



**Health  
Information  
and Quality  
Authority**

An tÚdarás Um Fhaisnéis  
agus Cáilíocht Sláinte

# **Report of the unannounced inspection at University Hospital Waterford.**

Date of on-site inspection: 21 November 2019

**HIQA's programme of monitoring against the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services.***



## About the Health Information and Quality Authority (HIQA)

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA's mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children and Youth Affairs, HIQA has responsibility for the following:

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.
- **Regulating social care services** — The Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children's special care units.
- **Regulating health services** — Regulating medical exposure to ionising radiation.
- **Monitoring services** — Monitoring the safety and quality of health services and children's social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.
- **Health technology assessment** — Evaluating the clinical and cost-effectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.
- **Health information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland's health and social care services.
- **National Care Experience Programme** — Carrying out national service-user experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.



## **Table of Contents**

1.0 Introduction.....	2
2.0 Information about this inspection .....	2
3.0 Hospital profile.....	3
4.0 Inspection findings .....	3
4.1 Governance and management structures .....	3
4.2 Monitoring, audit and evaluation systems including risk management.....	5
4.3: Implementation of evidence-based best practice .....	7
5.0 Conclusion .....	11
6.0 References.....	13



## 1.0 Introduction

Under section 8(1)(c) of the Health Act 2007, Authorised Persons of the Health Information and Quality Authority (HIQA) monitor the implementation of the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services*<sup>1</sup> in public acute hospitals.

HIQA's focus in 2019 included a detailed evaluation of how hospitals organise themselves to minimise the spread of healthcare-associated infections; with a particular focus on systems to detect, prevent, and manage multidrug-resistant micro-organisms. This area is internationally recognised as being a major contributor to potentially preventable patient harm as a consequence of healthcare provision.

## 2.0 Information about this inspection

This inspection report was completed following an unannounced inspection carried out at University Hospital Waterford by Authorised Persons from HIQA, Kathryn Hanly and Noreen Flannelly-Kinsella on 21 November 2019 between 09.00 hrs and 16.45 hrs.

Inspectors used specifically designed monitoring tools during this inspection and focused on aspects of the prevention and control of transmission of antimicrobial-resistant bacteria and healthcare-associated infections

During this inspection inspectors spoke with hospital managers, staff and representatives from the Infection Prevention and Control Committee. Inspectors requested and reviewed documentation and observed practice within the clinical environment in:

- The operating theatre complex comprising eight operating theatre suites, a reception and a recovery room. A recessed scrub and gowning room, an anaesthetic room and a dirty utility room were available for each operating theatre.
- Orthopaedic 2 Ward comprised four single rooms with en-suite facilities, one three-bedded room and four six-bedded rooms also with en-suite facilities.

All low level findings observed in the areas inspected were reported to the local ward/ department managers. HIQA would like to acknowledge the cooperation of the hospital management team and staff who facilitated and contributed to this unannounced inspection.

### 3.0 Hospital profile

University Hospital Waterford is a model 4 tertiary referral hospital which provides range of services including general medical, surgical, maternity and specialist care. The hospital is part of the South/South West Hospitals Group.\*

Building of a new five storey block, containing 72 single en-suite rooms and additional isolation facilities had been completed. However the building was not fully operational at the time of this inspection with deficiencies in respect of funding allocation for staffing and operational costs reported as the reason. Inspectors were informed that 24 beds on the top floor of the building were set to become operational in the coming weeks.

### 4.0 Inspection findings

The following sections 4.1 to 4.3 present the general findings of this unannounced inspection.

#### **4.1 Governance and management structures**

It was explained at interview that the Infection Prevention and Control Committee had a dual reporting relationship with the Executive Management Board and the Executive Steering Committee for Safety and Quality. However it was reported that the Executive Steering Committee for Safety and Quality was not currently functioning. This was partly attributed to vacancies of key roles including the quality manager and the risk manager.

In order to address issues with existing committee reporting structures, the hospital had sought external assistance from the South/South West Hospitals Group in rationalising and restructuring committee structures within the hospital. Proposed plans to enhance the structure and membership of hospital committees were viewed by inspectors. As an interim arrangement, it was explained that infection prevention and control related issues in need of resolution were brought to the hospital's Executive Management Board. However, inspectors were informed that the prevention and control of healthcare-associated infection at the hospital was not a standing agenda item at meetings of the Executive Management Board and that issues in relation to infection prevention and control were reported periodically as required.

---

\* Hospital groups: The hospitals in Ireland are organised into seven hospital groups. 1. Ireland East Hospital Group. 2. Dublin Midlands Hospital Group. 3. South/South West Hospital Group. 4. Saolta University Health Care Group. 5. University of Limerick Hospitals Group. 6. RCSI Hospitals Group. 7. National Children's Hospital Group.

Inspectors were also informed that the infection control team also reported issues in relation to infection prevention and control to the Diagnostics Directorate periodically as required.

Discussion with staff and review of documentation showed that outbreak control committees were convened to advise and oversee the management of outbreaks of infection at the hospital. The hospital had also established a transmission-based precautions steering group.

#### Infection prevention and control team

Inspectors were informed that due to the additional workload associated with managing the prolonged CPE outbreak, much of the infection control team's activity remained reactive in nature. A review of documentation indicated that a business case for 'Resources Required for Implementation of National Requirements for Management of Carbapenemase Producing Enterobacteriaceae (CPE) in University Hospital Waterford' had been submitted and an additional infection prevention and control Assistant Director of Nursing (ADoN) post had recently been approved.

Approximately 40 Infection prevention and control link practitioners<sup>†</sup> were in place to act as local champions within their own clinical areas and to support the work of the infection prevention and control team. An accredited link practitioner training programme was delivered onsite by the centre for nurse education.

While some antimicrobial stewardship interventions were in place, it was reported that the antimicrobial stewardship programme continued to be restricted by staffing constraints in the Clinical Microbiology and pharmacy departments. It was of concern that a tertiary hospital providing complex clinical care did not have a sufficiently defined antimicrobial stewardship programme in place.

University Hospital Waterford continued to provide a microbiology service to five hospitals across two hospital groups including twenty four hour/seven day a week microbiological clinical advice. The hospital had appointed a fourth consultant microbiologist who was due to take up the position in January 2020. It was planned that the newly appointed microbiologist would have a remit for antimicrobial stewardship.

#### Quality improvement plan

Inspectors reviewed the quality improvement plan developed following the January 2019 unannounced inspection. Some progress had been made in addressing the findings of the January 2019 inspection. For example, the hospital was now in full

---

<sup>†</sup>Link practitioners are hospital staff who in addition to performing their own job support the Infection Prevention and Control Team to promote good practice in relation to infection prevention and control.

compliance with the national CPE screening guidelines.<sup>2</sup> CPE screening was offered to all patients admitted to medical and surgical wards within the hospital. Patients admitted to antenatal, postnatal and paediatric wards were screened in line with national screening guidelines. Periodic audits completed to assess performance of the CPE screening programme found that compliance had improved in recent months.

The central laundering facility for reprocessing reusable cleaning textiles was re-visited by inspectors. While some improvements were made relating to the hygiene of this area, substantive issues relating to the infrastructure remained outstanding. The area did not support functional separation of the clean and dirty phases of the laundering process. Inspectors were informed that a suitable room had been identified for reprocessing reusable cleaning textiles.

Work in relation to reporting healthcare-associated infections as incidents and tracking and tracing of incidents was ongoing. This needs to be progressed so as to share learning from the infection prevention and control-related incidents reported.

## **4.2 Monitoring, audit and evaluation systems including risk management**

### **4.2.1 Monitoring, audit and evaluation systems**

The infection prevention and control team met weekly and submitted detailed infection prevention and control team report to the Infection Prevention and Control Committee on a quarterly basis.

In compliance with the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services<sup>1</sup>, the infection prevention and control surveillance programme included surveillance of:

- 'alert' organisms and 'alert' conditions<sup>‡</sup>
- multidrug-resistant organisms
- hospital-acquired *Staphylococcus aureus* bloodstream infection
- hospital-acquired *Clostridium difficile* infection
- catheter-related bloodstream infection (CRBSI)<sup>§</sup> in the Intensive Care Unit
- bloodstream infections.

However the hospital did not routinely perform surgical site surveillance as recommended in National standards.<sup>1</sup>

---

<sup>‡</sup> Alert conditions include physical symptoms such as skin rashes, vomiting, diarrhoea, respiratory illness that could be due to an infectious illness

<sup>§</sup> Catheter-related bloodstream infection (CRBSI) is defined as the presence of bacteraemia originating from an intravenous catheter.

Monthly performance data relating to surveillance figures for multidrug - resistant organisms (MDROs) and *Clostridioides difficile* across the hospital was available on the orthopaedic ward inspected.

Local hygiene audits were undertaken by ward/ department managers on a monthly basis. Inspectors were informed that action plans were developed by the contracts manager. However there was no evidence to indicate that action plans were shared with staff within the theatre department.

Inspectors were informed that a cleaning tender had recently been awarded. The hospital was in the process of reviewing cleaning processes, cleaning frequencies and monitoring systems. Regular scheduled multidisciplinary hygiene audits including representation from infection prevention and control and hygiene services, were undertaken in the hospital on a quarterly basis. It was reported that the managerial audit tool was under review.

Additional audits of staff compliance with transmission-based precautions were undertaken in areas experiencing CPE outbreaks.

#### **4.2.2 Risk management**

Hospital management told inspectors that an assistant risk management position had been put in place as an interim measure to deal with day-to-day issues relating to risk management.

Inspectors were informed that the hospital was in the process of transferring the corporate risk register onto the HSE risk register template. Inspectors viewed both the infection prevention and control risk register and the infection prevention and control risks on the corporate risk register.

While minutes of infection prevention and control committee meetings reviewed showed that clinical risk and incident management was a standing agenda item. However inspectors found that the local infection prevention and control risk register was not being managed and escalated in line with national guidance<sup>3</sup> as it had not been updated since March 2017. Management need to ensure that risk registers are managed in line with national guidance.

The corporate risk register, last updated in June 2019, reflected infection prevention and control risks including:

- CPE cross infection
- transmission of healthcare-associated infection
- water borne infections
- non-compliance relating to mandatory and other training due to reduced staffing levels

- laundry services; staffing, equipment and infrastructure.

Risk assessments\*\* in relation to risks on the corporate risk register outlined existing control measures enacted by the hospital to address current risks. While risks had a risk owner and were risk rated, a due date was not evident. Due dates for actions should be assigned in discussion and agreement with the action owner.

Inspectors were informed that incidents were reported on the National Incident Management System (NIMs).†† Inspectors were informed that infection prevention and control incidents were routinely discussed at ward level, at the weekly Infection Prevention and Control Team meetings and at infection prevention and control committee meetings however incidents were not being tracked and trended as recommended in National Standards.<sup>1</sup>

A review had been commissioned in early 2018 by the South/ South West Hospitals Group into a concern raised regarding non-compliance with the management of blood spillages within the Theatre Department. Inspectors were informed that this review remained in draft at the time of this unannounced inspection. Failure to finalise this review in a timely manner indicates gaps in assurance at executive level within the hospital, and within group and HSE risk management systems.

Inspectors were informed that the procedure for the management of blood spillages in the department had not been audited in response to the concern raised. Furthermore the procedure for the management of blood spillages provided to inspectors in the theatre department had not been updated to reflect best practice.<sup>4</sup> Where updated national policies are subsequently developed, they should be incorporated into local policies.

### **4.3: Implementation of evidence-based best practice**

#### **4.3.1 Systems to detect, prevent and manage multi-drug organisms**

##### CPE management

University Hospital Waterford had experienced an ongoing hospital outbreak of CPE since March 2016.†† Despite the implementation of multimodal infection prevention and control strategies to prevent and control CPE, the hospital had seen an increase

---

\*\* A risk assessment is an overall process of risk identification, risk analysis and risk evaluation.

†† The State Claims Agency National Incident Management System is a risk management system that enables hospitals to report incidents in accordance with their statutory reporting obligation.

‡‡ Guidelines advise that where three or more patients with the same CPE associated with a hospital in the past three months this should be interpreted as prima facie evidence of transmission in your hospital and an outbreak control team should be convened to assess what if any further action is required.

in the number of patients colonised with CPE year on year.<sup>5,6</sup> This increase could be partly attributable to the increase in screening.

Orthopaedic 2 Ward had experienced a CPE outbreak from June to October 2019. Interruption of CPE transmission had been successfully achieved and the ward had recently reopened to admissions.

To trace the possible environmental reservoirs, environmental screening<sup>7</sup> was performed on the outbreak wards as recommended by the infection prevention and control team in line with national guidelines.<sup>5</sup> Results of environmental screening identified the presence of the CPE in samples taken from a number of shower drains. Remedial actions were taken to address sources of environmental contamination.

### Hand hygiene

University Hospital Waterford achieved an overall hand hygiene compliance rate of 95.2% in the national hand hygiene audits in June 2019 which met the HSE's desirable target of 90% hand hygiene compliance.

Hand hygiene training was mandatory for staff at induction and every two years thereafter in line with national hand hygiene guidelines.<sup>8</sup> Records submitted subsequent to the inspection showed that 69% of staff had attended hand hygiene training over a rolling two year period. The figures showed that only 21.93% of Consultant and 36.7% of non-consultant hospital doctors had submitted evidence of attendance at hand hygiene training which was considerably lower than other staff groups.

## **Evidence of good practice in Orthopaedic 2 Ward**

### Communication

- Nursing admission documentation contained a comprehensive infection prevention and control section including history, assessment and a surveillance tracking tool for monitoring microbiological results. A review of discharge and transfer documentation was underway.

### Equipment and environmental hygiene

- Patient equipment appeared clean with few exceptions. A storage room for clean patient equipment was available.
- Patient equipment cleaning checklists were available. A review of schedules and checklists was due to take place.
- The environment appeared generally clean with few exceptions. A designated member of household services was assigned to the ward and the hospital contracts manager provided oversight of environmental hygiene service delivery.

## **Opportunities for improvement in Orthopaedic 2 Ward**

### Cleaning specifications and records

- Environmental cleaning specifications and check lists were not available on the ward. Hospital management told inspectors that revised cleaning specifications were being finalised. Hospital management need to be assured that cleaning specifications, toilet checking systems (full cleans and check clean) and record keeping such as sign off sheets are in line with national guidance and evidenced-based best practice guidance.<sup>9,10</sup>

### Hand hygiene facilities

- Alcohol gel, liquid soap and antiseptic hand wash agents were available at clinical hand wash sinks in patient care areas inspected. Routine use of antiseptic hand wash agents should be discouraged as it may increase the incidence of irritant and allergic contact dermatitis.<sup>11</sup>
- Surfaces of hand hygiene gel dispenser units were either damaged or stained in some areas. Inspectors were informed that plans to replace these items were underway.
- There was one sink in the 'dirty' utility room which was designated a hand wash sink. A separate sink for washing patient equipment was not available so it was difficult to determine if the hand wash sink had a dual function.
- The design of the clinical hand wash sink and sluice hopper for disposal of body fluids in a 'dirty' utility room did not conform to Health Building Note 00-10 Part C: Sanitary assemblies.<sup>12</sup>
- Only one of the four single patient rooms on the ward had dedicated clinical hand hygiene sink.

### Infrastructure and maintenance

- Wear and tear was noted in relation to woodwork, flooring and wall paintwork in some areas and as such did not facilitate cleaning.
- Bed spacing and the number of toilet facilities in six-bedded multi-occupancy rooms was not in compliance with best practice guidelines.<sup>5</sup>
- Construction of an adjacent building had been completed however some aspergillus controls remained in place on the ward. The ongoing need for controls should be routinely monitored and removed on completion of works.
- A wall-mounted medication storage cabinet was rusty and did not facilitate cleaning.

### Storage of supplies and consumables

- Sterile supplies including intravenous cannulas were observed in open drawer units located at the nurses' station. Sterile supplies should be stored in fully enclosed storage units in appropriate facilities in order to prevent inadvertent contamination, and damage.
- Sharps trays with integral sharps bins were stored on a high ledge in the clean utility room. The protective temporary closure mechanism was not engaged on the sharps bins. Inappropriate positioning posed a potential health and safety risk.<sup>13</sup>
- Boxes of intravenous fluids were stored adjacent to a hand hygiene sink in the clean utility room. This practice posed a risk of inadvertent splash contamination.
- Clean consumables for example patient incontinent pads, were inappropriately stored on open shelving in the 'dirty' utility room.

### **Evidence of good practice in the Theatre Department**

#### Infrastructure

- The design of the theatre department facilitated clean to dirty workflow.<sup>12</sup>
- Access through the main entrance to the theatre department had been restricted to prevent unauthorised access to the theatre suite.

#### Environmental and equipment hygiene

- Overall the environment in the recovery room and in a vacant operating theatre inspected was generally clean.
- Patient equipment seen in the theatre department was clean and well maintained with few exceptions.
- Microbiological air sampling was undertaken after any works that may affect airflow supply rates or distribution patterns.

### **Opportunities for improvement in the Theatre Department**

#### Management of patients with multidrug resistant organisms

- The hospital had developed a quick reference guide for the management of patients with multidrug resistant organisms which stated that patients colonised or infected with multidrug resistant organisms did not need to be planned last on the list for theatre. However inspectors were informed that this was not currently done in practice due to the lack of appropriate isolation

facilities to manage patients with suspected or confirmed transmissible infection within the recovery room. Inspectors were informed that isolation facilities within the recovery room were under review.

#### Equipment

- Sticky adhesive residue was noted on several the covers of patient trolleys, hindering effective cleaning and therefore require re-upholstering or replacement.

#### Oversight of environmental hygiene

- Cleaning techniques within operating rooms had not been assessed as part of quality control.

#### Infrastructure and maintenance

- Insufficient storage was also observed throughout the department resulting in inappropriate storage of equipment and supplies on the main corridors.
- Sterile supplies storage areas opened directly into the main operating theatres which was not in line with specifications.<sup>12</sup>
- Staff sanitary and shower facilities were not self-contained.
- There was one sink in the 'dirty' utility room which was designated a hand wash sink. A separate sink for washing patient equipment was not available so it was difficult to determine if the hand wash sink had a dual function.
- The seals between scrub troughs and walls were not intact in a number of scrub rooms inspected.
- Some damage to paintwork on door frames and walls of corridors was observed.
- Malfunctioning door seals between the corridor and the operating theatres potentially compromised the theatre suite ventilation systems to maintain pressure.

## **5.0 Conclusion**

Overall, inspectors found that the infection prevention and control team were committed to improving infection prevention and control practices in the hospital and were endeavouring to fully implement the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services*. However infection prevention and control governance arrangements at the hospital were evolving.

The local infection prevention and control risk register was not being managed and escalated in line with national guidance.<sup>3</sup> Risk registers should be reviewed monthly and at minimum, quarterly in line with national guidance.<sup>3</sup> Effective governance

arrangements are also required to support the timely and effective management of reviews and investigations.

Throughout 2019, despite local infection control efforts, the CPE outbreak continued. Dealing with CPE colonisation dominated the workload of the infection prevention and control team. Recurring challenges faced by the hospital to effectively prevent and control this CPE outbreak included a lack of isolation facilities and high occupancy rates. There was good local ownership in relation to infection prevention and control in the both areas inspected.

HIQA acknowledges the hospital's positive progress and compliance levels in relation to:

- implementation of national CPE screening guidelines
- the on-going microbiological surveillance programme
- environmental and equipment hygiene standards
- reviewing and standardising environmental hygiene audit practices frequencies and processes throughout the hospital.

However management must ensure measures are in place to address the deficiencies identified in this report with particular emphasis on the following:

- re-establishing the antimicrobial stewardship programme and committee with formal reporting lines to the medicines and therapeutics committee
- infrastructure of the area for reprocessing reusable cleaning textiles
- maintenance and infrastructure in both areas inspected
- monitoring for compliance with local cleaning guidelines
- storage of equipment and consumables to ensure best use of the facilities and maintain a clutter free environment
- compliance with mandatory hand hygiene training among all staff groups.

National standards<sup>14</sup> recommend that services manage their workforce to respond in a timely manner to changes in workload or resources available to ensure the delivery of a high quality service. It is recommended that current staffing resources in the hospital are reviewed and deficiencies addressed. University Hospital Waterford, as a member of the South/ South West Hospital Group, needs to be supported within the group structure to better address issues in relation to hospital infrastructure and resources in order to facilitate compliance with the National Standards for the Prevention and Control of Healthcare Associated Infections<sup>1</sup> and other existing national healthcare standards.

## 6.0 References

- 1 Health Information and Quality Authority. National Standards for the prevention and control of healthcare-associated infections in acute healthcare services. Dublin: Health Information and Quality Authority; 2017. [Online]. Available online from: <https://www.hiqa.ie/sites/default/files/2017-05/2017-HIQA-National-Standards-Healthcare-Association-Infections.pdf>
2. Health Service Executive. Requirements for screening of Patients for Carbapenemase Producing *Enterobacteriaceae* (CPE) in the Acute Hospital Sector. Dublin: Health Service Executive; April 2019. [Online]. Available online from: <https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/resources/cpe/requirements-for-screening-for-carbapenemase-producing-enterobacterales-cpe-april-2019.pdf>
3. Health Service Executive Integrated Risk Management Policy. Part 3. Managing and Monitoring Risk Registers. Dublin. Health Service Executive; 2017. [Online]. Available online from: <https://www.hse.ie/eng/about/qavd/riskmanagement/risk-management-documentation/risk%20management%20support%20tools.htm>
- 4 National Health and Medical Research Council. Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019). [Online]. Available online from: <https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019>
5. Health Service Executive. Guidance Relating to Carbapenemase Producing Enterobacterales (CPE): Interventions for Control of Transmission of CPE in the Acute Hospital Sector. Dublin: Health Service Executive; 2018. [Online]. Available online from: [http://www.hpsc.ie/az/microbiologyantimicrobialresistance/strategyforthecontrolofantimicrobialresistanceinirelandsari/carbapenemresistantenterobacteriaceae/guidanceandpublications/Interventions%20for%20Control%20of%20Transmission%20of%20CPE%20in%20Acute%20Hospitals\\_final.pdf](http://www.hpsc.ie/az/microbiologyantimicrobialresistance/strategyforthecontrolofantimicrobialresistanceinirelandsari/carbapenemresistantenterobacteriaceae/guidanceandpublications/Interventions%20for%20Control%20of%20Transmission%20of%20CPE%20in%20Acute%20Hospitals_final.pdf)
6. Health Service Executive. Acute Hospital Carbapenemase Producing Enterbacterales (CPE) Outbreak Control Checklist. Version 1. Dublin: Health Service Executive; 2018. [Online]. Available online from: [https://www.hpsc.ie/az/microbiologyantimicrobialresistance/strategyforthecontrolofantimicrobialresistanceinirelandsari/carbapenemresistantenterobacteriaceae/guidanceandpublications/Acute%20Hospital%20CPE%20Outbreak%20Control%20Checklist\\_final.pdf](https://www.hpsc.ie/az/microbiologyantimicrobialresistance/strategyforthecontrolofantimicrobialresistanceinirelandsari/carbapenemresistantenterobacteriaceae/guidanceandpublications/Acute%20Hospital%20CPE%20Outbreak%20Control%20Checklist_final.pdf)
- 7 Health Service Executive. Environmental Testing for Carbapenemase Producing Enterobacterales (CPE). Dublin: Health Service Executive; 2018. [Online]. Available from: <https://www.hse.ie/eng/about/who/healthwellbeing/our-priority->

[programmes/hcai/resources/cpe/environmental-testing-for-carbapenemase-producing-enterobacterales.pdf](#)

8. Royal College of Physicians of Ireland Clinical Advisory Group on Healthcare Associated Infections. Guidelines for Hand Hygiene in Irish Healthcare Settings Update of 2005 Guidelines. Dublin: Royal College of Physicians of Ireland/Health Service Executive; 2015. Available online from: <https://www.hpsc.ie/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHAI/Guidelines/File,15060,en.pdf>
- 9 Health Service Executive. HSE National Hospital Office-National Cleaning Standards Manual. [Online]. Available from: [http://www.hse.ie/eng/services/Publications/Hospitals/HSE\\_National\\_CleaningStandards\\_Manual.html](http://www.hse.ie/eng/services/Publications/Hospitals/HSE_National_CleaningStandards_Manual.html)
- 10 Health Services Executive. National Hospital Office - National Cleaning Manual Appendices [Online]. Available from: [http://www.hse.ie/eng/services/publications/Hospitals/HSE\\_National\\_Cleaning\\_Standards\\_Manual\\_Appendices.pdf](http://www.hse.ie/eng/services/publications/Hospitals/HSE_National_Cleaning_Standards_Manual_Appendices.pdf)
- 11 A World Health Organisation. WHO Guidelines on Hand Hygiene in Health Care: a Summary. Switzerland: World Health Organisation; 2009. [Online]. Available from: [https://www.who.int/gpsc/5may/tools/who\\_guidelines-handhygiene\\_summary.pdf](https://www.who.int/gpsc/5may/tools/who_guidelines-handhygiene_summary.pdf)
12. Department of Health, United Kingdom. Health Building Note 00-10 Part C: Sanitary Assemblies. [Online]. Available from: [http://www.dhsspsni.gov.uk/hbn\\_00-10\\_part\\_c\\_l.pdf](http://www.dhsspsni.gov.uk/hbn_00-10_part_c_l.pdf)
13. Health Services Executive. Healthcare Risk Waste Management Segregation Packaging and Storage Guidelines for Healthcare Risk Waste. 2010 [Online]. Available online from: [http://health.gov.ie/wp-content/uploads/2014/03/healthcare\\_waste\\_packaging2010.pdf](http://health.gov.ie/wp-content/uploads/2014/03/healthcare_waste_packaging2010.pdf)
14. Health Information and Quality Authority. National Standards for Safer Better Healthcare. Dublin: Health Information and Quality Authority; 2012. Available online from: <https://www.hiqa.ie/reports-and-publications/standards/national-standards-safer-better-healthcare>

**For further information please contact:**

**Health Information and Quality Authority  
Dublin Regional Office  
George's Court  
George's Lane  
Smithfield  
Dublin 7**

**Phone: +353 (0) 1 814 7400**

**Email: [qualityandsafety@hqa.ie](mailto:qualityandsafety@hqa.ie)**

**URL: [www.hqa.ie](http://www.hqa.ie)**

**© Health Information and Quality Authority 2020**