



**Health  
Information  
and Quality  
Authority**

An tÚdarás Um Fhaisnéis  
agus Cáilíocht Sláinte

# **Report of the unannounced inspection at Beaumont Hospital (Incorporating St Joseph's Hospital, Raheny)**

Date of on-site inspection: 21 February 2019

**HIQA's monitoring programme 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 Office of 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.



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## 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 will include 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, and the approach taken to reduce the risk of reusable device-related infection. These two areas are internationally recognised as being major contributors to potentially preventable patient harm as a consequence of healthcare provision.

HIQA has published a guide<sup>2</sup> to this monitoring programme which is available to view on HIQA's website [www.hiqa.ie](http://www.hiqa.ie)

## 2.0 Information about this inspection

This inspection report was completed following an unannounced inspection carried out at Beaumont Hospital by Authorised Persons, HIQA; Kathryn Hanly, Noreen Flannelly-Kinsella, Bairbre Moynihan and Geraldine Ryan on 21 February 2019 between 09.00 hrs and 15.30 hrs.

Specific lines of enquiry were developed to facilitate this monitoring programme and are included in this report in Appendix 1.

Inspectors used specifically designed monitoring tools during this inspection and focused specifically on:

- the prevention and control of antimicrobial-resistant bacteria and healthcare-associated infections
- decontamination facilities\* outside of designated controlled decontamination units.<sup>†</sup>

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\* Decontamination facilities refers to the physical infrastructure where decontamination of reusable medical devices is provided.

<sup>†</sup> A controlled decontamination unit, such as a Central Decontamination Unit or Endoscope Reprocessing Unit, is a designated unit which has defined governance arrangements and is designed, constructed, maintained and controlled with structures, systems, processes and outcomes that are continuously monitored, measured and validated to provide assurances that reusable medical devices are safely and effectively reprocessed consistently in accordance with legislation, manufacturer's instructions, national decontamination standards and guidelines, National Standards and best practice guidance.

During this inspection inspectors spoke with hospital managers, staff and representatives from both the Infection Prevention and Control Committee and Decontamination Committee. Inspectors also requested and reviewed documentation, data and observed practice within the clinical environment in a sample of clinical areas which included:

- Hamilton Ward: This was a medical ward which accommodated rheumatology and cystic fibrosis patients, with step-down stroke service for rehabilitation. The ward comprised 35 beds which included four six-bedded rooms, one four-bedded room, one two-bedded room and five single rooms, of which four had en-suite facilities.
- Out-Patient's Department: The Ear Nose and Throat Clinic (ENT OPD).

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

Beaumont Hospital is the lead model 4 hospital in the Royal College of Surgeons in Ireland (RCSI) Hospitals Group and is the principal teaching hospital for the Royal College of Surgeons in Ireland. The hospital provides emergency and acute care services across 54 medical specialties. It is a designated cancer centre and the regional treatment centre for ear, nose and throat and gastroenterology. It is also the national referral centre for neurosurgery and neurology, renal transplantation, and cochlear implantation.

St Joseph's Hospital, Raheny operates under the governance of Beaumont Hospital. The hospital provides day surgery, rehabilitation services, radiology and a number of medical day services. Beaumont Hospital governs and manages a 100 bed Community Nursing Unit on the St Joseph's Hospital campus.

Decontamination and reprocessing service provision was undergoing a period of transition at the time of this inspection. The hospital was relocating the decontamination service from St Joseph's Hospital, Raheny to centrally controlled decontamination units at Beaumont Hospital. Endoscopy decontamination had been transferred with an expectation that surgical instrument reprocessing would be relocated to CSSD by end of quarter one 2019; a business case to support this transition had been approved.

At the time of inspection the hospital was providing a decontamination and reprocessing service for reusable medical devices in the:

- Central Sterile Supplies Department (CSSD)
- Endoscopy Decontamination Unit (EDU)



- satellite decontamination facilities located in the following departments; OPD, Radiology, Ophthalmology and Cardiology
- a satellite decontamination facility located at St Joseph's Hospital, Raheny
- decontamination of non-critical reusable medical devices used in clinical and non-clinical areas was performed locally in each respective area.

## 4.0 Inspection findings

The following sections present the general findings of this unannounced inspection. The report is structured as follows:

- section 4.1 outlines high risks identified during this unannounced inspection
- sections 4.2 to 4.4 present the general findings of this unannounced inspection.

### 4.1 High risks identified during this unannounced inspection

High risks identified in relation to the management of an ongoing outbreak of Carbapenemase Producing *Enterobacteriaceae*<sup>‡</sup> (CPE) at the hospital included:

- **non-compliance with the Health Service Executive guideline around screening patients for CPE<sup>3</sup>**
- **continuing to admit patients to a CPE outbreak ward which had been closed to admissions; contrary to advice from the infection prevention and control team.**

The hospital had been managing an outbreak of CPE since August 2018.<sup>4</sup> While the hospital had acted to implement outbreak control measures, evidence at the time of the inspection did not provide assurance that the measures implemented were sufficiently effective or in line with *National Standards for the Prevention and Control of Healthcare-Associated Infections in Acute Healthcare Services*<sup>1</sup> and national guidelines.<sup>5,6</sup>

Details of risks identified on the day of inspection were communicated to senior management during the inspection. Cognisant of the ongoing outbreak and that a declaration of a National Public Health Emergency<sup>§</sup> to address CPE was issued by the

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<sup>‡</sup> 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>

<sup>§</sup> A public health emergency is described as any serious or unexpected event, due to an infectious disease, which causes, or threatens to cause, death or serious illness to large sections of the population, an individual region or a specific cohort of individuals and which will have a major impact on the normal functioning of the health system and on society in general.

Minister for Health on 25 October 2017, HIQA sought written assurance from the Chief Executive regarding the management of CPE within Beaumont Hospital.

In response, the Chief Executive submitted a CPE action plan to HIQA.

A copy of the letter issued to the Chief Executive of Beaumont Hospital to seek assurance regarding the risks identified and a copy of the CPE action plan received from the Chief Executive are shown in Appendices 2 and 3 respectively.

## **4.2 Governance and management structures**

### **4.2.1 Infection prevention and control surveillance programme**

Beaumont Hospital had formalised governance arrangements and organisational structures with clear lines of accountability in place to support the implementation of the infection prevention and control programme.

The Chief Executive was accountable for the overall management and monitoring of the prevention and control of healthcare-associated infection at the hospital, and reported to the Hospital Board. The Chief Executive of Beaumont Hospital was also Chief Executive Officer of the RCSI Hospital Group.

Eight sub-committees including the decontamination co-ordination group reported into the infection prevention and control committee.

Governance arrangements and organisational structures were outlined in an organogram provided to HIQA showing lines of communication for infection prevention and control (appendix 4).

#### Outbreak Governance

Good governance and managerial support are crucial to support outbreak management. Effective governance arrangements acknowledge the interdependencies between organisational arrangements and clinical practice and integrate these to deliver high-quality, safe and reliable care and support.<sup>1</sup>

A CPE outbreak had been declared on Hamilton Ward on 10 August 2018 and an outbreak control team was convened. Documentation reviewed indicated that the outbreak control team meetings were chaired by the director of nursing in her role as the Executive Management Team lead for infection prevention and control.

A review of the outbreak control committee minutes indicated that due to the prolonged nature of the CPE outbreak and evidence of ongoing acquisition of CPE, the consistent advice of the outbreak control team and the infection prevention and control team had been that the outbreak ward should be closed to new admissions. HIQA found that universal adherence to this recommendation had not occurred over the time period between recognition of the outbreak and this inspection, albeit

senior management stated to HIQA that the ward was closed to new admissions on the day of inspection.

Concerns in this regard had been escalated by the outbreak control team through the organisation's formal clinical governance structures prior to HIQA's inspection. Hospital management should ensure that outbreak control measures are fully adhered to ensure their effectiveness, and that continuity plans are in place for the provision of suitable and sufficient resources and facilities during an unforeseen ward closure or outbreak of infection.<sup>1</sup>

Multimodal infection prevention and control strategies implemented by the outbreak control team to manage the CPE outbreak will be discussed further in section 4.4 of this report.

#### 4.2.2 Decontamination and reprocessing of reusable medical devices

Strong leadership, governance and management arrangements with clear lines of accountability and responsibility at both corporate and service-delivery level were evident at the hospital. The senior decontamination lead was responsible for the hospital's decontamination service and was supported by deputy decontamination leads and supervisors. Additionally inspectors found defined supervisory and management arrangements with good local ownership in the ENT OPD satellite decontamination facility inspected.

An updated quality improvement plan for decontamination services was in place to address areas for improvement. An annual decontamination report was presented to the Governance and Risk Committee, a sub-committee of the hospital board.

### **4.3 Monitoring and evaluation systems including risk management**

#### 4.3.1 Infection prevention and control surveillance programme

In compliance with the *National Infection Prevention and Control Standards*<sup>1</sup>, the infection prevention and control surveillance programme included surveillance of:

- 'alert' organisms and 'alert' conditions<sup>\*\*</sup>
- multidrug-resistant organisms
- data reported to the European Antimicrobial Resistant Surveillance Network (EARS-Net)<sup>††</sup>
- antimicrobial usage and resistance patterns
- catheter-related bloodstream infection (CRBSI)<sup>††</sup> in the Intensive Care Unit.

<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> EARS-Net performs surveillance of antimicrobial susceptibility of bacteria causing infections in humans including; *Escherichia coli*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Acinetobacter species*, *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Enterococcus faecalis* and *Enterococcus faecium*.

Healthcare-associated infection data was reported to each hospital directorate on a quarterly basis, presented at infection prevention and control committee meetings and at twice yearly clinical governance committee meetings.

### *Clostridium difficile*

The monthly *Clostridium difficile* infection surveillance report showed an increased incidence of *Clostridium difficile* at Beaumont Hospital in 2018. Documentation reviewed showed that the hospital incidence of *Clostridium difficile* infection in quarter three and four 2018 was 4.4 and 3.4 cases per 10,000 bed-days used. This figure is higher than the desirable Health Service Executive (HSE) performance indicator for *Clostridium difficile* infection which is less than or equal to 2.5 cases per 10,000 bed-days used.

Documentation reviewed indicated that four outbreaks of *Clostridium difficile* infection were reported in 2018. Outbreak reports viewed by HIQA indicated that a number of initiatives to reduce the burden of *Clostridium difficile* infection had been implemented. Outbreaks of *Clostridium difficile* infection can have serious outcomes for patients resulting in increased length of stay, higher costs and increased morbidity and mortality. In a hospital with persistently high patient activity levels and limited isolation facilities, the prevention and control of *Clostridium difficile* infection must remain a priority for all relevant hospital staff and hospital management.

#### 4.3.2 Decontamination and reprocessing of reusable medical devices

The focus of this inspection was on decontamination facilities outside of designated controlled decontamination units.

Inspectors were informed and documentation reviewed showed that hospital management undertook a comprehensive decontamination audit of all decontamination facilities in February 2018. The audit components included decontamination processes, infrastructural compliance, equipment and training. A quality improvement plan identifying areas for improvement was created for each facility following this audit. Local managers provided updates on the plan relating to their area at oversight governance committee meetings.

The Authorised Engineer for Decontamination (AED)<sup>§§</sup> appointed by the hospital to oversee and audit technical aspects of the decontamination programme, undertook

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

<sup>§§</sup> A suitably qualified person to graduate level designated by management to provide independent auditing and technical advice in relation to decontamination facilities, and equipment testing and validation records.

an independent audit of decontamination services in March 2018. In response to infrastructural and process flow deficiencies identified in relation to decontamination facilities at St Joseph's Hospital, Raheny, decontamination service provision was in the process of transferring to central decontamination units at Beaumont Hospital at the time of this inspection.

The senior decontamination lead was responsible for overseeing the validation schedule for decontamination equipment at the hospital. Inspectors were informed that decontamination equipment was maintained and periodically tested, monitored and validated by specialist groups at the hospital and external service providers in line with national guidance and best practice recommendations.<sup>7,8,9,10</sup> The AED provided oversight and audited the service annually. Ventilation and water systems were overseen by the specialist departments at the hospital.

The global asset identifier coding and national track and trace programme to support quality assurance of decontamination practices had been rolled-out in central decontamination facilities and in a satellite decontamination facility inspected. Inspectors were told by management that informal contingency plans in the event of decontamination equipment failure were available. HIQA recommends that these arrangements are formalised going forward.

## **Risk Management**

The hospital had systems in place to identify and manage risks in relation to the prevention and control of healthcare-associated infection and decontamination of reusable medical devices.

Risks identified in clinical areas were either addressed at clinical area level or were documented and escalated to directorate level or to the corporate risk register<sup>\*\*\*</sup> as required. Inspectors were informed that risks which could not be effectively mitigated at a local hospital level were escalated to the Hospital Group through appropriate corporate hospital reporting structure.

General infection prevention and control risks on the corporate risk register included insufficient infection prevention and control isolation facilities and the high prevalence of outbreaks of infection. The causes of outbreaks were deemed to be multifactorial and included a lack of isolation facilities and high occupancy rates. It

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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.

also outlined that the hospital had a greater degree of visibility in relation to outbreaks as a consequence of its extensive surveillance programme.

However the risk in respect of non-adherence with full implementation of CPE screening guidelines did not appear to have been included on the risk register.

Inspectors were informed that incident forms were completed when isolation facilities for patients requiring transmission-based precautions were unavailable. In addition staff completed incident forms when patients were admitted to the outbreak ward.

Review of minutes of Infection Prevention and Control Meetings, Clinical Governance Meetings and Executive Management Group meetings showed that there was regular review of risks relevant to infection prevention and control.

### Decontamination and reprocessing of reusable medical devices

Local decontamination-related risks were recorded on a decontamination risk register and escalated as one overarching decontamination-related risk on the corporate risk register. The corporate risk register outlined existing control measures enacted by the hospital to address current risks. The risk register was last updated in February 2019. Documentation reviewed showed that risk assessments were monitored, reviewed, updated and presented both locally and at oversight governance meetings on a scheduled basis.

Inspectors were informed and documentation reviewed showed that a review of the methodology for decontamination of tonometer prisms<sup>+++</sup> and ophthalmic lenses in the Ophthalmology OPD had been undertaken. Hospital management confirmed that following this review single-use lenses were now used at the hospital.

Decontamination-reported incidents were reviewed and actioned by the decontamination lead and risk manager at the hospital.

The national medical devices eAlert system<sup>+++</sup> had been implemented at the hospital. Minutes of decontamination working and steering group meetings showed that safety notices were a standing agenda item at meetings.

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<sup>+++</sup> Reusable ophthalmic medical devices such as tonometer's prisms are semi-critical devices that come into contact with the mucous membrane surface of the eye during examinations and procedures in ophthalmology outpatient clinics.

<sup>+++</sup> The national eAlert system is a HSE ICT system which receives notification directly from the HPRA of all medical device safety / hazard notifications or any internally generated HSE safety notifications for distribution.

Management stated that Beaumont Hospital had implemented the 2016 Draft HSE national protocol for reporting and management of cases of CJD<sup>§§§</sup> and other TSEs or of a person at increased risk of a TSE.<sup>11</sup>

#### **4.4: Implementation of evidence based best practice**

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

A CPE outbreak had been declared on Hamilton Ward on 10 August 2018. An outbreak control team had been established to oversee the management of the CPE outbreak. Inspectors were informed that this outbreak had been successfully confined to this ward. Reports also indicated that the prevalence of CPE related bloodstream infections remained low throughout 2018.

However despite the implementation of a number of mitigating measures<sup>5</sup> at the hospital, new cases of hospital-acquired CPE continued to be identified. Documentation reviewed indicated that 31 patients with hospital-acquired CPE were linked to this current outbreak on Hamilton Ward.

Compliance with transmission-based precautions and hand hygiene were regularly monitored on the ward as recommended in national guidelines.<sup>5,6</sup> There was evidence that the number of new cases of CPE identified in Hamilton Ward had decreased in recent months indicating better control of the outbreak.

##### Screening

As discussed in section 4.1, Beaumont Hospital was not in full compliance with national CPE or screening guidelines.<sup>3</sup>

Specifically the hospital was not routinely screening:

- residents of long-term care facilities
- all patients directly transferred from an Irish hospital
- patients who had been inpatients in any hospital in Ireland in the previous 12 months.

As a consequence, it is likely that the true incidence of CPE in the hospital may be underestimated.

The hospital had recently implemented universal CPE screening of general medical and surgical patients admitted to the outbreak ward. However one cohort of patients

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<sup>§§§</sup>Creutzfeldt-Jakob disease (CJD) and vCJD (variant CJD) are human forms of TSE (Transmissible spongiform encephalopathies). TSE is a group of progressive, invariably fatal, conditions that affect the brain (encephalopathies) and nervous system of many animals, including humans, cattle, and sheep. Critical and semi-critical medical devices contaminated with high-risk tissue (i.e., brain, spinal cord, and eye tissue) from high-risk patients—those with known or suspected infection with Transmissible Spongiform Encephalopathies require special treatment.

accommodated on this ward were not screened on admission to the ward or weekly thereafter. The hospital needs to risk assess this practice following this inspection.

Following this inspection the Chief Executive provided HIQA with written assurance that screening of patients from long term care facilities was introduced from 04 March 2019. A commitment to full compliance with the Health Service Executive guideline around screening patients for CPE by Quarter 3 2019 was also provided.

### Patient placement

Inspectors noted that all patients colonised with CPE in the hospital were accommodated in single rooms on the day of inspection, as appropriate. Inspectors were informed that these patients were cared for by dedicated healthcare assistants. However, these patients were not cared for by dedicated nursing staff as recommended in national guidelines.<sup>5</sup>

Restricting movement of patients during an outbreak reduces the risk of further transmission. However the current number of single rooms with en-suite facilities was insufficient to manage the ever-increasing number of patients requiring both protective<sup>\*\*\*\*</sup> and source isolation.<sup>†††</sup> This frequently resulted in patients with transmissible infection including CPE being moved throughout the hospital whenever a single room became available.

Inspectors were informed that proactive discharge plans were in place to reduce the number of delayed discharge patients colonised with CPE on this ward to facilitate further reduction in occupancy thus enabling the decant process and subsequent remainder of necessary refurbishment works.

### Communication

National guidance developed by the CPE Expert Group<sup>12</sup> recommend that patients should be informed as fully as possible and as soon as is reasonably practical in the context of their overall condition, if they are known to have had a specific exposure to a particular healthcare associated infection or specific antimicrobial resistant organism risk (that is to say they have been designated as "contacts"<sup>††††</sup>).

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\*\*\*\* Protective isolation is used to segregate the susceptible patient/resident to prevent them from acquiring an infection from other patients.

††† Source isolation is to segregate the infected patient/resident in a single room to prevent the spread of infection to other patients.

†††† A CPE patient contact is defined as a person that has shared a multi-bed area and/or shared toilet facilities with a person identified as colonised or infected with CPE. This includes time spent in the Emergency Department (ED) and Acute Medical Assessment Units (AMAU). A person that has been cared for in an inpatient area (including ED and AMAU) by nursing staff who were simultaneously caring for one or more patients colonised with CPE in the absence of Contact Precautions. This might arise in relation to a patient who was not known to be colonised with CPE at the time in question.



Written CPE information was provided to all general medical and surgical patients who were offered admission from the emergency department to Hamilton ward. However, inspectors were informed that not all patients admitted to the CPE outbreak ward were informed of the CPE outbreak or provided with CPE information prior to or after admission to this ward. This practice was contrary to National Standards<sup>1</sup> and guidelines<sup>12</sup> and must be addressed by hospital management.

In line with the HSE CPE Contact Communications Programme<sup>13</sup>, the hospital had commenced writing to identified CPE patient contacts that had been discharged advising them of their CPE contact status and offering testing for colonisation.

### Environment

Additional resources and increased cleaning frequencies had also been allocated to the outbreak ward.

The hospital had a number of effective assurance processes in place in relation to the standard of hospital hygiene. Records viewed showed that unannounced environmental hygiene audits were performed by a multidisciplinary audit team on a cyclical basis whereby each clinical area was audited every six months. Average hospital-wide compliance was 89% in 2018. The high levels of compliance achieved in environmental hygiene audits were also reflected in Hamilton Ward on the day of inspection.

Notwithstanding a high standard of environmental hygiene on this ward, dated hospital infrastructure had been identified as a challenge at the hospital. However, good local ownership was identified by inspectors in relation to infection prevention and control despite the challenging circumstances posed by the ward infrastructure. Hospital management were working to mitigate risks in respect of hospital infrastructure through gradual upgrading of existing facilities. Refurbishment of four single rooms on Hamilton Ward was in progress at the time of the inspection.

Infection prevention and control committee minutes indicated that ward decants<sup>§§§§</sup> had taken place on three occasions during the current CPE outbreak. These included ward closure and a deep clean followed by decontamination with hydrogen peroxide vapour<sup>\*\*\*\*\*</sup>. However the outbreak continued on Hamilton Ward. A decision was made that a further decant was necessary to finalise the infrastructural works and carry out a subsequent deep clean and decontamination of the ward with hydrogen

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§§§§ Ward Decant: moving all remaining patients from the outbreak ward to another ward in order to manage an outbreak by allowing earlier cleaning and re-opening of an empty ward.

\*\*\*\*\* Hydrogen peroxide vapour is a substance that destroys or eliminates all forms of microbial life in the inanimate environment, including all forms of vegetative bacteria, bacterial spores, fungi, fungal spores, and viruses .

peroxide vapour. This was confirmed in the action plan submitted to HIQA which outlined plans to transfer the remaining patients to another ward to facilitate same.

To trace the potential source of the outbreak, environmental screening was performed as recommended in national guidelines<sup>5</sup>. A review of outbreak control committee minutes indicated that CPE had been cultured from a tap on the outbreak ward in January 2019. The strain identified corresponded to the strain implicated in ongoing outbreak.

Potential environmental reservoirs for CPE were again identified in the most recent environmental screening results which found that two of 27 taps in patient rooms were found to be CPE contaminated. Inspectors were informed that remedial actions were being taken to address this.

#### Patient equipment

Local audits of equipment hygiene were performed by ward staff on a monthly basis. An overall compliance score of 100% was recorded in January 2019. The high level of compliance achieved in the recent equipment hygiene audits was likewise reflected on the day of inspection.

However equipment storage space on Hamilton ward was inadequate resulting in clinical equipment being stored on corridors. The hospital needs to review arrangements for storage to ensure best use of the facilities and maintain a clutter-free environment.<sup>5</sup>

#### Antimicrobial stewardship

An established antimicrobial stewardship programme coordinated by a multidisciplinary antimicrobial stewardship team was in place. In compliance with national guidelines<sup>14</sup>, the hospital operated a policy of restricted access to the broad-spectrum antibiotic meropenem; a last line antibiotic used to treat serious Gram-negative infection, which should not be prescribed without prior consultation with an infection specialist. A February 2019 audit found a high level of compliance with this policy.

#### 4.4.2: Decontamination and reprocessing of reusable medical devices in a satellite decontamination facility

Inspectors visited a satellite decontamination facility in OPD to ensure that structures, systems, processes and outcomes were in compliance with national standards and recommended practices for decontamination and reprocessing of non-channelled flexible and rigid Ear Nose and Throat (ENT) endoscopes.<sup>8,9</sup>

### **Examples of good practice included:**

- practices as demonstrated to inspectors were aligned to recommended best-practice guidance for decontamination of ENT endoscopes: however the design did not facilitate the complete separation of dirty and clean activities
- dedicated technicians, a supervisor and deputy decontamination lead were assigned to the facility
- hydrogen peroxide-based low-temperature sterilisers and national electronic track and trace systems were in place
- audit of decontamination processes and practices were undertaken annually and implementation of action plans to address findings in the audits were also in place; annual traceability audits were also undertaken
- hygiene audits were also undertaken on a cyclical basis and action plans to address issues identified were in place. Overall the facility inspected appeared clean on the day of inspection.

Standard operating procedures and clear instructions to guide staff were accessible at point of use and up to date. Inspectors recommend that the SOP for the management of ENT endoscopes out of hours is reviewed so that step-by-step instructions are clearly defined including pre-cleaning of endoscopes and if applicable, moistening of transport bags.

While inspectors found many areas of good practice, the facility design was not compliant with national guidance and recommended practices for decontamination and reprocessing of ENT endoscopes. Hospital management need to put measures in place to address the following issues:

- the design and infrastructure did not ensure the complete physical separation of dirty and clean activities
- ventilation systems were not in compliance with national guidance and best practice recommendations
- sterilised endoscopes were not securely stored in line with national guidelines
- microbiological monitoring of the clean area was not performed.

### **Staff training, education and competency in relation to decontamination practices**

The HSELand online training programme in relation to decontamination and chemical agent hazards training programme was mandatory for all relevant staff every two years. Oversight of this training was provided by the decontamination lead who received electronic alerts when training was due or overdue. All staff in central decontamination facilities at the hospital was up to date with this training in October 2018.

In line with HSE recommendations a number of staff had either completed or were in the process of undertaking a third-level academic qualification in decontamination practices and sterile services. Training and education for staff working in decontamination was well established. Regular operator training was provided by the manufacturers/suppliers of equipment and training records were maintained.

HIQA found that individual audit of staff practices against relevant policies, procedures and guidelines was undertaken on an ongoing basis. A formalised competency assessment framework, validated annually, should be rolled out in line with national guidance and best practice recommendations.<sup>15,16,10</sup>

## 5.0 Conclusion

A National Public Health Emergency Plan was activated by the Minister for Health on 25 October 2017 as response to the increase and spread of Carbapenemase Producing *Enterobacteriaceae* (CPE) in Ireland. The National Public Health Emergency Team developed guidelines for screening of patients for Carbapenemase Producing *Enterobacteriales* (CPE) in the Acute Hospital Sector. However, inspectors found that the Beaumont Hospital was not fully aligned to national CPE screening guidelines.<sup>3</sup>

Beaumont Hospital had experienced an ongoing outbreak of CPE on Hamilton ward since August 2018. Although a number of mitigating measures<sup>5</sup> had been implemented on the outbreak ward, new cases of CPE continued to be identified over the six months preceding HIQA's inspection.

The consistent advice of the the outbreak control team and the infection prevention and control team had been that the outbreak ward should be closed to admissions. HIQA found that this advice had not been universally applied in practice, albeit management stated that the ward was closed to new admissions on the day of inspection

Details of the above risks were communicated to senior management during the inspection and in writing immediately following it (appendix 2). HIQA was assured that the measures outlined in the action plan submitted were sufficiently effective to address the concerns raised (appendix 3).

Overall HIQA found that the infection prevention and control team had made significant progress in improving infection prevention and control practices in the hospital and implementing the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services*. HIQA acknowledges the hospital's positive progress and compliance levels in relation to:

- the oversight of performance across all clinical areas in relation to infection prevention and control was facilitated by on-going surveillance, monitoring and audit programmes led by the infection prevention and control team
- environmental and equipment hygiene standards, despite infrastructural challenges
- oversight of environmental and patient equipment hygiene from local through to senior management level.

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

- full compliance with national CPE screening guidelines<sup>3</sup>

- patient placement decisions must be based on risk assessment and advice from the specialist infection prevention and control team and the outbreak control team.

#### Decontamination and reprocessing of reusable medical devices

Overall HIQA found that the hospital was successfully endeavouring to implement national standards and recommended best practice guidance in relation to decontamination service provision.

Facility design impacted on the overall compliance with best practice guidance in a satellite decontamination facility inspected. The hospital had placed this risk on a decontamination risk register and escalated to the corporate risk register.

In the interim of any infrastructural changes in the satellite decontamination facility inspected hospital management had put controls and measures in place to minimise this risk which included some of the following:

- strong leadership, management and oversight arrangements
- standardised processes with up-to-date standard operating procedures to support staff
- use of validated automated systems for decontamination in line with national recommendations
- academic training and education for staff working in decontamination and the oversight arrangements in place
- embedding a culture of audit, feedback and quality improvement cycles in relation to decontamination and reprocessing procedures.

The hospital was also actively reducing the number of satellite facilities carrying out decontamination in line with best practice guidance.<sup>17</sup>

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## 7.0 Appendices

### Appendix 1: Lines of enquiry 2019 monitoring programme

#### **1. Governance and management structures**

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

#### **2. Monitoring and evaluation systems including risk management**

The hospital has effective arrangements in place to respond to the ongoing monitoring, evaluation, audit and outcome measurement in relation to the prevention and control of healthcare-associated infection programme and the decontamination and reprocessing of reusable medical devices.

The hospital has a risk management system in place to identify, manage and report all hazards, adverse events, near misses and risks in relation to the prevention and control of healthcare-associated infections and the decontamination and reprocessing of reusable medical devices.

#### **3. Implementation of evidence-based best practice**

The hospital has the structures, systems and processes to detect, prevent, and manage multidrug-resistant organisms.

The hospital has the structures, systems and processes in relation to decontamination and reprocessing of reusable medical devices in satellite decontamination facilities.

The hospital ensures that key personnel have been appropriately trained to the necessary standard of competence and are supported with ongoing education and training reflecting national and international evidence.

The hospital ensures that key personnel are implementing evidenced-based best practice with up to date policies, procedures, protocols and guidelines in line with relevant legislation and national guidelines.

## Appendix 2: Copy of the letter issued to the Chief Executive of Beaumont Hospital regarding the high risks identified during HIQA's inspection.



Ian Carter  
Chief Executive Officer  
Beaumont Hospital  
Beaumont Road  
Dublin 9  
[ceo@beaumont.ie](mailto:ceo@beaumont.ie)

22 February 2019

Ref: PCHCAI 2019/05

Dear Ian

The Health Information and Quality Authority (HIQA) carried out an unannounced inspection at Beaumont Hospital against the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services on 21 February 2019.

During this inspection a number of immediate high risks were identified in relation to the management of an ongoing outbreak of Carbapenemase Producing *Enterbacteriales* (CPE) at the hospital.

Specific details of high risks identified at this inspection included:

- Non-compliance with the Health Service Executive guideline around screening patients for Carbapenemase Producing *Enterbacteriales*\* (CPE)

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\* Health Service Executive. Requirements for screening of Patients for Carbapenemase Producing *Enterbacteriales* (CPE) in the Acute Hospital Sector. October 2017. Available online from: <https://www.hse.ie/enq/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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- Continuing to admit patients to a ward experiencing an ongoing CPE outbreak with evidence of continuing cross transmission; this decision was contrary to advice from the infection prevention and control team.

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. The above issues were brought to the attention of senior management at the hospital during the inspection.

Please formally report back to HIQA by **2pm on 26 February 2019** to [qualityandsafety@hiqa.ie](mailto:qualityandsafety@hiqa.ie) outlining the measures that have been enacted to mitigate the identified risks as outlined above. Details of the risk identified, and proposed mitigating actions will be included in the report of this inspection. This will include copies of HIQA's notification of high risks and the service provider's response.

Should you have any queries, please do not hesitate to contact me at [qualityandsafety@hiqa.ie](mailto:qualityandsafety@hiqa.ie). Please confirm receipt of this letter by email [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

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## Appendix 3: CPE Action Plan

February 26, **[ACTION PLAN CPE, BEAUMONT HOSPITAL]**

Subsequent to the publication of National Screening for Carbapenemase Producing Enterobacteriaceae (CPE) in the Acute Hospital Sector February 2018, Beaumont Hospital has introduced CPE screening as follows

No.	Category	Yes/No
1	All contacts of a patient with CPE	Yes
2	All admissions to critical care areas on admission & weekly thereafter	Yes
3	All admissions to Hematology & Transplant wards on admission & weekly thereafter	Yes
4	All patients who have received Cancer chemotherapy in the previous 12 months on admission	Partial
5	All patients who are transferred from any other hospital (specialty transfers being screened abroad, TUN & Neurosurgery)	Partial
6	All patients who have been an in-patient in any hospital in Ireland or elsewhere at any time in the previous 12 months	No
7	Renal Dialysis patients at first dialysis in a unit, periodically during dialysis treatment	Partial
8	All patients who normally reside in a long term care facility	No

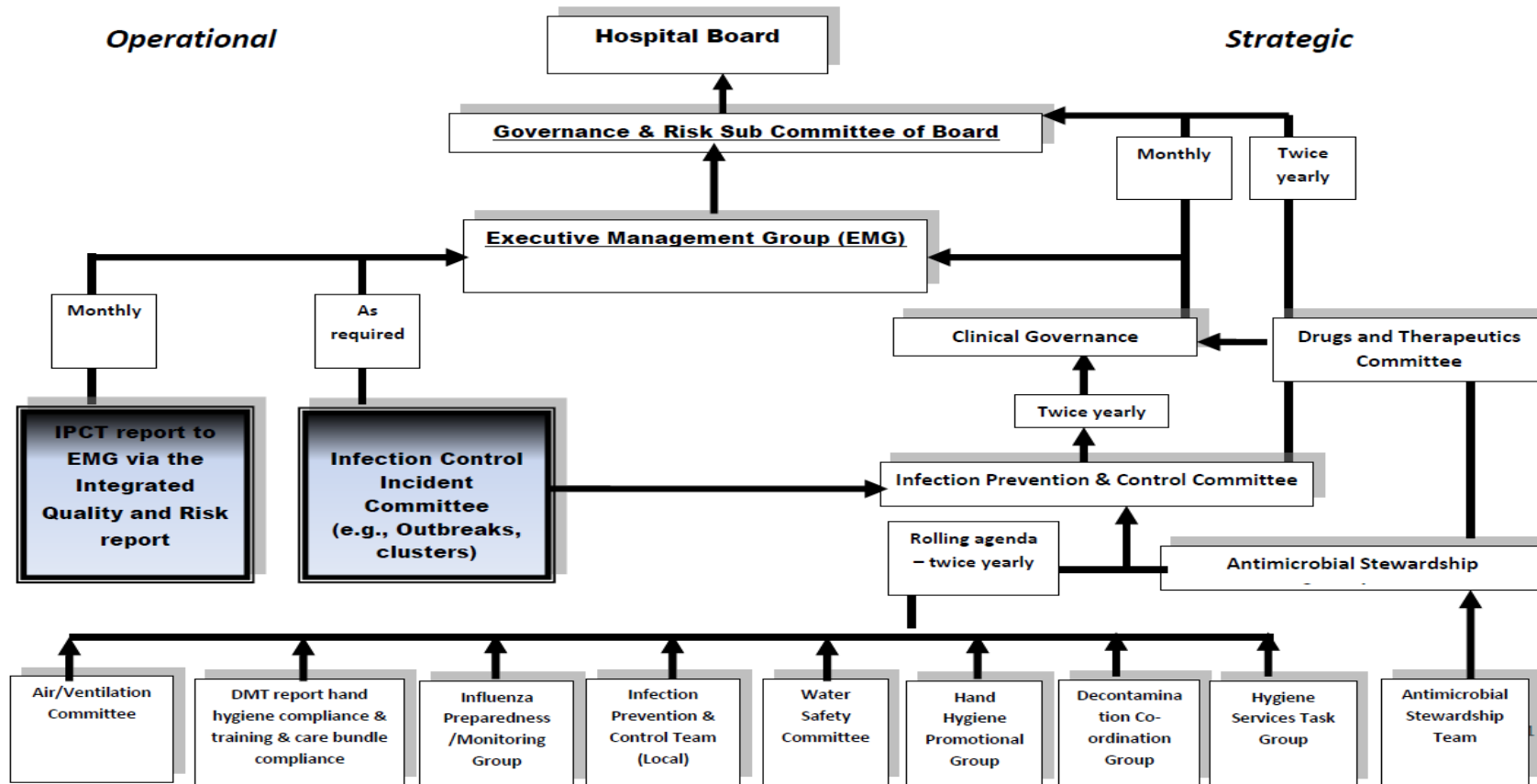
Note: As of 22.02.2019 Beaumont Hospital are now screening patients being admitted from Long Term Care (LTC) facilities and following a recruitment initiative will be fully compliant across all screening categories with automated publication of compliance in place for monitoring by Q3.

On 21.02.2019 CPE Outbreak ward was closed to admissions. The following actions are being undertaken to assist in the management and control of the CPE Outbreak on the ward

Week Beginning	It	Key Actions
18.02.2019	1	Ward closed to admissions
	2	Continue with ward refurbishment works as outlined by OCT/IP&C
	3	Optimise discharges on Hamilton ward to further reduce burden of CPE colonised patients/CPE contacts
	4	Close capacity (designated ward) to facilitate decant of CPE Outbreak ward
	5	Decant remaining CPE contact patients to designated decant ward
	6	Transfer single remaining CPE positive patient to into single isolation room on designated ward
	7	CPE ward closed
25.02.2019	8	Expedite remaining refurbishment works
	9	Subsequently deep clean , HPV (fogging) decontamination of ward
	10	Treat all drains/water outlets with anolyte solution post action 8 & 9
	11	Environmental screening with focus on wet/damp areas
	12	Ward to open as a designated clean ward <u>only</u> when environmental screening results have been confirmed negative
	13	The ward will re-open on a phased basis
	14	CPE screening on admission of patients to the ward & weekly screening of patients thereafter will continue for 4 weeks as per policy
	15	CPE contact ward (related to Outbreak ward) to remain closed to admissions & screening protocol to continue as per national guidance
04.03.2019	16	Weekly treatment of drains/water outlets with anolyte solution
	17	Close monitoring of the ward to continue for 3 month period

## Appendix 4: Hospital governance organogram

### Governance of Infection Prevention and Control and Antimicrobial Stewardship in Beaumont Hospital





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