



**Health  
Information  
and Quality  
Authority**

An tÚdarás Um Fhaisnéis  
agus Cáilíocht Sláinte

# **Report of the unannounced inspection at Cappagh National Orthopaedic Hospital, Dublin.**

Monitoring programme undertaken against the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services

Date of on-site inspection: 15 February 2018



## About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is an independent authority established to drive high-quality and safe care for people using our health and social care services in Ireland. HIQA's role is to develop standards, inspect and review health and social care services and support informed decisions on how services are delivered.

HIQA aims to safeguard people and improve the safety and quality of health and social care services across its full range of functions.

HIQA's mandate to date extends across a specified 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 statutory responsibility for:

- **Setting Standards for Health and Social Services**— Developing person-centred standards, based on evidence and best international practice, for health and social care services in Ireland.
- **Regulation** — Registering and inspecting designated centres.
- **Monitoring Children's Services** — Monitoring and inspecting children's social services.
- **Monitoring Healthcare Safety and Quality** — Monitoring the safety and quality of health services and investigating as necessary serious concerns about the health and welfare of people who use these services.
- **Health Technology Assessment** — Providing advice that enables the best outcome for people who use our health service and the best use of resources by evaluating the clinical effectiveness and cost-effectiveness of drugs, equipment, diagnostic techniques and health promotion and protection activities.
- **Health Information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information about the delivery and performance of Ireland's health and social care services.



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## 1. Introduction

HIQA monitors 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 in Ireland to determine if hospitals have effective arrangements in place to protect patients from acquiring healthcare-associated infection. The *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services* will be referred to as the National Standards in this report.

In 2017, HIQA commenced a revised monitoring programme against the National Standards. The aim of this revised monitoring programme is to assess aspects of the governance, management and implementation of designated programmes to prevent and control healthcare-associated infections in hospitals. This monitoring programme comprises Phases One, Two and Three which will be described next.

The National Standards were updated in 2017 and therefore supersede the previous version. Hospitals should work towards implementing these revised National Standards.

### Phase One

All public acute hospitals were requested to complete and return a self-assessment tool to HIQA during April and May 2017. The self-assessment tool comprised specific questions in relation to the:

- hospital infection prevention and control programme and associated oversight arrangements
- training of hospital personnel to implement policies, procedures, protocols, guidelines and evidence-based practice in relation to the prevention and control of infection
- the systems in place to detect, prevent, and respond to healthcare-associated infections and multidrug-resistant organisms.

The hospital Chief Executive Officer or General Manager and the Health Service Executive (HSE) Hospital Group Chief Executive Officer were asked to verify that the information provided to HIQA accurately reflected the infection prevention arrangements within the hospital at that time.

### Phase Two

Using a revised assessment methodology HIQA commenced a programme of unannounced inspections against the National Standards in public acute hospitals in May 2017.

Specific lines of enquiry were developed to facilitate monitoring in order to validate some aspects of self-assessment tools submitted by individual hospitals. The lines of enquiry which are aligned to the National Standards are included in this report in Appendix 1.

Further information can be found in the *Guide to the monitoring programme undertaken against the National Standards for the prevention and control of healthcare-associated infections*<sup>2</sup> which was published in May 2017 and is available on HIQA's website: [www.hiqa.ie](http://www.hiqa.ie).

In 2018 in light of the national public health emergency in relation to Carbapenemase Producing *Enterobacteriales*\* (CPE) the focus of these inspections will be on systems to detect, prevent and respond to healthcare-associated infections and multidrug-resistant organisms in line with national guidelines.

### **Phase Three**

Phase Three of this monitoring programme will focus on the reprocessing of reusable medical devices and HIQA will commence onsite inspections in this regard in due course.

### **Information about this inspection**

This inspection report was completed following an unannounced inspection carried out at Cappagh National Orthopaedic Hospital, Dublin by Authorised Persons from HIQA; Kathryn Hanly, Noreen Flannelly-Kinsella and Kirsten O'Brien. The inspection was carried out on 15 February 2018 between 10:00hrs and 16:00hrs.

During the inspection inspectors spoke with hospital managers, staff and a member of the Infection Prevention and Control Team. Inspectors requested and reviewed documentation and data and observed practice within the clinical environment in a small sample of clinical areas which included:

- An Orthopaedic Ward
- A Rehabilitation Ward.

HIQA would like to acknowledge the cooperation of the hospital management team and all staff who facilitated and contributed to this unannounced inspection.

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\*Carbapenemase Producing *Enterobacteriales* (CPE), are Gram-negative bacteria that have acquired resistance to nearly all of the antibiotics that would have historically worked against them. They are therefore much more difficult to treat.

## 2. Findings at Cappagh National Orthopaedic Hospital

The following section of this report outlines the main findings of this inspection. The report is structured as follows:

- section 2.1 outlines the risk identified during this unannounced inspection
- section 2.2 to 2.7 present the general findings of this unannounced inspection which are aligned to monitoring lines of enquiry.

### 2.1 Risk identified during this unannounced inspection

During an unannounced inspection by HIQA on 15 February 2018, a risk was identified at Cappagh National Orthopaedic Hospital in relation to the prevention and control of healthcare-associated infection. Specifically, a risk was identified in relation to non-compliance with national screening guidelines in relation to CPE.<sup>3</sup>

In light of the limited treatment options and substantial mortality associated with infections caused by CPE, prevention and control measures are of the utmost importance. Screening for CPE is considered an essential infection prevention and control strategy.

#### **Risk escalation by HIQA, and reciprocal response by the hospital group**

Considering this in the context of the activation of the National Public Health Emergency Plan<sup>†</sup> to address CPE in our health system, HIQA sought assurance regarding arrangements that are in place to ensure compliance with the national guidelines on screening<sup>‡</sup> for CPE at Cappagh National Orthopaedic Hospital.

The Chief Executive Officer (CEO) provided written assurance of arrangements that would be enacted in response to HIQA's letter to ensure compliance with the national policy on screening for CPE at the hospital. Specifically these key actions included:

- Draft procedure for the 'Screening and Management of CPE developed and awaiting approval.
- Staff education sessions scheduled for the week commencing 19th March 2018

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<sup>†</sup>A National Public Health Emergency Plan was activated on 25 October 2017 by the Minister for Health in response to the increase and spread of Carbapenemase Producing *Enterobacteriaceae* (CPE) in Ireland. As a result a National Public Health Emergency Team was convened and they have been meeting on a weekly basis since 02 November 2017. Please refer to the Department of Health webpage for further details: <http://health.gov.ie/national-patient-safety-office/patient-safety-surveillance/antimicrobial-resistance-amr-2/public-health-emergency-plan-to-tackle-cpe/nphet-press-releases-minutes-of-meetings/>

<sup>‡</sup> Performing active surveillance cultures, active screening tests or contact screening of at-risk patients to detect colonisation with Carbapenemase Producing *Enterobacteriales*.



- Pre-assessment medical questionnaire updated to include request for information to identify patients requiring CPE screening
- General Consent Form updated to include patient consent for a rectal swab
- Risk assessment of pre-assessment treatment room to ensure suitability to carry out rectal swabbing
- HSE patient information leaflet will be provided to patients and made available on hospital website
- Test Method for CPE Screening developed, proceduralised and validated by Hospital Laboratory
- Alert system on electronic healthcare system to be utilised for patients testing positive for CPE
- Weekly bed management meeting will consider patients who are confirmed CPE positive when planning in patient stay.

In addition the hospital was developing a business case to enable them to address some of the issues that are required to be in place to be fully compliant with CPE requirements. The hospital had stated that they had notified the Ireland East Hospital Group and were working with them to access the required resources necessary to ensure compliance with the national guidelines on screening for CPE.

A copy of the letter issued to the CEO of Cappagh National Orthopaedic Hospital to seek further assurance regarding the risk identified and a copy of the response received from the CEO of Cappagh National Orthopaedic Hospital are shown in Appendices 2 and 3 respectively.

## 2.2 Governance

### Line of enquiry

The hospital has formalised governance arrangements with clear lines of accountability and responsibility around the prevention and control of healthcare-associated infections.

Cappagh National Orthopaedic Hospital is a voluntary hospital and is member of the Ireland East Hospital Group. The hospital is a tertiary referral centre for elective orthopaedic surgery and also has a specialised rehabilitation unit to treat patients following an acute episode to sustain independent living.

On the day of inspection inspectors found that there were clear lines of accountability and responsibility in relation to governance and management arrangements for the prevention and control of healthcare-associated infection in Cappagh National Orthopaedic Hospital. The Chief Executive Officer (CEO) was accountable for overall management and monitoring of the prevention and control of healthcare-associated infection at the hospital.

An organisational diagram reviewed by inspectors showed that the Infection Prevention and Control Committee formally reported into the Clinical Governance and Clinical Risk Committee, who in turn reported into the Senior Management Team which was led by the CEO.

The hospital also reported that key members of the Infection Prevention and Control Committee were also members of the Clinical Governance and Clinical Risk Committee, the Senior Management Team, the Health, Safety and Risk Management Committee and the Hygiene Committee and this shared membership supported governance and oversight of infection prevention and control at the hospital.

### Infection Prevention and Control Team

The infection prevention and control programme was led by a consultant microbiologist, co-ordinated by the Infection Prevention and Control Committee, and delivered by a specialist multidisciplinary infection prevention and control team. The team was responsible for the co-ordination of infection prevention and control programme, antimicrobial stewardship and microbiological services including surveillance. An annual infection prevention and control report and plan was produced by the Infection Prevention and Control Team.

The consultant microbiologist position was a joint appointment for Cappagh National Orthopaedic Hospital and the Mater Misericordiae University Hospital. The Consultant

Microbiologist had a 0.26 whole time equivalent commitment (WTE)<sup>§</sup> to Cappagh National Orthopaedic Hospital. Consultant microbiologist advice was available to clinical staff by telephone twenty four hours a day, seven days a week, in line with National Standards. This was provided on a rotational basis by consultant microbiologists, based at the Mater Misericordiae University Hospital. The Microbiology Department in Cappagh National Orthopaedic Hospital was accredited by the Irish National Accreditation Board.

Cappagh National Orthopaedic Hospital had one whole time equivalent (WTE) Infection Prevention and Control Clinical Nurse Specialist. Staff stated that access to expert clinical microbiology and infection prevention and control advice was available from the Infection Prevention and Control Team as required.

The team was supported by Medical Scientists in the Microbiology Laboratory who in the absence of a surveillance scientist performed both national and legally mandated reporting in respect of healthcare-associated infection, antimicrobial resistance and infectious diseases. The hospital did not have a surveillance scientist or formalised access to this resource, despite national guidelines which recommended this as far back as 2009.

A number of wards had a designated infection prevention and control link nurse. Four infection prevention and control link nurses had completed post-graduate training in this speciality.

The hospital had also established a multidisciplinary hygiene services committee. This group was also chaired by the CEO and membership included senior management and infection prevention and control team members. The committee was responsible for overseeing hygiene services for the hospital.

### **The Infection Prevention and Control Committee**

The Infection Prevention and Control Team reported to the Infection Prevention and Control Committee at the hospital. Inspectors were informed that the Infection Prevention and Control Committee was chaired by the Consultant Microbiologist and membership included multidisciplinary and senior management team representation. It was confirmed at interview, and verified in the documentation which was reviewed, that the Infection Prevention and Control Committee meetings were well attended with a structured agenda and schedule.

It was reported at interview that the Infection Prevention and Control Committee presented relevant safety and quality assurance data to the hospital Board of Directors & Senior Management Team through the quarterly compilation of

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<sup>§</sup> Whole-time equivalent (WTE) allows part-time workers' working hours to be standardised against those working full-time. For example, the standardised figure is 1.0, which refers to a full-time worker. 0.5 refers to an employee that works half full-time hours

Integrated Governance Monitoring Reports. The information reported included standardised surveillance data for healthcare-associated infections. This comprehensive approach to monitoring facilitated evaluation of the efficacy of measures implemented at the hospital to prevent and control healthcare-associated infection and in addition, the identification of opportunities for improvement.

### **2.2.1 Monitoring and evaluation**

The hospital was clearly focused on monitoring both process and outcome measures in relation to healthcare-associated infection at the hospital. An annual infection prevention and control audit and surveillance schedule was prepared by the Infection Prevention & Control Clinical Nurse Specialist.

Hospital management monitored the following key performance indicators in relation to the prevention and control of healthcare-associated infection in line with HSE national reporting requirements:

- hospital-acquired *Staphylococcus aureus* bloodstream infection
- hospital-acquired *Clostridium difficile* infection.

The hospital also submitted the following data on additional CPE performance indicators to the HSE Acute Business Intelligence Unit:

- new cases of Carbapenemase Producing *Enterobacteriales* (CPE)
- number of samples tested for CPE each week
- number of in-patients with CPE who were accommodated in unsuitable accommodation for any part of their admission
- evidence of cross transmission of CPE within the hospital
- number of grams of meropenem issued from pharmacy each week.

A number of other parameters relating to the prevention and control of healthcare-associated infection were regularly monitored by the Infection Prevention and Control Team and these included surveillance and monitoring of:

- 'alert' organisms and 'alert' conditions\*\*
- multidrug-resistant organisms
- central line bacteraemias
- surgical site infections
- clusters or outbreaks of infection
- bloodstream infections
- hand hygiene compliance.

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\*\*Alert conditions include physical symptoms such as skin rashes, vomiting, diarrhoea, respiratory illness that could be due to an infectious illness.

## 2.3 Risk management

### Line of enquiry

Risks in relation to the prevention and control of infection are identified and managed.

Inspectors were informed by management that risks identified in clinical areas were addressed at clinical area level and high risks were escalated in line with HSE risk management processes. Inspectors reviewed the corporate risk register<sup>††</sup> for the hospital. Documentation provided showed that hospital management had identified risks which could increase transmission of healthcare-associated infection due to the dated inpatient infrastructure.

To address identified maintenance and infrastructural risks, in the interim of future capital development, the hospital had established an Infrastructural Development Committee and membership included infection prevention and control committee representation.

In conjunction with the risk management procedure, hospital management informed inspectors that it was hospital policy to record incidents related to the prevention and control of healthcare-associated infection on the hospital incident management system. Infection prevention and control incidents and near misses were tracked and trended to assess progress, identify emergent infection prevention and control concerns and prioritise infection prevention and activities, which is good practice.

Minutes of meetings were reviewed by inspectors which demonstrated that infection prevention and control incident reports were submitted and discussed at clinical governance and clinical risk committee meetings and health safety & risk committee meetings.

The Clinical Governance & Clinical Risk Committee was chaired by a member of the Board of Directors and the Health, Safety and Risk Committee was chaired by the hospital's CEO. A review of minutes of meetings showed that there was regular review of risks relevant to infection prevention and control at these meetings.

In line with National Standards, infection prevention and control programme activities should include regular service-wide risk assessment. Inspectors were

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<sup>††</sup> A risk register is a database of assessed risks that face any organisation at any one time. Always changing to reflect the dynamic nature of risks and the organisation's management of them, its purpose is to help hospital managers prioritise available resources to minimise risk and target improvements to best effect. The risk register provides management with a high level overview of the hospital's risk status at a particular point in time and becomes an active tool for the monitoring of actions to be taken to mitigate risk.

informed that an infection prevention and control gap analysis against the National Standards<sup>1</sup> was in progress.

## 2.4 Policies, procedures and guidelines

### Line of enquiry

The hospital has policies, procedures and guidelines in relation to the prevention and control of infection and hospital hygiene.

Current HSE policy states that hospital policies, procedures and guidelines should be reviewed every three years.<sup>4</sup> Documentation reviewed by inspectors showed that the review cycle for local policies, procedures and guidelines was every two years. Infection prevention and control policies, procedures and guidelines had been ratified by the Infection Prevention and Control Committee.

Inspectors found that the hospital had a suite of up-to-date infection prevention and control policies in relation to standard precautions, transmission-based precautions and multidrug-resistant organisms including outbreak management.

Documents were available on an electronic document management system to facilitate document version control and access to staff across the hospital. Inspectors found that these documents were readily accessible to staff in the clinical areas inspected.

## 2.5 Staff training and education

### Line of enquiry

Hospital personnel are trained in relation to the prevention and control of healthcare-associated infections.

### Infection prevention and control education

General infection prevention and control education was mandatory for relevant hospital staff at induction and every two years thereafter. Mandatory training records were presented to the hospital's Board of Directors quarterly meetings via the Integrated Governance Monitoring Report by the CEO.

Documentation viewed by inspectors showed that as of December 2017, 75% of clinical staff and 84% of non-clinical staff had completed mandatory infection prevention and control training in the previous two years. The percentage of staff in the orthopaedic ward inspected who had availed of this training was not available at the time of inspection. In the rehabilitation ward, 90% of staff had attended infection prevention and control training in the previous two year period.

Prevention and control of healthcare-associated infection training sessions were scheduled on a regular basis for hospital staff. Content included training in relation to:

- standard precautions
- care bundles
- aseptic technique
- new equipment and products introduced to the hospital
- updates on policies and procedure changes.

Information provided to inspectors during the inspection suggested that training in transmission-based precautions was not included in mandatory infection prevention and control training. Transmission-based precautions are the second tier of basic infection control and are to be used in addition to standard precautions for patients who may be infected or colonized with certain infectious agents for which additional precautions are needed to prevent infection transmission. The Infection Prevention and Control Team should progress plans to review the content of their training programme to align this training to the national framework for such knowledge and skills.<sup>5</sup>

Staff with responsibility for cleaning and decontamination of the environment had undertaken a recognised training programme.



## **Hand hygiene training**

Inspectors were informed that hand hygiene training was mandatory for staff at induction and every two years thereafter in line with national hand hygiene guidelines.<sup>6</sup> Inspectors reviewed training records for relevant staff across the hospital and staff in the clinical areas inspected. At the time of the inspection, 77% of nursing staff, 76% of medical staff, 60% of allied health professionals, 100% of support staff and 54% of management and administrative staff in Cappagh National Orthopaedic Hospital were up to date with hand hygiene training.

At the time of inspection 96% of staff in the rehabilitation ward inspected had attended hand hygiene and standard precaution training in the previous two year period. This training comprised both eLearning training programmes and yearly face-to-face sessions.

## 2.6 Implementation of evidence-based best practice

### Line of enquiry

The hospital has implemented evidence-based best practice to prevent intravascular device-related infection and urinary catheter-associated infection, ventilator-associated pneumonia and surgical site infection.

National guidelines recommend healthcare-associated infection surveillance in relation to surgical site infection and invasive-device related infection surveillance including central venous access device-related infection and urinary catheter-associated urinary tract infection.<sup>7,8,9</sup> Central line associated bloodstream infections were monitored and surgical site infection surveillance was carried out. However catheter-associated urinary tract related infection rates were not prospectively monitored.

A care bundle is a group of evidence-based practices that improve the quality of care when consistently applied to all patients. Cappagh National Orthopaedic Hospital had established a programme of audit, feedback and quality improvement plans in relation to peripheral vascular catheter and urinary catheter infection prevention care bundles at the hospital.

Peripheral vascular and urinary catheter care bundles had been implemented in both areas inspected. It was reported that compliance with peripheral vascular and urinary catheter care bundles was audited and results were centrally trended to provide oversight of consistency of care bundle implementation throughout the hospital. Performance data including care bundle compliance results were displayed on a notice board in a staff office in the rehabilitation ward inspected. However there was a lack of awareness and feedback of trended results achieved during compliance audits in the areas inspected.

Evidence indicates that compliance with all care bundle components should consistently be 100%. Peripheral vascular catheters care bundle compliance was consistently 100% across all hospital wards for the third quarter of 2017. Audit results viewed also showed 100% compliance with urinary catheter infection prevention care bundle implementation in the fourth quarter 2017, however the orthopaedic ward inspected did not submit data for this period.

Inspectors viewed individual peripheral vascular catheter care bundle record sheets on the orthopaedic ward inspected which demonstrated inconsistent compliance of recording all the elements of this care bundle.

Nursing metrics are an agreed standard of measurement for nursing care, where care delivered to patients can be monitored against standards or benchmarks. Monthly nursing metrics were recorded at the hospital included some elements of invasive medical device management. Individualised reports were provided to each acute area indicating targets achieved using a traffic light system.

### **Surveillance of surgical site infection**

Surgical site infection surveillance represents good practice, demonstrates a commitment to monitoring the quality of patient care, and is an important patient safety and quality assurance initiative. Inspectors were informed that surgical site infection surveillance and orthopaedic implant infection surveillance was performed at the hospital by the Infection Prevention and Control Team. HIQA note that in keeping with findings from some other inspections, the approach taken to such surveillance at the hospital has been driven locally rather than in concert with other hospitals nationally. Therefore, the potential benefits that might be realised through benchmarking of surveillance findings with other similar Irish services through the use of a shared methodology was not currently possible.

Surgical Site Infection rates were reported to the hospital Board of Directors and Senior Executive Management via the hospitals quarterly Integrated Governance Monitoring Reports. The data was also presented to the hospital's Medical Board at the hospital's twice yearly clinical audit day.

## 2.7 Systems to prevent and manage multidrug-resistant organisms

### Line of enquiry

The hospital has systems in place to detect, prevent, and respond to healthcare-associated infections and multidrug-resistant organisms in line with national guidelines.

### 2.7.1 Hospital systems to prevent and control multidrug-resistant organisms

Inspectors looked at implementation of aspects of standard and transmission-based precautions to assess the detection, prevention, control and management of transmission of multidrug-resistant bacteria at the hospital.

#### Microbiological screening and surveillance of multidrug-resistant bacteria

The hospital had processes for the early detection of patients colonised or infected with Methicillin-Resistant *Staphylococcus aureus* (MRSA). Screening of patients for colonisation or infection with MRSA was performed in line with national guidelines.<sup>10</sup> A full MRSA screen was completed for all elective orthopaedic patients at the Preoperative Assessment Clinic. These pre-admission screens were deemed valid for a period of three months. A local MRSA risk assessment was also completed on admission and patients were rescreened for MRSA if required. All orthopaedic inpatients were screened weekly for MRSA.

However, screening of patients for Vancomycin-related *Enterococci* (VRE) and CPE colonisation or infection was not performed in line with national guidelines.<sup>3,11</sup> If the source is not identified and eliminated, infection control measures could be ineffective. It was reported that additional resources would be required to support full implementation of national guidelines in relation to screening for CPE across the hospital.

The infection control team monitored outcome measures in patients with multidrug-resistant organisms by quantifying the number of patients with clinical infection due to these organisms and the number of these infections that may have been hospital-acquired. This information was presented and discussed at infection prevention and control committee meetings.

Where patients were identified with a specific transmissible organism, relevant patient information leaflets were provided to patients. The Infection Prevention and Control Team provided advice in relation to control measures.

## **Hospital isolation facilities**

In late 2012 a dedicated Active Rehabilitation Unit was established within the hospital. Patients are referred to the Unit from both Connolly Hospital and the Mater Misericordiae University Hospital. To minimise the risk of cross transmission of infection rehabilitation and orthopaedic surgical patients are admitted to and cared for in separate areas within the hospital.

In an effort to try to further prevent and manage healthcare-associated infections and multidrug-resistant organisms in orthopaedic inpatients, all orthopaedic patients with suspected or confirmed transmissible infection or multidrug-resistant organism colonisation or infection were placed in an isolation room on a ward comprising ten single occupancy en-suite patient rooms. Two of the rooms were neutral pressure isolation rooms. There was also a dedicated review room and rehabilitation room on the unit.

Inspectors were also informed that orthopaedic patients with a history of MRSA colonisation or an unknown MRSA status were admitted to this ward until their admission screen was available.

Transfer of patients between healthcare facilities is a potential pathway for the introduction of new antimicrobial-resistant organisms into a health care facility. It is essential to have appropriate plans in place to manage this risk. Due to the limited number of appropriate isolation facilities within the Active Rehabilitation Unit, it was reported that criteria for admission to the Unit from Connolly Hospital and the Mater Misericordiae University Hospital included a negative MRSA screen. A reduction in the incidence of hospital-acquired MRSA in the unit was facilitated by rigorous implementation of these admission criteria. However, infection status should not adversely affect an individual patient's access to rehabilitation, in so far as possible, as recommended in the national guidelines.<sup>12</sup> Arrangements should be in place to ensure patients infected or colonised with MRSA receive appropriate rehabilitation in Connolly and the Mater Misericordiae University Hospital.

## **Hand hygiene**

Effective hand hygiene is the most important measure to prevent and control the spread of multi-resistant organisms. Rigorous adherence to hand hygiene is also integral to any outbreak control and management program.

A group of hand hygiene champions in the hospital acted as role models and mentors for their colleagues. The hospital achieved an average of 90.4% compliance in monthly hand hygiene audits carried out in 2017 which is in line with the HSE's desirable target of 90% hand hygiene compliance among staff. Documentation provided to inspectors showed variation in hand hygiene compliance audit results

across all disciplines in 2017. Data breakdown showed that nursing staff achieved 95% and medical staff achieved 77.5% compliance respectively in this audit. It is recommended that targeted education is performed in order to drive improvement in hand hygiene compliance across all staff disciplines.

Feedback is an important means to raise awareness on deficits in good hand hygiene practices and to acknowledge the results achieved. Audit results were trended for each clinical area and quality improvement plans were developed in response to deficiencies identified. Trended hospital wide hand hygiene audit results were also presented to hospital management through inclusion in the Integrated Governance Monitoring Report, which is good practice and facilitates the identification of areas for improvement.

The most recent hand hygiene audit results for the rehabilitation ward inspected showed 88.9% compliance in June 2017. A staff member was identified as a hand hygiene champion and promoted best practice in relation to hand hygiene compliance on the ward.

## **Cleaning**

One of the most basic measures for the prevention and control multidrug-resistant organisms is cleaning. Dedicated cleaning staff were assigned to the wards. Cleaning sign-off sheets were consistently completed and submitted to a cleaning supervisor for oversight. Dedicated cleaning staff were also available for cleaning beds and mattresses when patients were discharged from the ward. There was a good standard of cleaning observed in relation to the patient environment and there was good ownership from local through to senior management level. Cleaning specifications were in place which clearly identified environmental surfaces and fixtures to be cleaned, the required frequency of cleaning and the staff discipline responsible in line with national cleaning guidelines.<sup>13</sup>

Hospital management told inspectors that environmental and patient equipment hygiene standards were continuously monitored at the hospital. Audits were carried out in all areas by a multidisciplinary audit team on a regular basis. Results of these audits were tracked and trended by management and this information was used to identify and address any deficiencies. Environmental hygiene audit reports showed average of 81% compliance with hygiene standards in the hospital in 2017.

The hospital had implemented new information technology software to facilitate audit of both hospital hygiene and hand hygiene practice in 2017. This system facilitated electronic recording of audit findings and trending and analysis of audit results and communication of issues that require action to the relevant departments. However, at the time of inspection, it was noted that staff in one of the clinical areas inspected could not freely access hygiene audit results.

## **Antimicrobial stewardship**

Effective antimicrobial stewardship, in combination with a comprehensive infection prevention and control program, has been shown to limit the emergence and transmission of multidrug-resistant organisms. The hospital had established an antimicrobial stewardship committee in 2016. Antimicrobial stewardship was a standing item on the Infection Prevention and Control Committee meeting agenda.

The committee was chaired by the Consultant Microbiologist. The hospitals' Antimicrobial Stewardship Team comprised the Clinical Microbiologist and the Infection Prevention and Control Clinical Nurse Specialist. At the time of the announced inspection the hospital did not have an antimicrobial pharmacist, rather antimicrobial stewardship activities were integrated into the wider workload of the Senior Clinical Pharmacist. It was reported that these antimicrobial stewardship hours were not protected.

Weekly antimicrobial stewardship rounds were undertaken by the Consultant Microbiologist, Infection Prevention and Control Clinical Nurse Specialist and clinical pharmacist.

Antimicrobial restriction is a core strategy of antimicrobial stewardship programmes and is considered to be an effective approach to controlling the use of antimicrobial agents. Cappagh National Orthopaedic Hospital used the Mater Misericordiae University Hospital empiric antimicrobial prescribing guidelines. The hospitals antimicrobial guidelines include a list of restricted antimicrobials. However, not all staff on the orthopaedic ward inspected were aware of these on the day of inspection. It was reported to inspectors that compliance with antimicrobial restriction measures was monitored by maintaining only those restricted antibiotics which are included in treatment or prophylaxis guidelines as ward stock. All other antibiotics must be requested from pharmacy for specific patient use and were dispensed only when their use was approved and recommended by a microbiologist.

Two local antimicrobial point prevalence surveys were undertaken in 2017. This demonstrated a commitment by the hospital to proactively identify areas for improvement in the hospital. The hospital had also participated annually in a national point prevalence survey of hospital-acquired infections and antimicrobial use which was part of a European-wide point prevalence study. The hospital reported antimicrobial consumption data in line with Health Service Executive national reporting requirements.

Education is a necessary component for changing behaviour to improve antimicrobial use. During the inspection inspectors found a lack of education around antimicrobial stewardship for staff prescribing and administering antimicrobials. A more formal education programme regarding antimicrobial stewardship is needed. The principles

of prudent antimicrobial prescribing should be included in induction training for all new medical, nursing and pharmacy staff.

### **Management of outbreaks**

Documentation reviewed by inspectors showed that there had been two possible outbreaks of infection at the hospital in 2017. Discussion with staff and review of documentation showed that outbreak control teams were convened to advise and oversee the management of outbreaks of infection at the hospital. Review of documentation showed that minutes of these meetings were recorded. However, outbreak reports were not produced following outbreaks. National Standards recommend that a report outlining the outcome of an investigation of an outbreak is presented to senior management, with feedback of outbreak control learning points provided to staff to identify opportunities for improvement.

The desirable national key performance indicator for *Clostridium difficile* infection is less than or equal to 2.5 cases per 10,000 bed days. HSE key performance indicator data for the hospital was viewed by inspectors and a sharp increase in the incidence of *Clostridium difficile* in the hospital was noted in January and February 2017.

At the time of the outbreak a multidisciplinary outbreak control team was convened by the hospital. Therapeutic and infection control measures were instituted to control and terminate the outbreak. Specimens were sent for ribotyping and therapeutic and control measures were instituted to control the outbreak. Ribotyping of samples taken from patients who acquired *Clostridium difficile* infection in the hospital did not identify strains common between the taken. This would indicate that there was no cross infection between patients. However, a comprehensive outbreak report was not written following the outbreak to identify contributory factors and the related control measures that were successfully implemented.

On the day of inspection infection control measures were in place to manage a suspected outbreak of influenza. The outbreak was confined to one ward and transmission-based precautions were in place. An outbreak control team had been convened and the HSE Department of Public Health had been informed.

It is recommended that health care workers should get the flu vaccine to protect themselves, their families and their patients. Research in European healthcare institutions shows a link between increased vaccinations and a reduction in the rates of flu-like illness. In 2017 the HSE aimed to achieve a target of 40% flu vaccination uptake among health care workers. A review of influenza vaccine uptake figures found that 37% staff in the hospital had obtained the seasonal influenza vaccine in 2017.<sup>14</sup> Measures to promote and improve healthcare worker uptake of seasonal influenza vaccine should be encouraged.



### **2.7.2 Systems in place to prevent and control multidrug-resistant organisms in clinical areas inspected**

Systems and measures to prevent the spread of multidrug-resistant organisms were reviewed in both clinical areas inspected.

#### **Orthopaedic Ward**

Nursing admission documentation in the orthopaedic ward inspected was reviewed by inspectors and included an MRSA risk assessment and screening record. This prompted nurses to follow the national guidelines in relation to screening requirements for MRSA.

On the day of inspection two orthopaedic inpatients who required transmission-based precautions were appropriately isolated in single rooms on the ward. Signage to communicate isolation precautions was in place for both of these isolation rooms. However, inspectors observed that the door to one of the single isolation rooms accommodating a patient requiring transmission-based precautions was ajar at the beginning of the ward-based inspection. Doors to rooms of patients requiring contact precautions should be kept closed at all times. If a risk assessment indicates a requirement to leave the door open for safety reasons this deviation from established contact precaution etiquette should be clearly documented and communicated to staff and relevant visitors to the ward.

Overall the environment and patient equipment hygiene in the orthopaedic ward inspected appeared clean with very few exceptions. Daily checklists for environmental cleaning had been consistently completed. Environmental audits were carried out on nine occasions in 2017 with an average of 84% compliance with desirable standards, which was marginally below the hospitals desirable target of 85%.

Patient care equipment audits showed average of 89% compliance with patient equipment hygiene in the ward in 2017. Clean patient equipment was labelled with decontamination tags to denote cleaning had taken place. Consistent implementation of this system was observed by inspectors on the day of inspection. Mattress audits checking the integrity of mattresses were also undertaken on a regular basis.

However, inspectors observed that there was lack of storage space in the ward with inappropriate storage of equipment resulting in clutter. Despite this limitation ancillary rooms in the ward were tidy and well organised.

The catering staff on the orthopaedic ward inspected also provided a catering service to three patient rooms on the adjacent rehabilitation ward. To reduce the risk of cross transmission between patients on these wards, hospital management

must be assured that catering staff rigorously adhere to standard and when necessary, transmission-based precautions.

### **The Rehabilitation Ward**

Measures to prevent the spread of antimicrobial-resistant organisms and implementation of aspects of transmission-based precautions were reviewed in the rehabilitation ward inspected.

The ward could accommodate 30 beds which comprised five six-bedded rooms. The inspector was informed that 28 beds were operational on the day of inspection.

On the day of inspection, as there were no single rooms to accommodate patients requiring isolation, one patient who required transmission-based precautions was accommodated and isolated in a six-bedded room with the remainder of beds vacant at the time of inspection. A dedicated toilet and shower facility on a corridor across from the six-bedded room with appropriate signage was assigned to this patient. None of the six-bedded rooms had en-suite facilities; toilets and shower facilities were located off the main ward corridor across from each six-bedded room. Spacing between beds in multi-occupancy rooms was less than ideal from an infection prevention and control perspective.

Inspectors were informed that dedicated equipment was assigned to the isolation room. Signage to communicate isolation precautions was in place however the door was open at the start of the inspection which was highlighted to staff and addressed at the time of inspection. Doors to rooms of patients requiring contact precautions should be kept closed unless a risk assessment indicates otherwise.

Patient assessment to determine previous colonisation or infection with MRSA was undertaken prior to transfer to the ward as criteria for transfer to the ward from an acute hospital included a negative MRSA screen within seven days of transfer. It was reported that screening for colonisation or infection with MRSA was performed in line with national guidelines. There was no single isolation room on the ward inspected.

Nursing admission documentation reviewed by inspectors did not specifically include an infection prevention and control section or prompts in relation to screening requirements in line with national guidelines. It was reported that screening of patients for colonisation or infection with VRE and Carbapenemase Producing *Enterobacteriales* was not performed.

Overall the patient environment inspected was generally clean with few exceptions. Cleaning schedules and checklists for patient equipment and associated ancillary rooms reviewed showed that cleaning had been consistently completed in line with the hospital's cleaning schedules. A labelling system to denote that patient equipment had been cleaned was consistently applied.

Cleaning checklists in relation to the patient environment had been consistently completed also. An opportunity for improvement was observed in relation to raised toilet seats as small brown stains were observed on the under surface of three toilet seats. This was highlighted at the time of inspection. The inspector noted that local cleaning specifications for environmental hygiene had been locally devised by staff responsible for cleaning in this area. The hospital needs to be assured that locally documented cleaning specifications are aligned to the overall hospital cleaning policy. Cleaning specifications should be reviewed on an on-going basis to ensure it continually meets the needs of patients and staff and visitors alike and results in a consistently high standard of cleanliness.

Although the inspector was informed that local environmental and patient equipment hygiene audits were performed on a regular basis, audit findings were not available to staff on the ward. Hygiene audit results received by inspectors following this inspection showed that the ward achieved an average performance compliance score of 90% for environmental hygiene and 93% for patient equipment hygiene from January to December 2017 which was reflective of the findings on the day of inspection. Information produced through local monitoring should be shared with and accessible to frontline staff to provide assurances to local managers that the service provided is in line with recommended standards and to ensure that staff responsible are provided with feedback. The information produced through local monitoring can also be used to identify opportunities for improvement in relation to the prevention and control of healthcare-associated infection.

Some opportunities for improvement were identified in relation to maintenance of wall paintwork and floor surfaces in some patient care areas. Sticky residue was observed on some floor surfaces which did not facilitate effective cleaning.

There was insufficient space to separate clean and dirty functions in the 'dirty' utility room. Despite this limitation the 'dirty' utility room was tidy with finishes that readily facilitated effective cleaning and findings on the day of inspection were consistent with overall hospital annual hygiene audit compliance score of 100% achieved for this area.

### **3. Progress since the previous HIQA inspection**

HIQA reviewed the quality improvement plan published by Cappagh National Orthopaedic Hospital following the 2016 inspection. It was apparent that Cappagh National Orthopaedic Hospital is actively endeavouring to address the issues previously identified in the unannounced HIQA inspection carried out in previous inspections. The quality improvement plan showed that 65 of the 77 actions identified in the quality improvement plan were given the status 'complete', seven were "on-going" and five actions had yet to be addressed.

Parts of the hospital building, which is approximately 100 years old, require significant structural work. The hospital was working to address outstanding maintenance issues and refurbishment and renovation of clinical areas within the hospital. Documentation reviewed by inspectors showed that improvement measures implemented at the hospital included the following:

- improvements to surfaces and finishes in ward areas
- hospital-wide mattress audit and subsequent replacement programme commenced in 2016
- formal legionella site risk assessment had been performed at the hospital in December 2016
- the building of a new 12-bay recovery room within the Operating Theatre Department was completed in late 2016
- the hospital programme for replacement of clinical hand wash sinks in patient areas to ensure compliance with HBN 00-10 standards<sup>15</sup> was nearing completion
- the hospital undertook a retrospective audit in relation to compliance with the implementation of the sepsis management national clinical guideline. A report was provided to the national sepsis programme and the hospital sepsis team.

## 4. Conclusion

A National Public Health Emergency Plan was activated on 25 October 2017 by the Minister for Health in response to the increase and spread of CPE in Ireland. Identification of colonised patients by screening patients who meet the criteria in the national screening guidelines on entry to hospital is a critical measure required to identify those patients who are colonised with CPE. Early identification can prevent further transmission to other patients. The Health Service Executive introduced screening guidelines for the acute hospital sector in June 2017. Inspectors found that Cappagh National Orthopaedic Hospital had not successfully ensured that screening patients for CPE was fully embedded in the hospital. In light of the current national public health emergency, HIQA considered this to be a high risk that required escalation to hospital management following this inspection.

However, overall HIQA found that Cappagh National Orthopaedic Hospital was endeavouring to fully implement the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services. Effective leadership, governance and management arrangements were evident around the prevention and control of healthcare-associated infection. The hospital had an established infection prevention and control programme which was overseen and supported by a consultant microbiologist who chaired the Infection Prevention and Control Committee. The hospital management team was clearly focused on monitoring structures, processes and outcomes and implementing evidence-based practice to inform any improvements in relation to the prevention and control of healthcare-associated infection at the hospital.

HIQA notes that the fabric and infrastructure of the hospital continues to present on-going challenges to the maintenance and upkeep of the building. The older infrastructure and limited space at the hospital meant that there were limited isolation facilities in the Active Rehabilitation Unit for patients with transmissible infection. Notwithstanding this, the hospital had continued to revise and strengthen local arrangements for managing hospital hygiene and infrastructural maintenance since the last HIQA inspection in 2016. Patient equipment and the patient environment was generally clean in the areas inspected.

The hospital had systems in place to identify and manage risks in relation to the prevention and control of healthcare-associated infection. Infection prevention and control related incidents and near misses were tracked, trended and graded, and where trends were identified, action was taken to prevent reoccurrence of such variance. Moreover, in the absence of a nationally coordinated programme, the hospital had established a local system of surgical site infection surveillance.

Hospital staff achieved 93.3% hand hygiene compliance in the National hand hygiene audit October/ December 2017 which exceeds the HSE's desirable target of 90% hand hygiene compliance.

Peripheral vascular and urinary catheter care bundles were in place. However, improvements are required relating to auditing compliance with the peripheral vascular catheter care bundles and feedback to staff.

In order to meet modern day infection prevention and control and hospital infrastructural standards, the hospital needs to be supported both at group and national level to address deficiencies going forward. It is recommended that the hospital continues to assess and manage the impact of these factors and escalate accordingly as part of their on-going infection prevention and control programme.

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## 5. Appendices

### Appendix 1: Lines of enquiry for the monitoring programme undertaken against the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services

Number	Line of enquiry	Relevant National Standard
1.1	The hospital has formalised governance arrangements with clear lines of accountability and responsibility around the prevention and control of healthcare-associated infections.	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 5.2, 5.3, 5.4, 6.1, 7.1
1.2	Risks in relation to the prevention and control of infection are identified and managed.	2.1, 2.3, 2.5, 3.1, 3.6, 3.7, 3.8
2	The hospital has policies, procedures and guidelines in relation to the prevention and control of infection and hospital hygiene.	2.1, 2.5, 3.1, 3.6, 3.8, 5.4, 7.2
3	Hospital personnel are trained and in relation to the prevention and control of healthcare-associated infection	2.1, 2.8, 3.1, 3.2, 3.3, 3.6, 6.1, 6.2
4.1	The hospital has implemented evidence-based best practice to prevent intravascular device-related infection and urinary catheter-associated infection, ventilator-associated pneumonia and surgical site infection.	1.1, 2.1, 2.3, 3.5
4.2	The hospital has systems in place to detect, prevent, and respond to healthcare-associated infections and multidrug-resistant organisms in line with national guidelines.	2.1, 2.3, 2.5, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8,

## Appendix 2: Copy of letter issued to Cappagh National Orthopaedic Hospital following unannounced inspection on 15 February 2017



Gordon Dunne  
CEO  
Cappagh National Orthopaedic Hospital  
Finglas  
Dublin 11  
[gordon.dunne@cappagh.ie](mailto:gordon.dunne@cappagh.ie)

16 February 2018

Ref: PCHCAI 2018/09

Dear Gordon

### **National Standards for the prevention and control of healthcare-associated infections in acute healthcare services - monitoring programme**

The Health Information and Quality Authority (HIQA) carried out an unannounced inspection at Cappagh National Orthopaedic Hospital against the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services on 15 February 2018.

On review of the inspection findings inspectors identified that the hospital is not in compliance with the Health Service Executive guideline around screening patients for Carbapenemase Producing Enterobacteriaceae (CPE). We consider this to be a high risk in light of the ongoing National Public Health Emergency Plan to address CPE in our health system which was activated by the Minister for Health on 25 October 2017.

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\* Health Service Executive, Requirements for screening of Patients for Carbapenemase Producing Enterobacteriaceae (CPE) in the Acute Hospital Sector, October 2017. Available online from: <https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/resources/cpe/requirements-for-screening-of-patients-for-cpe-in-the-acute-hospital-sector.pdf>

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Please outline how the hospital intends to address this high risk following this inspection. Details of the risk identified, and proposed mitigating actions will be included in the report of this inspection.

Please provide this information to HIQA by close of business on **23 February 2018** to [qualityandsafety@hiqa.ie](mailto:qualityandsafety@hiqa.ie). Should you have any queries, please do not hesitate to contact me at [qualityandsafety@hiqa.ie](mailto:qualityandsafety@hiqa.ie).

Yours sincerely,



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**Kathryn Hanly**  
**Authorised Person**

CC: Mary Dunnion, Director of Regulation, Health Information and Quality Authority  
Mary Day, CEO, Ireland East Hospital Group  
Liam Woods, National Director of Acute Services, Health Service Executive

## Appendix 3: Copy of the response letter received from Cappagh National Orthopaedic Hospital regarding the high risk identified during the HIQA inspection of Cappagh National Orthopaedic Hospital

**CAPPAGH  
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**FINGLAS, DUBLIN 11, IRELAND  
TEL: 01 8140 400 FAX: 01 8140 327**

9th March 2018

Ms. Kathryn Hanley (Inspector) Health Information Quality Authority,  
George's Court,  
George's Lane,  
Smithfield,  
Dublin,  
D07 E98Y

**Subject: CPE Response**

Dear Kathryn,

Cappagh National Orthopaedic Hospital is committed to the implementation of the HSE/ HCAI/ AMR Policy around the Screening of Patients for Carbapenemase Producing Enterobacteriaceae (CPE) in the acute Hospital Sector. A multidisciplinary team, which includes the Consultant Microbiologist, is actively working on an implementation plan to address the issues raised at the inspection in Cappagh National Orthopaedic Hospital on 15th February 2018 in relation to CPE screening.

The following initiatives have been implemented to support the screening of orthopaedic in-patients for CPE:

- Draft Procedure for the 'Screening and Management of CPE' developed and awaiting approval.
- Staff Education Sessions scheduled for the week commencing 19<sup>th</sup> March 2018
- Pre-Assessment Medical Questionnaire updated to include request for information to identify patients requiring CPE Screening
- General Consent Form updated to include patient consent for a Rectal Swab
- Risk Assessment of Pre-Assessment Treatment Room to ensure suitability to carry out rectal swabbing
- HSE Patient Information Leaflet will be provided to Patients and made available on Hospital Website
- Test Method for CPE Screening developed, proceduralised and validated by Hospital Laboratory
- Alert system on Electronic Healthcare System to be utilised for patients testing positive for CPE
- Weekly Bed Management Meeting will now consider patients who are confirmed CPE positive when planning in patient stay.

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In relation to patients for admission to the Active Rehabilitation Unit, the Sending Facility will be requested to indicate a patient's infection status prior to admission so that preparations can be made to accommodate CPE positive patients in line with the requirements of the HSE/ HCAI/ AMR policy.

If a patient tests positive for CRE, if possible, they will be placed in a single isolation room with ensuite. If single isolation is not an option, due to the limited number of single rooms in the hospital, the patient will be placed in a shared room with shared bathroom facilities with patients of similar infection status. Standard precautions and contact precautions will be implemented.

Due to the infrastructural limitations, this will invariably lead to closing of some beds. However we are currently developing a business case to enable us to address some of the issues that are required to be in place to be fully compliant with CPE requirements. We have also notified the IEHG and are working with them to access the required resources.

The above initiatives will take effect on the 1<sup>st</sup> April 2018. At CNOH, we are fully aware that we have a duty of care to all our patients and that colonisation or infection with CPE is not a contraindication to the provision of treatment, care or surgery.

We will endeavour to provide progress updates as we put systems in place to address these issues.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'G Dunne'.

---

**Gordon Dunne**  
*Chief Executive Officer*



**For further information please contact:**

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Dublin Regional Office  
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