Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the unannounced inspection at Tallaght University Hospital, Dublin.

Date of on-site inspection: 02 May 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 medical 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 Tallaght University Hospital by Authorised Persons from HIQA, Noreen Flannelly-Kinsella, Kathryn Hanly and Bairbre Moynihan on 02 May 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 Governance Committee and Reusable Invasive Medical Devices (RIMD) Committee. Inspectors requested

[*] 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.

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

- Lynn Ward
- Osborne Ward
- Ear, Nose and Throat Out-Patient Department (ENT OPD).

In light of the ongoing National Public Health Emergency Plan[‡] to address Carbapenemase-Producing *Enterobacterales* (CPE)[§] in our health system which was activated by the Minister for Health on 25 October 2017, HIQA sought assurance regarding arrangements in place to ensure compliance with the national guidelines on screening for CPE.

Hospital managers told inspectors that screening for CPE[**]was in line with national guidelines. This was further validated following discussions with staff in the clinical area inspected.

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

Tallaght University Hospital is a model 4 acute teaching hospital and is part of the Dublin Midland Hospital Group.[††] The hospital provides emergency, medical and surgical services for both adult and paediatric patients. The hospital has a number of specialties and is also a national urology centre and a regional orthopaedic trauma centre.

The hospital was providing a decontamination and reprocessing service for reusable medical devices used at the hospital. Decontamination and reprocessing of critical and semi-critical devices was performed in the:

[‡] 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.

[§] 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.

[**] 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

[††] 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.

- Hospital Sterile Services Department (HSSD)
- Endoscopy Decontamination Unit
- Endoscope satellite decontamination facilities located in the Operating Theatre and Genito-Urinary and ENT OPD
- Out-Patient Department and Radiology Department.

Semi-invasive ultrasound probes used in Operating Theatre and Genito-Urinary and Gynaecology OPD, and non-invasive ultrasound probes used in semi-critical procedures in Interventional Radiology were decontaminated locally after use using high-level disinfectant manual multi-wipe systems.

Decontamination of transvaginal and transrectal ultrasound probes used in the Radiology Department was performed locally using automated validated systems for decontamination.

4.0 Inspection findings

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

- Sections 4.1 to 4.3 present the general findings of this unannounced inspection.

4.1 Governance and management structures

4.1.1 Infection prevention and control programme

Inspectors found that there were clear lines of accountability and responsibility in relation to governance and management arrangements for the prevention and control of healthcare-associated infection at the hospital.

The Infection Prevention and Control Governance Committee dealt with both clinical and environmental infection prevention and control topics. This committee reported to the Quality, Safety and Risk Management Executive Governance Committee.

Hospital committees were required to prepare and present a report for the Quality, Safety and Risk Management Executive Governance Committee annually with the Infection Prevention and Control Governance Committee due to report each January. However, a review of minutes found that this formal reporting relationship had not yet fully embedded in practice at the time of this inspection.

Paediatric services at the hospital were under the governance of Children's Health Ireland. In the interim of relocation to the new children's hospital on the grounds of St James's Hospital, a service level agreement for service provision by the hospital to Children's Health Ireland at Tallaght University Hospital was in place.

Governance arrangements and organisational structures were outlined in an organogram provided to HIQA showing lines of communication for infection prevention and control at the hospital (Appendix 2).

An updated quality improvement plan following HIQA's previous inspection in 2018 was in place to address areas for improvement. The majority of actions had been completed.

4.1.2 Decontamination and reprocessing of reusable medical devices

Strong leadership with clearly defined governance and management arrangements and designated lines of accountability and responsibility at both corporate and service-delivery level were evident at the hospital. The decontamination lead (0.5 WTE[‡‡] position) was responsible for the hospital's decontamination service. Inspectors also found through this inspection that management arrangements and good local ownership were in place in a satellite decontamination facility inspected.

The RIMD Committee had oversight of decontamination service provision at the hospital and met quarterly. Hospital managers told inspectors that local managers from satellite decontamination facilities also attended. Minutes of meetings were emailed to members and available electronically on a shared decontamination folder for all staff working in areas of decontamination at the hospital. This was further validated following discussions with staff in a satellite decontamination facility inspected. The RIMD Committee reported to the Infection Prevention and Control Governance Committee.

An annual decontamination quality assurance report outlining improvements implemented and recommendations on actions for 2018 was presented to the hospital's Quality, Safety and Risk Management Executive Governance Committee in line with National Standards.[1]

4.2 Monitoring, audit and evaluation systems including risk management

4.2.1 Monitoring, audit and evaluation systems

Infection prevention and control of healthcare-associated infection

Tallaght University Hospital had an established infection surveillance programme. The infection prevention and control surveillance programme included surveillance of:

- 'alert' organisms and 'alert' conditions[§§]

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

[§§] Alert conditions include physical symptoms such as skin rashes, vomiting, diarrhoea, respiratory illness that could be due to an infectious illness

- multidrug-resistant organisms
- hospital-acquired *Staphylococcus aureus* bloodstream infection
- hospital-acquired *Clostridium difficile* infection
- catheter-related bloodstream infection (CRBSI)[***] in the Intensive Care Unit
- data reported to the European Antimicrobial Resistant Surveillance Network (EARS-Net).[†††]

Carbapenemase-Producing *Enterobacterales* (CPE)

The hospital was screening for CPE in excess of national recommendations on screening patients for CPE[3] which included universal patient screening on admission and targeted patient screening of high risk patient cohorts during admission. This helped identify at risk colonised patients asymptomatically carrying CPE, allowing for the appropriate control measures to be put in place. As a consequence of this extensive level of screening the hospital had a greater degree of visibility in relation to the CPE outbreak. There was an 11% reduction in the prevalence of new CPE cases in 2018 and continued improvement to date which indicated better control of the ongoing CPE outbreak.

Surgical site infection surveillance

The hospital recommenced a programme of surgical site infection surveillance in early 2015 among elective orthopaedic implant surgical patients. In 2016 this surveillance was extended to include spinal surgery and in 2017 trauma orthopaedics was included. During the course of this inspection inspectors were informed that the position of surgical site infection surveillance co-ordinator at the hospital had been vacated in quarter four 2018. This resulted in the suspension of the existing programme of surgical site infection surveillance. However the hospital had recently appointed and was in the process of training a new surgical site surveillance co-ordinator.

Clostridium difficile infection surveillance

Inspectors were informed that there had been an increase in the number of cases of *Clostridium difficile* infections associated with Tallaght University Hospital in recent months. Recent ribotyping of samples taken from patients who acquired *Clostridium difficile* infection in the hospital found that a small minority of strains detected were similar. This would indicate that there was potential cross infection between patients. In a hospital with persistently high patient activity levels and limited

[***] Catheter-related bloodstream infection (CRBSI) is defined as the presence of bacteraemia originating from an intravenous catheter.

[†††] 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.

isolation facilities, the prevention and control of *Clostridium difficile* infection must remain a priority for all relevant hospital staff and hospital management.

Hygiene audits

The frequency of audit for very high risk functional areas was not in line with national guidance[4] or best practice.[5] Environmental and equipment hygiene standards were monitored at the hospital on a cyclical basis whereby each clinical area was audited annually by a multidisciplinary team of auditors. Results showed varying levels of compliance throughout 2018 with only 16 of 23 clinical areas achieving the hospital's desirable target of 85% compliance or over.

The infection prevention and control team also carried out audits of equipment hygiene, infection control practices, adherence to transmission-based precautions and management of peripheral devices. Two of the 17 clinical areas audited in 2018 achieved the hospital's desirable target of 85% compliance or over.

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 a comprehensive audit of reusable medical devices used had been undertaken in 2016-2017. The audit also included scopes used out of hours and semi-invasive ultrasound probes practices. Audit findings in relation to the ENT OPD satellite decontamination facility inspected and measures to address the issues identified will be discussed further in this report.

The global asset identifier coding and national track and trace programme to support quality assurance of decontamination practices had been rolled-out at the hospital. The hospital had advanced and integrated electronic reporting systems which facilitated oversight of endoscopy daily and weekly testing regimes by the decontamination lead. The interface of systems also supported generation of audit reports as required.

The hospital had an inventory of reusable medical devices used. Inspectors were informed that decontamination equipment and water systems were maintained, periodically tested, monitored and validated by specialist groups at the hospital and external service providers in line with national guidance and best practice recommendations.[6,7,8,9]

Hospital management told inspectors that new endoscope washer disinfectors had been recently installed across all endoscopy decontamination facilities including the satellite decontamination facility in ENT OPD. A specialist group at the hospital was responsible for ensuring water testing was performed. However the frequency of

final rinse water testing regimes in a satellite decontamination facility inspected was not in line with national standards[8] and recommended practices and needs review.

The Authorised Engineer for Decontamination (AED)[‡‡‡] was appointed by the hospital to oversee and audit technical aspects of the decontamination programme. Inspectors were told by management that contingency plans in the event of decontamination equipment failure were in place.

Inspectors found through this inspection that the frequency of environmental hygiene audits were not carried out in line with national guidance[4] for high risk functional areas such as a decontamination facility.[10] In addition hygiene audit trend reports were not available to staff in the satellite decontamination facility inspected; this should be progressed to facilitate local ownership.

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.

Infection prevention and control of healthcare-associated infection

Infection prevention and control related-risks were entered on an infection prevention and control risk register, and or local departmental/directorate risk registers.[§§§] Risks that could not be addressed at a local level were escalated to the executive management team (EMT) risk register.

Inspectors were informed that the infection prevention and control risk register was reviewed every two to three months. The risk register included both existing and additional controls but didn't include a review date, action owner or a due date for the actions. Risk registers should be managed and escalated in line with national guidance.[11]

HIQA acknowledge that the hospital risk registers were being reviewed and revised at the time of this inspection. Additionally minutes of meetings reviewed showed that hospital management were reviewing options for educating staff on risk assessments and risk registers. A rollout of a new electronic risk register record in 2019 was planned.

[‡‡‡] 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.

[§§§] 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.

The infection prevention and control risk register was a standing agenda item on Infection Prevention and Control Governance Committee meetings. Minutes of meetings reviewed by inspectors identified that an update on the risk register was given at meetings. Inspectors were informed by senior management that none of the risks on the infection prevention and control risk register required escalation to the EMT risk register.

Some infection prevention and control-related risks had been transferred to other departmental/directorate risk registers, for example a risk in relation to insufficient isolation rooms had been entered on the Facilities Departmental risk register. This risk had been escalated to the EMT risk register. The EMT risk register was a standing agenda item on Quality, Safety and Risk Management Executive Governance Committee meetings held quarterly. Hospital management need to ensure that there are clear processes for communication and oversight by the Infection Prevention and Control Governance Committee of infection prevention and control-related risks entered on other risk registers at the hospital.

Documentation reviewed indicated that the process for undertaking a system analysis review for each *Staphylococcus aureus* blood stream infection and severe *Clostridium difficile* associated diarrhoea had yet to be progressed in line with national guidelines.[12,13]

Ward staff informed inspectors that incident forms were completed for example if no isolation room was available, or if a patient acquired a healthcare-associated infection. Incidents were logged on the national incident management systems (NIMS).[****]

Decontamination and reprocessing of reusable medical devices

Inspectors were informed that decontamination-related risks were managed locally and risks that could not be effectively mitigated were escalated through directorate management reporting structures. Decontamination-related risks on the EMT risk register were last reviewed in April 2019. It was reported to HIQA that plans to introduce a local decontamination risk register were underway. Risk management was a standing agenda item at RIMD Committee meetings.

Documentation reviewed showed that recent risk assessments[††††] undertaken in a satellite ENT OPD decontamination facility inspected were in relation to design and equipping of endoscopy decontamination facilities and handling, use and storage of chemicals. In response a business case for a new hospital build including a centralised endoscopy decontamination facility had been submitted. In the interim

[****] 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.

[††††] A risk assessment is an overall process of risk identification, risk analysis and risk evaluation.

existing control measures enacted by the hospital to address current risks were in place.

Subsequent to the decontamination audit in 2017 a risk assessment in relation to the management of emergency use of ENT endoscopes 'out of hours'[‡‡‡‡] had been undertaken. The hospital had implemented a number of measures to address this risk, such as:

- a standard operating procedure (SOP) for the use of ENT endoscopes by medical staff 'out of hours' was devised
- audit of track and trace of ENT endoscopes 'out of hours' had taken place
- an endoscope controlled environment storage cabinet (CESC) to allow processed endoscopes to be stored for extended periods had been installed.

Inspection of ENT OPD showed that the endoscope CESC had been located in a room also used occasionally as an ENT procedure room 'out of hours' which was not in line with national standards. Endoscope storage should be controlled in a designated room for clean activity only; hospital management need to review this.

It was reported that manufacturer's CESC training was due to be provided to designated medical staff to facilitate access to stored endoscopes for emergency use 'out of hours'. Hospital management need to be assured that responsible operators at each operation stage are deemed competent to undertake assigned responsibilities.

A standard operating procedure (SOP) for the use of ENT OPD endoscopes 'out of hours' was in place. However it did not include pre-cleaning of endoscopes at point of use. This is particularly important to prevent the formation of biofilm and in light of the fact that 'out of hours' ENT endoscopes were not reprocessed until the following morning. Hospital management need to be assured that the SOP reflects pre-cleaning guidance. In addition management need to be assured that on-call staff, including staff on-call from other hospital sites, have read, understand and apply this SOP.

In line with national guidance[9] a risk assessment had been performed for the use of high level disinfectant manual multi-wipe systems for decontamination of semi-invasive ultrasound probes at the hospital. In order to progress to automated validated systems for decontamination of probes in all relevant facilities capital funding had been requested.

Inspectors were informed that it was hospital policy to report decontamination-related incidents on NIMS. The decontamination lead was notified of any reported

[‡‡‡‡] "Out of hours" was defined as after 18.30 hours on weekdays and 24 hours on the weekends and Bank Holidays.

decontamination-related incidents. A log reviewed by inspectors showed that a number of incidents had been recorded for the previous year.

The national medical devices eAlert system[§§§§] had been implemented at the hospital.

An SOP for minimising the risk of transmission of transmissible spongiform encephalopathies (TSE)[*****] was available. Hospital management told inspectors that the document was due to be updated when revised national guidance becomes available.

4.3 Implementation of evidence-based best practice

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

In August 2016 Tallaght University Hospital declared an outbreak of CPE.[†††††] An outbreak control committee had been convened and the local Public Health Department was informed of the outbreak. During this inspection the inspection team focused on measures to prevent the spread of antimicrobial-resistant organisms including CPE.

Hand hygiene

The hospital had adopted a multimodal strategy in improving hand hygiene practices. The 2018 national hand hygiene audit results achieved HSE compliance with a rate of 91% in May and 90% in October 2018. This met the HSE's desirable target of 90% hand hygiene compliance.

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 year. Documentation indicated that 73% of hospital staff had attended hand hygiene theory training in the previous two years up to 31 March 2019. However it was reported that this number may be underestimated due to ongoing upgrades of electronic recording systems.

[§§§§] 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.

[*****] 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.

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

Antimicrobial stewardship

The *HSE National Policy on Restricted Antimicrobial Agents*[14] recommends that hospitals have a process in place to facilitate pre-authorisation for the use of all carbapenem antibiotics by an infection specialist (Consultant or Specialist Registrar in Clinical Microbiology or Infectious Diseases). Although meropenem[‡‡‡‡‡] was classified as a reserved antibiotic, the hospital did not have a strict pre-authorisation process in place. Inspectors were informed that the hospital was in the process of reviewing the current approach to restrictive prescribing rights.

The hospital had a system for identifying when restricted antimicrobials had been prescribed, and review of such prescriptions by a member of the antimicrobial stewardship team. Restricted antimicrobial use was also monitored via the pharmacy dispensing system reports, the antimicrobial stewardship round and the antimicrobial point prevalence surveys, with feedback to prescribers. There was evidence that antimicrobial stewardship initiatives implemented to date had led to the 25% reduction in meropenem consumption in 2018.

Communication

In line with the HSE CPE Contact Communications Programme,[15] the hospital had written to identified CPE patient contacts[§§§§§]that had been discharged advising them of their CPE contact status.

All patients with positive CPE screens were provided with a durable wallet sized alert card identifying their CPE status to alert healthcare providers to their CPE status when they presented for future care.

An infection prevention and control risk-assessment in relation to multidrug-resistant organisms was incorporated in nursing admission documentation.

Patient placement

All patients colonised with CPE in the hospital were accommodated in single rooms on the day of inspection, as appropriate.

[‡‡‡‡‡] 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.

[§§§§§] 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.

An infection control cohort ward for the management of patients requiring transmission-based precautions including CPE had been established (observations from a visit to this ward are presented below).

Isolation facilities

The hospital had no ventilated isolation rooms in inpatient wards.[16] In the interim of addressing this issue, an informal arrangement to transfer patients with suspected multidrug-resistant tuberculosis (MDR-TB) requiring airborne isolation facilities had been agreed with a hospital in the region.

Lynn Ward (Infection control cohort ward)

In an effort to try to manage the increased incidence of CPE colonisation in patients presenting to the hospital, the hospital had established a specialist ward to accommodate patients requiring transmission-based precautions. The ward comprised two parallel corridors with 29 single isolation rooms with en-suite facilities. One side had 19 single rooms which were designated for the isolation of CPE patients.

A demarcation line clearly separated the CPE isolation facilities from the rest of the ward. It was clear that efforts had been made to differentiate equipment used in the CPE designated area of the cohort ward. However shared ancillary rooms including the clinical room, 'dirty' utility room****** and storage room in addition to a four-bedded patient room were located in the connecting corridor between the CPE isolation facilities and the isolation facilities on the other corridor. The hospital needs to be assured that shared ancillary facilities do not compromise effective infection prevention and control practices.

A three-bedded Post-Operative Surgical Unit (POSU) was located within the footprint of the infection control cohort ward. A number of control measures were in place to minimise the risks associated with this arrangement including the inclusion of separate 'dirty' utility and storage rooms for the POSU. It was explained that this was an interim solution until the new critical care unit is available in 2022. Having made a decision to locate the POSU within the infection control cohort ward, it is incumbent on the hospital to ensure that effective infection prevention and control practices are consistently implemented.

Evidence of good practice

Examples of interventions to detect, prevent, and respond to multidrug-resistant organisms included but were not limited to:

- the patient environment inspected was generally clean with few exceptions

****** A room 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.

- patient equipment in the ward appeared clean
- additional cleaning resources had been allocated to the cohort ward
- patients colonised with CPE were cared for by dedicated nursing staff as recommended in national guidelines[17]
- signage to identify the need to implement transmission-based precautions was consistently displayed
- appropriate supplies of personal protective equipment (PPE) were also observed to be available outside isolation rooms.

Required areas for improvement

- compliance with transmission-based precautions was monitored periodically on the ward by the infection prevention and control team. However audit showed that the ward failed to achieve the pass mark of 85% in the overall result in audits carried out in 2018
- notwithstanding a high standard of environmental hygiene on Lynn ward maintenance of the patient environment was of significant concern to inspectors at the time of the inspection. For example maintenance issues were observed relating to wall surfaces and damaged flooring throughout the ward. Sanitary facilities in the ward also required upgrading
- hospital management was working to mitigate risks in respect of hospital infrastructure through gradual upgrading and ongoing refurbishment plans of existing facilities. Inspectors were informed that refurbishment works on Lynn ward had stalled in recent months. High risk areas such as the infection control cohort ward must be prioritised for refurbishment
- the CPE corridor was used as a thoroughfare for staff from an adjacent ward; access to Lynn ward should be restricted
- baths remained in place in three patient en-suites. Showers are generally more practical than baths in connection with clinical procedures and are easier to keep clean[18]
- inspectors were informed that dedicated equipment was not always available for patients with CPE in isolation
- equipment storage space on Lynn ward was inadequate resulting in clinical equipment including integrated sharps trays being stored on dressing trolleys on the corridor
- adequate facilities for cleaning and disinfection of reusable plastic bedpan supports between uses were not available. Where reusable supports are used with maceratable bedpans, there should be adequate facilities for their cleaning and disinfection between uses.

Osborne ward

During this inspection an inspector also visited Osborne ward, a medical nephrology ward. Examples of interventions to detect, prevent, and respond to multidrug-resistant organisms included but were not limited to:

Evidence of good practice

- the ward was generally clean with few exceptions
- staff had a good knowledge of CPE and the screening requirements[3]
- all patients requiring a single isolation room were appropriately isolated
- signage to communicate isolation precautions was in place
- local hand hygiene compliance results showed 100% compliance in February and April 2019. Inspectors were informed that Osborne ward had three hand hygiene auditors on the ward.

Required areas for improvement

- some equipment was noted to be rusty for example: drip stand, bins, patient hoist and observation trolleys and bed tables were damaged
- red-staining was noted on three glucometers
- general wear and tear was noted throughout the ward in particular in a patient bathroom located on a public corridor
- the design of clinical hand wash sinks in three multi-occupancy rooms inspected did not comply with HBN 00-10 Part C: Sanitary assemblies[19]
- clinical hand wash sinks for staff were not available in isolation rooms. Senior management informed inspectors that they were aware of this and the space didn't allow placement of sinks and a risk assessment was completed
- minimal spatial separation[††††††] between beds in multi-occupancy rooms did not comply with best practice guidelines[20]
- on day of the inspection, there was an additional patient on a trolley located on the corridor. Overcrowding in hospitals has been shown to increase the risk of spreading infection.[21]

4.3.2 Decontamination and reprocessing of reusable medical devices

An inspector visited the ENT OPD to ensure that structures, systems, processes and outcomes for decontamination of ENT endoscopes were aligned to national guidance.

Evidence of good practice included:

- a dedicated decontamination facility with a separate wash room and endoscope storage room was available

[††††††] Patients should be separated by at least 2.4 metres between bed centres in multi-bed areas.

- staff maintained an unidirectional flow within infrastructural constraints
- reprocessing of endoscopes took place in an automated endoscope washer disinfector
- dedicated operatives with sole responsibility for decontamination was assigned to reprocessing of endoscopes
- electronic and manual track and trace systems were in place; arrangements were also in place for endoscopes used 'out of hours'
- a defined system which clearly indicated when ENT endoscopes had been contaminated and decontaminated was in place
- endoscopes used 'out of hours' at the hospital were sprayed with an enzyme spray and covered with a colour-coded liner for reprocessing the following morning
- daily and weekly periodic testing and microbiological testing of endoscopes were performed and electronically recorded
- SOPs in relation to decontamination processes supported staff and were available at point-of-use
- staff-fitted respiratory protection masks for chemical use were available and individually stored in separate containers.

Required areas for improvement

While the inspector found many areas of good practice, similar to the findings of the hospital's audit in 2017, the facility design was not compliant with national guidance and recommended practices for decontamination and reprocessing of ENT endoscopes. Some other findings included:

- a separate sink for rinsing endoscopes was not available; the endoscope washer disinfector was not a pass-through model
- the room for storage of endoscopes was occasionally used as a procedure room 'out of hours' and for storage of staff protection masks; this needs review
- rooms were not mechanically ventilated and controlled; staff were required to open a window in the wash room
- microbiological monitoring of the clean area was not performed
- access to both rooms was not controlled
- regular local auditing of decontamination processes and practices against policies and procedures and implementation of quality improvement plans needs to be progressed.

4.3.3 Staff training, education and competency in relation to decontamination practices

In line with HSE recommendations a number of staff had completed a third-level academic qualification, including to degree level, in decontamination practices and sterile services in central decontamination facilities at the hospital.

A hospital-devised eLearning decontamination platform implemented for staff operatives in HSSD was reviewed by an inspector on the day of inspection. This comprehensive programme facilitated a blended approach to learning and included both practical and online education and ongoing competency assessments. The programme was overseen by the decontamination lead. Inspectors were informed that a similar but adapted platform for staff operatives working in endoscopy decontamination was being explored. This should be progressed to concur with best practice guidance.[22]

Regular operator training was also provided by the manufacturers and or suppliers of equipment in endoscopy and satellite decontamination facilities. This was evident from training records reviewed for staff operatives in ENT OPD. Inspectors were told that assessment of competency in the use of equipment was undertaken during training sessions. Going forward academic training for staff operatives in satellite decontamination facilities should also be progressed.

Chemical agent hazards training programme was mandatory for all relevant staff every two years at the hospital. The HSELand online training programme in relation to decontamination was completed by staff in central decontamination facilities at the hospital. Staff operatives working in satellite decontamination facilities should also complete this online programme.

To support staff the hospital had implemented an electronically controlled document management system and had a comprehensive list of policies, procedures and guidelines for reusable medical device reprocessing at the hospital.

5.0 Conclusion

Effective leadership, governance and management arrangements were evident around the prevention and control of healthcare-associated infection in Tallaght University Hospital.

Overall HIQA found that staff at Tallaght University Hospital were committed to improving infection prevention and control practices in the hospital and were endeavouring to fully implement the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services.*

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

In light of the National Public Health Emergency in relation to Carbapenemase-Producing *Enterobacterales* (CPE) inspectors sought assurance regarding arrangements that were put in place to ensure compliance with the latest national guideline on screening for CPE at the hospital. During this inspection hospital management confirmed that the hospital had ensured the full implementation of this guideline.

Although the CPE outbreak was ongoing, efforts to date had succeeded in reducing the number of new CPE cases year on year and maintaining CPE related bloodstream infections at very low levels.

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

- systems in place to identify and manage risks in relation to the prevention and control of healthcare-associated infection
- cleanliness of patient environment and equipment with few exceptions
- application of appropriate transmission-based precautions
- good ownership in relation to environmental hygiene in the areas inspected.

HIQA recommends the frequency of hygiene audits (both local and managerial) should be appropriate to the risk associated with the functional area and the cleanliness levels already achieved. In addition, management need to ensure that risk registers are managed and escalated in line with national guidance.

The physical environment in both wards inspected had not been managed and maintained according to relevant national and international standards to reduce the risk of infection to patients. In addition factors in relation to existing hospital infrastructure which included lack of suitable isolation facilities which contribute to the onset of outbreaks of infection and hinder management need to be reviewed and addressed.

5.2 Decontamination and reprocessing of reusable medical devices in a satellite decontamination facility

Inspectors found that there was strong leadership with clearly defined governance and management arrangements for decontamination of reusable medical device reprocessing at the hospital.

The hospital had systems in place to identify and manage decontamination-related risks and incidents. The hospital had identified a risk in relation to 'out of hours' ENT endoscopy service provision and had put measures in place to address this risk. Management must ensure that designated operators 'out of hours' are deemed competent to undertake assigned responsibilities in relation to decontamination. In addition ongoing audit and monitoring must take place to provide assurances in relation to the quality and safety of this process.

The hospital had devised a comprehensive eLearning platform for staff education and training in the Hospital Sterile Services Department which provides a good example for other service providers.

Overall HIQA found that the hospital was successfully endeavouring to implement national standards and recommended best practice guidance in relation to decontamination service provision in a satellite decontamination facility inspected. However facility design impacted on the overall compliance with best practice guidance. In the interim of any infrastructural changes hospital management had put controls and measures in place to minimise this risk which included some of the following:

- standardised processes with SOP's to support staff
- use of a validated automated system for decontamination with track and trace
- integrated electronic reporting systems to facilitate oversight of daily and weekly testing regimes
- training and education of staff was progressing.

The hospital should look to progress with embedding regular local auditing in the satellite decontamination facility inspected to ensure compliance with decontamination policies and procedures. The findings of audits will inform local implementation of quality improvement plans. The frequency of environmental hygiene audits were not carried out in line with national guidance for high risk functional areas and needs review.

The hospital should look to advance proposals in relation to reducing the number of satellite endoscopy decontamination facilities carrying out decontamination in line with best practice guidance.[23]

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7.0 Appendices

Appendix 1: Lines of enquiry

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

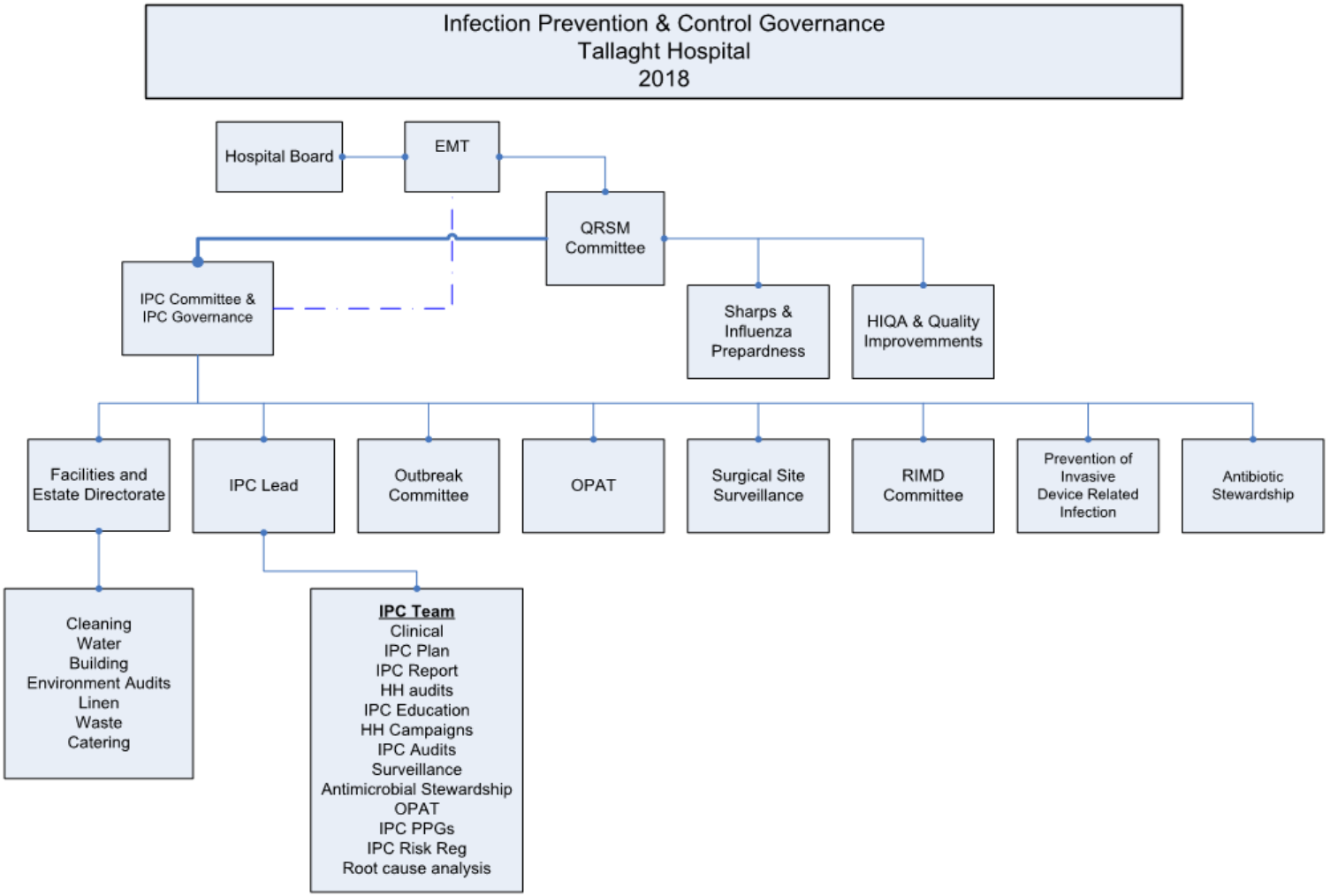
The hospital has the structures, systems and processes to detect, prevent, and manage multidrug-resistant organisms.

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: Infection prevention and control governance organogram



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