



TECHNICAL DOCUMENT

**Core competencies for
infection control and
hospital hygiene professionals
in the European Union**

ECDC TECHNICAL DOCUMENT

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Acknowledgements

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² In memory of Professor Helmut Mittermayer.

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Abbreviations

AMR	Antimicrobial resistance
ARHAI	Antimicrobial resistance and healthcare-associated infections
ECDC	European Centre for Disease Prevention and Control
ESCMID	European Society of Clinical Microbiology and Infectious Diseases
EU	European Union
HAI	Healthcare-associated infection
HCW	Healthcare worker
IPSE	Improving Patient Safety in Europe project

Background

Healthcare-associated infections are recognised as a major burden for patients, society and healthcare management. In 2008, ECDC estimated that more than four million people acquire a healthcare-associated infection each year in the European Union (EU), of which approximately 37 000 die as the direct consequence of the infection³.

One major topic that falls under the mandate of the European Centre for Disease Prevention and Control (ECDC) is the strengthening of the European Union's capacity for the prevention and control of infectious diseases⁴ as well as a number of special health issues listed under Decision 2119/98 EC⁵, which include healthcare-associated infections (HAI). The Centre also has a role in strengthening capacity by assisting the Member States and the Commission in obtaining sufficient numbers of trained specialists.

Effective HAI prevention and control in healthcare organisations relies on specialised infection control staff in charge of elaborating, implementing and monitoring local preventive measures such as hand hygiene and patient isolation.

Increased efforts in this area are backed by a 2008 'Communication from the Commission to the European Parliament and the Council on patient safety, including the prevention and control of healthcare-associated infections'^{6,7}.

Training in infection control and the epidemiology of healthcare-associated infections was also the topic of one of the work packages of the Improving Patient Safety in Europe project (IPSE), the now-defunct EU surveillance network for healthcare-associated infections.

Development process

In collaboration with the European Society of Clinical Microbiology and Infectious Diseases (ESCMID), IPSE developed a first document on core competencies for infection control nurses and physicians in Europe^{8,9}. ECDC drew upon previous IPSE experiences to assess the training needs for infection control in Europe (through a contract with the University of Udine¹⁰, Italy), with the goal of developing a basic training strategy at the EU level in the area of infection control.

This document results from a multi-staged process of reviews, discussions and updates of a previous list of core competencies for infection control and hospital hygiene. This was done through meetings between ECDC and the project core team and the National Contact Points for Infection Control Training (NCPICs) (as proposed by the EU Member States) and a June 2010 meeting in Udine, Italy, which was also attended by representatives from Croatia and Turkey and followed-up by e-mail consultations. During these meetings, statements were proposed, commented, amended or changed; the resulting text version was eventually verified and agreed upon by the NCPICs. Finally, the NCPICs were requested to approve the proposed two-tier classification (introductory level and expert level) in infection control and hospital hygiene, which had been discussed earlier during the meeting.

³ European Centre for Disease Prevention and Control (ECDC). Annual epidemiological report on communicable diseases in Europe 2008. Stockholm: ECDC; 2008. Available from:

http://ecdc.europa.eu/en/publications/Publications/0812_SUR_Annual_Epidemiological_Report_2008.pdf

⁴ Regulation (EC) No 851/2004 of the European Parliament and of the Council of 21 April 2004 establishing a European Centre for Disease Prevention and Control. Available from: http://www.ecdc.europa.eu/About_us/Key_Documents/ecdc_regulations.pdf

⁵ Decision No 2119/98/EC of the European Parliament and of the Council of 24 September 1998 setting up a network for the epidemiological surveillance and control of communicable diseases in the Community.

⁶ http://ec.europa.eu/health/ph_systems/docs/patient_com2008_en.pdf

⁷ Council of the European Union. Council Recommendation of 9 June 2009 on patient safety, including the prevention and control of healthcare associated infections (2009/C 151/01). Available from: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:151:0001:0006:EN:PDF>

⁸ Improving Patient Safety in Europe (IPSE). The IPSE report 2005-2008. Lyon: Université Claude Bernard Lyon 1; November 2009]. Available from:

http://www.ecdc.europa.eu/en/activities/surveillance/HAI/Documents/0811_IPSE_Technical_Implementation_Report.pdf

⁹ <http://ecdc.europa.eu/ipse/Working%20packages/WP1/Core%20Curriculum%20Report.pdf>

¹⁰ The Training in Infection Control in Europe (TRICE) project was funded by ECDC through a specific service contract (ECD.1840) with the University of Udine, Italy.

Definitions of competency and of core competency

In Europe, a variety of terms relating to 'competencies' is used, each fraught with different meanings and linked to somewhat different frames of reference. All definitions, however, are related to what the individual will know, understand and be able to do at the end of a learning experience.

In the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy.

In this document, the term **competency** is defined as: 'the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development'¹¹.

The **core competencies** listed in this document are defined for infection control and hospital hygiene professionals, with the profile of a medical doctor, nurse or caregiver. The term 'core' indicates that the competencies should be a minimum pre-requisite, common to all professionals in this field.

In the list, core competencies are classified in areas and domains, and proposed separately for the introductory level and for the expert level. The levels are defined as follows:

- Introductory level (junior specialist): newly appointed infection control and hospital hygiene staff member with little or no previous experience.
- Expert level (senior specialist): infection control and hospital hygiene professionals who are confident and experienced; who use reasoning, critical thinking, reflection and analysis to inform his/her assessment and decision-making; and are able to develop and implement new solutions to problems.

It is acknowledged that professional expertise grows in a continuum where speed of acquisition and completeness of knowledge depend on many different variables such as local culture (e.g. expectations that the infection control doctor or infection control nurse will chair the infection control committee), the existence of a professional profile for infection control/hospital hygiene professionals in a given country, the level of administrative support or resources, the presence of audit/patient safety departments, attitudes, preferences, and previous experience (e.g. when newly hired infection control doctors or nurses already have considerable management experience/transferable skills in other specialties before embarking on their new infection control and hospital hygiene career).

Use and users

This list of core competencies is not a regulatory document or part of a curriculum, but rather a reference paper for different groups of users and a variety of uses.

This document is published with the intent of proposing a comprehensive list of core competencies that should be adopted by infection control and hospital hygiene professionals across Europe.

This document can be considered as a reference for the:

- standardisation of the competencies for infection control and hospital hygiene professionals in Europe;
- design and implementation of training courses according to different national contexts while facilitating the mutual recognition of competencies across the EU Member States;
- self-assessment of performance for infection control and hospital hygiene professionals and the planning of professional development;
- identification of the needs of healthcare organisations with regard to professional staff; and the
- evaluation of the performance of infection control and hospital hygiene professionals.

The use of this list of core competencies as a reference could increase the comparability of job descriptions and facilitate the mobility of professionals throughout Europe. The core competencies could be used as a basis for certain human resource tools, such as annual performance reviews or personal development plans, by selecting four to six competencies as goals for infection control and hospital hygiene professionals.

Potential users are public health institutes, universities, hospitals and other healthcare organisations, training programmes, professionals and trainees.

¹¹ http://ec.europa.eu/education/policies/educ/eqf/rec08_en.pdf

List of core competencies

The list of core competencies for infection control and hospital hygiene professionals in the European Union, grouped by areas and domains, is presented in the Appendix.

ECDC plans to use this list as an assessment tool for specific training needs in the EU Member States (e.g. during country visits or for surveys).

Appendix. List of core competencies for infection control and hospital hygiene professionals in the European Union, grouped by areas and domains

Table A1. Areas and domains of competency in infection control and hospital hygiene

Area	Domain
Area 1. Programme management	Elaborating and advocating an infection control programme
	Management of an infection control programme, work plan and projects
Area 2. Quality improvement	Contributing to quality management
	Contributing to risk management
	Performing audits of professional practices and evaluating performance
	Infection control training of employees
	Contributing to research
Area 3. Surveillance and investigation of healthcare-associated infections (HAIs)	Designing a surveillance system
	Managing (implementation, follow up, evaluation) a surveillance system
	Identifying, investigating and managing outbreaks
Area 4. Infection control activities	Elaborating infection control interventions
	Implementing infection control healthcare procedures
	Contributing to reducing antimicrobial resistance
	Advising appropriate laboratory testing and use of laboratory data
	Decontamination and sterilisation of medical devices
	Controlling environmental sources of infections

Table A2. Areas, domains and competencies in infection control and hospital hygiene for junior and senior specialists (introductory and expert levels)**Area 1. Programme management**

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
Elaborating and advocating an infection control programme	<ul style="list-style-type: none"> • Advocate the importance of healthcare-associated infections (HAIs) as a crucial element of patient safety and highlight their potential human, economic and reputational burden to the decision-makers of the healthcare organisation • Contribute to the development of the infection control programme • Contribute in involving identified stakeholders in the infection control programme • Identify needs for the protection of healthcare workers in their respective healthcare organisations • Take a lead role as appropriate for the healthcare organisation to formulate, propose and liaise with other key players to produce appropriate indicators in relation to the control of healthcare-associated infections, taking into account the official policy on internal transfer of information and public health disclosure of information • Foster and promote team work in infection control • Lead the team to ensure that it has shared vision and works cohesively 	<ul style="list-style-type: none"> • Advocate the importance of healthcare-associated infections (HAIs) as a crucial element of patient safety and highlight their potential human, economic and reputational burden to the decision-makers of the healthcare organisation • Prepare and present an outline of an infection control programme focusing on key elements: mission statement, description of objectives and indicators, presentation of action plan, including outcomes, success measures, rules for the functioning of the infection control committee, operating manual, links to other patient safety and healthcare organisation programmes • Identify and communicate the requirements of an infection control programme to relevant internal and external stakeholders (including patient advocates) and develop strategies for involving them in the infection control programme • Establish priorities for infection control according to the characteristics of an individual healthcare organisation, including the safety of healthcare workers internal transfer of information and public disclosure of information, respecting ethical standards for patient protection • Take a lead role as appropriate for the healthcare organisation to formulate, propose and liaise with other key players to produce appropriate indicators in relation to the control of healthcare-associated infections, taking into account the official policy on internal transfer of information and public health disclosure of information • Foster and promote team work in infection control • Lead the team to ensure that it has shared vision and works cohesively
Management of an infection control programme, work plan and projects	<ul style="list-style-type: none"> • Contribute to the management of an infection control programme or other programmes on adverse events (from conception to impact evaluation, including budgeting) according to EU, national or local regulations and healthcare organisation policies • Participate in the formulation of an organisational structure for controlling HAIs • Collate data regarding the infrastructure in 	<ul style="list-style-type: none"> • Manage an infection control programme or other programmes on adverse events (from conception to impact evaluation, including budgeting) according to EU, national or local regulations and healthcare organisation policies • Play a key role in formulating an organisational structure for controlling HAIs and antimicrobial resistance (AMR) in the healthcare organisation – while interacting

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
	<p>the healthcare organisation in order to review and recommend appropriate resources for HAI control</p> <ul style="list-style-type: none"> • Be able to manage system changes related to infection control issues based on knowledge of the healthcare organisation • Be able to manage individual and organisational changes utilising knowledge of the behavioural sciences • Identify financial resources with cost–benefit analyses of infection control activities and learn negotiation skills • Attend infection control committee meetings and contribute to the agenda and agreed actions, and keep minutes of infection control committee meetings • Contribute to the regular review of policies/procedures for HAI prevention and control • Support ways to improve team work: provide tools for the sharing of responsibilities, the exchange of information, and the planning of tasks • Participate in providing specialist expertise related to infection control on healthcare organisation policies and know where to access this expertise if it is not available locally • Disseminate information regarding legislation, regulations and official recommendations for infection control • Inform healthcare workers (HCWs) about new threats: epidemics, new agents, etc. • Communicate with, and provide support to, the healthcare organisation’s contractors and service providers (construction, renovation, maintenance, housekeeping, laundry, etc.) • Appropriately report infection control findings to the infection control committee, the healthcare organisation’s management, clinical departments, units and involved professionals • Improve communication between different levels of care (primary, hospital, long term) • Promote collaborative partnerships between professionals • Contribute appropriately to external communications on infection control, 	<p>with others as appropriate</p> <ul style="list-style-type: none"> • Review, assess, provide and recommend appropriate resources for infection control in the healthcare organisation: scientific and technical expertise, facilities for infection control, information systems, continuing education, use of link professionals¹², allocated budget • Be able to manage system changes related to infection control issues based on knowledge of the health organisation • Be able to manage individual and organisational changes utilising knowledge of the behavioural sciences • Identify and negotiate financial resources with cost–benefit analyses of infection control activities • Organise and support the meetings of an infection control committee and technical working groups • Organise and lead regular reviews of policies/procedures in collaboration with multidisciplinary experts • Support ways to improve team work: provide tools for the sharing of responsibilities, the exchange of information, and the planning of tasks • Provide specialist expertise related to infection control on healthcare organisation policies • Formulate and facilitate a suitable strategy for internal communications on infection control with key stakeholders • Disseminate information regarding legislation, regulations and official recommendations for infection control • Inform healthcare workers (HCWs) about new threats: epidemics, new agents, etc. • Communicate with, and provide support to, the healthcare organisation’s contractors and service providers (construction, renovation, maintenance, housekeeping, laundry, etc.) • Appropriately report infection control findings to the infection control committee, the healthcare organisation’s management, clinical departments, units and involved professionals • Improve communication between different

¹² ‘Link professionals (mostly nurses) act as a link between their own clinical area and the infection control team. Their role is to increase awareness of infection control issues in their ward and motivate staff to improve practice.’ From: Dawson SJ. The role of the infection control link nurse. J Hosp Infect. 2003 Aug;54(4):251-7.

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
	<p>including communications with public health authorities as and when required</p> <ul style="list-style-type: none"> • Communicate with the media if agreed locally • Contribute to the review and evaluation of an infection control programme 	<p>levels of care (primary, hospital, long term)</p> <ul style="list-style-type: none"> • Promote collaborative partnerships between professionals • Contribute appropriately to external communications on infection control, including communications with public health authorities as and when required • Communicate with the media if agreed locally • Review and evaluate infection control programmes regularly, according to updated legislation, recommendations and latest feedback (audits, surveillance results, etc.)

Area 2. Quality improvement

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
Contributing to quality management	<ul style="list-style-type: none"> • Contribute to the ongoing accreditation, certification, evaluation and normalisation processes within the healthcare organisation • Contribute to the integration of infection control activities within the healthcare organisation's quality promotion and patient safety programmes • Prepare, conduct and coordinate audits of professional practices related to infection control in clinical areas • Collaborate with HCWs, patients and their relatives in evaluating the infection control aspects of quality and patient safety programmes 	<ul style="list-style-type: none"> • Contribute to the ongoing accreditation, certification, evaluation and normalisation processes within the healthcare organisation • Contribute to the integration of infection control activities within the healthcare organisation's quality promotion and patient safety programmes • Prepare, conduct and coordinate audits of professional practices related to infection control in clinical areas • Lead (where appropriate) and support other stakeholders, e.g. HCWs, consumers and consumer groups to establish and evaluate the infection control aspects of quality and patient safety programmes
Contributing to risk management	<ul style="list-style-type: none"> • Advocate and enable integration of risk management concepts (such as rapid reporting of adverse events or errors, without sanctions) and methods (such as systemic analysis, e.g. root causes of adverse events) in infection control activities within the healthcare organisation • Contribute – if locally appropriate – to the ongoing risk management programme of the healthcare organisation by coordinating infection control activities with other safety programmes such as for transfusion, administration of drugs, or use of medical devices (coordinated communication, training, data collection or notification, etc.) 	<ul style="list-style-type: none"> • Advocate and enable integration of risk management concepts (such as rapid reporting of adverse events or errors, without sanctions) and methods (such as systemic analysis, e.g. root causes of adverse events) in infection control activities within the healthcare organisation • Contribute – if locally appropriate – to the ongoing risk management programme of the healthcare organisation by coordinating infection control activities with other safety programmes such as for transfusion, administration of drugs, or use of medical devices (coordinated communication, training, data collection or notification, etc.)
Performing audits of professional practices and evaluating performance	<ul style="list-style-type: none"> • Take into account the different clinical and cultural considerations and conditions that determine the various types of evaluations and audits • Establish a programme of audits and investigations • Prepare protocols for the evaluation of performance • Train investigators so they can assess targeted practices, structures or processes • Apply appropriate epidemiological methods during data collection to ensure reliability and reproducibility • Analyse data and interpret results related to the evaluation and report back to relevant staff in appropriate language • Coordinate, and report on, the progress of the audits programme and associated learning in the targeted units or departments 	<ul style="list-style-type: none"> • Take into account the different clinical and cultural considerations and conditions that determine the various types of evaluations and audits • Establish a programme of audits and investigations • Prepare protocols for the evaluation of performance • Train investigators so they can assess targeted practices, structures or processes • Apply appropriate epidemiological methods during data collection to ensure reliability and reproducibility • Analyse data and interpret results related to the evaluation and report back to relevant staff in appropriate language • Coordinate, and report on, the progress of the audits programme and associated learning in the targeted units or departments

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
	<ul style="list-style-type: none"> • Disseminate and communicate constructively the results of audits and the lessons learnt to the HCWs, administration and other professionals involved • Work with the healthcare organisation to formulate corrective actions and enable staff to carry out these actions to ensure that evaluation results are acted upon 	<ul style="list-style-type: none"> • Disseminate and communicate constructively the results of audits and the lessons learnt to the HCWs, administration and other professionals involved • Work with the healthcare organisation to formulate corrective actions and enable staff to carry out these actions to ensure that evaluation results are acted upon
Infection control training of employees	<ul style="list-style-type: none"> • Evaluate the training needs of the healthcare organisation and of HCWs through consultations and surveys and other methodologies such as gap analysis • Integrate within the healthcare organisation’s training programme for new employees, basic knowledge and awareness of infection control issues • Design a training programme on infection control activities and procedures for all employees in healthcare organisation to update their knowledge and awareness according to the latest data (national, local, newly published) • Select and provide appropriate training modalities to achieve expected outcomes • Evaluate the impact of the training sessions 	<ul style="list-style-type: none"> • Evaluate the training needs of the healthcare organisation and of HCWs through consultations and surveys and other methodologies such as gap analysis • Integrate within the healthcare organisation’s training programme for new employees, basic knowledge and awareness of infection control issues • Design a training programme on infection control activities and procedures for all employees in the healthcare organisation to update their knowledge and awareness according to the latest data (national, local, newly published) • Select and provide appropriate training modalities to achieve expected outcomes • Evaluate the impact of the training sessions
Contributing to research	<ul style="list-style-type: none"> • Understand the methodology of evaluative and research studies [descriptive or analytic studies (cohort, case-control), randomised trial, efficacy or cost-effectiveness of intervention or technology, and meta-analysis], and interpret and use the results • Contribute to the research by collecting data according to the surveillance design and defined methodology 	<ul style="list-style-type: none"> • Understand the methodology of evaluative and research studies [descriptive or analytic studies (cohort, case-control), randomised trial, efficacy or cost-effectiveness of intervention or technology, and meta-analysis], and interpret and use the results • Apply standard methodologies of research to the investigation of healthcare-associated infections and to the evaluation of preventive measures

Area 3. Surveillance and investigation of healthcare-associated infections

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
Designing a surveillance system	<ul style="list-style-type: none"> • Advocate HAI surveillance activities (including post-discharge surveillance) and gather the opinions of appropriate professionals in order to rank priorities and formulate objectives • Formulate the scope, methodology and practical organisation of the HAI surveillance system based on the population served, services provided and professional involvement in order to meet the objectives • Select and define appropriate indicators • Gather specific data from the laboratory and pharmacy departments for further analysis • Identify national and international recommendations, regulations and standard definitions to design HAI surveillance activities, ensuring all the while the need for consistency in applying definitions • Support the development of the healthcare organisation's information systems (including patient and laboratory systems) to meet surveillance needs • Contribute to the organisation of collaborative organised networks • Elaborate mechanisms for timely data feedback and ensure that prompt and responsive mechanisms for reporting and feedback are included in the system 	<ul style="list-style-type: none"> • Advocate HAI surveillance activities (including post-discharge surveillance) and gather the opinions of appropriate professionals in order to rank priorities and formulate objectives • Formulate the scope, methodology and practical organisation of the HAI surveillance system based on the population served, services provided and professional involvement in order to meet the objectives • Select and define appropriate indicators • Develop functional links with the laboratory and pharmacy departments for periodically reviewing laboratory and antimicrobial consumption data • Identify national and international recommendations, regulations and standard definitions to design HAI surveillance activities, ensuring all the while the need for consistency in applying definitions • Support the development of the healthcare organisation's information systems (including patient and laboratory systems) to meet surveillance needs • Identify the benefits of collaborative organised networks (local, regional and national) and take steps to promote these networks • Elaborate mechanisms for timely data feedback and ensure that prompt and responsive mechanisms for reporting and feedback are included in the system
Managing (implementation, follow up, evaluation) a surveillance system	<ul style="list-style-type: none"> • Contribute to the implementation of HAI surveillance system • Design and develop systems for effective HAI data collection according to defined methodology • Participate in preparation of HAI surveillance data for analysis • Identify, and communicate with, the healthcare organisation or public health body if additional epidemiologic investigations (case-control studies, cohort studies, trials) and outbreak investigations are required • Contribute to the production of periodic structured reports of surveillance data • Regularly review the risks, needs and priorities in order to adjust surveillance targets and objectives 	<ul style="list-style-type: none"> • Implement the HAI surveillance system (pilot testing, implementation, kick off, commissioning and evaluation) according to the organisation's priorities and objectives • Design and develop systems for effective HAI data collection according to defined methodology • Analyse HAI data using appropriate epidemiological methods, measures and tests, seeking the assistance of biostatisticians and other experts when necessary • Identify, and communicate with, the healthcare organisation or public health body if additional epidemiologic investigations (case-control studies, cohort studies, trials) and outbreak investigations are required

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
	<ul style="list-style-type: none"> • Prepare data for the periodic evaluation of the effectiveness of the HAI surveillance system • Ensure that reporting and feedback tools are efficiently used to communicate adequately in different contexts (scientific, professional, media, etc.) • Use feedback tools effectively 	<ul style="list-style-type: none"> • Produce periodic structured reports to interpret significant findings and learning, taking into account the target readership • Regularly review the risks, needs and priorities in order to adjust surveillance targets and objectives • Periodically evaluate the effectiveness of the HAI surveillance system • Ensure that reporting and feedback tools are efficiently used to communicate adequately in different contexts (scientific, professional, media, etc.) • Use feedback tools effectively
Identifying, investigating and managing outbreaks	<ul style="list-style-type: none"> • Identify clusters of HAIs (or other unusual events) through contacts with clinical units and laboratories, through alerts or through systematic analysis of microbiological laboratory testing • Manage an outbreak of infections at healthcare organisation or community level • Carry out descriptive and analytic investigations of the outbreak • Select appropriate methods of molecular typing and interpret microbiological results in close collaboration with clinical/reference microbiology laboratories • Formulate and implement a suitable strategy for identifying and communicating internally and externally with concerned actors, including those in primary, hospital and long-term care • Interpret findings and report them to relevant people by using appropriate means and seek the relevant internal and external personnel advice, including advice from the public health sector • Use lessons learned from outbreak investigations to inform quality improvement measures 	<ul style="list-style-type: none"> • Identify clusters of HAIs (or other unusual events) through contacts with clinical units and laboratories, through alerts or through systematic analysis of microbiological laboratory testing • Manage an outbreak of infections at healthcare organisation or community level • Carry out descriptive and analytic investigations of the outbreak • Select appropriate methods of molecular typing and interpret microbiological results in close collaboration with clinical/reference microbiology laboratories • Formulate and implement a suitable strategy for identifying and communicating internally and externally with concerned actors, including those in primary, hospital and long-term care • Interpret findings and report them to relevant people by using appropriate means and seek the relevant internal and external personnel advice, including advice from the public health sector • Use lessons learned from outbreak investigations to inform quality improvement measures

Area 4. Infection control activities

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
Elaborating infection control interventions	<ul style="list-style-type: none"> • Collect and analyse the relevant documentation for the development of an infection control procedure • Prepare infection control policies and procedures according to national or local standard operating procedures (SOPs), for example for validated main infection control activities, i.e. standard precautions and hand hygiene • Isolation and special (barrier) precautions • Skin disinfection • Patient pre-operative preparation • Decontamination and sterilisation of medical devices • Invasive procedures: vascular and urinary catheterisation, mechanical ventilation, etc. • Support activities: linen and waste management, housekeeping, food service, environmental safety (air, water), decontamination of environmental surfaces • Examples for occupational health activities: management following fluid exposure, prevention of inoculation injuries and other infection risks in HCWs • Immunisation of HCWs and patients • Contribute to the design and implementation of procedures for crisis management in infection control: alert management, recall of patients, recall of potentially contaminated equipment and supplies, reporting and exchange with relevant healthcare professionals • Contribute to the drawing up of clinical procedures when special precautions for infection control are required • Contribute to the drawing up of clinical procedures for specific settings • Plan strategies for the design of healthcare procedures 	<ul style="list-style-type: none"> • Collect and analyse the relevant documentation for the development of an infection control procedure • Prepare infection control policies and procedures according to national or local standard operating procedures (SOPs), for example for validated main infection control activities, i.e. standard precautions and hand hygiene • Isolation and special (barrier) precautions • Skin disinfection • Patient pre-operative preparation • Decontamination and sterilisation of medical devices • Invasive procedures: vascular and urinary catheterisation, mechanical ventilation, etc. • Support activities: linen and waste management, housekeeping, food service, environmental safety (air, water), decontamination of environmental surfaces • Examples for occupational health activities: management following fluid exposure, prevention of inoculation injuries and other infection risks in HCWs • Immunisation of HCWs and patients • Prepare a procedure for crisis management in infection control: alert management, recall of patients, recall of potentially contaminated equipment and supplies, reporting and exchange with relevant healthcare professionals • Contribute to the drawing up of clinical procedures when special precautions for infection control are required • Contribute to the drawing up of clinical procedures for specific settings • Plan strategies for the design of healthcare procedures
Implementing infection control healthcare procedures	<ul style="list-style-type: none"> • Contribute to set a policy for the implementation and revision of infection control guidelines and recommendations according to the SOPs: roles and responsibilities of supervisor, trainers, link professionals • Disseminate pertinent policies and procedures to applicable departments and help HCWs in their implementation through continuous support. 	<ul style="list-style-type: none"> • Set a programme for the implementation and the revision of infection control guidelines and recommendations according to the SOPs: roles and responsibilities of supervisor, trainers, link professionals • Disseminate pertinent policies and procedures to applicable departments and help HCWs in their implementation through continuous support.

Domain	Competencies for a junior specialist – introductory level	Competencies for a senior specialist – expert level
	<ul style="list-style-type: none"> • Identify barriers to compliance with procedures and involve HCWs • Promote and participate in the evaluation of compliance to the procedures and contribute to the improvement of compliance by monitoring parameters with regard to process or outcome • Facilitate the implementation of infection control procedures within the clinical care organisation 	<ul style="list-style-type: none"> • Identify barriers to compliance with procedures and involve HCWs • Promote and participate in the evaluation of compliance to the procedures and contribute to the improvement of compliance by monitoring parameters with regard to process or outcome • Facilitate the implementation of infection control procedures within the clinical care organisation
Contributing to reducing antimicrobial resistance	<ul style="list-style-type: none"> • Promote the importance of prevention and control of antimicrobial resistance (AMR), including antibiotic prophylaxis. Highlight the human, economic and wider public health burden of AMR and communicate it to the decision-makers of the healthcare organisation and the community • Identify the specific local determinants of AMR in the healthcare organisation • Implement a plan to reduce AMR in the healthcare organisation, based on findings related to local determinants and focused on decreasing overuse and misuse of antimicrobial agents and limiting cross-infection and contamination • Involve key people in the implementation of a plan to reduce AMR in the healthcare organisation • Implement surveillance of AMR in the healthcare organisation; participate in national and international surveillance schemes. • Formulate and propose appropriate indicators concerning the identification and control of AMR, taking into account the official policy on internal transfer of information • Participate and involve infection control committee members in periodic evaluations (audits) of antimicrobial usage for treatment and prophylaxis • Contribute to the training of HCWs in antimicrobial usage, including prescription practice, dispensing and audit of usage 	<ul style="list-style-type: none"> • Promote the importance of prevention and control of antimicrobial resistance (AMR), including antibiotic prophylaxis. Highlight the human, economic and wider public health burden of AMR and communicate it to the decision-makers of the healthcare organisation and the community • Identify the specific local determinants of AMR in the healthcare organisation • Prepare a plan to reduce AMR in the healthcare organisation, based on findings related to local determinants and focused on decreasing overuse and misuse of antimicrobial agents and limiting cross-infection and contamination • Identify and involve key people in the implementation of a plan to reduce AMR in the healthcare organisation • Implement surveillance of AMR in the healthcare organisation; participate in national and international surveillance schemes. • Formulate and propose appropriate indicators concerning the identification and control of AMR, taking into account the official policy on internal transfer of information • Participate and involve infection control committee members in periodic evaluations (audits) of antimicrobial usage for treatment and prophylaxis • Contribute to the training of HCWs in antimicrobial usage, including prescription practice, dispensing and audit of usage
Advising appropriate laboratory testing and use of laboratory data	<ul style="list-style-type: none"> • Advise about appropriate surveillance and screening/testing, including policies for patient testing based on microbial habitats and pathogenesis of infectious diseases • Be able to interpret microbiological data to assist in the prevention and control of infections • Understand characteristics of microorganisms and apply knowledge to 	<ul style="list-style-type: none"> • Advise about appropriate surveillance and screening/testing, including policies for patient testing based on microbial habitats and pathogenesis of infectious diseases • Be able to interpret microbiological data to assist in the prevention and control of infections • Understand the characteristics of microorganisms and apply knowledge to

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	help assess patients and HCW environments in order to estimate the risk of transfer of microorganisms	help assess patients and HCW environments in order to estimate the risk of transfer of microorganisms
Decontamination and sterilisation of medical devices	<ul style="list-style-type: none"> • Distinguish between levels of risk presented by individuals, equipment and the environment • Propose and select appropriate methods and products for decontamination • Develop and update procedures related to decontamination and sterilisation guidelines and standards • Support and encourage the centralisation of decontamination and sterilisation of medical devices 	<ul style="list-style-type: none"> • Distinguish between levels of risk presented by individuals, equipment and the environment • Propose and select appropriate methods and products for decontamination • Develop and update procedures related to decontamination and sterilisation guidelines and standards • Support and encourage the centralisation of decontamination and sterilisation of medical devices
Controlling environmental sources of infections	<ul style="list-style-type: none"> • Propose appropriate infection control measures for the management of waste, air, water, laundry and food • Contribute to risk reduction by participating in the architectural and functional design of units and associated essential services in the healthcare organisation 	<ul style="list-style-type: none"> • Propose appropriate infection control measures for the management of waste, air, water, laundry and food • Take an active role in risk reduction during planning of renovations and new constructions in the healthcare organisation