



Guidance on Infection Control in Healthcare Settings in Europe:

Recommended practices, standards and indicators for monitoring the control of healthcare-associated infections and antibiotic resistance

IPSE Project Deliverable D2.1

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Acronyms

AB	Antibiotic
ABR	Antibiotic resistance
AMR	Antimicrobial Resistance
ARPAC	Antibiotic Resistance Prevention and Control: a DG R&D Project
ARMed	Antibiotic resistance in the South-Eastern Mediterranean
DG R&D	Director General Research and Development;
DG SANCO	Directorate General for Health and Consumer Affairs
ECDC	European Centre for Disease Prevention and Control
EU	European Union
GRE	Glycopeptide-resistant enterococci
HCAI	Healthcare associated infection
INCO-MED	International Research Cooperation with Mediterranean Partner Countries
HELICS	Hospital in Europe Link for Infection Control through surveillance
IC	Infection Control
IFIC	International Federation of Infection Control
IPSE	Improving Patient Safety in Europe
MS	Member States
ORION	Outbreak Reports and Intervention studies of Nosocomial infection
MRSA	Meticillin (formerly methicillin) resistant <i>Staphylococcus aureus</i>
PVL	Panton-Valentine Leukocidin
SPI	Standards and Performance Indicator
WP	Work Package

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Deliverable D2.1: Guidance on Infection Control in Healthcare Settings in Europe

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Introduction

The results of the IPSE WP 2 survey “National Recommendations and Indicators on Healthcare-associated Infection (HCAI) and Antimicrobial Resistance (AMR)” showed that there are many differences in the national IC programmes of European countries. This document describes the results of the IPSE WP 2 consensus process on recommended practices, standards and indicators for monitoring the control of HCAI and AMR. These were prepared with the aim of helping countries to measure the occurrence and control capabilities of HCAI and AMR in order to harmonise standards of healthcare in European countries.

Those taking part in the consensus process understood that the findings would be taken into account in the preparation of a DG SANCO document for submission to the European Council of Health Ministers. The possibility that countries would in due course be required to report progress in their national IC programmes towards compliance with such proposals, was emphasised. During the project, DG SANCO invited members of the WP2 Expert Group to join the DG SANCO group convened to finalise their document.

Methods

The DG SANCO *Public consultation on strategies for improving patient safety by prevention and control of healthcare-associated infections*¹ and recommendations of the DG R&D funded ARPAC project,² the INCO- MED funded ARMed project,³ an IFIC workshop⁴ and contributions from the WP2 Expert Group were taken into account in the preparation of the guidance. There were also the previous recommendations for the prudent use of antimicrobials in human medicine.⁵

WP2 Experts developed the guidance and IPSE National Contact Points were asked for their opinion about these proposals as recommended practices, standards and indicators for IC programmes in European countries.

The IPSE National Contact Points were asked to discuss and reach a consensus with nominated members of IC Professional Societies and other bodies considered to be appropriate.

For example, one country, with whom the guidance was piloted, consulted the steering group of its surveillance system. However, MS Departments of Health had already had the opportunity to comment on the public consultation document¹ and, although it was not necessary to consult with them, several did so.

Recommended practices, standards and indicators for the measurement of occurrence and control capabilities of HCAI and AMR in IC programmes of European countries have been grouped into five categories each of which aims to achieve a level of accomplishment considered appropriate for national EU programmes;

Category	Title	Target Accomplishment
1	Organisation of the control of healthcare-associated infections and antimicrobial resistance.	National and local health organisations implement strategies for controlling HCAI and AMR in all healthcare settings.
2	Prevention and control policies.	Continuous quality improvement of healthcare care leads to the reduction of HCAI and AMR.
3	Surveillance policies.	Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities.
4	Education and Training.	The principles of HCAI prevention and control and antibiotic stewardship are integrated in the professional activities of every healthcare worker.
5	Resources for the control of HCAI and AMR.	Hospitals and other healthcare facilities have appropriate resources to operate HCAI control and antibiotic stewardship programmes.

For each of the categories, a ‘Standards and Indicators’ section describes standards and corresponding indicators (SPIs) to measure and monitor progress. The second part of the document describes recommended practices corresponding to the standards. National Contact Points were asked to complete a Likert score for each section as follows:

1.	Agree, with no changes - this means “We think this standard/indicator/practice should be recommended”
2.	Agree, with changes - this means “We think, with changes, this standard/indicator/practice should be recommended” <u>Please alter what would make this acceptable under track changes.</u>
3.	Neutral - we neither agree nor disagree.
4.	Disagree – this means “We think this standard/indicator/practice should not be recommended and should be removed.” <u>Please alter what would make this acceptable under track changes.</u>

As National Contact Points examined the proposals in the guidance document, they were also asked to consider the following questions and enter their responses into the table after reviewing it:

- “Is the proposed scheme practical: i.e. would countries find it a useful support towards monitoring and improving national Infection Control standards?” If the answer was “no” they were asked to comment on the weaknesses of the proposals.
- “Overall, is the level of detail correct?”

Results

- There was a high response rate (88%) with 29 National Contact Points returning comments on the document.
- Most (21: 72%) had engaged with lead IC doctor and nursing professional organisations in their countries. Fifteen of these had also engaged with their Departments of Health. One had only been able to interact with solely an IC doctor organisation and in seven instances the National Contact Points only had reviewed the document; no explanation was offered for this.
- Most (90%) felt the approach was practical, although opinion was a little more divided about the level of detail. Here it should be remembered that the remit of the WP was to respond to the DG SANCO consultation document, which itself had a high level of detail. That being said, the majority (59%) responding thought the level of detail was about right, with 38% feeling that it was too detailed.
- There was a high average level of agreement (80%) for the SPIs. Another 11% were able to agree subject to alteration, 2% were neutral and 3% disagreed with or without comments (See Table One). Three countries accounted for three quarters of the disagreements.
- There were 138 Recommended Practices relating to these SPIs. For these there was again a high level of average agreement of 84%, another 6% agreed with alteration, 4% were neutral and 3% disagreed with or without comments (See Table Two). A small number of National Contact Points (ten) accounted for 95% of these disagreements.

Table One: Review of Standards and Indicators

Analysis of response received from 29 countries

Category	Agree	Modify	Neutral	Disagree
Organisation	85%	9%	4%	1%
Control	79%	7%	2%	2%
Surveillance	79%	11%	1%	2%
Education	79%	14%	1%	3%
Resources	79%	15%	2%	5%
Overall	80%	11%	2%	3%

Table Two: Review of Recommended Practices

Analysis of response received from 29 countries

Category	Agree	Modify	Neutral	Disagree
Organisation	80%	7%	5%	5%
Control	85%	4%	6%	4%
Surveillance	92%	4%	1%	2%
Education	79%	10%	4%	3%
Resources	84%	4%	6%	1%
Overall	84%	6%	4%	3%

IPSE WP2 Consultation

Despite the high level of consensus, many points were raised. The guidance document was altered in order to respond to the comments made in the review (see Appendix 2). Key points arising are as follows:

- Some MS are organised in regions and many of these recommendations would normally be progressed at a regional level instead of, or in addition to, a national one. This is mentioned in a footnote to the SPIs (no 2 page 1).
- In MS with smaller populations, interactions are often closer to healthcare providers and healthcare workers. Ministries of Health may interact directly with IC committees, for example.
- Clarification of some terms was requested and a glossary (Appendix One) is now included in response to this. DG SANCO is writing a comprehensive glossary which will take into account the glossary prepared here.
- Many interesting comments prompted clarification, exposing areas of contention or areas where there is no consensus between or even within MS. However, the DG SANCO document (page 16) states that there should be a number of actions at the community level which MS should inform e.g. review of resources required for isolation of patients and staffing requirements. This requirement resonates throughout these comments.
- There are also comments about IC resources. It is assumed that IC resources will become augmented (not replaced) by interactions with link nurse and team practitioners on the wards and with audit and quality improvement departments. Again the resources required will require review as per the comment above.
- Many comments were received about the community aspects. Although the document from DG SANCO related to healthcare associated infections, it was subsequently clarified that nursing homes and other forms of community care are outside the remit. DG SANCO have since made clear that community aspects are very important and will be considered in the future.
- Frequent comments emphasised that IC is no longer just the role of the IC team, but part of every healthcare worker's duty of care. This statement is included in the guidance and has since been re-emphasised by DG SANCO in their meetings held to review their public consultation document.
- Audit proposals were suggested in particular and included in the revised guidance document.
- One of the most difficult areas was the publication of hospital specific HCAI infection rates where there are clearly different views amongst MS. The following scheme, developed in consultation with DG SANCO, may provide a way forward by allowing the possibility of different systems. These are still at a draft stage and may change:
 1. Confidential (within the health care institution, not shared with public health authorities); e.g.; individual surgical team infection rates.

2. Confidential benchmarking within surveillance networks with publication of anonymised or aggregated results; e.g. surveillance of surgical site infections;
3. Disclosure to public health authorities, e.g.; early warning of notifiable nosocomial events
4. Public reporting of agreed indicators, e.g. composite structure and process indicators or HCAI rates.

The alterations made to the original recommended practices, standards and indicators as a result of this consultation are presented in emboldened italics in Appendix Two. This document was also sent to DG SANCO for consideration and to help inform discussions.

A “cut-down” selection of indicators will be considered at the IPSE network consensus meeting in Lyon, France on 22nd May, 2008. Introducing the scheme in this way, by offering a relatively small number of indicators to infection control programmes at national and hospital levels, could be envisaged. Some areas may be included where issues were not able to be resolved (e.g. resourcing of the infection control team), but such an approach could help infection control professionals, healthcare workers, patients, policy makers and politicians to focus on key issues being faced.

References

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5. *Report from the commission to the council on the basis of member states' reports on the implementation of the council recommendation (2002/77/ec) on the prudent use of antimicrobial agents in human medicine.* Brussels, 22 December 2005 COM (2005) 0684. http://ec.europa.eu/health/ph_threats/com/mic_res/com684_en.pdf

APPENDIX ONE: GLOSSARY OF TERMS REQUESTED IN IPSE WP2 CONSULTATION*

- Accountable:** answerable to. It implies that there is a person to whom the subject is held to account.
- Alert organisms:** this is a daily list of organisms produced by the microbiology laboratory from specimens received that need to be drawn to the attention of the infection control team e.g. virulent organisms (*Streptococcus pyogenes*), antimicrobial resistant organisms e.g. MRSA.
- Alert conditions:** Is the same listing important infections e.g. cellulitis.
- Antibiotic Stewardship:** comprises antibiotic policy, prescribing interventions and educational activities
- Appropriate:** suitable; fitting the hospital/healthcare organisation
- Audit:** is a cyclical process where practice is compared with policy, the results are reflected upon and the policies altered where this is appropriate or informed by newer evidence or interventions are initiated to ensure that subjects of the audit comply with policy for example by re-training or removing opportunities to deviate from practice e.g. restricting antibiotics.
- Clinical governance:** a framework through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of patient care, by creating an environment in which excellence in clinical care will flourish.
Reference: Onion, C,W.R. Principles of Clinical Governance, Journal of Evaluation in Clinical Practice. 2000:6;4,; 405-412.
- Duty of care:** is defined as an obligation that a sensible person would use in the circumstances when acting towards others and the public. If the actions of a person are not made with watchfulness, attention, caution, and prudence, their actions are considered negligent. Consequently, the resulting damages may be claimed as negligence in a lawsuit. Reference: <http://www.legal-explanations.com/definitions/duty-of-care.htm>
- Equivalent system:** is one that is comparable and would produce the same results.
- Formulary:** a list of preferred, commonly prescribed prescription drugs. These drugs are chosen by a team of doctors and pharmacists because of their clinical superiority, safety, ease of use and cost. Reference: <http://www.emonetwork.org/terms.asp#formulary>
- General public:** as opposed to the media, current patients and healthcare workers. This will be contextual as these may be previous patients or healthcare workers.

Good/Best practice policies:

the adoption of safe working to control existing healthcare associated infections and to prevent the acquisition of infections within the healthcare setting. The Health and Safety Executive (HSE) defines it as those standards for controlling risk which have been judged and recognised by the HSE as satisfying the law when applied to a particular relevant case in an appropriate manner. The term is often used in EU documents in our field. e.g. “EU-wide **exchange of best practice** of all relevant issues should be promoted. Examples of good practice concerning antimicrobial resistance, vaccination campaigns and hygiene/infection control should be discussed and exchanged between Member States. Reference: http://ec.europa.eu/health/ph_threats/com/mic_res/com684_en.pdf “

National: refers to the whole of a nation.

National audit: (see audit above) refers to a review which is generally carried out by nominated organisations and is fed back to the national body for scrutiny. They in turn may release into the public domain annual reports showing hospital performance against specific targets.

National Health Authority:

is a term used to describe a health service that is distributed across an entire nation which is responsible for matters of health and which has administrative powers in that field.

Officially recognised: programmes (in this context) that are established or sanctioned by a government (national or regional) body who hold public position and authority

Programme: a broad framework of goals to be achieved, serving as a basis to define and plan specific projects. A specific example could be an agreed statement of objectives between chief executive/manager of the healthcare organisation, the infection control programme director, and the senior management group, for example clinicians to whom the programme director reports.

Strategy: a long term plan of action designed to achieve a particular goal.

Structural measures: refer to any physical construction e.g. adequate staff/policies to reduce or avoid possible impacts of hazards such as healthcare associated infections. Reference: <http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm>

Suitable system: one that fits the purpose of the hospital and which is recognised by a representative body of clinicians

***These have been sent to DG SANCO to assist them in compiling a larger glossary for their document.**

APPENDIX TWO: RECOMMENDED PRACTICES, STANDARDS & INDICATORS FOR MONITORING THE CONTROL OF HAI & AMR

Category #1	<u>ORGANISATION OF THE CONTROL OF HEALTHCARE-ASSOCIATED INFECTIONS (HCAI) AND ANTIMICROBIAL(ANTIBIOTIC) RESISTANCE (AMR)</u> “National and local health organisations implement strategies for controlling HCAI and AMR in all healthcare settings”		
Ref.	Standard	Hospital Indicator (1)	National Indicator (2)
1.1a	There is a <i>nationally funded</i> programme, which implements a national strategy to reduce the burden of HCAI.		Is a <i>nationally funded</i> programme to reduce the burden of HCAI in place (yes/no)?
1.1b	There is a programme, which implements a national strategy to reduce the threat of AMR.		Is a national programme to reduce the threat of AMR in place (yes/no)?
1.2a	Hospitals have programmes for the control of HCAI (Infection Control: IC).	Do you have an IC programme in your hospital (yes/no)?	What is the proportion of hospitals having an IC programme in place (%)?
1.2b	Hospitals have programmes to control AMR, <i>the practice of which is subject to audit.</i>	Do you have an antibiotic prescribing control strategy in your hospital (yes/no)?	What is the proportion of hospitals having an antibiotic prescribing control programme in place (%)?
1.3a	A national progress report is provided annually by the national programme and presented to the national health authority.		Annual reports are produced and presented to the national health authority (yes/no).
1.3b	An annual progress report is provided by each hospital and presented to hospital chief executives.	Is there an annual progress report issued on the control of HCAI and AMR (yes/no)?	
1.4a	National multi-disciplinary strategic committee(s) is/are responsible for <i>assessing implementation of</i> the programmes aimed at reducing the burden of HCAI and reducing AMR (3).		Is/are responsible strategic national committee(s) in place for HCAI and AMR control (yes/no)?
1.4b	A multidisciplinary infection control committee (ICC) is responsible for implementing HCAI control programmes in each hospital.	Do you have a multidisciplinary ICC in your hospital (yes/no)?	What is the proportion of hospitals having an ICC in place (%)?
1.4c	A committee is responsible for <i>overseeing implementation of</i> antibiotic prescribing control programmes in hospitals, <i>whose practice is subject to audit.</i>	Do you have a committee in charge of AB policy and prescribing processes in your hospital (yes/no)?	What is the proportion of hospitals having a committee in charge of antibiotic prescribing in place (%)?

(1) Indicators apply to hospitals/other healthcare organisations e.g. hospital trusts, health networks. Hospital data would be stratified by e.g. type and size.

(2) The **regional** level may be considered (instead of the national level) if health services are organised mainly at this level.

(3) There may be separate HCAI and AMR (sometimes **Antibiotic Stewardship**) committees or sub-committees reporting to a single committee.

<p align="center"><u>ORGANISATION OF THE CONTROL OF HEALTHCARE-ASSOCIATED INFECTIONS (HCAI) AND ANTIMICROBIAL(ANTIBIOTIC) RESISTANCE (AMR)</u></p> <p align="center">“National and local health organisations implement strategies for controlling HCAI and AMR in all healthcare settings”</p> <p align="center"><u>STANDARDS AND INDICATORS</u></p>			
Category #1	Standard	Hospital Indicator (1)	National Indicator (2)
Ref. 1.5	Hospital chief executives (<i>or other legal entities as appropriate</i>) are accountable for patient safety and particularly HCAI control and antibiotic stewardship.		Is there an official statement on the legal accountability of hospital chief executives (<i>or other appropriate legal entities</i>) for HCAI control and antibiotic stewardship (yes/no)?

PREVENTION AND CONTROL POLICIES “Continuous quality improvement in healthcare delivery and to reduction of HCAI and AMR” STANDARDS AND INDICATORS			
Cat #2	Standard	Hospital Indicator (1)	National Indicator (2)
2.1	National programmes to reduce the burden of HCAI and the threat of AMR have a long-term <i>and sustained</i> strategic priority of pursuing the continuous improvement of the quality of healthcare, as part of a total quality management system.		The pursuit of continuous improvement of the quality of healthcare is included in the national programme’s strategy (yes/no)?
2.2	Hospitals have access to nationally recognised “good practice policies” produced on evidence-based guidelines, <i>along with examples of best practice</i> .		Nationally recommended evidence-based guidelines for the control of HCAI and AMR are available <i>along with examples of best practice</i> (yes/no)? <i>(See Recommended Practices Section 2 for examples of areas to be covered)</i>
2.3	“Good practice policies” (<i>derived from standard 2.2 above</i>) are available to healthcare workers for the major activities contributing to HCAI and AMR control		What is the proportion of hospitals having good practice policies locally available to healthcare workers (%)?
2.4	Good practice policies available locally to healthcare workers include (a fuller list is in ref ¹), <i>the process of maintenance and provision of which is subject to audit:</i> <ul style="list-style-type: none"> • Standard precautions 	Are good practice policies locally available to healthcare workers for: <ul style="list-style-type: none"> • Standard precautions (yes/no)? 	
2.5	<ul style="list-style-type: none"> • Special precautions (isolation) 	<ul style="list-style-type: none"> • Special precautions (isolation) (yes/no)? 	
2.6	<ul style="list-style-type: none"> • Sharps injuries and blood contact 	<ul style="list-style-type: none"> • Sharps injuries and blood contact (yes/no)? 	
2.7	<ul style="list-style-type: none"> • Screening for AMR organism carriage 	<ul style="list-style-type: none"> • Screening for AMR organism carriage (yes/no)? 	
2.8	<ul style="list-style-type: none"> • Sterilisation and disinfection 	<ul style="list-style-type: none"> • Sterilisation and disinfection (yes/no)? 	
2.9	<ul style="list-style-type: none"> • Waste disposal 	<ul style="list-style-type: none"> • Waste disposal (yes/no)? 	

PREVENTION AND CONTROL POLICIES “Continuous quality improvement in healthcare delivery and to reduction of HCAI and AMR”			
STANDARDS AND INDICATORS (cont.)			
Cat #2	Standard	Hospital Indicator (1)	National Indicator (2)
2.10	<ul style="list-style-type: none"> • AB prophylaxis 	<ul style="list-style-type: none"> • Antibiotic prophylaxis (yes/no)? 	
2.11	<ul style="list-style-type: none"> • AB therapy 	<ul style="list-style-type: none"> • Antibiotic therapy (yes/no)? 	
2.12	<ul style="list-style-type: none"> • Urinary care 	<ul style="list-style-type: none"> • Urinary care (yes/no)? 	
2.13	<ul style="list-style-type: none"> • Venous catheter care 	<ul style="list-style-type: none"> • Venous catheter care (yes/no)? 	
2.14	Hospitals have programmes for the promotion of hand hygiene and hand disinfection.	Do you have an on-going programme for the promotion of hand hygiene and hand disinfection in your hospital (yes/no)?	What proportion of hospitals have an on-going programme for the promotion of hand hygiene in place (%)?
2.15	The use of hand disinfectant solution (alcohol-based) is monitored by each hospital.	Do you monitor the amount of hand disinfectant solution in your hospital (yes/no)?	
2.16	The compliance of recommended practice of hand hygiene and disinfection is monitored periodically.	Do you monitor the compliance of the recommended practice of hand hygiene in your hospital? (%)?	What proportion of hospitals monitor compliance with recommended hand hygiene practice (%)?
2.17	An antibiotic formulary is formally established in each hospital.	Do you have an antibiotic formulary in your hospital (yes/no)?	What percentage of hospitals has formularies (%)?
2.18	Achievement of the major activities contributing to HCAI and AMR control is monitored through nationally and/or locally organised audits (or any other kinds of evaluation) with feedback to management and healthcare workers.	Did your hospital organise an audit (or equivalent) in the field of HCAI or AMR control during the last year and feed this back to management and healthcare workers (yes/no)?	Did you organise a national audit (or equivalent) in the field of HCAI or AMR control in your country during the last year and feed this back to management and healthcare workers (yes/no)?

SURVEILLANCE POLICIES			
“Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities”			
STANDARDS AND INDICATORS			
Cat #3	Standard	Hospital Indicator (1)	National Indicator (2)
Ref.		<i>Does your hospital participate in the national system for the surveillance of HCAI (yes/no)?</i>	Is there a national system for HCAI surveillance (yes/no)?
3.1	There is a national (<i>mandatory or recommended</i>) system for the surveillance of HCAI that addresses national priorities and produces data which is fed back to those who can take appropriate actions.		
3.2	There is a national (<i>mandatory or recommended</i>) system for the surveillance of antibiotic resistance.		Is there a national system for antibiotic resistance surveillance (yes/no)?
3.3	Hospitals participate in a surveillance system for HCAI, particularly for surgical and intensive care patients.	Does your hospital have a local HCAI surveillance system (yes/no)?	What is the proportion of hospitals having a surveillance system for HCAI (%)?
NEW 3.4	Hospitals participate in a continuous surveillance system for the main antibiotic resistance patterns.	Do you have a local HCAI surveillance system (yes/no)?	What is the proportion of hospitals having a surveillance system for the main antibiotic resistance patterns (%)?
3.5 (was 3.4)	Hospitals organise an alert and response system for new or threatening nosocomial events <i>e.g. equipment malfunctions</i> , alert organisms lists.	<i>Does your hospital organise an alert system to identify new or threatening nosocomial events or alert organisms (yes/no)?</i>	Do you organise an alert system to identify new or threatening nosocomial events or alert organisms (%)?
3.6 (was 3.5)	A national reference dataset complies with common European surveillance protocols for definitions, collection and reporting systems.	<i>Does your hospital send data complying with common European surveillance protocols for inclusion in a national reference dataset (yes/no)?</i>	Are national data included in common European surveillance databases (yes/no)?
3.7 (was 3.6)	National surveillance results are published annually.		Is an annual report produced describing surveillance results (yes/no)?
3.8 (was 3.7)	Results of nationally organised surveillance of HCAI and/or AMR are fed-back to participating institutions allowing benchmarking of performance <i>where this has been established at a national level</i> .		Are results of nationally organised surveillance of HCAI and/or AMR annually fed-back to participating institutions (yes/no)?
3.9 (was 3.8)	Hospital surveillance systems for HCAI and AMR surveillance regularly report data to clinical units and health professionals.	Is/are report(s) regularly disseminated describing surveillance results in your hospital (yes/no)?	What proportion of hospitals regularly disseminate report(s) describing surveillance results in the hospital (%)?
3.10 (was 3.9)	Hospitals have a continuous surveillance system for monitoring level and trends in antibiotic consumption.	Do you record and analyse annually the consumption of antibiotics in your hospital (yes/no)?	What proportion of hospitals record and analyse annually the consumption of antibiotics in the hospital (%)?
3.11 (was 3.10)	Hospitals have a suitable (<i>“fit for purpose”</i>) system for the rapid detection of outbreaks and for their investigation, <i>the operation of which is subject to audit</i> .	Do you have a suitable outbreak detection and investigation system in your hospital (yes/no)?	What proportion of hospitals have a suitable outbreak detection and investigation system (%)?

<p style="text-align: center;">EDUCATION AND TRAINING</p> <p style="text-align: center;">“The principles of HCAI prevention and control and antibiotic stewardship are integrated in the professional activities of every healthcare worker”</p> <p style="text-align: center;">STANDARDS AND INDICATORS</p>			
Cat # 4	Standard	Hospital Indicator (1)	National Indicator (2)
4.1	The prevention, control and treatment of infection and antibiotic stewardship are part of the duty of care of all medical and nursing specialists and any other healthcare professionals (e.g. pharmacists) involved in the management of infection in hospitals.	<i>Does your hospital have clinical governance systems in place to ensure that the prevention, control and treatment of infection and antibiotic stewardship are recognised as part of the duty of care of all medical and nursing specialists and any other healthcare professionals (e.g. pharmacists) involved in the management of infection (yes/no)?</i>	The prevention, control and treatment of infection and antibiotic stewardship are recognised as part of the duty of care of all medical and nursing specialists and any other healthcare professionals (e.g. pharmacists) involved in the management of infection in hospitals (yes/no)?
4.2	Officially recognised and mandatory educational programmes in HCAI and AMR control are provided to students in medicine, nursing and other health professions.		Is an educational programme in HCAI and AMR control strictly required in all medical and nursing training programmes (yes/no)?
4.3	Officially recognised educational programmes are organised for infection control practitioners (both doctors and nurses).		Are officially recognised educational programmes organised for infection control practitioners (both doctors and nurses) (yes/no)?
4.4	Continuing professional education in HCAI prevention and control (including hand hygiene) and antibiotic stewardship exists for all relevant healthcare workers, the provision of which is subject to audit.	Does continuing professional education in HCAI prevention and control (including hand hygiene) and antibiotic stewardship exist for all relevant healthcare workers in your hospital (yes/no)?	What proportion of hospitals have continuing professional education in HCAI prevention and control (including hand hygiene) and antibiotic stewardship for all relevant healthcare workers (%)?
4.5	Hospitals give HCAI prevention and control and antibiotic stewardship policies to all relevant staff at induction, the provision of which is subject to audit.	Does your hospital provide HCAI prevention and control and antibiotic stewardship policies to all relevant staff at induction (yes/no)?	What proportion of hospitals provide HCAI prevention and control and antibiotic stewardship policies to all relevant staff at induction (%)?

<p align="center">RESOURCES FOR THE CONTROL OF HCAI AND AMR “Hospitals and other healthcare facilities have appropriate resources to operate HCAI control and antibiotic stewardship programmes”</p> <p align="center">STANDARDS AND INDICATORS</p>			
Cat # 5	Standard	Hospital Indicator (1)	National Indicator (2)
5.1	National standards describe the human resource requirements for HCAI and AMR control in healthcare establishments (including the roles and responsibilities of infection control practitioners) according to their capacity and needs.	Does your hospital receive the support of a multidisciplinary IC team (either internal or not) (yes/no)?	Do you have national standards for human resource requirements for HCAI and AMR control in hospitals (yes/no)?
5.2	Hospitals receive the support of a multidisciplinary infection control team (with <i>sufficient</i> trained infection control doctors and nurses).	In most of your hospital wards do you have link nurses working who liaise with the IC team (yes/no)?	What proportion of hospitals receives the support of a multidisciplinary IC team (%)?
5.3	The majority of hospital wards have an IC “link” doctor or nurse liaising with the IC team?	Does your hospital have appropriate structural resources to operate HCAI prevention and control and antibiotic stewardship programmes (yes/no)?	What proportion of hospitals have an IC “link” doctor or nurse liaising with the IC team in the majority of wards (%)?
5.4	Hospitals and other healthcare facilities have appropriate structural resources to operate HCAI prevention and control and antibiotic stewardship programmes.	Do you have enough single patient rooms or separate wards to adequately isolate patients in your hospital (yes/no)?	What proportion of hospitals have appropriate structural resources to operate HCAI prevention and control and antibiotic stewardship programmes (%)?
5.5	The number and equipment of the single patient rooms or other adequate patient isolation facilities corresponds to the needs of the hospitals.	Do you have hand hygiene facilities available at the point of patient care (yes/no)?	What is the percentage of beds that are single bedded side rooms (%)?
5.6	Hand hygiene facilities are available at the point of patient care in hospitals, the availability of which is subject to audit.	Does your hospital have access to accredited microbiology laboratory services? (Y/N)	What proportion of hospitals have hand hygiene facilities available at the point of patient care (%)?
5.7	Hospitals have access to accredited microbiology laboratory services.	Does your hospital have access to laboratory typing facilities (in-house or out-of-house) sufficient for its needs (y/n)?	What percentage of hospitals has access to accredited microbiology laboratory services? (%)?
5.8	Hospital laboratories have access to microbial typing facilities sufficient for their needs.		A funded HCAI and AMR research programme exists of a size commensurate with the economic resources of the country (yes/no)?
5.9	The National health authority ensures that resources are available for a research programme.		

<p style="text-align: center;">ORGANISATION OF THE CONTROL OF HEALTHCARE-ASSOCIATED INFECTIONS (HCAI) AND ANTIBIOTIC RESISTANCE (AMR) “National and local health organisations implement strategies for controlling HCAI and AMR in all healthcare settings”</p>	
<p>RECOMMENDED PRACTICES</p>	
Category #1	Standard
Ref.	Recommended Practice
1.1a/b.1	HCAI prevention and control objectives and antibiotic stewardship recommendations for policy progression are produced and reviewed annually.
1.1a/b.2	There is a period of consultation for the proposed strategy with national professional groups and the general public.
1.1a/b.3	Minutes of meetings, annual reports and reviews are made available publicly via the internet and/or other appropriate mechanisms.
1.1a/b.4	There is national advocacy, informed by data from standards and indicators, involving politicians and the media, to foster a culture of awareness of adverse events and prevention strategies and to ensure that HCAI and antibiotic stewardship are governmental priorities.
1.1a/b.5	<p>1.1a There is a nationally funded programme, which implements a national strategy to reduce the burden of HCAI.</p>
1.1a/b.6	<p>1.1b There is a programme, which implements a national strategy to reduce the threat of AMR.</p> <p>New strategies, including those from other European countries, are considered</p> <p>Examples include:</p> <ul style="list-style-type: none"> • a director of Infection Prevention and Control (or equivalent) reporting directly to the hospital board. • linking of hospital insurance premiums to the levels of prevention activity. • legislation. • public reporting of HCAI rates. • antibiotic prescribing reimbursement rules.
1.1a/b.7	Programme practices, standards and indicators are audited to ensure compliance with those herewith described.
1.1a/b.8	Programmes participate in collaborative EU and international initiatives aimed at reflecting upon experiences and harmonising IC and prevention policies and antibiotic stewardship activities.

<p align="center">ORGANISATION OF THE CONTROL OF HEALTHCARE-ASSOCIATED INFECTIONS (HCAI) AND ANTIBIOTIC RESISTANCE (AMR) “National and local health organisations implement strategies for controlling HCAI and AMR in all healthcare settings”</p>	
<p align="center">RECOMMENDED PRACTICES (cont.)</p>	
Category #1	
Ref.	Standard
1.2a.1	Hospitals have programmes for the control of HCAI (Infection Control: IC).
1.2a.2	
1.2a.3	
1.2a.4	
1.2a.5	
1.2b.1	Hospitals have programmes to control AMR, <i>the practice of which is subject to audit.</i>
1.2b.2	
	Recommended Practice
	Hospital IC programmes; <ul style="list-style-type: none"> • have defined objectives. • review the objectives at least annually. • provide an annual progress report. • formally publish the annual report to the hospital senior management. • ensure there is interaction of surveillance and policy, process, audit, review cycles.
	Hospital programmes to control antibiotic resistance have; <ul style="list-style-type: none"> • an antibiotic prescribing document. • a multidisciplinary drugs and therapeutic committee which meets at least twice per year.

ORGANISATION OF THE CONTROL OF HEALTHCARE-ASSOCIATED INFECTIONS (HCAI) AND ANTIBIOTIC RESISTANCE (AMR) “National and local health organisations implement strategies for controlling HCAI and AMR in all healthcare settings”	
RECOMMENDED PRACTICES (cont.)	
Category #1	Recommended Practice
Ref.	Standard
1.4a.1	National strategic committee(s) • have a government mandate.
1.4a.2	• are supported financially by the government.
1.4a.3	• meets regularly (at least twice per year).
1.4a.4	• is multi-disciplinary and includes, for example , representatives of healthcare workers, healthcare providers, infection control specialists, clinical microbiology specialists, antibiotic specialists, pharmacists, Public Health physicians, relevant government departments and patient advocates.
1.4a.5	• Experts in social anthropology (behavioural and organisational change), patient safety and regulation among relevant others are available to the committee(s) for consultation, or are members of convened sub-committees.
1.4a.6	Committee members declare any commercial interests annually and as and when conflicts of interest arise (see http://www.ypc.gov.uk/ (accessed 8.3.08) or an example of good practice).
1.4a.7	The Committee members are appointed for fixed terms and there is a transparent system to ensure that all professions are provided with the opportunity to chair it (rotating systems might be considered)
1.4b.1	Hospital ICCs; • are multidisciplinary.
1.4b.2	• meet regularly (at least twice per year).
1.4b.3	• have a representative of hospital management.
1.4c.1	Hospital antibiotic committees are; • multidisciplinary (e.g. management and infection control, doctors, nurses, other relevant healthcare workers, pharmacists and others ad hoc)
1.4c.2	• meet regularly (at least twice per year).
1.4c.3	• have a representative of hospital management.
1.4b.1	A multidisciplinary infection control committee (ICC) is responsible for implementing HCAI control programmes in each hospital.
1.4c.1	A committee is responsible for overseeing implementation of antibiotic prescribing control programmes in hospitals, whose practice is subject to audit.
1.4c.2	
1.4c.3	

PREVENTION AND CONTROL POLICIES “Continuous quality improvement of healthcare care leads to the reduction of HCAI and AMR”	
RECOMMENDED PRACTICES	
Category #2	Standard
Ref.	Recommended Practice
2.1.1	National specifications outline the important components of hospital management procedures governing the pursuit of continuous improvement of healthcare quality, including accountability and interactions with quality of patient care, audit and risk management committees.
2.1.2	National specifications outlining the important components of hospital management procedures governing the pursuit of continuous improvement of healthcare quality are reviewed annually to demonstrate fitness for purpose.
2.1.3	National guidelines include recommendations on the following; <ul style="list-style-type: none"> • the movement of patients between wards, departments, such as Accident and Emergency, radiology, and other clinical areas.
2.1.4	<ul style="list-style-type: none"> • assessment of the clinical need for and risk of patient transfer.
2.1.5	<ul style="list-style-type: none"> • audit and review systems to ensure effective communication between bed managers.
2.1.6	<ul style="list-style-type: none"> • quality assurance methods to ensure that patient care procedures include embedded IC precautions (e.g. care bundles).
2.1.7	<ul style="list-style-type: none"> • response to HCAI and antimicrobial resistance threats (e.g. the threat of pandemic or epidemic influenza or SARS, emergence of virulent or resistant organisms such as PVL MRSA or highly resistant Gram negative rods, <i>vanA</i> MRSA).
2.1.8	<ul style="list-style-type: none"> • investigation of outbreaks.
2.1.9	<ul style="list-style-type: none"> • production of local policies, including audit and regular review strategy of practices, consideration by local multi disciplinary groups of healthcare workers with the relevant competencies, learning from best practice in other hospitals (e.g. via an external audit or accreditation system).
2.1.10	National guidelines are developed with the Cochrane AGREE (http://www.agreecollaboration.org/) or similar approach, which includes a period of consultation.
2.1.11	National guidelines are regularly evaluated and updated, publicly accessible and accountable.
2.1.12	All hierarchical levels and functions of national health services are involved in the pursuit of continuous improvement of healthcare quality to achieve results-oriented behavioural changes.
2.1.13	Progress in the pursuit of continuous improvement of healthcare quality is reviewed regularly to assess the national situation, (e.g. three to five years, depending on progress).

<p style="text-align: center;">PREVENTION AND CONTROL POLICIES “Continuous quality improvement of healthcare care leads to the reduction of HCAI and AMR”</p> <p style="text-align: center;">RECOMMENDED PRACTICES (cont.)</p>	
Category #2	Standard
Ref.	Recommended Practice
2.1.14	National programmes to reduce the burden of HCAI and the threat of AMR have a long-term <i>and sustained</i> strategic priority of pursuing the continuous improvement of the quality of healthcare, as part of a total quality management system.
2.1.15	Hospitals have access to nationally recognised “good practice policies” produced on evidence-based guidelines, <i>along with examples of best practice.</i>
2.2.1	Policies are written and agreed by a multi-disciplinary group including healthcare workers.
2.2.2	Policies are audited regularly and audit results are feedback to management and staff in order to ensure policies are reviewed accordingly.
2.14.1	Programmes; <ul style="list-style-type: none"> • ensure hand hygiene rubs are available at every patient area.
2.14.2	<ul style="list-style-type: none"> • monitor the amount of hand hygiene consumables (e.g. rubs, soap, towels) used.
2.14.3	<ul style="list-style-type: none"> • ensure there is a policy governing when to use gloves.
2.14.4	<ul style="list-style-type: none"> • recommend washing or disinfecting hands after usage of gloves.
2.14.5	<ul style="list-style-type: none"> • audit the compliance of healthcare workers concerning hand hygiene.
2.14.6	<ul style="list-style-type: none"> • feedback audit data to management and healthcare workers.

Cat #3	<p align="center">SURVEILLANCE POLICIES</p> <p align="center">“Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities”</p> <p align="center"><u>RECOMMENDED PRACTICES</u></p>	
Ref.	Standard	Recommended Practice
3.1.1	<p>There is a national (mandatory or recommended) system for the surveillance of HCAI <i>that addresses national priorities and produces data which is fed back to those who can take appropriate actions.</i></p>	<p>National systems for HCAI surveillance include;</p> <ul style="list-style-type: none"> • a set of official EU recognised definitions.
3.1.2		<ul style="list-style-type: none"> • agreed rules for the reporting (including post-discharge surveillance).
3.1.3		<ul style="list-style-type: none"> • quality control, analysis, feedback and dissemination of results.
3.1.4		<ul style="list-style-type: none"> • evaluation of the need for mandatory surveillance.
3.1.5		<ul style="list-style-type: none"> • comparison between institutions and benchmarking based on the data collected.
3.1.6		<ul style="list-style-type: none"> • assessment of the risk factors of healthcare-associated infections.
3.1.7		<ul style="list-style-type: none"> • examination of the relationship between HCAI rates and process indicators.
3.1.8		<ul style="list-style-type: none"> • feedback of results to track the epidemiology of HCAI at the national level.
3.1.9		<ul style="list-style-type: none"> • agreed rules for the reporting of serious incidents or outbreaks to Public Health authorities.
3.1.10		<ul style="list-style-type: none"> • investigation of the occurrence of HCAI epidemics and the microorganisms involved at the national level.
3.1.11		<ul style="list-style-type: none"> • regulation of data access, which is clear and sustainable.
3.1.12		<ul style="list-style-type: none"> • compliance with data protection regulations, which guarantees the confidentiality and security of data.
3.1.13		<ul style="list-style-type: none"> • electronic data collection from available databases (e.g. clinical, laboratory, pharmacy, administrative, occupational health).
3.1.14		<ul style="list-style-type: none"> • funded external data validation studies at the level of the healthcare institution assessing the sensitivity and specificity of surveillance data and using internationally recommended comparable methods.
3.1.15		<ul style="list-style-type: none"> • regular reviews of the programme utility including stakeholder assessments (government, healthcare establishments, patient advocates and the media).
3.1.16		<ul style="list-style-type: none"> • regular reviews of the resources required for the programme and the balance between the need for national datasets to provide Public Health information and the local needs of surveillance.

SURVEILLANCE POLICIES “Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities”	
RECOMMENDED PRACTICES (cont.)	
Cat #3	Standard
Ref.	Recommended Practice
3.2.1	National systems for AMR surveillance include; <ul style="list-style-type: none"> • a set of officially-recognised definitions, agreed rules for reporting
3.2.2	<ul style="list-style-type: none"> • production of indicators and agreed criteria for referral of isolates to reference laboratories, which are audited annually and reviewed.
3.2.3	<ul style="list-style-type: none"> • quality control, analysis, feedback and dissemination of results.
3.2.4	<ul style="list-style-type: none"> • evaluation of the need for mandatory surveillance.
3.2.5	<ul style="list-style-type: none"> • comparison between institutions and benchmarking based on the data collected.
3.2.6	<ul style="list-style-type: none"> • agreed rules for the reporting of serious incidents or outbreaks to Public Health authorities.
3.2.7	<ul style="list-style-type: none"> • regulation of data access, which is clear and sustainable.
3.2.8	<ul style="list-style-type: none"> • compliance with data protection regulations, which guarantees the confidentiality and security of data.
3.2.9	<ul style="list-style-type: none"> • electronic data collection from available databases (e.g. clinical, laboratory, pharmacy, administrative, occupational health).
3.2.10	<ul style="list-style-type: none"> • funded external data validation studies at the level of the healthcare institution assessing the sensitivity and specificity of surveillance data and using internationally recommended comparable methods.
3.2.11	<ul style="list-style-type: none"> • regular reviews of the programme utility including stakeholder assessments (government, healthcare establishments, patient advocates and the media).
3.2.12	<ul style="list-style-type: none"> • regular reviews of the resources required for the programme and the balance between the need for national datasets to provide Public Health information and the local needs of surveillance.

SURVEILLANCE POLICIES “Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities”	
RECOMMENDED PRACTICES (cont.)	
Cat #3	Standard
Ref.	Recommended Practice
3.3.1	Hospital surveillance systems for HCAI; <ul style="list-style-type: none"> • have annually reviewed objectives.
3.3.2	<ul style="list-style-type: none"> • produce relevant indicators (such as incidence and/or prevalence rates or proportions of resistant organisms).
3.3.3	<ul style="list-style-type: none"> • are based on the needs for national and locally driven objectives.
3.3.4	<ul style="list-style-type: none"> • comply with national mandatory surveillance requirements, which are re-considered periodically.
3.3.5	<ul style="list-style-type: none"> • produce analyses of data, which are fed back to the infection control committee and relevant healthcare workers to inform prevention and control strategies, including policy and process audit review cycles, so ensuring improved patient safety.
3.3.6	<ul style="list-style-type: none"> • compare risk-adjusted local rates with those in other institutions as a measure of the hospital’s performance (through participation in a national/regional surveillance network).
3.3.7	<ul style="list-style-type: none"> • produce local analyses of the risk factors of HCAI infections, as well as the relationships between rates and process indicators.

SURVEILLANCE POLICIES	
“Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities”	
RECOMMENDED PRACTICES (cont.)	
Ref.	Standard
Ref.	Recommended Practice
3.4.1	Hospital surveillance systems for AMR;
3.4.2	<ul style="list-style-type: none"> • have annually reviewed objectives.
3.4.3	<ul style="list-style-type: none"> • produce relevant indicators.
3.4.4	<ul style="list-style-type: none"> • are based on the needs for national and locally driven objectives. • comply with national mandatory surveillance requirements, which are re-considered periodically.
3.4.5	<ul style="list-style-type: none"> • produce analyses of data, which are fed back to the infection control committee and relevant healthcare workers to inform prevention and control strategies, including policy and process audit review cycles, so ensuring improved patient safety.
3.4.6	<ul style="list-style-type: none"> • compare risk-adjusted local rates with those in other institutions as a measure of the hospital’s performance (through participation in a national/regional surveillance network).
3.4.7	<ul style="list-style-type: none"> • produce local analyses of the risk factors of AMR, as well as the relationships between rates and process indicators.
3.4.8	<ul style="list-style-type: none"> • include alert organism and alert condition surveillance systems
3.4.9	<ul style="list-style-type: none"> • include systems to detect <i>existing</i>, new, emerging or re-emerging resistant pathogens, e.g. GRSA, MRSA, GRE, extended spectrum beta lactamase producers.
3.4.10	<ul style="list-style-type: none"> • include a strategy for the screening of risk patients for relevant alert organisms e.g. MRSA, GRE. (<i>where feasible and cost effective</i>)
3.4.11	<ul style="list-style-type: none"> • include the production of local trends in antibiotic resistance, which are monitored appropriately, stratified by organism, speciality, ward and site of infection.
3.4.12	<ul style="list-style-type: none"> • include an agreed annual antibiotic usage review strategy (where, when and how this is performed)
3.4.13	<ul style="list-style-type: none"> • specify that areas of antibiotic usage be reviewed.
3.4.14	<ul style="list-style-type: none"> • feedback data to prescribers and the drugs and therapeutic committee.

<p style="text-align: center;">SURVEILLANCE POLICIES</p> <p style="text-align: center;">“Surveillance of HCAI and AMR is implemented in each healthcare organisation to support prevention and control activities”</p> <p style="text-align: center;"><u>RECOMMENDED PRACTICES (cont.)</u></p>		
Cat #3	Standard	Recommended Practice
3.9.1		Reports of hospital surveillance for HCAI and AMR are; <ul style="list-style-type: none"> • produced at least annually.
3.9.2	Hospital surveillance systems for HCAI and AMR surveillance regularly report data to clinical units and health professionals.	<ul style="list-style-type: none"> • be provided to the hospital chief executives and infection control committee.
3.9.3		<ul style="list-style-type: none"> • be provided to relevant clinical staff.
3.9.4		<ul style="list-style-type: none"> • record the whole hospital antibiotic usage.
3.9.5		<ul style="list-style-type: none"> • investigate <i>high</i>/low levels and changes of consumption.
3.10.1		Hospitals have a continuous surveillance system for monitoring level and trends in antibiotic consumption.
3.11.1	Hospitals have a suitable (“ <i>fit for purpose</i> ”) system for the rapid detection of outbreaks and for their investigation, <i>whose practice is subject to audit.</i>	<i>Alert organism and condition surveillance systems are in place and results made available rapidly to the infection control team.</i>

EDUCATION AND TRAINING	
“The principles of HCAI prevention and control and antibiotic stewardship are integrated in the professional activities of every healthcare worker”	
<u>RECOMMENDED PRACTICES</u>	
Cat #4	Recommended Practice
Ref.	Standard
4.2.1	Officially recognised and mandatory educational programmes in HCAI and AMR control are provided to students in medicine, nursing and other health professions.
4.2.2	
4.2.3	
4.3.1	Officially recognised educational programmes are organised for infection control practitioners (both doctors and nurses).
4.3.2	
4.3.3	
4.4.1	
4.4.2	
4.4.3	
4.4.4	Continuing professional education in HCAI prevention and control (including hand hygiene) and antibiotic stewardship exists for all relevant healthcare workers, the provision of which is subject to audit.
4.4.5	
4.4.6	
4.4.7	

Recommended Practice

Programmes are **approved and supported** at national level.

Programmes include certification of competence.

Programmes include education practice audits and regular feedback monitoring to ensure their effectiveness.

Programmes are organised at national level.

Programmes include certification of competence.

Programmes include education practice audits and regular feedback monitoring to ensure their effectiveness.

Core Curricula are harmonised at national level.

Continuing professional education in IC encompassing HCAI prevention and control and including hand hygiene and disinfection is organised **at induction and** annually.

Continuing professional education in IC encompassing HCAI prevention and control and hand hygiene and disinfection is given to staff in a dedicated time.

Attendance is recorded in training sessions of continuing professional education in IC encompassing HCAI prevention and control and hand hygiene and disinfection, and those not in attendance are contacted.

Continuing professional education in IC encompassing HCAI prevention and control includes training in surveillance.

Training sessions in surveillance of continuing professional education in IC use local surveillance and audit data in a timely fashion so that they are relevant to those receiving the training.

Training sessions of continuing professional education in IC encompassing HCAI prevention and control and hand hygiene and disinfection, make use of modern techniques and methodology of training and education in order to meet different staff needs, availability and learning styles (e.g. workshops, internet, e-learning, practical training, case analysis).

Continuing professional education in IC encompassing HCAI prevention and control and hand hygiene and disinfection include education practice audits and regular feedback monitoring to ensure their effectiveness.

<p style="text-align: center;">EDUCATION AND TRAINING</p> <p style="text-align: center;">“The principles of HCAI prevention and control and antibiotic stewardship are integrated in the professional activities of every healthcare worker”</p> <p style="text-align: center;"><u>RECOMMENDED PRACTICES (cont.)</u></p>	
Cat # 4	Standard
Ref.	Recommended Practice
4.5.1	Continuing professional education in IC encompassing AMR control and antibiotic stewardship is organised annually.
4.5.2	Continuing professional education in IC encompassing AMR control and antibiotic stewardship is given to staff in a dedicated time.
4.5.3	Attendance is recorded in training sessions of continuing professional education in IC encompassing AMR control and antibiotic stewardship, and those not in attendance are contacted.
4.5.4	Training sessions of continuing professional education in IC encompassing AMR control and antibiotic stewardship make use of modern techniques and methodology of training and education in order to meet different staff needs, availability and learning styles (e.g. workshops, internet, e-learning, practical training, case analysis).
4.5.5	Continuing professional education in IC encompassing AMR control and antibiotic stewardship, include education practice audits and regular feedback monitoring to ensure their effectiveness.

RESOURCES FOR THE CONTROL OF HCAI AND AMR “Hospitals and other healthcare facilities have appropriate resources to operate HCAI control and antibiotic stewardship programmes”	
RECOMMENDED PRACTICES	
Cat # 5	Standard
Ref.	Recommended Practice
5.4.1	Structural arrangements of healthcare institutions (including technical and architectural aspects) comply with national infection control, health and safety and other relevant specifications.
5.4.2	Education and information exchange in healthcare institutions are resourced and an integral part of overall healthcare cost according to regulations at national level.
5.4.3	Information technology tools are made available for data mining from healthcare information systems, including antimicrobial usage data.
5.5	Patient isolation rooms include an attached bathroom and a dedicated ventilation system.
5.9	Realistic funding is available. Applications into new or existing patient safety and healthcare research programmes at national, regional and local levels, as appropriate. Multi-disciplinary groups are convened to explore and prioritise the major research questions to improve the understanding of the epidemiology of HCAI and its interplay with antibiotic resistance. Surveillance methodological aspects are compliant with, or aim to improve or complement, HELICS/ECDC protocols. Applications are assessed for scientific rigour using agreed processes such as the ORION statement http://www.bsac.org.uk/content_display.cfm?cit_id=451 .