Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the unannounced inspection at the Mater Misericordiae University Hospital, Dublin

Date of on-site inspection: 28 March 2019

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

About the Health Information and Quality Authority (HIQA)

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

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

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.

- **Regulating social care services** — The 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*[1] 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[2] to this monitoring programme which is available to view on HIQA's website www.hiqa.ie

2.0 Information about this inspection

This inspection report was completed following an unannounced inspection carried out at the Mater Misericordiae Hospital, Dublin by Authorised Persons from HIQA: Noreen Flannelly-Kinsella, Kathryn Hanly and Bairbre Moynihan on 28 March 2019 between 09.00hrs and 17.00hrs.

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 and focused on:

- the prevention and control of transmission of antimicrobial-resistant bacteria and healthcare-associated infections
- decontamination facilities[*] outside of designated controlled decontamination units.[†]

During this inspection inspectors spoke with hospital managers, staff and representatives from the Infection Prevention and Control Committee and Decontamination Committee. Inspectors requested and reviewed documentation,

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

[†] 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.

data and observed practice within the clinical environment in a sample of clinical areas which included:

- Our Lady's Ward
- St Agnes Ward
- The Radiology Department.

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

The Mater Misericordiae University Hospital is a model four acute hospital which is both a university teaching and tertiary referral[‡] hospital. The hospital provides emergency and acute care services across a range of services. It is a designated cancer care centre and a national centre for many specialities including heart and lung transplantation.

The Mater Misericordiae University Hospital also governs and manages three post-acute care services located off site at Fairview Community Unit, Fairview. The hospital is part of the Ireland East Hospitals Group.[§]

Decontamination and reprocessing services for reusable medical devices were provided in the following areas at the hospital:

- Decontamination and reprocessing of critical and semi-critical devices was performed in the Central Sterile Supplies Department (CSSD)
- Endoscope decontamination was performed in dedicated decontamination facilities located in:
    - Gastro-Intestinal, Heart and Lung Transplant, and Bronchoscopy Units
    - General Theatre
    - Day Surgery Unit
    - Ear Nose and Throat Out-Patient Department
- Semi-invasive ultrasound probes were decontaminated locally in the Radiology Department and CSSD.

[‡] A tertiary referral hospital is a hospital that provides care from specialists in a large hospital after referral from primary care and secondary care.

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

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 the high risk identified during this unannounced inspection
- Sections 4.2 to 4.4 present the general findings of this unannounced inspection.

4.1 High risk identified during this unannounced inspection

A risk was identified 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 Carbapenemase-Producing *Enterobacterales* (CPE).[**3]

Screening is required to ensure that patients with CPE infection or colonisation are identified to:

- ensure that measures are taken to prevent onwards transmission to other patients
- provide an accurate picture of the current epidemiology of CPE at each institution and to inform appropriate infection control policies.[4]

Details of the risk identified were communicated to senior management during the inspection. Cognisant of two significant outbreaks of CPE in critical care areas in 2018 and that a declaration of a National Public Health Emergency[††] to address CPE was issued by the Minister for Health on 25 October 2017, HIQA sought written assurance from the chief executive officer (CEO) regarding arrangements that were in place to ensure compliance with the national guidelines on screening for CPE at the Mater Misericordiae University Hospital.

In response the CEO explained that a business case had been prepared outlining additional resources required to support the implementation of universal CPE screening for all patients admitted to the Mater Misericordiae University Hospital. This business case was due to be presented at the next hospital board meeting scheduled for May 2019.

[**] Carbapenemase-Producing *Enterobacterales* (CPE), are a family of bacteria which can cause infections that are difficult to treat because they are resistant to most antimicrobials, including a class of antimicrobials called carbapenems which have typically been used as a reliable last line treatment option for serious infection. Bloodstream infection with CPE has resulted in patient death in 50% of cases in some published studies internationally.

[††] 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.

A copy of the letter issued to the CEO to seek assurance regarding the risk identified and a copy of the reply received from the CEO are shown in Appendices 2 and 3 respectively.

4.2 Governance and management structures

Infection prevention and control programme

The CEO of the hospital held overall accountability and responsibility for the prevention and control of healthcare-associated infection at the hospital and was the chair of both the Direct and Indirect Infection Prevention and Control Committees.

It was reported to inspectors that the infection prevention and control programme had been severely restricted due to staffing constraints within key roles of the infection prevention and control team over the previous 10 month period. The hospital's Direct and Indirect Infection Prevention and Control Committees had been inactive for the previous 12 months. Infection prevention and control team meetings were also infrequently held during this period.

This was a particular concern in the context of two outbreaks of CPE in critical care areas in 2018. Inspectors were informed that the additional workload generated by CPE outbreak management had been absorbed by the existing infection prevention team members. It was reported that this had severely restricted the implementation of the wider infection prevention and control programme throughout 2018. The hospital acknowledged that this had led to deficits in the prevention and control of other healthcare-associated infections in the hospital. Management of the 2018 CPE outbreaks in the hospital will be presented in section 4.4 in this report.

National standards[5] recommend that services manage their workforce to respond in a timely manner to changes in workload or resources available to ensure the delivery of high quality safe service. In building sustainability with respect to governance oversight, it is important that the burden of responsibility for participation is shared fairly across relevant personnel, rather than reliance on a few individuals.

Inspectors were informed that the infection prevention and control programme was in the process of being re-established and a committee meeting had been scheduled. The infection prevention and control assistant director of nursing post was reinstated in March 2019. In addition, the hospital had recently appointed an infection prevention and control nurse to a vacant post, who was due to take up the position in the coming weeks.

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

Decontamination and reprocessing of reusable medical devices

The decontamination lead was responsible for leading and coordinating decontamination service provision supported by local managers at decontamination facilities at the hospital.

The Decontamination Committee had oversight of decontamination service provision and met monthly. Hospital managers told inspectors that local managers from satellite decontamination facilities also attended. However there was no evidence to indicate that minutes were shared with frontline operatives in a satellite decontamination facility inspected; good governance includes engagement and communication with staff at the point of care on issues of relevance to the service.[1] Furthermore the suspension of the infection prevention and control committees in 2018 impacted on reporting structures for decontamination.

Inspectors noted from the minutes of decontamination committee meetings reviewed that attendance was poor; approximately 50-70% of members were absent. Management need to review the attendance, membership and frequency to ensure that the committee's objectives are being met and relevant specialist expertise are in attendance when required to advise and inform the programme.

The hospital's governance organogram (Appendix 4) did not reflect the reporting arrangements outlined in the decontamination committee's terms of reference.

Hospital management need to ensure that there are clearly defined governance and oversight structures on an ongoing basis to support decontamination service provision. Effective governance arrangements facilitates staff to provide updates and report on identified risks in relation to the service.[1] The hospital's organogram needs to be reviewed and/or amended to accurately reflect governance and oversight arrangements in relation to decontamination service provision.

4.3 Monitoring, audit and evaluation systems including risk management

4.3.1 Monitoring, audit and evaluation systems

Infection prevention and control of healthcare-associated infection

The surveillance of healthcare-associated infection is one of the core components of an effective infection prevention and control programme.[6,7,8] The infection prevention and control surveillance programme included surveillance of:

- 'alert' organism[‡‡] and 'alert' conditions

[‡‡] Alert organisms are micro-organisms that pose a significant risk of transmission to non-infected patients or staff, resulting in colonisation or healthcare-associated infection, or that pose a significant risk of transmission to non-infected people in the wider population or community.

- multidrug-resistant organisms
- data reported to the European Antimicrobial Resistant Surveillance Network (EARS-Net)§§
- surgical site surveillance (limited in respect of cardiac surgery)
- total parenteral nutrition*** infusion line surveillance
- antimicrobial usage and resistance patterns.

However, although this information was being gathered, there was no evidence to indicate that this surveillance data was shared with front line staff on the wards inspected. Sharing findings of surveillance programmes with front line staff must be addressed as a priority following this inspection.[1]

Infection surveillance in relation to central venous access device-related infection, urinary catheter-associated urinary tract infection and ventilator-associated pneumonia (VAP) was not carried out as recommended in national guidelines.[9,10,11]

Decontamination and reprocessing of reusable medical devices

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

There was no evidence to suggest that regular audit of decontamination practices was routinely undertaken at decontamination facilities at the hospital; this should be progressed in line with national standards.[1,12] Documentation reviewed showed a gap analysis of central decontamination facilities had been undertaken and an improvement action plan implemented in 2016. However there was no clear indication that the effectiveness of the implementation of the improvement plan had been re-audited.

The hospital undertook a gap analysis in 2018 in relation to validation and testing in endoscope decontamination facilities to ensure compliance with the latest national standards in this regard.[14] 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.[12,13,14,15] The hospital had a comprehensive inventory of reusable medical device and decontamination equipment used.

§§ 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.*

*** Total parenteral nutrition is the aseptic delivery of nutrients into the circulatory system via a central venous catheter or the peripheral veins

An authorised engineer for decontamination (AED)[†††] was appointed by the hospital to oversee and audit the technical aspects of the decontamination programme. Hospital management told inspectors that environmental monitoring of air and surfaces of clean areas in central and endoscope decontamination facilities was not performed, which is not in line with national guidance.[12,14]

Self-assessment environmental hygiene audits were performed monthly in the satellite decontamination facility visited. However overall trend reports were not available to staff; this should be progressed to facilitate local ownership. National guidance recommends that managerial audits should be carried out to validate the local audit process, provide an independent objective view of cleanliness and should form part of the ongoing management and supervision of ward/department hygiene.[16]

4.3.2 Risk management

Infection prevention and control risks were on both a local and corporate risk register. The local infection prevention and control risk register had not been updated since March 2018. Risk registers should be reviewed on a monthly basis but at a minimum quarterly in line with national guidance.[17] Local risks which are deemed to be significant by senior management should be escalated to the corporate risk register. The corporate risk register did not reflect the risks on the local risk register. Inspectors found during this inspection that the local infection prevention and control risk register was not being managed and escalated in line with national guidance.[17] The corporate risk register was updated in March 2019.

Infection prevention and control risks on the corporate risk register included for example:

- risk of cross infection from mattresses
- increased number of patients with CPE requiring infection control measures
- limited surgical surveillance infection programme
- hand hygiene training below the national target
- infrastructural deficits in CSSD.

The risk register did not include the hospitals non-compliance with national screening guidelines in relation to CPE[**] and the absence of a functioning Infection Prevention and Control Committee.

Inspectors were informed that the hospital was in the process of transferring the risk register onto the HSE risk register template and training relevant staff on risk

[†††] 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.

registers. This was reflected in the minutes of the Quality and Patient Safety Steering group.

Inspectors were informed that infection prevention and control and CPE were standing agenda items on the Quality and Patient Safety Steering group. This was not identified by inspectors on review of the agenda for this meeting. Inspectors reviewed the minutes of the last three Quality and Patient Safety Steering group meetings and noted that infection prevention and control and CPE was discussed at one meeting.

Inspectors were informed that incidents of healthcare-associated infection were not being reported in line with national guidance.[1,18] Healthcare-associated infections must be reported and inputted into the National Incident Management System in line with national guidance and legislation.[1,19]

Decontamination and reprocessing of reusable medical devices

The decontamination risk register showed that risks were last reviewed in 2016 and 2017. Inspectors noted that risk management was not a standing agenda item at decontamination committee meetings. In addition representation from risk management although included in committee membership, was not evident in minutes reviewed.

Hospital management need to implement a risk management plan that is effectively communicated to all staff to ensure everyone understands who is responsible for identifying, reporting and managing risk.[1] Decontamination-related risks need to be discussed, updated and effectively managed in line with national guidance.[17] Furthermore an annual decontamination quality assurance report outlining and identifying risks, near misses and measures put in place to minimise risks, was not provided to senior management at the hospital in line with National Standards.[1]

Some identified risks on a decontamination risk register included facilities in CSSD and day surgery endoscopy and ageing equipment. The risk register showed that some decontamination-related equipment, for example steam sterilisers and washer disinfectors had surpassed recommended life-cycles and replacement was subject to capital funding approval. National guidance recommend that feedback from routine or planned preventive maintenance along with the life cycle information from the manufacturer should inform decisions when to replace a device/equipment.[20]

Subsequent to a day surgery risk assessment, plans to relocate the unit to a new location at the hospital were underway. The risk register also showed that a feasibility study was carried out in relation to the development of a new location for CSSD.

In light of the number of satellite endoscopy decontamination facilities at the hospital and lack of dedicated operatives in some of these facilities, staff training requirements featured on the risk register. Inspectors were informed that advanced proposals in relation to a more centralised model for decontamination service provision across the hospital, in line with national recommendations, had been escalated to the hospital board.

A risk assessment had been undertaken in relation to the use of multi-wipe high level disinfection systems for decontamination of ultrasound probes, which is in line with national guidance. The hospital had recently purchased automated validated systems for decontamination of semi-invasive ultrasound probes in the Radiology Department.

The national medical devices eAlert[‡‡‡] system had been implemented in the hospital. The lead clinical engineer and risk manager, as the nominated "designated persons", were responsible for internal hospital distribution to the relevant personnel for implementation of the recommended actions where applicable.

Inspectors were informed that it was hospital policy to report decontamination-related incidents on the national incident management system (NIMS).[§§§] The decontamination lead was notified of any reported decontamination-related incidents. A log reviewed by inspectors showed that two incidents had been recorded for the previous two year period. A systems analysis review in line with the HSE's incident management framework[21] was due to commence in relation to a recent water supply incident.

A draft policy in relation to minimising the risk of transmission of transmissible spongiform encephalopathies (TSE)[****] was reviewed following this inspection. Hospital management need to finalise this document and be assured that the hospital is in line with national guidance in this regard.[22]

[‡‡‡]The national eAlert system receives notification directly from the HPRA of all medical device safety / hazard notifications or any internally generated HSE safety notifications for distribution.

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

[****] Transmissible spongiform encephalopathies (TSEs) are 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.

4.4 Implementation of evidence-based best practice

4.4.1 Systems to detect, prevent and manage multidrug-resistant organisms

CPE management

The hospital experienced two significant outbreaks of CPE in critical care areas in 2018. A CPE multidisciplinary outbreak committee was convened to advise and oversee the management of these outbreaks. Inspectors were informed that both CPE outbreaks had been successfully confined within the Intensive Care Unit (ICU) and Coronary Care Unit (CCU) respectively. Reports also indicated that the prevalence of CPE related bloodstream infections remained low throughout 2018.

Outbreak investigation

The infection control team explained that epidemiological links identified between patients with CPE in the CCU were indicative of CPE cross transmission between patients within the unit. Concerted infection prevention and control interventions, including adherence to principles of standard precautions and contact isolation, succeeded in halting the CPE outbreak in the CCU.

However inspectors were informed that cross transmission between patients was not evident in the ICU. Extensive environmental testing for CPE in the ICU found evidence of a potential environmental source in dialysis disposal units within the unit and remedial actions were taken. However it was identified that the strain identified did not correspond to the strain implicated in the ICU outbreak.

In September 2018 the infection prevention and control team identified that the outbreak strain was frequently reported as a contaminant of personal care products. The team instituted a process to remove all open containers of creams and lotions and related products from the ICU. Products were replaced with single use sachets of products where available. These interventions coincided with success in containment of CPE transmission in the ICU. The hypothesis was that personal care products in the ICU may have become contaminated and served as environmental reservoirs for CPE.

Following a period of 90 consecutive days without a newly detected CPE hospital associated case, the outbreak was declared closed in December 2018.[23] However, this could not be verified as records of outbreak control committee meetings were not kept after September 2018. Furthermore an outbreak report that detailed findings of an epidemiological investigation into the CPE outbreak as recommended in national guidelines was not prepared.[24]

CPE screening and microbiological testing

As discussed in section 4.1, the hospital was not in full compliance with national CPE screening guidelines.** Specifically the hospital was not routinely screening:

- residents of long-term care facilities
- patients who had been inpatients in any hospital in Ireland in the previous 12 months
- renal dialysis patients at first dialysis in a unit, periodically during dialysis treatment (at intervals of not less than six months), and on return from dialysis elsewhere
- patients who have received cancer chemotherapy in the previous 12 months on admission.

As a consequence, it is likely that the true incidence of CPE in the hospital may be underestimated at the hospital. Early identification of CPE cases is recommended so that appropriate isolation precautions can be implemented to reduce the risk of spreading infection to patients, staff and visitors at the hospital.**

Inspectors were informed that insufficient resources within the infection control team and limited isolation facilities posed a key challenge in meeting full compliance with national CPE screening guidelines. However continuing to exclude these patient groups in the context of the recent CPE outbreaks was a significant concern, was not in line with national guidance and must be addressed as a matter of urgency.

Antimicrobial stewardship

Antimicrobial stewardship should be enhanced in hospitals with ongoing CPE transmission. The hospital had an established antimicrobial stewardship programme[1] in place which was co-ordinated by a multidisciplinary antimicrobial stewardship team. Inspectors were informed that weekly meropenem de-escalation ward rounds had resulted in a 50% reduction in meropenem usage in 2018.

However the hospital had not introduced national guidelines[25,26] for restricted antimicrobial prescribing rights for the broad-spectrum carbapenem antibiotic meropenem,†††† which is a last line antibiotic used to treat serious gram-negative infection.

Patient placement

Inspectors were told that all patients colonised with CPE in the hospital were accommodated in single rooms on the day of inspection, as appropriate. However,

†††† Meropenem is a carbapenem antibiotic reserved for treatment of infections due to antimicrobial resistant bacteria and infections in seriously ill patients, with input from an infection specialist (clinical microbiologist or infectious diseases physician). Because antimicrobial consumption is a driver of antimicrobial resistance, excessive consumption of meropenem is undesirable, as it may contribute to the spread of CPE in hospitals.

these patients were not cared for by dedicated nursing staff as recommended in national guidelines.[27]

A review of documentation indicated that CPE patient contacts‡‡‡‡ were not always isolated while awaiting their results.[27]

Communication

Inspectors were informed that due to infection prevention and control resource deficiencies the hospital had fallen behind writing to identified CPE patient contacts that had been discharged advising them of their CPE contact status as recommended by the HSE.[28]

National guidelines[1] recommend that staff have access to high-quality information and data to support effective decision-making in all aspects of infection prevention and control. Access to specialist infection control surveillance software to track patients and their associated clinical data as they moved through the hospital was not available to the infection prevention and control team.

Evidence of good practice

Measures to prevent the spread of antimicrobial-resistant organisms were reviewed in both clinical areas inspected.

Communication

- routine assessment on patient admission for multidrug-resistant organism risk status was nurse-led with screening questions printed on the dedicated infection prevention and control assessment in the admission booklet.

Patient placement

- all patients requiring transmission-based precautions on St Agnes Ward on the day of inspection were appropriately placed.

Infrastructure and environmental hygiene

- St Agnes's ward was generally clean with well-maintained surfaces, finishes and furnishings that facilitated cleaning
- good local ownership was identified in relation to infection prevention and control from local through management level despite the challenging circumstances posed by the unit infrastructure. Staff in clinical areas

‡‡‡‡ 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 (AMAUs). 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.

inspected audited hygiene every month. Average hospital wide compliance was consistently high throughout 2018.

Hand hygiene

- national hand hygiene guidelines recommend that hand hygiene training should be mandatory for relevant staff at induction and every two years thereafter. Hand Hygiene theory and practice training in the hospital was mandatory every two years. Documentation indicated that 73% of hospital staff had attended hand hygiene training in the previous two years.

Required areas for improvement

Patient placement

- a patient requiring transmission-based precautions was isolated within a six-bedded patient room on Our Lady's Ward between patients who did not require isolation. In the absence of sufficient single rooms, patients requiring transmission-based precautions should be grouped (cohorted) together within the room to confine their care to one area and prevent contact with patients without infection
- inconsistent use of signage to communicate isolation precautions was observed on doors to isolation rooms on both wards inspected
- doors to rooms accommodating patients with transmission-based precautions were open on St Agnes Ward.

Infrastructure and environmental hygiene

- although the patient environment was generally clean on Our Lady's Ward, surfaces, finishes and some furnishings in patient rooms including wall paintwork, woodwork, wood finishes were worn, poorly maintained and did not facilitate effective cleaning. Hospital management were working to mitigate risks in respect of hospital infrastructure through a phased refurbishment programme of existing facilities within the older inpatient ward areas including Our Lady's Ward, of the hospital
- clinical waste bins were observed incorrectly placed outside patient isolation rooms on the corridor of both wards inspected. Some mobile clinical waste collection bins were unlocked and inappropriately placed in a public area outside Our Lady's Ward
- a lack of awareness among staff that the engineering controls on the ventilated isolation room on Our Lady's Ward had been decommissioned as part of a planned upgrade was also identified by inspectors.

Patient equipment

- opportunities for improvement were identified regarding equipment hygiene and oversight for same. For example:
  - a number of unclean commodes were observed in the 'dirty' utility room[§§§§] in both areas inspected
  - red staining was present on the surface of intravenous trays in the clinical rooms on both wards inspected
  - storage space for some items of equipment was either inappropriate or limited on both wards inspected
- bedpans were not processed in line with best practice (contents of bedpans emptied into the sluice hopper prior to being placed in the washer disinfector in both wards inspected)
- a patient fan was observed to be in use in the clinical room and in a multi-occupancy room accommodating a patient that was being cared for with transmission-based precautions. Assurance was not provided at the time of inspection that the patient fans were consistently cleaned each day in line with national guidelines[16]
- opportunities for improvements were also identified on Our Lady's Ward with regard to formal checks of equipment cleaning. A green tagging system which alerted staff to when patient equipment was last cleaned was in use, however inspectors also found evidence that this system was not consistently used on this ward.

Hand hygiene

- the hospital achieved 89.5% compliance rate in the national hand hygiene audit in May/June 2018 which is below the current required compliance target of 90% set by the HSE.

A breakdown of hand hygiene training attended by each staff group showed that attendance of consultant medical staff was considerably lower than other staff group.

[§§§§] Rooms equipped for the disposal of body fluids and the decontamination of reusable equipment such as bedpans, urinals, commodes and body fluid measuring jugs. Waste, used linen and contaminated instruments may also be temporarily stored in this room prior to collection for disposal, laundering or decontamination.

4.4.2 Decontamination and reprocessing of reusable medical devices

An inspector visited the Radiology Department to ensure that structures, systems, processes and outcomes for decontamination of semi-invasive ultrasound probes were aligned to national guidance.[15]

Whilst both transvaginal (TV) and transrectal (TR) semi-invasive ultrasound probes were used in the department a review of TV semi-invasive ultrasound probe decontamination in the Ultrasound Department was undertaken on this inspection.

Evidence of good practice

- decontamination was performed external to the clinical treatment room
- automated validated systems for high level disinfection were used
- a manual track and trace system had been introduced; traceability stickers were also attached to patient 'consent for ultrasound' forms
- single-use pre-gelled ultrasound covers were used
- TV probes were covered following decontamination, with decontamination certificate attached, and stored in ultrasound rooms
- standard operating procedures (SOP) in relation to decontamination processes were available and up-to-date; instructions as guidance for users were also available at point-of-use
- a high level of compliance was achieved in monthly environmental hygiene audits undertaken in 2018.

Required areas for improvement

- transport of TV probes was inappropriate;[15] staff reported that transport containers were being sourced at the time of inspection however an alternative arrangement needs to be put in place in the interim
- an inspector was told that TR probes were stored in transport containers following decontamination in CSSD; this practice needs review to ensure that it is in line with manufacturer's instructions and national guidance[15]
- disposable plastic covers used to protect decontaminated probes during storage on the day of inspection require review
- decontamination was performed in a staff office: management need to assure themselves that cross-infection of the working environment is minimised
- the SOP requires review to ensure that step-by-step instructions also include examination of probes and use of personal protective equipment[15]
- staff performing ultrasound procedures were also assigned as operatives for probe decontamination; decontamination was external to procedure rooms necessitating operatives to leave the room; a risk assessment of this practice should be undertaken by management.

Staff training, education and competency in relation to decontamination practices

In the Radiology Department staff operatives had received manufacturer's training in relation to the automated systems used for high level disinfection of semi-invasive ultrasound probes. Notwithstanding this, training updates for operatives in Interventional Radiology who infrequently use this system also need to be put in place.

It was reported that relevant staff including clinical staff had completed an online training programme in relation to high level disinfection manual multi-wipe systems used after hours. However a training needs assessment should be carried out periodically once operatives are assessed as competent to work independently in line with national guidance.[15]

Inspectors were informed that, in line with HSE recommendations, five staff members from central and endoscope decontamination facilities at the hospital had either completed or were in the process of undertaken an academic qualification in decontamination practices and sterile services. In addition a number of staff were due to commence the same course in the next academic year.

All other staff operatives working in decontamination facilities had completed the HSELanD online training programme in relation to the decontamination. Chemical safety training was mandatory for staff every two years. Regular operator training was also provided by the manufacturers/suppliers of endoscopes and decontamination-related equipment.

Inspectors were told and documentation reviewed showed that individual competencies of staff working in the gastrointestinal decontamination unit were assessed and every 2-3 years thereafter. To concur with best practice guidance the hospital should ensure that a formalised competency assessment framework validated annually is rolled-out across all central and endoscope decontamination facilities at the hospital.[29]

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 *Enterobacterales* (CPE) in Ireland. The National Public Health Emergency Team developed guidelines for screening of Patients for CPE in the Acute Hospital Sector.

Inspectors found that Mater Misericordiae University Hospital was not screening in line with national guidance. 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. The hospital's response included that a business case requesting additional resources required to support the full implementation of CPE screening guidelines had been prepared. This business case was due to be presented at the next hospital board meeting in May 2019.

5.1 Systems to detect, prevent and manage multidrug-resistant organisms

During this inspection inspectors found that governance arrangements for the prevention and control of healthcare-associated infection needed to be strengthened. In re-establishing the infection prevention and control programme and committees it is important that the programme is effectively structured, resourced and governed. The hospital should as part of its response to this inspection report, implement better workforce contingency and succession planning for key specialist infection prevention and control staff, to seamlessly continue to deliver a safe, effective and sustainable service as staff leave or transfer to other parts of the service.

Multidrug-resistant gram-negative bacteria, including carbapenemase-producing *Enterobacterales* place patients at risk of potentially untreatable infection. HIQA acknowledges the outbreak control committee had implemented multimodal infection prevention and control strategies to manage the CPE outbreaks in 2018. The team had successfully achieved interruption of CPE transmission in critical care areas. However if further CPE outbreaks are to be avoided, national guidelines[**,27] recommend that multifaceted interventions must continue to be implemented to mitigate the risks posed by CPE at the hospital.

Inspectors found during this inspection that the local infection prevention and control risk register was not being managed and escalated in line with national guidance.[17] The senior management team need to have clear processes for the communication and notification of risks from one level to another.

5.2 Decontamination and reprocessing of reusable medical devices

While the hospital had clearly defined leadership and management arrangements in place for decontamination service provision, inspectors found that governing and oversight structures to support the service were not clearly defined. Furthermore the suspension of infection prevention and control committees in 2018 impacted on reporting structures for decontamination.

In addition inspectors found that decontamination-related risks had not been effectively managed. The risk register had been last updated in 2016 and 2017. Local risk registers need to be up-to-date so that current risks can be mitigated and or notified to senior management. Management of risk is integral to patient safety[30] and needs to be addressed by senior management at the hospital as a matter of priority.

In line with national recommendations the hospital is exploring options in relation to centralising decontamination service provision at the hospital. Furthermore academic training and education for staff working in decontamination across the hospital was progressing.

HIQA acknowledges that the hospital was endeavouring to fully implement national guidance in relation to decontamination of semi-invasive ultrasound probes in the satellite decontamination facility inspected.

Notwithstanding this HIQA identified during this inspection that there was a need to embed a culture of continuous audit, feedback and quality improvement cycles in relation to decontamination and reprocessing procedures across the hospital.

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7.0 Appendices

Appendix 1: Lines of enquiry (LOE)

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 the prevention and control of healthcare-associated infections and thedecontamination 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 Mater Misericordiae University Hospital regarding the high risk identified during HIQA's inspection at the Mater Misericordiae University Hospital

Health Information and Quality Authority
An tÚdarás um Fhaisnéis agus Cáilíocht Sláinte

Gordon Dunne
Chief Executive Officer
Mater Misericoridiae University Hospital
Eccles Street
Dublin 7
ceooffice@mater.ie

01 April 2019

Ref: PCHCAI 2019/10

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 the Mater Misericoridiae University Hospital against the National Standards for the prevention and control of healthcare-associated infections in acute healthcare services on 28 March 2019.

During this inspection inspectors identified that the hospital is not in compliance with the latest Health Service Executive guideline around screening patients for Carbapenemase Producing Enterobacterales* (CPE).

* Health Service Executive. Requirements for Screening of Patients for Carbapenemase-Producing *Enterobacteriales* (CPE) in the Acute Hospital Sector February 2018. Available online from: http://www.hpsc.ie/az/microbiologyantimicrobialresistance/strategyforthecontrolofantimicrobialresistanceinirelandsari/carbapenemresistantenterobacteriaceaecre/guidanceandpublications/Requirement%20for%20screening%20of%20patients%20for%20CPE%2016Feb18_Final.pdf

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Please outline how the hospital intends to address this risk. Details of the risk identified will be included in the report of the inspection. This will include copies of HIQA's notification of the high risk and the service provider's response.

Please provide this information to HIQA by 2pm on **08 April 2019** to qualityandsafety@hiqa.ie. Should you have any queries, please do not hesitate to contact me at qualityandsafety@hiqa.ie.

Yours sincerely,

KATHRYN HANLY
Authorised Person

CC: Mary Dunnion, Director of Regulation, Health Information and Quality Authority

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Appendix 3: Copy of the response letter received from the Mater Misericordiae University Hospital regarding the high risk identified during HIQA's inspection at the Mater Misericordiae University Hospital

Mater Misericordiae
University Hospital
Sisters of Mercy
Eccles Street, Dublin D07 R2WY, Ireland

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Not for prescription purposes

8th April 2019

Ms. Kathryn Hanly
Authorised Person
Health Information and Quality Authority
Unit 1301
City Gate
Mahon
Cork

Via email to: qualityandsafety@hiqa.ie

Dear Ms Hanly,

Re: Response to Compliance with the National screening Guidelines around screening patients for Carbapenemase Producing Enterobacterales (CPE)

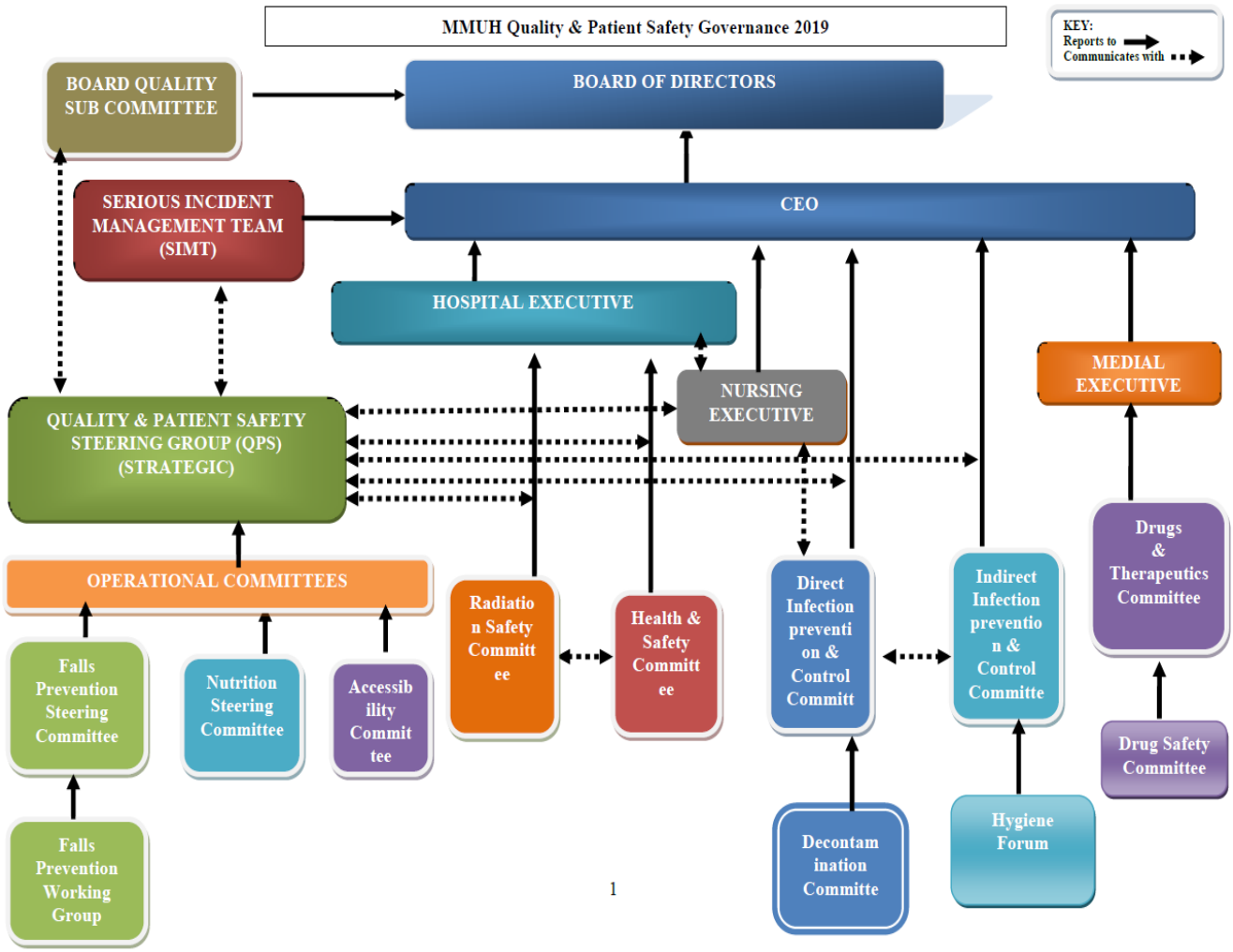
In reference to your correspondence dated 1st April 2019.

We are very cognisant of the risks associated Carbapenemase Producing Enterobacterales (CPE) and the requirement for screening patients. As you can appreciate, compliance with the screening requirements has significant implications for the hospital requiring board level approval. The business case, a copy of which I am attaching, is due to be tabled at the next Hospital Board Meeting in May 2019.

Yours sincerely

Mr Gordon Dunne
Chief Executive

Appendix 4: Hospital Governance Organogram



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