:

Mr. Kevin James (Chairperson):
Training & Development Officer, Performance & Development Unit, HSE DNE

Ms. Joan Balfe (Administration Support):
Performance & Development Unit, HSE DNE

Ms. Marian Brennan:
Assistant Director of Midwifery, Infection Prevention and Control, Rotunda Hospital

Ms. Sheila Donlon:
Prevention and Infection Control Nurse Manager, Health Protection Surveillance Centre

Ms. Margaret Nadin:
Project Manager, Nursing and Midwifery Planning and Development, HSE Dublin North East - Ardee Office

Ms. Teresa O'Callaghan:
Regional Quality Improvement Advisor, Regional Patient Quality and Safety Department, HSE DNE

Ms. Ann O'Connor:
Infection Prevention and Control Clinical Nurse Specialist, St Francis Hospice, Raheny, Dublin

Ms. Gwen Regan:
Infection Prevention and Control Clinical Nurse Specialist, Dublin North

Ms. Aisling Tinsley:
Infection Control Nurse Manager, Our Lady of Lourdes Hospital, Drogheda

Appendix 4
National Consultation Process & Feedback Received

The draft document was placed on the HPSC website for general consultation in March 2014 with a three week period allowed for individuals and groups to feedback comments and suggested amendments. In addition, a draft of this document was sent to the following groups seeking feedback and comment:

An Bord Altranais agus Cnáimhseachais na hÉireann (Nurse and Midwifery Board of Ireland)

Athlone Institute of Technology

Carlow College

Dental Council of Ireland

Dublin Institute of Technology

Dundalk Institute of Technology

Faculty of Occupational Medicine of the Royal College of Physicians of Ireland

Further Education and Training Awards Council

Galway-Mayo Institute of Technology

Health and Safety Authority

Health & Social Care Professionals Council (CORU)

Health Information and Quality Authority

Infectious Disease Society of Ireland

Institute of Technology, Sligo

Institute of Technology, Blanchardstown

Institute of Technology, Tralee

Infection Prevention Society

Irish Society of Clinical Microbiologists

Letterkenny Institute of Technology

Limerick Institute of Technology

Medical Council of Ireland

National University of Ireland, Galway

Nursing Homes Ireland

Office of the Nursing and Midwifery Services, Health Services Executive

Royal College of Physicians in Ireland (RCPI)

RCPI Healthcare-associated Infection & Antimicrobial Resistance Clinical Advisory Group

University College Cork

University of Limerick

University of Trinity College Dublin

Waterford Institute of Technology

The committee gratefully acknowledges the feedback received from the following: