



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the unannounced inspection 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 inspection: 7 July 2015

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 (the Authority) 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 the Authority'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. It focuses 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 the Authority will assess the prevention of invasive device related infections by monitoring the implementation of infection prevention care bundles.* In particular this monitoring will focus upon peripheral vascular catheter and urinary catheter care bundles, but monitoring of performance may include other care bundles as recommended in national³⁻⁴ and international⁵ guidelines.

Assessment of performance will focus on compliance with 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. The Authority uses hygiene observation tools to gather information about the cleanliness of the environment and equipment, hand hygiene practice and infection prevention care bundles in one to three clinical areas depending on the size of the hospital. The Authority's approach to an unannounced inspection against

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

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 2015, unannounced inspections will aim to identify progress made at each hospital since the previous unannounced inspection conducted in 2014.

An unannounced inspection was carried out at the Mercy University Hospital on 7 July 2015 by Authorised Persons from the Authority, Kay Sugrue, Aileen O' Brien, Rachel McCarthy and Anna Delany between 09:30hrs and 16:50hrs. The areas assessed were:

- The Intensive Care Unit, which provides Level 3[†] critical care. It has eight bed spaces, four of which were in use.
- St Oliver's Ward, which comprises a day ward and an endoscopy unit. The day ward has 16 trolleys and four chairs and the endoscopy unit has three procedure rooms.

In addition, St Joseph's Ward and St Mary's Ward, both inspected during an unannounced inspection by the Authority on 13 October 2014, were re-visited to assess the level of progress made since the 2014 inspection.

The Authority would like to acknowledge the cooperation of staff with this unannounced inspection.

[†] Level 3 Critical Care involves active management by the critical care team to treat and support critically ill patients with two or more organ failures.

2. The Mercy University Hospital Profile[‡]

The Mercy University Hospital is a 319-bed acute general teaching hospital providing in-patient, day patient, out-patient services, emergency department and urgent care centre secondary and tertiary services in a wide range of specialties. It is the second largest hospital in Cork, playing an important role in the delivery of acute hospital care in Cork and in the South/South West Hospital Group.

Located in the busy centre of Cork City since 1857, Mercy University Hospital employs approximately 950 staff. In 2014, there were approximately 10,886 in-patients discharges, 22,574 day case admissions, 47,654 Emergency Department and Urgent Care Centre attendances and 49,275 out-patients attendances. The number of patients treated by the Mercy University Hospital has risen substantially in the last decade and will continue to do so as new facilities are brought on stream.

The hospital will shortly become the Regional Centre for Gastroenterology and a recognised site for the National Colon Cancer Screening Service.

[‡] The hospital profile information contained in this section has been provided to the Authority by the hospital, and has not been verified by the Authority.

3. Findings

This report outlines the Authority's overall assessment in relation to the inspection, and includes key findings of relevance. 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 the key areas of non-compliance are summarised within this report.

This report is structured as follows:

- **Section 3.1** outlines the level of progress made by St Joseph's Ward and St Mary's Ward after the unannounced inspection on 13 October 2014.
- **Section 3.2** presents the key findings of the unannounced inspection on 7 July 2015.
- **Section 3.3** describes the key findings relating to hand hygiene under the headings of the five key elements of the World Health Organization (WHO) multimodal improvement strategy⁶ during the unannounced inspection on 7 July 2015.
- **Section 3.4** describes the key findings in relation to the prevention of invasive medical device related infection through the implementation of infection prevention care bundles during the unannounced inspection on 7 July 2015.

3.1 Progress since the last unannounced inspection on 13 October 2014

The Authority reviewed the quality improvement plan (QIP) published by the Mercy University Hospital⁷ following the October 2014 inspection. It was reported that many of the issues identified were addressed, with outstanding issues relating mainly to maintenance on St Mary's Ward. However, the Authority was informed of plans to carry out essential maintenance work in St Mary's Ward and to make the ward environment more suitable for patients with dementia in October 2015.

Assurance was not evident at the time of the revisit that environmental hygiene standards in the St Mary's Ward were being effectively managed. During the 2015 revisit to St Mary's Ward, inspectors viewed a June 2015 routine equipment cleaning audit report which showed a poor compliance score of 42%. A local equipment cleaning checklist viewed was not comprehensive and cleaning duties were not clearly allocated. Dust was present on a number of environmental surfaces, similar to the 2014 inspection. In response to the poor compliance achieved by St Mary's Ward during the revisit by the Authority, the hospital acted to schedule a meeting with departmental and cleaning managers to address the issues identified. In addition, it was reported that any clinical areas which did not achieve desirable standards would be re-audited.

In contrast to St Mary's Ward, St Joseph's Ward achieved 96% compliance in an environmental hygiene audit carried out in May 2015. It was clear that St Joseph's Ward had taken on board the findings of the 2014 inspection and had implemented measures to address them. Staff on St Joseph's informed the Authority that significant work has taken place since the 2014 inspection. Staff stated that a review of the condition of patient equipment had taken place and damaged equipment, such as commodes, had been replaced. Poor practice observed relating to inappropriate storage of a syringe and saline for intravenous use had been addressed. It was reported that additional training had been provided to staff regarding the cleaning of patient equipment and that staff responsibilities in this regard had been clarified at ward level. The hospital informed the Authority that blood glucose monitor holders are no longer brought to the patient bedside in St Joseph's Ward and practice is monitored locally.

In response to the findings of the 2014 inspection, it was reported to inspectors that all patients requiring transmission precautions on St Joseph's Ward were prioritised for single room isolation.

Opportunities for improvements were identified on St Joseph's Ward with regard to formal checks of equipment cleaning. There were insufficient local assurance mechanisms in place to ensure that patient equipment was cleaned in accordance with national guidelines.⁸ For example, there was no evidence of checklists for daily cleaning of patient equipment.

Annual checks of mattress integrity were conducted. The Authority was informed that while checks of mattresses were performed in between annual audits, there was no scheduled process for such checks.

3.2 Key findings of the unannounced inspection on 7 July 2015

Intensive Care Unit

Patient equipment and the environment in the Intensive Care Unit were generally clean with some opportunities for improvement observed. Dust was present on some surfaces, including ceiling extract vents and shelving units used to store sterile supplies. There was some staining on surfaces in the patient toilet. There was dust and staining on the undercarriage of one vacant bed inspected and the design of the bed did not facilitate effective cleaning.

There was evidence of good local ownership of infection prevention and control and staff were endeavouring to prevent infection within a less than optimal infrastructure. Commendable measures implemented by staff to measure and prevent invasive device related infection are addressed in the care bundle section of this report (Section 3.4).

Overall the Intensive Care Unit infrastructure and design was dated and did not meet the desirable standards of a modern day critical care facility⁹ or facilitate effective infection prevention and control. There was limited space around beds in the main unit for staff and visitors to comfortably manoeuvre and to accommodate equipment.

The Intensive Care Unit did not have appropriate isolation facilities for patients with transmissible infection. Two single patient rooms within the unit did not have ensuite toilet/washroom facilities or specialised ventilation required to effectively implement transmission precautions for patients with infection.

Surfaces and finishes in the unit were not designed to facilitate effective cleaning, for example there were multiple horizontal surfaces and ledges including door architraves, window sills and exposed pipe work.

Paint surfaces within the unit had not been maintained to a satisfactory standard and there was evidence of wear and damage to most woodwork finishes and to some walls. Metal surfaces of bed tables, drip stands and storage units showed evidence of corrosion. Such corroded surfaces do not facilitate effective cleaning. A number of ceiling tiles were stained and ill-fitting in the main unit and ancillary rooms. Ill-fitting ceiling tiles may facilitate the ingress of dust from the space above ceiling level. Unused extract vents were in place in some window panes and the window glass did not appear to be completely sealed in one window in the main unit.

An arterial blood gas analyser and mattresses requiring recovering were located within a clean equipment store room. There should be clear separation of functional activity and of clean and potentially contaminated items or equipment.

There was insufficient storage space for clean equipment not required for everyday use, including extra mechanical ventilators and dialysis machines. Instead these items were stored in an unoccupied area of the open plan unit in the pathway of patients accessing a patient toilet and persons entering the unit. The amount of equipment in place relative to the size of the unit made it look cluttered and further impeded circulation space for staff. Patient chairs and a portable X-ray machine were stored in communal corridor outside the unit entrance. Consumables and supplies were stored in a number of mobile closed cabinets within the unit and near the patient zone. A mobile trolley with open top drawers was used for central venous access device insertion. It is recommended that storage within the unit is reviewed and rationalised and that sterile stock is stored within closed cupboards or drawers not located next to the patient zone. There should be designated spaces for storing and for cleaning equipment.

The drug preparation area was situated immediately adjacent to a clinical hand wash basin which is not recommended because of the risk of contamination of sterile supplies. In addition, a 100ml bag of intravenous fluid with adrenaline added was stored directly on a fridge shelf and was dated 29 June 2015. Medication prepared for intravenous use should be contained in an injection tray and discarded if not required.

The 'dirty' utility room was used as a utility and storage area for housekeeping equipment and the housekeeping cart was stored in a stairwell lobby due to a lack of designated utility rooms. A staff toilet was situated in a room within the 'dirty' utility room. There should be separate sanitary facilities for staff and also for housekeeping functions.

It was reported that the hospital is planning to create one designated ensuite isolation room with specialised ventilation within the existing unit footprint, however there was no agreed timeframe for this project. Notwithstanding the creation of a dedicated isolation facility, essential maintenance works need to be performed as a matter of priority. Going forward the hospital needs to put in place plans to modernise its intensive care facility in line with best practice recommendations for modern day critical care unit design.

St Oliver's Ward

St Oliver's Ward was well maintained. However there were opportunities for improvement with regard to the cleaning of equipment and the environment.

Patient equipment

The system in place for the cleaning of patient equipment on St Oliver's Ward requires improvement. At the time of the inspection, equipment including a commode, patient chairs, bed frames, bedside tables, suction apparatus, a resuscitation trolley and intravenous stands were dusty or unclean. A labelling system was used to identify equipment that had been cleaned, however dates on labels observed on some patient equipment items indicated that not all equipment was cleaned daily in line with national guidelines.

Inspectors observed a trolley containing blood sampling equipment being transported around the endoscopy unit during use. In addition, a stained blood glucose monitor holder was observed in storage in the unit. It is recommended that only equipment required for individual patient procedures should be brought to the patient bedside. The Authority recommends that the hospital review practices for storage and use of sterile supplies and for blood glucose monitoring and to provide assurances that the recommended infection prevention and control precautions are

in place to prevent blood-borne virus transmission. Safe practice in relation to blood glucose monitoring should be standardised across the hospital particularly as similar issues were identified in the 2014 unannounced inspection.

Hand hygiene was not was not performed prior to handling decontaminated endoscopes, this is not in line with best practice guidelines¹⁰ as it may lead to contamination of clean endoscopes.

The Authority observed an unauthorised person walking from a procedure room through the endoscope decontamination room during the inspection. HSE Guidelines¹⁰ state that the entry to the decontamination room should be restricted to authorised personnel only and staff movement, between dirty and clean areas should not be possible without passing through a clothing change and hand-wash area. In addition, windows were open in the decontamination room, which is not in line with best practice.¹⁰

Environmental Hygiene

Unacceptable levels of dust were observed in most areas in St Oliver's Ward including floors, skirting and electrical service points. Dust was also present on several surfaces in the clean utility room, including the intravenous drug preparation area.

Staining and residue were visible on a number of sinks, including the hand hygiene sink in one 'dirty' utility room and one clean utility room. Ineffective cleaning of sinks, taps, sink drains and sink traps was observed during the inspection. This was of concern as similar poor cleaning practices have been demonstrated to potentially promote proliferation of bacteria such as *Pseudomonas aeruginosa* which can cause infection in patients with poor immune systems.¹¹ Indeed, *Pseudomonas aeruginosa* bacteria have been implicated in healthcare associated infection outbreaks.¹² It is important that the hospital takes the necessary measures to mitigate against the risk of the water borne pathogens.

Ward corridors were cluttered with patient equipment and hospital supplies, a number of these items were very dusty. Inappropriate storage of equipment and supplies does not facilitate effective cleaning and may act as a reservoir for dust.

St Oliver's Ward achieved 93% compliance in an environmental hygiene audit carried out in June 2015. However, findings at the time of the HIQA inspection did not provide assurance that an acceptable standard of environmental hygiene was consistently maintained on St Oliver's Ward. A review of environmental hygiene auditing process is recommended.

Cleaning process management

The clinical areas assessed did not have dedicated rooms for the storage of cleaning equipment and cleaning equipment was stored within 'dirty' utility rooms which was not appropriate. Failure to segregate functional areas poses a risk of cross contamination.

Assurance mechanisms were not observed to be in place to ensure appropriate processing of clean and dirty cleaning textiles. The wooden internal surfaces of a cabin structure housing laundry appliances did not facilitate effective cleaning and did not have a designated hand washing facility for staff. This is not an acceptable arrangement for laundering cleaning textiles.

Staff informed the Authority that patient toilets were monitored for cleanliness several times per day. However, checklists for cleaning of two of the patient toilets in St Oliver's Ward were not fully completed.

Endoscopy unit facilities

There was no designated changing room for staff in the Endoscopy unit. Staff changed in a staff toilet, which was also used as a storage area for staff personal belongings. Health Building Note 00-02: Sanitary Spaces recommends that toilets should be located separately to changing facilities.¹³ Such separation is necessary to avoid the risk of contamination.

Hand hygiene compliance

The hospital has demonstrated high compliance in national hand hygiene audits.¹⁴ However, at the time of the inspection, poor performance in hand hygiene practice was observed in St Oliver's Ward.

In addition, facilities for hand hygiene were less than optimal. Access to hand hygiene facilities in the room on St Oliver's Ward which held decontaminated equipment was observed to be restricted during the inspection. Alcohol hand rub was not readily available at all points of care in both St Oliver's Ward and the Intensive Care Unit.

The Authority was informed that hand hygiene audits have been carried out only as part of national hand hygiene audits. This was also the case during the 2014 inspection. It was reported that the hospital plans to increase the frequency of hand hygiene audits once additional resources are in place.

Communicable/Transmissible Disease Control

The hospital reported having a high incidence of hospital acquired Vancomycin-Resistant Enterococci (VRE) cases. In assessing this finding, the Authority also notes

that as a country, Ireland has the amongst highest rate of VRE of all European countries.¹⁵ The hospital explained that in the absence of VRE screening on admission, the reported high incidence may not be an accurate reflection of the level of VRE acquired at the Mercy hospital, and may instead be reflective of a more widespread high rate in the overall Irish patient population. Notwithstanding the broader nature of this issue at a national level, the hospital need to continue in their efforts to better differentiate between infection and colonisation and the true incidence of hospital acquired VRE infection in the Mercy University Hospital to inform appropriate local control measures.¹⁶

3.3 Key findings relating to hand hygiene

3.3.1 System change⁶: *ensuring that the necessary infrastructure is in place to allow healthcare workers to practice hand hygiene.*

- Clinical hand wash sinks in St Oliver's Ward and the Intensive Care Unit conformed to Health Building Note 00-10 Part C: Sanitary assemblies.¹⁷
- Placement of alcohol hand gels at clinical hand wash sinks should be reviewed to ensure that it is not mistaken for liquid soap.
- Clinical hand wash sinks were not at each bed space in the Intensive Care Unit. Alcohol hand gels were not readily accessible at each point of care in the areas inspected. Waste bins in the Intensive Care Unit were not located immediately next to each hand wash sink.

3.3.2 Training/education⁶: *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.*

- Hospital staff can avail of either practical hand hygiene training or the HSELandD e-learning training programme (the HSE's online resource for learning and development).¹⁸ Hospital staff are deemed to be trained in hand hygiene if they have completed one or both training modes. It was reported that 100% of staff in both St Oliver's Ward and the Intensive Care Unit were trained in 2015.
- The hospital informed the Authority that multi-disciplinary personnel will be trained as hand hygiene trainers and that additional hand hygiene auditors will be trained in order to facilitate hand hygiene compliance. The hospital informed the Authority that it hoped to increase the level of hand hygiene training with planned additional infection prevention and control resources.

3.3.3 Evaluation and feedback⁶: *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 audits

- The Mercy University Hospital participates in the national hand hygiene audits which are published twice a year.¹⁴ The hospital has consistently achieved compliance above the national targets set by the HSE as outlined in Table 1.¹⁹

Table 1: National hand hygiene audit results

Hand hygiene audit period	Hand hygiene compliance 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%

Source: Health Protection Surveillance Centre – national hand hygiene audit results.¹⁴

Local hand hygiene audits

- It was reported to the Authority that Intensive Care Unit staff achieved 100% compliance in a hospital hand hygiene audit carried in June 2015. Findings at the time of inspection were consistent with a high level of compliance in that 16 of 18 hand hygiene opportunities were taken and the correct technique was observed in 13 of 16 opportunities.

Observation of hand hygiene opportunities

Authorised Persons 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 inspections are based on guidelines promoted by the WHO²⁰ and the HSE.²¹ In addition, Authorised Persons 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^γ 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.

The Authority observed 30 hand hygiene opportunities in total during the inspection. Hand hygiene opportunities observed comprised the following:

- six before touching a patient
 - two after body fluid exposure risk
 - two after touching a patient
 - 19 after touching patient surroundings
 - one combination of after touching a patient and after touching patient surroundings.
- 20 of the 30 hand hygiene opportunities were taken. The ten opportunities which were not taken comprised the following:
 - three before touching a patient
 - one after touching a patient
 - six after touching patient surroundings
 - Of the 20 opportunities which were taken, the hand hygiene technique was observed (uninterrupted and unobstructed) by the Authorised Persons for 20 opportunities and the correct technique was observed in 17 hand hygiene actions.

In addition the Authorised Persons observed:

- wrist watches worn by staff in the patient zone
- staff wearing gloves put their hands into uniform pockets

^γ The inspectors observe if all areas of hands are washed or alcohol hand rub applied to cover all areas of hands.

3.3.4 Reminders in the workplace⁶: *prompting and reminding healthcare workers about the importance of hand hygiene and about the appropriate indications and procedures for performing it.*

- While hand hygiene advisory posters were available in St Oliver's Ward, they were not highly visible or sufficient.
- Hand hygiene signage in the Intensive Care Unit was clean and laminated; however, hand wash technique posters were not available at every hand wash sink.

3.3.5 Institutional safety climate⁶: *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.*

- While the Mercy University Hospital's performance in national hand hygiene audits is in line with the national targets set by the HSE, it does not conduct local hand hygiene audits. As a result, ongoing monitoring of performance with feedback to staff is relatively limited when compared to many Irish hospitals. The hospital needs to build on the achievements to date to ensure that hand hygiene compliance is sustained across the hospital.

3.4 Key findings relating to infection prevention care bundles

Authorised persons looked at documentation and practices and spoke with staff relating to infection prevention care bundles in the areas inspected and re-visited. Overall infection prevention and control bundles have been well advanced and embedded in the hospital which is commendable.

Peripheral vascular catheter care and urinary care bundles were piloted in the hospital in 2012 and have been fully implemented since 2013. The hospital informed the Authority that the policy with regard to peripheral vascular catheter care bundles and urinary catheter care bundles has been recently revised to include updates to national recommendations. The Authority viewed care bundle record sheets in use on the wards.

Ventilator associated pneumonia care bundles were in place in the Intensive Care Unit since January 2014. Evidence based interventions to reduce the rate of ventilator associated pneumonia including hourly subglottal suctioning, regular administration of antiseptic dental gel and four hourly assessments to ensure the head of bed was positioned at a 30 degree angle. There was evidence of multidisciplinary team involvement in these initiatives whereby new endotracheal tubes had been purchased to facilitate subglottal suctioning and staff have been given additional training regarding care bundles. Plans were in place to progress the use of same endotracheal tubes in the Emergency Department patients. Assessment

tools had been researched and introduced for sedation and pain scoring in order to facilitate earlier extubation of patients. Staff had also received training in this regard.

Infection prevention measures in place to reduce the risk of central venous access device related infection including chlorhexidine patches and wipes for line management were also in place. The central venous access device insertion procedure had been revised to include extra staff to facilitate full barrier precautions and insertion packs were being customised for the unit. Hourly care bundle compliance measurement were performed and device related observations were continued for 48 hours after device removal.

Weekly audits of ventilator associated pneumonia and central venous access device audits were performed. All staff members were involved in the carrying out of audits in the Intensive Care Unit. The hospital informed the Authority that clinical staff have access to audit results for all clinical areas thus allowing peer review.

Peripheral venous access device and urinary catheter care bundle compliance was audited every two weeks and audits frequency was increased to weekly if any deviation in good practice was observed. Care bundle compliance in the range of 97-100% was reported indicating that practices were well embedded and successful. The audit results were not assembled to give an overall view of compliance in the hospital, however staff noted that work was underway to compile such data. Staff informed the Authority that if poor compliance was identified in an audit, an incident report would be completed and managed through local risk management processes. The majority of care bundle record sheets viewed by the Authority were complete.

Surveillance of ventilator associated pneumonia and central venous access device infection surveillance was performed in the Intensive Care Unit. The hospital informed the Authority that it repeats the Health Protection Surveillance Centre's Point Prevalence Survey of Hospital-Acquired Infections and Antimicrobial Use²¹ process annually to inform local trends.

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.

The hospital informed the Authority that nurses received national training with regard to the implementation of care bundles and non-consultant hospital doctors receive training at university and induction. Staff on the wards had a good awareness and knowledge of care bundles. In addition, it was reported that patients were given information verbally on admission regarding care bundles, which is likewise and important and positive measure.

4. Summary

Overall the Intensive Care Unit infrastructure and design was dated and did not meet the desirable standards of a modern day critical care facility or facilitate effective infection prevention and control. The Intensive Care Unit did not have appropriate isolation facilities for patients with transmissible infection. Essential maintenance works need to be performed in the Intensive Care Unit as a matter of priority. Going forward the hospital needs to put in place plans to modernise its intensive care facility in line with best practice recommendations for modern day critical care unit design.

Authorised persons note the infrastructural challenges of an older building but notwithstanding this the Mercy University Hospital, as an acute hospital providing critical care, surgical and other services should strive to maintain and improve the hospital infrastructure and environment.

The Authority notes the commendable progress with regard to the implementation of infection prevention and control bundles, particularly in the Intensive Care Unit. The Mercy University Hospital should continue to build on progress to date to provide assurance that device related infections are effectively reduced or prevented.

St Oliver's Ward was well maintained with some exceptions. However, a review of the processes and systems in place to ensure a consistent and high level of environmental hygiene is required. A review of practice and facilities in relation to reusable invasive device decontamination should be performed, with any deficiencies addressed.

5. Next steps

The Mercy University Hospital must now revise and amend its quality improvement plan (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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For further information please contact:

**Health Information and Quality Authority
Dublin Regional Office
George's Court
George's Lane
Smithfield
Dublin 7**

Phone: +353 (0) 1 814 7400

Email: qualityandsafety@hiqa.ie

URL: www.hiqa.ie

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