Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of inspections at the Mercy University Hospital

Monitoring programme for unannounced inspections undertaken against the National Standards for the Prevention and Control of Healthcare Associated Infections

Date of on-site inspections: 07 June 2016 and 20 July 2016

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is an independent Authority established to drive high quality and safe care for people using our health and social care and support services in Ireland. HIQA's role is to develop standards, inspect and review health and social care and support services, and support informed decisions on how services are delivered. HIQA's ultimate aim is to safeguard people using services and improve the quality and safety of services across its full range of functions.

HIQA's mandate to date extends across a specified range of public, private and voluntary sector services. Reporting to the Minister for Health and the Minister for Children and Youth Affairs, the Health Information and Quality Authority has statutory responsibility for:

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

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1. Introduction

The Health Information and Quality Authority (HIQA) carries out unannounced inspections in public acute hospitals in Ireland to monitor compliance with the *National Standards for the Prevention and Control of Healthcare Associated Infections*.[1] The inspection approach taken by the Authority is outlined in guidance available on HIQA's website, www.hiqa.ie – *Guide: Monitoring Programme for unannounced inspections undertaken against the National Standards for the Prevention and Control of Healthcare Associated Infections*.[2]

The aim of unannounced inspections is to assess hygiene in the hospital as observed by the inspection team and experienced by patients at any given time. They focus specifically on the observation of the day-to-day delivery of services and in particular environment and equipment cleanliness and compliance with hand hygiene practice. In addition, following the publication of the 2015 *Guide: Monitoring Programme for unannounced inspections undertaken against the National Standards for the Prevention and Control of Healthcare Associated Infections*,[2] HIQA began assessing the practice in the implementation of infection prevention care bundles. In particular this monitoring is focused upon peripheral vascular catheter and urinary catheter care bundles, but monitoring of performance may include other care bundles as recommended in prior national guidelines[3-4] and international best practice.[5]

Assessment of performance is focused on the observation of the day-to-day delivery of hygiene services, in particular environmental and hand hygiene and the implementation of care bundles for the prevention of device related infections under the following Standards:

- Standard 3: The physical environment, facilities and resources are developed and managed to minimise the risk of service users, staff and visitors acquiring a Healthcare Associated Infection.
- Standard 6: Hand hygiene practices that prevent, control and reduce the risk of spread of Healthcare Associated Infections are in place.
- Standard 8: Invasive medical device related infections are prevented or reduced.

Other Standards may be observed and reported on if concerns arise during the course of an inspection. It is important to note that the Standards are not assessed in their entirety during an unannounced inspection and therefore findings reported are related to a particular criterion within a Standard which was observed during an inspection. HIQA uses hygiene observation tools to gather information about the cleanliness of the environment and equipment as well as monitoring hand hygiene practice in one to three clinical areas depending on the size of the hospital. HIQA's

approach to an unannounced inspection against these Standards includes provision for re-inspection within six weeks if standards on the day of inspection are poor. This aims to drive improvement between inspections. In addition, in 2016, unannounced inspections will aim to identify progress made at each hospital since the previous unannounced inspection conducted in 2015.

Timeline of unannounced inspections:

An unannounced inspection was carried out at Mercy University Hospital on 07 June 2016. A re-inspection on 20 July 2016 examined the level of progress which had been made regarding the infection prevention and control risks identified during the 07 June inspection in the Theatre Department. This report was prepared after the re-inspection and includes the findings of both inspections and any improvements observed between the first and second inspections.

A summary of these inspections is shown in Table 1.

Table 1: Summary of inspections carried out at the Mercy University Hospital in 2016

Date of Inspection	Authorized Persons	Clinical Areas Inspected/Visited	Time of Inspection
07 June 2016	Kathryn Hanly Katrina Sugrue	St Therese's Ward inspected Theatre Department inspected Intensive Care Unit revisited. St Oliver's Ward revisited.	09:25- 17:30
20 July 2016	Kathryn Hanly Katrina Sugrue	Theatre Department re-inspected	09:30- 16:00

HIQA would like to acknowledge the cooperation of staff during both unannounced inspections.

2. Findings

This section of the report outlines the findings of the inspections undertaken at the Mercy University Hospital on 07 June 2016 and 20 July 2016.

Overview of areas inspected

- St Therese's Ward, an eight bay oncology day ward and a nine bedded inpatient ward which comprises two three bedded rooms, one two bedded room and one single room.
- The Theatre Department, which consists of four theatres, a procedure room, a reception area and a recovery area. The Sterile Services Department was located within the Theatre Department.
- In addition, St Oliver's Ward and the Intensive Care Unit, which were inspected during an unannounced inspection by HIQA on 07 July 2015, were re-visited to assess the level of progress which had been made after the 2015 inspection.

Structure of this report

The structure of the remainder of this report is as follows:

Section 2.1 describes the immediate high risk finding identified during the inspection on 07 June 2016 and the level of progress made by the hospital in response to these findings at the time of the re-inspection on 20 July 2016. Copies of the letter sent to the hospital regarding the finding and the response received from the hospital are shown in Appendices 1 and 2 respectively.

Section 2.2 summarises additional key findings of the 2016 inspections**.**

Section 2.3 outlines the progress made by the hospital following the unannounced inspection by HIQA on 07 July 2015.

Section 2.4 describes the key findings relating to hand hygiene under the headings of the five key elements of the World Health Organization (WHO) multimodal improvement strategy[6] during the inspections on 07 June 2016 and 20 July 2016.

Section 2.5 describes the key findings relating to infection prevention care bundles during the unannounced inspection on 07 June 2016.

This report outlines HIQA's overall assessment in relation to the inspection, and includes key findings of relevance. In addition to this report, a list of additional low-level findings relating to non-compliance with the standards has been provided to the hospital for completion. However, the overall nature of all of the findings are fully summarised within this report.

2.1 Immediate high risk findings

Introduction

During the inspection on 07 June 2016, a number of high infection prevention and control related risks were identified. The composite of these risks presented an immediate high risk finding to patients and staff which required immediate mitigation measures to be put in place. Risks were identified regarding:

- Decontamination of reusable invasive medical devices in the Theatre Department.
- Infrastructure of the Theatre Department

The findings identified were such that HIQA deemed that a re-inspection was necessary within six weeks.

Details of these risks were communicated to the hospital. The key findings relating to areas of non-compliance observed during the June inspection and the level of progress that was evident during the re-inspection on 20 July are discussed below. Copies of the high risk letter sent to the hospital regarding the findings and the response received from the hospital are shown in Appendices 1 and 2 respectively.

Unannounced inspection on 07 June 2016

Decontamination of reusable invasive medical devices.

The arrangements for surgical instrument decontamination within the Theatre Department did not comply with the Health Service Executive Code of Practice for Decontamination of Reusable Invasive Medical Devices[7], and were not in compliance with the *National Standards for the Prevention and Control of Healthcare Associated Infection*.[1]

Decontamination of reusable surgical instruments was performed within the Theatre Department by theatre staff rather than in a separate central sterile supply department. There was no decontamination lead within the hospital. HIQA was informed that the hospital decontamination committee had not met in a number of years. Assurance was not provided at the time of the initial inspection that effective governance and management arrangements in place were sufficient to fully ensure the provision of a high quality and safe decontamination of reusable invasive medical devices service within the hospital.

The configuration and location of the decontamination facilities was not fit-for-purpose and did not facilitate the implementation of effective infection prevention and control measures. Decontamination of reusable invasive medical devices such as surgical instruments and endoscopes were carried out in three different locations

throughout the Theatre Department. The main area used for the decontamination of surgical instruments was located between two operating rooms. The allocated space was inadequate, cramped and dated in design. Dedicated gowning rooms with hand hygiene facilities were not available at the entrance to the clean room, inspection, assembly and packing room.

Access to the wash room was through an operating theatre. Inspectors observed that movement of staff in the operating theatre was not restricted. Inspectors observed staff walking through an operating theatre to access the decontamination facilities while a procedure was in progress. Access from the inspection and packing room to the corridor was via a scrub room shared between the two theatres or via the operating theatre. The width of the scrub room was very narrow which posed logistical challenges when transporting surgical equipment from the decontamination unit.

An autoclave machine used to sterilize surgical instruments was inappropriately located within a separate store room. The store room was cluttered, overstocked with little space to manoeuvre due to the storage of equipment on the available floor space. In addition, the room was poorly maintained with visible damage to wall surfaces and ceiling tiles. There were no hand hygiene facilities in this room.

Reprocessing of endoscopes took place in a third room which also served as a store room for equipment and surgical supplies. It was reported that the washer-disinfector in use at the time of the inspection was approaching its end of life and as a consequence could no longer be validated. This washer-disinfector was located in an inappropriate area that did not support the separation of clean and dirty processes and had the potential to impact on the sterile supplies also stored in the room. The facilities for endoscope reprocessing did not comply with the Health Service Executive Code of Practice for Decontamination of Reusable Invasive Medical Devices.

HIQA notes that the arrangements that are in place have been longstanding, and have been recorded as the highest possible risk rating on the hospital risk register. HIQA also was informed that an independent risk assessment has been carried out which identified numerous risks relating to;

- the infrastructure and layout of the decontamination facilities
- inappropriate storage of reusable invasive medical device sets
- the lack of a dedicated decontamination manager
- lack of policies, procedures and guidelines relating to decontamination work processes
- lack of dedicated appropriately trained staff

- documentation practices not fit for auditing purposes
- decontamination equipment which is reaching end of life
- breakdowns in the traceability system
- absence of original equipment manufacturers instructions.

It was reported that the hospital planned to address the risks identified by outsourcing the reprocessing of surgical instruments to an accredited external company. Evidence viewed showed that the hospital had escalated this risk in writing to the South/South West Group in 2014, 2015 and 2016. A request seeking minor capital funding in February 2016 to facilitate the outsourcing of decontamination was under consideration. It was explained to inspectors that in the absence of an alternative solution and the necessary support required to address this issue, decommissioning the decontamination unit was not an option as it would severely impact on the surgical services at the hospital. Failure to progress and manage the risks identified relating to the decontamination facilities and processes in the Mercy University Hospital indicates gaps in assurance at corporate and executive level within the hospital, and within group and HSE risk management systems.

Infrastructure and maintenance of the Theatre Department

The infrastructure and design of the Theatre Department in the Mercy University Hospital is outdated and not in line with good practice guidelines for surgical facilities.[8] Several maintenance issues were also identified during the unannounced inspection. The following issues were identified by HIQA during the 07 June inspection:

- Infection prevention environmental controls in operating theatres one and two could not be assured at the time of the inspection and was a particular concern. There was unrestricted access into the operating theatres from the corridor. Inspectors observed that the operating theatre was a thoroughfare for staff en route to the decontamination facilities during procedures and during the preparation of surgical instruments at the time of the inspection.
- Scrub room facilities for operating theatres one and two did not comply with current standards.[12] There was no door between the shared scrub room and the corridor and from the scrub room into the operating theatres. Open access between the corridor and the operating theatre may compromise the pressure gradients within and between the two operating theatres, with possible adverse consequences for infection control.[8] In addition, the privacy and dignity of patients could not be protected.
- There was no waste sub collection facility resulting in the build up of clinical risk waste in the operating theatre and in the service lift to the rear of the department. The build up of waste observed at the time of the first inspection

presented an infection prevention and control risk. Waste had to regularly be transported through the operating theatres as there was no separate exit.

- The design of the Theatre Department did not facilitate patient flow and workflow processes. The two 'dirty' utility rooms serving the Theatre Department were only accessible via operating theatres one and two. This did not facilitate appropriate workflow and posed a risk of cross contamination. Units should be designed so that the flow of waste materials including body fluids is such that cross-contamination between contaminated and clean items is minimised.[9]
- The entrance to the Theatre Department was not secure and therefore unauthorized access could not be prevented.
- Operating theatres and adjoining ancillary rooms were cluttered and cramped. Lack of storage meant that sterile supplies were stored in various ancillary rooms throughout the department, many of which were inappropriate and poorly maintained in some cases.
- The lack of storage space in the Theatre Department also resulted in unnecessary overstocking within the operating rooms and sterile consumables being stored inappropriately on open shelves and in a number of mobile cabinets in the operating theatres. To prevent inadvertent contamination, sterile and clean supplies in operating theatres should be kept to a minimum and should be stored in fully enclosed storage units.
- There was no designated linen facility. Linen was stored inappropriately on patient equipment in the Recovery Bay and on stored sterile supplies in the Anaesthetic Room.
- The Theatre Department did not have a dedicated room for the storage of cleaning equipment and supplies. Cleaning equipment was inappropriately stored in the room used for endoscope decontamination.
- The recovery room accommodates up to five patients however the space allocated to each trolley bay and between trolleys was very limited. In addition, floor covering was not intact in the recovery room. There was only one designated patient toilet within the Theatre Department which was located in the patient reception. There were no appropriate patient toilet facilities in the recovery bay. Facilities in place were not sufficient enough to comfortably meet patients' needs and posed challenges in the management of bodily fluids. There was no segregated area for children within the recovery room.
- Flooring, ceilings, walls and exposed pipe work were poorly maintained.

Re-inspection on 20 July 2016

The level of progress regarding the high risks identified was assessed during the re-inspection on 20 July 2016. The sections below describe the findings and the mitigating measures implemented by the hospital in response to the findings.

Decontamination of reusable invasive medical devices

Following the June inspection endoscope reprocessing within the Theatre Department has ceased. The reprocessing of all endoscopes has been centralised in the Endoscopy Department.

In response to the high risks indentified during the June inspection the hospital reported that the clinical governance structures within the hospital provide assurances that there are no serious risks to the health or welfare of patients and staff as a result of the existing sub optimal decontamination arrangements at the Mercy University Hospital (Appendix 2). However robust clinical governance structures to support continuous monitoring and assessment of the safety of decontamination services within the hospital were not evident during the re-inspection. For example:

- The sub optimal decontamination facilities have been recorded as the highest possible risk rating on the hospital's Risk Register for several years with little action taken to mitigate the risks. The hospital must have an effective and comprehensive process in place to identify, understand, monitor and address current and future risks in a timely manner. Through discussion and review of documentation during the July inspection, it was evident that the pace of change in relation to the management of risks identified with regard to decontamination processes and facilities within the hospital have been slow prior to the June 2016 inspection.
- Following the June inspection the risks were again escalated by the Mercy University Hospital to hospital group level. Procurement of additional instrumentation necessary for outsourcing the surgical instrument decontamination to an external provider of Decontamination Services had commenced. Sufficient surgical instruments and accessories must be purchased to allow adequate time for reprocessing in the external decontamination unit without adversely affecting throughput.[10] A routine inspection programme to evaluate existing instruments for repair or replacement should also be introduced.
- Documentation provided to HIQA during the July inspection indicated that risks in relation to the decontamination of reusable invasive medical devices had also been escalated to the South/ South West Hospital Group and

recorded on the Group risk register on 28 May 2014. While the general risk associated with the facilities and infrastructure of the decontamination facilities were captured on the group risk register, specific reference to the risks outlined by HIQA in this report were not explicitly referred to.

- The hospital's Decontamination Committee was reconvened following the June inspection. However HIQA notes that at the time of preparing this report there was still no named person as decontamination lead in the Mercy University Hospital. Strong expert leadership in decontamination is essential for effective decision-making, efficient use of resources and ensuring the provision of high quality, safe, effective, person-centred care.
- The current lack of clinical audit prevents the hospital from effectively assuring itself that the service provided is in line with best practice and does not pose risks to patients.
- Inspectors were informed that the hospital had plans to introduce a new reusable invasive medical device track and trace system. This will facilitate auditing of efficacy of the decontamination process. However, while the development of an auditing structure was in progress at the time of the re-inspection, a timeframe was not clearly defined.
- At the time of re-inspection while a number of staff had completed HSE online training course, no staff member had undertaken formal training in decontamination of reusable invasive medical devices. Inspectors were informed that three staff members were to undertake an academic program in the near future.

A process to commence the outsourcing of surgical instrument decontamination was underway at the time of the re-inspection. It was reported that there was an agreed timeline for the completion of the procurement phase of the project which will be concluded within 16 weeks allowing for the commencement of the offsite arrangements. The early involvement and support of a wide range of managers and staff including surgical and infection prevention and control teams is recommended. This will be vital to the success of the project, both to determine the requirement and scope of the investment and also to participate in subsequent stages of planning. In the interim, any changes and measures that can be implemented to address the risks identified and to enhance both existing and future infection prevention and control practices should be progressed.

While it was evident that the process for outsourcing of the decontamination of surgical instruments had progressed during the re-inspection, there is significant scope for improvement in clinical governance structures and effective assurance mechanisms relating to decontamination processes.

Infrastructure and maintenance of the Theatre Department

Improvement was made in respect of the Theatre Department following the June inspection and it was apparent that the hospital was actively endeavouring to address the risks identified. Provisional phased plans were drawn up to upgrade the theatre complex within the existing hospital footprint to include revision of access routes to theatres, provision of dirty utility rooms to service all operating theatres, additional storage and a new domestic services room.

Some preliminary works had begun and a number of issues identified during the June inspection have been addressed:

- Inspectors were informed that new storage facilities have been identified and a new storage system is at an advanced stage of planning. It is important that planners and design teams take account of the type of storage facilities required in the Theatre Department. There should be enough storage area for sterile supplies equipment and other clean supplies to keep supplies off the floor with sufficient space under the lowest shelf to permit cleaning the floor underneath.[11]
- Theatre six (procedure room) has been decommissioned and is now in use as a store room.
- The store room accommodating the second autoclave was de-cluttered and painted. However the autoclave remains in this room. Inspectors were informed that the room will be used for the storage of sterile instrument sets when decontamination is outsourced and the autoclave has been removed.
- Theatre two had been temporarily closed pending renovations. The closure of theatre two had improved access to and from the decontamination area in the interim. However the limited space within the decontamination facilities continued to present a logistical challenge for the transport of surgical instruments for reprocessing.
- A temporary partition had been erected between the corridor and scrub room accessing Theatre one. However the partition did not extend to ceiling height which may hinder the efficiency of the ventilation system in the operating theatre.
- Flooring had been temporarily repaired in the recovery room.
- Damaged and rusty equipment had been replaced and or repaired with further items on order.
- A number of windows within the department had been sealed. However several remained unsealed at the time of the re-inspection. Inspectors were informed that all windows would be sealed during planned works.

- Access through the main entrance to the Theatre Department is now restricted.
- An additional waste collection round reduced the build up of waste at the service lift. However, the absence of an appropriate waste sub collection facility remained an issue. It was reported that a suitable waste storage room would be provided as part of the planned works. In the interim, build up of waste would be avoided through further additional waste collections.

Inspectors were informed that the second phase of the works could not commence until the outsourcing of reusable invasive medical devices decontamination was complete. Despite some progress, the ongoing poor infrastructure in the Theatre Department does not facilitate effective infection prevention and control practices. The hospital must ensure that refurbishment plans in the existing theatre department are in accordance with current national[1] and international standards.[12]

In the absence of comprehensive ongoing surgical site infection surveillance programme, the hospital does not have appropriate mechanisms in place to fully assure itself that infrastructural deficits in the Theatre Department and decontamination facilities do not negatively impact on patients from an infection prevention and control perspective. Failure to effectively maintain hospital infrastructure has been cited as a contributory factor in hospital wide outbreaks of infection.[13] Inspectors were informed that a business case had been prepared for a surgical site infection surveillance programme and was due to be submitted to the South/ South West Hospital Group.

Unannounced inspection on 07 June 2016

2.2 Additional key findings of the 2016 inspections

Introduction

The key findings relating to areas of non-compliance observed during the June inspection and the level of progress that was evident during the re-inspection in July are discussed below.

Environment and Equipment

St Therese's Ward

Overall, the general environment and equipment in St Therese's Ward was clean and well maintained with some exceptions. For example, excess items and patient equipment were stored on the ward corridor. A fan which was dusty was in use in a clinical room, which is not in line with best practice. Pinprick holes and staining were observed on the inside cover of a mattress. This posed a risk to patients and staff of transmissible infective microorganisms as the integrity of the cover was

compromised and thus no longer impermeable to body fluids. Inspectors were informed that mattress inspections had been introduced on an ad hoc basis. It is recommended that a regular more frequent scheduled system of mattress inspection is implemented.

Records viewed showed that environmental hygiene audits were performed regularly. The ward achieved 97% compliance in the most recent environmental audit carried out. The high levels of compliance achieved in environmental hygiene audits were also reflected on the day of inspection.

Theatre Department

Patient areas inspected in the Theatre Department such as Theatre five, the Recovery Bay and Patient Reception Area were clean and generally well maintained. There was good local ownership in relation to infection prevention and control in the unit despite the challenging circumstances posed by the unit infrastructure. However, opportunity for improving dust levels in the ancillary rooms was observed. The cramped and cluttered conditions caused by limited available space and storage facilities resulted in excess storage of supplies in these rooms. These conditions can contribute to increased dust levels and hinder effective cleaning. It was reported to HIQA that these rooms were regularly decanted to facilitate cleaning.

Many of the wall and ceiling vents viewed were dusty at the time of the inspection. It was reported to HIQA that vents should be cleaned on a six monthly basis, however compliance with this regime was poor which was symptomatic of the dust levels seen. Ceiling vents had been cleaned on the day of the re-inspection. Inspectors were informed that the ceiling vent cleaning schedule had been reviewed.

Floor mats were present on the floors of scrub rooms. It was reported that these mats were in place to prevent slips, trips and falls caused by wet slippery floors. These mats were replaced each week and cleaned. Alternative solutions to this issue should be considered in light of the infection prevention control risk associated with damp floor mats left in situ each day for up to a week. Floor mats in a theatre setting are not recommended. Flooring had been replaced and the floor mats had been removed in the scrub rooms serving operating theatres four and five.

Environmental auditing in Theatre Department

It was reported that regular environmental audits of the Theatre Department are undertaken. The Theatre Department achieved 89% compliance in the most recent audit carried out. However, issues relating to infrastructural and maintenance deficiencies were not routinely captured and therefore compliance levels achieved were not necessarily a reflection of the maintenance and cleanliness of the environment. It was reported during the re-inspection that the audit tool was under

review. Identified maintenance issues should be prioritised and addressed to facilitate effective infection prevention and control practices.

Safe injection practice

St Therese's Ward

Nine intravenous infusion giving sets were primed with intravenous fluids and stored in an intravenous tray in preparation for patients attending the morning session in St Therese's Day Ward. This practice of preparing solutions for intravenous use in advance of anticipated administration time should be reviewed to ensure that the risk of contamination of either the medication or the equipment used to administer medication is prevented. Intravenous solutions should, where possible, be prepared as close as possible to the time of administration in a clean environment using an aseptic non-touch technique.[15]

Theatre Department

Open multiple dose vials of insulin and other medicine which was not designated to single patient use in line with best practice guidelines were observed in the medicine fridge located in the anaesthesia room. Inappropriate use of multi-dose vials has been linked to outbreaks of infection.[14] It is recommended that multi-dose vials are designated single patient use where possible. Such vials should be labelled with the date of opening and discarded within the recommended timeframe specified by the manufacturer.[15,16] Both the Theatre Manager and Senior Management were informed of these findings at the time of the inspection for immediate mitigation. Inspectors were informed during the re-inspection that the sharing of multiple dose vials of medication between patients had ceased immediately following the June inspection.

2.3 Progress since the unannounced inspection on 07 July 2015

HIQA reviewed the QIP published by the Mercy University Hospital following the 2015 inspection. HIQA acknowledges that the hospital has taken on board the recommendations of the 2015 report and is working towards improving equipment and environmental hygiene and the clinical environment in both the Intensive Care Unit and St Oliver's Ward. A significant level of progress was evident on the day of inspection in this regard. Both areas have been repainted and floor covering has been replaced. In addition new ceiling tiles have been replaced in both areas and a wider hospital replacement programme was in progress.

Following the 2015 inspection, the hospital reviewed storage of equipment and consumables in the Intensive Care Unit. A system for storing and dispensing clean consumables and sterile supplies has been fitted. Deficiencies in relation to storage of equipment were also addressed with the allocation of an equipment store room.

While some improvements were made relating to maintenance of and storage within the Intensive Care Unit, substantive issues and risks identified in the 2015 HIQA report relating to the infrastructural deficiencies and the isolation facilities remain outstanding. Inspectors were informed that a funding application has been submitted to the HSE for reconfiguration of the Intensive Care Unit. However, on the day of the inspection there were as yet, no funded plans or agreed timelines in place to address the issues which have been identified.

The facilities for the processing of clean and dirty cleaning textiles remained unchanged. Inspectors were informed that alternatives are being explored to fully address this issue.

In St Oliver's Ward, progress had been made in relation to the effective use of the labelling system used to identify equipment that had been cleaned. Inspectors were informed that staff no-longer change in the staff toilet. However storage remains an issue in the endoscopy unit. Boxes of intravenous fluids were observed on the floor in the main corridor.

In response to the findings of the 2015 inspection, cleaning frequencies and schedules had been reviewed. Additional training on equipment decontamination has been provided to staff. HIQA was informed that a system had been introduced to identify and track maintenance issues. Inspectors were informed by hospital management that the hospital had created an equipment library to address the storage of excess equipment.

HIQA was informed that senior management undertake safety walkabouts. The hospital had made significant investments in new information technology software to facilitate infection prevention and control auditing across the hospital.

2.4 Key findings relating to hand hygiene

2.4.1 System change [6]: *ensuring that the necessary infrastructure is in place to allow healthcare workers to practice hand hygiene*.

- Clinical hand wash sinks in St Therese's Ward conformed to Health Building Note 00-10 Part C: Sanitary assemblies.[17] This was not the case in the Theatre Department where the majority of sinks viewed did not comply with current recommended specifications. It is recommended that sink replacement programmes should be prioritized towards high risk functional areas such as Theatre Departments and be included as a component of the planned works.
- Placement of alcohol hand gels and moisturiser at some clinical hand wash sinks in St Therese's Ward should be reviewed to ensure that it is not mistaken for liquid soap.

- There was inadequate provision of hand hygiene sinks in the decontamination facilities within the Theatre Department.

2.4.2 Training/education [6]: *providing regular training on the importance of hand hygiene, based on the 'My 5 Moments for Hand Hygiene' approach, and the correct procedures for handrubbing and handwashing, to all healthcare workers*.

- The Mercy University Hospital provides mandatory hand hygiene training to all staff on induction and on a yearly basis which is over and above the national recommendation of two yearly training. Hand hygiene training comprises face-to-face sessions and staff can avail of online training in addition to practical demonstration.

- Inspectors also reviewed training records which documented that 92% of staff had attended hand hygiene training in the previous year. However a breakdown of hand hygiene training compliance for each staff group showed that only 16% of Medical Consultants were up-to-date with hand hygiene training. This figure is considerably lower than other staff groups. As variation in performance among disciplines affects overall hospital hand hygiene compliance scores, it is recommended that targeted education and audit is performed in order to drive improvement in hand hygiene compliance.

- The majority of staff in both areas inspected were up to date with hand hygiene training.

2.4.3 Evaluation and feedback [6]: *monitoring hand hygiene practices and infrastructure, along with related perceptions and knowledge among health-care workers, while providing performance and results feedback to staff*.

National hand hygiene audit results

The Mercy University Hospital participates in the national hand hygiene audits, results of which are published twice a year.[18] The results in the table below are taken from publically available data from the Health Protection Surveillance Centre's website. In general the hospital's compliance rate has exceeded the HSE's national 90% target.[19] However, the latest results for October/November 2015 show a decrease to 87.6%. The Hospital needs to continue to improve hand hygiene compliance in order to again meet and maintain the HSE's national hand hygiene.

Hand hygiene audit period	Result
March/April 2011	76.2%
Oct/Nov 2011	85.7%
May/June 2012	90.0%
Oct/Nov 2012	91.4%
May/June 2013	91.4%
Oct/Nov 2013	97.1%
May/June 2014	91.9%
Oct/Nov 2014	91.9%
May/June 2015	95.2%
Oct/Nov 2015	87.6%

Source: Health Protection Surveillance Centre – national hand hygiene audit results.[20]

Local hand hygiene audits

Similar to findings from 2014 and 2015, inspectors were informed that hand hygiene audits have been carried out only as part of national hand hygiene audits. It was reported during the re-inspection that that local hand hygiene audits had been commenced and will be rolled out to all areas as soon as local auditors are in place.

Observation of hand hygiene opportunities

Inspectors observed hand hygiene opportunities using a small sample of staff in the inspected areas. This is intended to replicate the experience at the individual patient level over a short period of time. It is important to note that the results of the small sample observed is not statistically significant and therefore results on hand hygiene compliance do not represent all groups of staff across the hospital as a whole. In addition results derived should not be used for the purpose of external benchmarking.

The underlying principles of observation during inspection are based on guidelines promoted by the WHO[21] and the HSE.[22] In addition, inspectors may observe other important components of hand hygiene practices which are not reported in national hand hygiene audits but may be recorded as optional data. These include the

duration, technique[ϒ] and recognised barriers to good hand hygiene practice. These components of hand hygiene are only documented when they are clearly observed (uninterrupted and unobstructed) during an inspection. Such an approach aims to highlight areas where practice could be further enhanced beyond the dataset reported nationally.

Inspectors observed 27 hand hygiene opportunities in total during the June and July 2016 inspections. Hand hygiene opportunities observed comprised the following:

- eight before touching a patient
- two before clean/aseptic procedure
- one after body fluid exposure risk
- nine after touching a patient
- five after touching patient surroundings
- two which combined a number of indications

- 21 of the 27 hand hygiene opportunities were taken. The six opportunities which were not taken comprised the following:
  - two before touching a patient
  - four after touching a patient

- Of the 21 opportunities which were taken, the hand hygiene technique was observed (uninterrupted and unobstructed) by inspectors for 21 opportunities and the correct technique was observed in 16 hand hygiene actions.

In addition the inspectors observed:

- A wrist watch and bracelet worn by a staff member in the Theatre Department.

2.4.4 Reminders in the workplace[6]: *prompting and reminding healthcare workers about the importance of hand hygiene and about the appropriate indications and procedures for performing it*.

- Hand hygiene advisory posters were available, up-to-date, clean and appropriately displayed in most of the areas inspected at the hospital.

2.4.5 Institutional safety climate[6]: *creating an environment and the perceptions that facilitate awareness-raising about patient safety issues while guaranteeing consideration of hand hygiene improvement as a high priority at all levels*.

- The overall compliance for October/ November 2015 is below the HSE's national target of 90%. The hospital needs to continue to build on the

[ϒ] The inspectors observe if all areas of hands are washed or alcohol hand rub applied to cover all areas of hands.

awareness and best practices relating to hand hygiene to ensure that its performance is improved particularly in reaching the national target of 90% hand hygiene in both the national and local audits.

2.5 Key findings relating to infection prevention care bundles*

Care bundles to reduce the risk of different types of infection have been introduced across many health services over the past number of years, and there have been a number of guidelines published in recent years recommending their introduction across the Irish health system.[3,4]

Peripheral and central vascular catheter care and urinary care bundles have been fully implemented in the hospital since 2013. In addition, ventilator associated pneumonia care bundles were in place in the Intensive Care Unit. Inspectors reviewed documentation and practices and spoke with staff relating to infection prevention care bundles in the areas inspected and re-visited. Through observation of practice, review of documentation and discussion with staff it was evident that peripheral vascular catheter and urinary catheter care bundles were in use, and were operationally embedded in practice.

Care bundle compliance was audited every two weeks and audit frequency was increased to weekly if any deviation in good practice was observed. Overall compliance with the parameters audited was consistently good.

HIQA was informed that urinary catheter care bundles were introduced to the hospital in February 2016. However on the day of inspections there was no patient in St Therese's Ward with a urinary catheter in place.

Surveillance of ventilator associated pneumonia and central venous access device infection surveillance was performed in the Intensive Care Unit. However similar to 2015 although individual episodes of device related infection are reported through local risk management processes, there was no surveillance system in place to collate infection incidence related to peripheral venous and urinary catheters. Given the significant progress that the hospital has made in progressing care bundle implementation, it is recommended that the hospital further explores the potential for the establishment of surveillance of device related infection rates over time to ensure full compliance with best practice standards and guidelines.

* A care bundle consists of a number of evidence based practices which when consistently implemented together reduce the risk of device related infection.

3. Summary

The initial unannounced inspection undertaken by HIQA against the National Standards for the Prevention and Control of Healthcare Associated Infections at the Mercy University Hospital on 07 June 2016 revealed a significant need for improvement in the Theatre Department infrastructure and decontamination facilities. The findings of the initial inspection in the Theatre Department were such that a re-inspection was deemed necessary within six weeks.

A commitment to addressing the immediate high risks identified at the time of the June inspection was evident during the re-inspection in July. However, substantive issues and risks remain due to current decontamination facilities, processes and the challenges posed by the older infrastructure and design of the Theatre Department. HIQA acknowledges that the proposed refurbishment of the Theatre Department will require the commitment of staff and the significant investment of time, effort and resource to implement the changes planned. Planned refurbishment and upgrade programmes should be in line with best practice and current standards and should include input and consultation with the infection prevention and control team.

It is acknowledged that the hospital had identified inherent infection prevention and control risks relating to the decontamination facility and had escalated such risks within the hospital and hospital group risk management structures. Effective decontamination of surgical instruments is critical in the provision of a safe, clean environment and equipment. Improvements in corporate and clinical governance in the Mercy University Hospital is required particularly regarding the management of decontamination of reusable invasive medical devices.

The lack of timely management of this risk identified by the hospital at both hospital and hospital group level is a concern to HIQA. The Mercy University Hospital, as a member of the wider South/ South West Hospital Group, needs to be supported within the group structure to better address infrastructural issues and risks relating to infection prevention and control identified by the hospital and to ensure compliance with the *National Standards for the Prevention and Control of Healthcare Associated Infections*

Hospitals should ensure that the acquisition process in place ensures all equipment purchased including reusable medical devices is safe for its intended use. Therefore, infection prevention and control teams and key individuals should be involved in the procurement of equipment prior to purchase to ensure that the required level of safety, quality and performance is met. Sufficient resources must be allocated to ensure a seamless transition of the current decontamination services to an external contractor and to ensure the sustainability of the surgical and decontamination services in the short and long term.

Opportunities for improvement relating to medication management were also identified during the inspection. HIQA recommends that the hospital reviews the practice relating to the preparation and administration of intravenous fluids to assure itself that the potential risks to patients in this regard are fully mitigated.

Good local ownership in relation to infection prevention and control was evidenced in St Therese's Ward during the June inspection and is commendable. Overall, the physical environment and patient equipment in St Therese's Ward were clean and well maintained.

It was evident that progress had been made since the 2015 inspection. Improvements in environmental hygiene and facilities were observed by inspectors in both St Oliver's Ward and the Intensive Care Unit.

The hospital needs to continue to improve hand hygiene compliance in order to again meet and maintain the HSE's national hand hygiene target[19] of 90%. Local hand hygiene auditing should be rolled out hospital wide. Poor uptake of hand hygiene training by Medical Consultants is a concern to HIQA and should be addressed by the hospital as part of its QIP. The hospital needs to build on achievements to date to ensure that good hand hygiene compliance is achieved and maintained across all clinical areas.

Overall infection prevention and control bundles have been well advanced and embedded in the hospital which is commendable. Care bundle implementation is supported by regular audit with feedback on process measure implementation. The Mercy University Hospital should continue to build on progress to date to provide assurance that device related infections are effectively reduced or prevented.

Surgical patients comprise a population that is vulnerable to infection. As part of a recent national review by HIQA[23] the need for improved systems of surgical site infection surveillance was identified and a number of other national and international bodies have recommended the establishment of such systems as a key quality assurance and improvement measure. Surveillance is an essential element of surgical site infection prevention and should be progressed in the Mercy University Hospital.

4. Next steps

The Mercy University Hospital must now revise and amend its QIP that prioritises the improvements necessary to fully comply with the Standards. This QIP must be approved by the service provider's identified individual who has overall executive accountability, responsibility and authority for the delivery of high quality, safe and reliable services. The QIP must be published by the hospital on its website within six weeks of the date of publication of this report and at that time, provide the Authority with details of the web link to the QIP.

It is the responsibility of the Mercy University Hospital to formulate, resource and execute its QIP to completion. The Authority will continue to monitor the hospital's progress in implementing its QIP, as well as relevant outcome measurements and key performance indicators. Such an approach intends to assure the public that the hospital is implementing and meeting the Standards, and is making quality and safety improvements that safeguard patients.

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Appendix 1 - Copy of letter issued to the Mercy University Hospital following the unannounced inspection on 07 June 2016

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

Sandra Daly
Chief Executive Officer
Mercy University Hospital
Grenville Place
Cork
sdaly@muh.ie

08 June 2016

Ref: PCHCAI/636

Dear Sandra

National Standards for the Prevention and Control of Healthcare Associated Infections (NSPCHCAI) Monitoring Programme

During the course of the unannounced inspection at the Mercy University Hospital on 07 June 2016, Authorized Persons[1] identified specific issues in relation to surgical instrument decontamination facilities in the Theatre Department that may present a serious risk to the health or welfare of patients and staff, and immediate measures need to be put in place to mitigate these risks.

The arrangements for surgical instrument decontamination within the theatre department do not comply with the Health Service Executive Code of Practice for Decontamination of Reusable Invasive Medical Devices, and are not in compliance with the *National Standards for the Prevention and Control of Healthcare Associated Infection.*

HIQA note that the arrangements that are in place have been longstanding, and have been recorded as the highest possible risk rating on the hospital risk register. It is also noted that proposals are being explored to fully address this risk, and that the risk has been escalated for mitigation externally from the hospital. However in the interim, it is requested that the hospital outlines to HIQA the assurance measures enacted to ensure patient safety in light of the current non-compliant arrangements in place, and confirm that the current arrangements in place are safe from an infection prevention and control perspective.

[1] Authorized Persons of the Health Information and Quality Authority (HIQA) under Section 70 of the Health Act 2007 (the Act) are authorised for the purpose of monitoring against the *National Standards for the Prevention and Control of Healthcare Associated Infections (NSPCHCAI)* pursuant to Section 8(1)(c) of the Act.

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

Consequently, please respond in writing to HIQA **within 2 working days**, to provide assurance that patient safety is not currently compromised by the current arrangements for surgical instrument decontamination. Also, please provide an overview of the plans in place, with associated agreed timelines, for the overall mitigation of this risk in the short term.

In addition, HIQA identified that the current approach to endoscope reprocessing in the Theatre Department uses an endoscope washer-disinfector which is at end of life, and which can no longer be serviced. Given the risk of poor reliability in the ability to decontaminate what may be an emergency piece of equipment using this method, it is requested that use of this washer-disinfector is discontinued, and that reprocessing of scopes is centralised in the endoscopy department.

Finally, please note that the totality of findings from the inspection in the Theatre Department necessitate reinspection **within six weeks**.

Please report back to HIQA by 5pm on 10 June 2016 to qualityandsafety@hiqa.ie, to both provide assurance with respect to the safety of current arrangements for the decontamination of surgical instruments, and to outline measures to fully address this risk in the short term.

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

Yours sincerely

Sean Egan
Acting Head of Healthcare

CC: Gerry O'Dywer, Group CEO, South/South West Hospital Group
Liam Woods, National Director of Acute Services, Health Service Executive
Mary Dunnion, Director of Regulation, HIQA

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Appendix 2 - Copy of letter received from the Mercy University Hospital in response to letter received from HIQA following the unannounced inspection on 07 June 2016

MERCY UNIVERSITY HOSPITAL, CORK LIMITED

Grenville Place, Cork, T12 WE28, Ireland.
Tel: +353 (21) 493 5450
Email: sdaly@muh.ie www.muh.ie

From the Chief Executive Officer
Ms Sandra Daly

Mercy UNIVERSITY HOSPITAL
Compassion Excellence Justice Respect Team Spirit

10th June 2016

Mr Sean Egan,
Acting Head of Healthcare,
Regulation Directorate,
Health Information and Quality Authority,
Unit 1301,
City Gate,
Mahon,
Cork

Re: National Standards for the Prevention and Control of Healthcare Associated Infections (NSPCHCAI) Monitoring Programme

Dear Mr Egan,

I write in response to your letter of 8th June following an unannounced inspection visit to Mercy University Hospital (MUH) on Tuesday, 7th June 2016.

At the outset, I can provide the requested assurance that patient safety is not compromised by the current arrangements for surgical instrument decontamination at MUH. I can also confirm that the hospital has mechanisms in place to provide assurance that there are no serious risks to the health or welfare of patients and staff as a result of the existing sub optimal decontamination facility at MUH. This is evidenced through the clinical governance structure that the hospital has in place which provides oversight and ongoing measurement of patient outcomes.

The decontamination arrangements are risk assessed as part of the risk management processes at MUH and control measures are in place to mitigate against risk where feasible. It is acknowledged that the hospital's inability to comply with the '*HSE Code of Practice for Decontamination for Reusable Invasive Medical Devices 2007*' has been a long standing item listed on the hospital's risk register at the highest possible risk rating and has been escalated externally for resolution.

The hospital routinely analyses NQAIS Surgery KPI data as an indication of patient safety and reviews average length of stay and readmission rates which if infections arise, one could expect to be elevated. The hospital's average length of stay data is within national norms when adjusted for case complexity and admission type. MUH's readmission rates are below the national norm at just over 2% for main surgical sub-specialties except gastroenterology/ hepatobiliary, and colorectal where significant pre-existing morbidity and complexity produces higher but still compliant ratios of 7.8% and 6.5% respectively. The data does not support any contention that infection rates may be unduly raised in surgical cases. Full access to this system can be made available to HIQA if required.

Specifically, in respect of infection prevention and control within the surgical services, I attach for assurance purposes the results of a Surgical Site Infection Surveillance audit of all surgical cases undertaken during a single week in November 2015 using CDC criteria. You will note that the results of this study demonstrate infection rates within national and international norms and do not support any contention that infection rates may be unduly raised in surgical cases. The hospital is committed to undertaking further audits in this respect and will liaise with Dr Rob Cunney, Consultant Microbiologist and Clinical Lead HSE HCAI/AMR Clinical Programme.

As advised, the preferred solution to address the hospital's compliance in respect of surgical instrument decontamination is to outsource this function to an accredited provider. The hospital has a well advanced proposal in this respect and funding has now been secured from the South/South West Hospital Group to purchase the necessary additional instrumentation to enable this off-site solution. The MUH Procurement Department has commenced the purchasing process. It is anticipated that the procurement phase of this project will be concluded within sixteen weeks which will allow for the commencement of the offsite arrangements. A further update will be provided during the re-inspection visit.

I also note in your correspondence it is requested that the use of the Washer Disinfector is discontinued and that the reprocessing of scopes is centralised in the Endoscopy Department. I can confirm that this action has been expedited and endoscope reprocessing in the Theatre Department has ceased. By way of background, following the publication of the Quality Improvement Division's report on the *Review of Endoscope Decontamination in Acute Hospitals 2015,* a self-assessment was carried out at MUH which identified the centralisation of endoscopic decontamination practices as an area for improvement. The Executive Management Board (EMB), appreciating the importance of the provision of safe endoscopy decontamination services, prioritised the discontinuation of decontamination activity within St. John's Urology Unit (now centralised within the Endoscopy Department) and also the discontinuation of decontamination of endoscopes within the theatre complex. Progress on the latter was interrupted due to an unforeseen escape of water and associated structural damage which affected the Endoscopy Department in March 2016. The Endoscopy Unit is now fully refurbished and operational and the hospital has proceeded to enact its Quality Improvement Plan (QIP) for the centralisation of Endoscopic Decontamination.

In parallel, the hospital has initiated a review of the critical plant and essential engineering services of the operating theatre complex in conjunction with HSE Estates.

I enclose copies of the following documentation in support of the above:

- Surgical Site Infection Surveillance MUH 6 November- 12 November 2015
- Theatres Decontamination Risk Assessment April 2016
- Endoscopic Decontamination Self-Assessment May 2016 (currently being updated for June)
- JAG Accreditation Assessment (Decontamination & Safety) May 2016
- HIQA Reports of Unannounced Inspections 2015
- Risk Register May 2016
- Risk Dashboard May 2016

I trust this letter serves to provide you with the immediate requisite assurances. My office is available at any time should you require any additional information in advance of the planned re-inspection.

Yours sincerely,

Ms. S. Daly,
Chief Executive Officer

c.c. Mr Gerry O'Dwyer, Group CEO, South/South West Hospital Group
Mr Liam Woods, National Director of Acute Services, HSE
Ms Mary Dunnion, Director of Regulation, HIQA

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