



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the unannounced inspection at the South Infirmary-Victoria University Hospital, Cork.

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

Date of on-site inspection: 6 April 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.

Table of Contents

1. Introduction	1
2. Findings	3
2.1 Progress since the last unannounced inspections on 16 April 2015 and re-inspection on 21 May 2015.....	3
2.2 Key findings of the unannounced inspection on 06 April 2016.....	5
2.3 Key findings relating to hand hygiene.....	11
2.4 Key findings relating to infection prevention care bundles.....	15
3. Summary	16
4. Next steps.....	17
5. References	18

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 HIQA 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. 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 HIQA will assess the practice in 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 prior national guidelines^{3,4} and international best practice.⁵

Assessment of performance will focus 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. Authorized persons use 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.

An unannounced inspection was carried out at South Infirmar-y-Victoria University Hospital, Cork on 06 April 2016 by authorized persons from HIQA, Kathryn Hanly, Katrina Sugrue, Noreen Flannelly-Kinsella and Gearoid Harrahill between 10:00hrs and 17:00hrs. The areas assessed were:

- The Day Surgical Unit which comprises an open plan unit with eight bays and three patient chairs, a minor procedures room, an operating theatre and a two bay recovery area.
- Ground Floor South 1 is a 20 bed capacity Nightingale* style unit divided into three sections comprising a five bay admission area, a 14 bay area where most of the patients admitted to the unit are accommodated and a three bay area at the end of the ward. It was reported that this three bay unit was rarely used for patient accommodation.

In addition, Ground Floor Victoria Ward, General Theatre Department and Oncology Day Unit, which were inspected during an unannounced inspection by HIQA on 16 April 2015 and 21 May 2015, were re-visited to assess the level of progress which had been made after the 2015 inspection and reinspection.

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

* Nightingale wards were named after Florence Nightingale and describe a type of ward that is multi-bedded and generally consists of one large room which is not divided. Such a design is now obsolete in modern hospital design.

2. Findings

This report outlines HIQA'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 Standards¹ has been provided to the hospital for inclusion in local quality improvement plans. However, the overall nature of the key areas of non-compliance are within this report.

This report is structured as follows:

Section 2.1 outlines the level of progress made by Ground Floor Victoria Ward, General Theatre Department and Oncology Day Unit after the unannounced inspection on 16 April 2015 and re-inspection on 21 May 2015.

Section 2.2 presents the key findings of the unannounced inspection on 6 April 2016.

Section 2.3 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 6 April 2016.

Section 2.4 describes the key findings relating to infection prevention care bundles during the unannounced inspection on 06 April 2016.

2.1 Progress since the last unannounced inspections on 16 April 2015 and re-inspection on 21 May 2015

HIQA reviewed the quality improvement plan (QIP) published by South Infirmery-Victoria University Hospital following the 2015 unannounced inspections.

Good local ownership in relation to infection prevention and control was evidenced in the Ground Floor Victoria Unit during the inspection and is commendable. The Clinical Nurse Manager audits one area of the ward each day as part of the productive[†] ward initiative. Significant improvement in compliance achieved in these daily audits was demonstrated in 2015. Results were recorded on the safety cross board which exhibited a comprehensive visual representation of the audits carried in each of the areas within the ward. The display board is an effective means of sharing information with staff, visitors and patients. Such measures should be encouraged across the hospital. Environmental audits of the ward were carried out regularly. For example, the ward achieved 81.5% compliance in an environmental audit conducted in April 2016. It was reported that maintenance issues impacted on

[†] The productive ward is a global initiative. The initiative was designed and licensed by the National Health Service in the United Kingdom and focuses on improving work processes of staff in clinical areas which helps to facilitate more time on patient care. The initiative has been shown to benefit both staff and patients.

the overall compliance rate of this and several other audits carried out in 2015. Some re-occurring maintenance issues were reported which had not been fully addressed at the time of inspection.

HIQA observed improvements in the environment and facilities of the Oncology Day Unit during the 2016 inspection. In response to the findings of the 2015 inspection, designated isolation facilities for patients with transmissible infections were created, a new door had been fitted to the clinical room and the patient toilets had been refurbished. The clinical hand wash sinks were upgraded and now conform to Health Building Note 00-10 Part C: Sanitary assemblies.⁷ Storage and supply of sterile consumables had been reviewed and clean consumables and sterile supplies are now stored in a clean closed area in the clinical room and treatment room. The unit achieved 90% compliance in the most recent environmental hygiene audit.

The Theatre Department was revisited to determine the progress made since the 2015 inspections. As part of The Productive Operating Theatre (TPOT) programme,⁸ storage was redesigned and as a result it was generally well ordered, organised and free from clutter. The department was repainted following the 2015 inspections and many of the maintenance issues were addressed including the installation of a sluice hopper, repairs to the door of Theatre Two and sealing of all windows in the Theatre complex.

While some improvements were made relating to maintenance and infrastructure, substantive issues and risks identified in the 2015 HIQA report relating to the infrastructure of Theatres 1-4 remain outstanding. Authorized persons were informed that a feasibility study report has been produced outlining options for reconfiguration of the Theatre Department. 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.

Progress was made relating to safe medication practices in the Theatre Department. A key code access system has been installed which requires staff to access theatres using a swipe card. The system facilitates traceability on those accessing theatre where drugs are stored while also limiting access to unauthorized persons. HIQA were informed that some progress was made relating to preparedness and labelling of intravenous medications, and awareness has increased. However, it was acknowledged that more progress is required in this area.

HIQA was informed that a zero tolerance approach was taken to staff bringing personal items such as bags in to theatre operating rooms and clinical areas following the 2015 unannounced inspections. Compliance is monitored regularly by the Theatre Manager.

It was reported that hygiene walkabouts are undertaken by the theatre manager, infection prevention and control and the hygiene supervisor in the Theatre Complex. These walkabouts help to identify issues which need to be actioned relating to hygiene, infection prevention and control and maintenance. In addition, three hygiene audits have been carried out since September 2015. The first of these audits achieved 77% compliance. As this audit failed to reach 85% compliance a reaudit was undertaken where compliance dropped to 75%. Minimal improvement was achieved in an audit carried out in February 2016 where 77.5% was achieved. Operating theatres are recognized as potentially high risk functional areas from an infection prevention and control perspective due to the nature of procedures carried out there. Results achieved in these hygiene audits were well below what would be expected in a theatre department. Ongoing maintenance issues identified in hygiene audits were reported but not always fully addressed. Maintenance and infrastructural issues were reported to have impacted on overall compliance levels achieved in these audits.

Inspectors were informed that reduced services periodically facilitated deep cleaning and essential maintenance of the theatre complex on a quarterly basis.

Theatre shared documents are available on computer desktops for all staff to see. Infection prevention and control audit results were available on this system which also included minutes of hygiene meetings. It was reported that there was seven hand hygiene champions in the Theatre Department. A recent hand hygiene audit completed in Theatre Recovery showed 83% compliance. Areas of poor compliance were identified and discussed with staff in the unit.

Surgical site infections can result in a significant negative impact on the patient leading to increased morbidity, length of stay in hospital, reduction in the patient's functional status, mortality and cost. The hospital has submitted a business case for the initiation of a surgical site infection surveillance programme to include a surgical site surveillance nurse. However, similar to 2015, little progress has been made to date. In the absence of surgical site infection surveillance, the hospital does not have appropriate mechanisms in place to fully assure itself that infrastructural deficits in the Theatre Department do not negatively impact on patients from an infection prevention and control perspective.

2.2 Key findings of the unannounced inspection on 06 April 2016.

Audit Practice

Some progress was made in respect of the environmental audit programme following the 2015 inspections. It was apparent that the hospital was actively endeavouring to address auditing deficiencies previously identified in the unannounced inspections carried out by HIQA in the hospital in 2014 and 2015.

A multidisciplinary hygiene audit group was formed in 2015. The audit committee have developed an audit schedule where high risk areas are audited every six months and all other areas are audited annually.

Both the Day Surgical Unit and Ground Floor South 1 have been identified by the multidisciplinary hygiene audit team as high risk areas. An environmental audit was last carried out in the Day Surgical Unit in September 2015 which demonstrated compliance of 86%. An environmental hygiene audit was last carried out in Ground Floor South 1 in October 2015 which demonstrated a very low compliance rate of 64% achieved in patient equipment cleanliness and an overall compliance of 79%. Similar issues identified in this audit were also observed by HIQA during the inspection. A reaudit was carried out which demonstrated 84% compliance which was marginally below the required 85%. A follow up audit was not carried out in line with the terms of reference for the Prevention and Control of Healthcare Associated Infections Audit Committee.

Documentation viewed by HIQA indicated that high risk areas are scheduled to be audited twice a year by a multidisciplinary hygiene audit team which was formed following HIQA's 2015 unannounced inspections. Results of audits carried out are reported to the Infection Prevention and Control Committee and to senior hospital management. Additional Household and Catering audits are also undertaken. Local hygiene audits were not routinely conducted by staff at ward level. The Hospital Hygiene Annual Report for 2015 indicated that 13 hygiene audits were carried out in 2015. In addition a hygiene walkabout was conducted and a quality improvement plan was developed following same. Compliance in four out of 10 audits conducted following HIQA's 2015 inspection achieved between 75% to 83% compliance. Three audits were undertaken between January and March 2015 which showed compliance between 65% to 80%. A further 32 Household and Cleaning audits were also completed, 20 of which achieved less than 85% compliance. It is unclear from the information provided if infrastructure and maintenance issues impacted on overall compliance with all these audits. Deficiencies in the monitoring and auditing of environmental hygiene were identified in the unannounced inspections by HIQA in 2014 and 2015. HIQA notes that the hospital has taken some action to address these deficiencies. However, further improvements in local auditing programmes are required to help in addressing the findings of these audits.

HIQA recommends that the hospital review the mechanisms in place to assure itself that the physical environment, facilities and resources are developed and managed to minimise the risk of service users, staff and visitors acquiring a Healthcare Associated Infections.

Patient equipment

In general most of the patient equipment seen in Surgical Day Unit was clean and well maintained with some exceptions. For example, the covers of three patient chairs were torn, hindering effective cleaning and therefore require re-upholstering or replacement.

Opportunities for improving the management of some patient equipment were seen in Ground Floor South 1. Sterile equipment was stored on uncovered trolleys directly beside a hand hygiene sink which placed the contents of the trolley at risk of exposure of splash contamination from the hand wash sink. This risk was mitigated at the time of the inspection.

In Ground Floor South 1 not all frequently used patient equipment was observed to be cleaned after each patient use. For example, one commode inspected was unclean. Inspectors observed that a stethoscope was not cleaned after use and a used thermometer probe cover was not disposed of correctly.

Organic contamination was observed on the underside of two patient chairs in Ground Floor South 1. Similar organic matter was seen on the wall behind one of these chairs.

The internal fabric cover of three patient mattresses on Ground Floor South 1 was stained and indicates that the inner foam of these mattresses was no-longer impervious to moisture. It was reported that a mattress audit was conducted in September 2015 and a mattress replacement programmed is in place. HIQA recommends that mattresses and covers are checked more regularly at local level to reduce the risks associated with contaminated mattresses.

Infrastructure and facilities

Ground Floor South 1

The design and infrastructure of Ground Floor South 1, which is a multi occupancy nightingale style ward, does not comply with current national infection prevention and control standards and hospital building guidelines.^{1,9} This ward was configured such that there are three separate sections within the ward. The main section of the ward comprises fourteen beds which are situated between a separate five bay admission area and a three bed section. Both of these sections were vacant at the time of inspection. Inspectors observed limited spacing between patient zones in the multi occupancy section of the unit. Several of the hand hygiene sinks observed were obstructed or partially obstructed by furniture, curtains, bins and equipment.

During the inspection, although the ward was generally clean, limited spacial separation in the multi occupancy section hindered access behind beds, around

lockers and around sinks. While patients had bedside lockers, one patient's belongings were placed on the ground alongside their bed, impeding effective cleaning. Notwithstanding these issues, inspectors observed local ownership of environmental cleaning and viewed daily and weekly check lists and cleaning schedules. Inspectors were informed that a deep clean takes place when the ward is closed on weekends,

Space in the clean utility room was very limited and did not facilitate effective infection prevention and control measures. For example, there was no designated medication preparation area. The hand hygiene sink was located adjacent to open storage of sterile consumables and the medication fridge, both of which were exposed to splash contamination. The exterior of the medication fridge was stained. Due to lack of space, the non-clinical household waste bin was stored outside the clean utility room.

There was limited space in the 'dirty' utility room on Ground Floor South 1 which was further cluttered by two laundry bags awaiting collection. There was insufficient storage within this room, consumables were stored in open blue storage boxes. The hand hygiene towel dispenser and household cleaning solution dispensers were located above the sluice hopper which was exposed to splash contamination from the sluice hopper. A double-sided sink with both a hand hygiene and an equipment sink adjacent to each other also pose a possible risk of contamination from splashes.

Inappropriate storage of staff personal items was observed in both the clean and 'dirty' utility rooms at the time of the inspection.

Surgical Day Unit

Overall the environment in the Surgical Day Unit was generally clean. The unit achieved 86% compliance in the most recent hygiene audit carried out. However, a number of infrastructural and maintenance issues which had the potential to impact on infection prevention and control measures were identified during the course of the inspection. For example, limited spatial separation between patient trolleys did not facilitate ease of movement of staff or mobilisation of patients. Staff should be able to attend to one patient without impinging on the adjacent patient or patient zone and without compromising infection control practices. The wood finish on the doors and door frames leading from the corridor to the Operating Theatre were damaged. Furthermore, when closed these doors did not seal fully which is not in line with best practice.

The limited space and storage of consumables on open shelving in the 'dirty' utility room[‡] was of concern due to the potential for contamination of consumables stored

[‡] A 'dirty' utility room is a temporary holding area for soiled/contaminated equipment, materials or waste prior to their disposal, cleaning or treatment.

on open shelving directly beside the sluice hopper. It is recommended that the storage of these consumables should be reviewed to reduce the risk of contamination of clean items.

Safe Injection Practices

An open multi dose vial of insulin was observed in the medication fridge in Ground Floor South 1. The date on the vial indicated that it had been opened on 1 March 2016 and was not discarded within 28 days of opening. It was reported to HIQA that multi-dose vials of insulin were not dedicated to single patient use and therefore potentially used on multiple patients. 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.^{10,11} These issues were communicated to senior management for mitigation.

Inspectors observed a member of staff carrying a used sharp to the clean utility room to be discarded. Sharps should be disposed of at the point of care into an appropriate sharps container and immediately following use to avoid unnecessary sharps related injury.

Blood glucose monitors and their holders containing sterile supplies for blood sampling were brought to the patient bedside when monitoring the patient's blood sugar in both areas inspected. This practice increases the risk of transmission of blood-borne viruses and is not in line with best practice.¹² In the Day Surgical Unit, red staining was visible on both the inside surface of the blood glucose monitor holder and also on the blood glucose monitor within the holder. It is recommended that only the equipment required for a single procedure on an individual patient should be brought to a patient bedside.¹³ These issues were reported to staff at the time of the inspection for immediate mitigation. The observation of this issue in both areas inspected may indicate that this is not an isolated practice but extends to other departments within the hospital and should be addressed from a hospital wide perspective.

Safety cannulas were observed in both areas inspected, however, needles with safety engineered mechanisms were not evident. Senior management informed authorized persons that the hospital is currently reviewing a range of safety engineered devices. HIQA recommends that the hospital review its' compliance with European Union (prevention of sharps injuries in the healthcare sector) Regulations 2014 which transpose the Council Directive 2010/32/EU.¹⁴ These Sharps Regulations places responsibility on employers to ensure that the risks from sharps injuries are appropriately assessed and the necessary control measures are put in place to mitigate the risks.

Safe injection practice is an infection prevention and control standard precaution and is integral to ensuring patient safety. Failure to adhere to safe injection practices may potentially increase the risk of transmission of infection and has been identified as a contributing factor in outbreaks of blood-borne viruses among patients in healthcare settings.^{15,16,17,18}

Reprocessing of cleaning equipment

The laundering area for reusable cleaning textiles such as mop heads and cloths was located in multi-functional room and was inappropriate. The infrastructure of this laundering area was not self contained and did not support functional separation of the clean and dirty phases of the laundering process. There should be clear separation of functional activity and of clean and potentially contaminated items equipment or activities that could result in contamination. HIQA recommends that the hospital review these laundering facilities from an infection prevention and control context and to ensure compliance with best practice guidelines.

***Legionella* control**

Evidence viewed at the time of inspection indicated that a risk assessment for the prevention and control of *Legionella* was last carried out at the hospital in 2013. National guidelines recommend that every risk assessment be reviewed on an annual basis and independently reviewed every two years.¹⁹ On the day of inspection an annual review or independent audit of the *Legionella* risk assessment had not been carried out at the in line with national Guidelines.

2.3 Key findings relating to hand hygiene

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

- The design of clinical hand wash sinks in the Day Surgical Unit and Ground Floor South 1 did not conform to Health Building Note 00-10 Part C: Sanitary assemblies.⁷ A replacement priority report for hand hygiene sinks was developed in 2015. This included all clinical hand hygiene sinks within the hospital. HIQA was informed that hand hygiene sinks will be upgraded as part of this planned programme of works.
- Access to clinical hand-wash sinks was restricted due to curtain placement, the storage of equipment and space limitations in Ground Floor South 1.
- Non-clinical risk waste bins were not always located near a hand wash sink. For example, in Ground Floor South 1 the bin was located outside the clean utility room door due to space limitations.
- Alcohol gel was available throughout Ground Floor South 1 and at each point of care in the Surgical Day Unit.

2.3.2 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.*

- The hospital maintains and regularly updates these hand hygiene training records on a database which highlights staff members who require hand hygiene training. Inspectors reviewed hospital training and education records which illustrated that 89% of all staff at the hospital had attended mandatory hand hygiene training in the previous two years. However records documented that, similar to 2014, only 45% of medical staff had attended mandatory hand hygiene training within the previous two years. This was included in the quality improvement plan published by the hospital in response to the 2015 unannounced inspection. However little progress has been made since 2015.
- Authorized persons also reviewed local training records on the Day Surgical Unit which documented that 82% of nursing and healthcare assistant staff had attended hand hygiene training in the previous two years. In Ground Floor South 1 83% of staff had attended training in the previous two years.

2.3.3 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

South Infirmar-y-Victoria University Hospital participates in HSE national hand hygiene audits, which are published twice a year. Results contained in Table 1 are publically available on the Health Protection Surveillance Centre’s website. There has been an incremental improvement in hand hygiene since mid-2013. The hospital has exceeded the HSE’s national target of 90% since May/June 2014 and should aim to maintain high compliance rates. However, notwithstanding the inherent limitations presented in conducting snapshot observation audits such as these, the high levels of compliance with national and local hand hygiene audits conducted by the hospital did not reflect the standard of hand hygiene observed by HIQA during the 2016 inspection.

Period	Result
Period 1 March/April 2011	No data available
Period 2 Oct/Nov 2011	71.4%
Period 3 May/June 2012	80.5%
Period 4 Oct/Nov 2012	88.6%
Period 5 May/June 2013	85.2%
Period 6 Oct/Nov 2013	86.6%
Period 7 May/June 2014	90.5%
Period 8 Oct/Nov 2014	91.4%
Period 9 May/ June 2015	93.8%
Period 10 Oct/ Nov 2015	94.8%

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

Local hand hygiene audits

In addition to twice yearly national hand hygiene audits, hand hygiene audits are also carried out locally across the hospital in all patient care areas by hand hygiene champions. Detailed feedbacks of results are given to staff in the areas audited.

Results of hand hygiene audits carried out in 2016 indicate that the Day Surgical Unit has achieved 93% and 97% compliance in January and February. Ground Floor South 1 achieved 97% compliance in March 2016. The Theatre Department achieved 53% compliance in February 2016 however compliance increased to 83% in the March audit.

A hand hygiene champion program is in place in the hospital. The aim of the programme is to train local hand hygiene auditors for each clinical area to facilitate local hand hygiene teaching sessions and support the Infection Prevention and Control Team. To date the hospital has trained over twenty staff on how to audit in their clinical areas. However authorized persons were informed that local hand hygiene auditor training did not include inter-rater reliability assessment. Hand hygiene auditors should be trained and validated in line with the national Hand Hygiene Observational Audit Standard Operating Procedure.²¹

Observation of hand hygiene opportunities

Authorized 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 WHO²² and the HSE.²³ In addition, authorized 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.

HIQA observed 25 opportunities in total during the inspection. Hand hygiene opportunities observed comprised the following:

- six before touching a patient
- one after body/ fluid exposure risk
- five after touching a patient

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

- 12 after touching patient surroundings.
 - one opportunity with combined indications
- 13 of the 25 hand hygiene opportunities were taken. The 12 opportunities which were not taken comprised the following:
- five before touching a patient
 - two after touching a patient
 - four after touching patient surroundings.
 - one opportunity with combined indications
- Of the 13 opportunities which were taken, the hand hygiene technique was observed (uninterrupted and unobstructed) by the authorized persons for 13 opportunities and the correct technique was observed in 12 hand hygiene actions.

In addition, the authorized persons observed:

- Inappropriate use of disposable gloves by healthcare workers and the lack of awareness between the patient and healthcare zones significantly contributed to poor hand hygiene compliance observed at the time of the inspection. The appropriate use of gloves and clarity on what is the patient and healthcare zone should be a focus of future hand hygiene training.

2.3.4 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.*

- In the Day Surgical Unit, hand hygiene technique posters were observed at hand hygiene sinks but not at alcohol gel dispensers at patient bays.

2.3.5 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.*

- The hospital should build on hand hygiene compliance achieved to date to ensure that good hand hygiene compliance is maintained across all clinical areas.

2.4 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}

Authorized persons looked at documentation and practices and spoke with staff relating to infection prevention care bundles in the areas inspected and visited. Peripheral vascular catheter care bundles were in place and compliance with the bundles was good in both areas inspected. However, improvements are required relating to auditing compliance with the peripheral vascular catheter care bundles, the provision of patient education, and feedback to staff. It was reported that audits of peripheral vascular catheter bundle compliance were performed however there was lack of awareness and feedback at local level of results achieved during care bundle audits. In Ground Floor 1 Ward, auditing of a peripheral catheter care bundles had commenced in December 2015. This audit was displayed on the ward notice board but it was unclear if this audit had been completed and if the results had been communicated to staff. Patients interviewed were aware why their cannulas were inserted but did not receive information leaflets relating to hand hygiene or cannula care.

HIQA was informed that urinary catheter care bundles were introduced to the hospital in February 2016. However on the day of inspections there were no patients in the areas inspected with urinary catheters insitu.

The routine application of infection prevention care bundles has been proven to reduce device related infection internationally, and has been recommended in relevant national guidelines and the National Standards for the Prevention and Control of Healthcare Associated Infection, for a number of years. South Infirmary-Victoria University Hospital needs to continue to build on the progress to date to fully embed infection prevention care bundles into routine practice in the best interest of patients.

[§] 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

It was evident that progress had been made since the 2015 inspections. Improvements in environmental hygiene and facilities were observed by authorized persons in both areas revisited. However there remained ongoing scope for improvement in the monitoring and auditing of environmental hygiene. HIQA recommends that the hospital review its systems and processes relating to the monitoring, management and maintenance of the physical environment and all equipment to assure its compliance with Standard 3 of the Infection Prevention and Control Standards.¹

Treatment of patients in close proximity to each other increases the risk of spread of healthcare associated infections. It is recommended that bed spacing on inpatient wards on Ground Floor South 1 and trolley spacing in the day Surgical Unit be re-evaluated in consideration of infection prevention and control risks and in line with the National Standards.

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

Hand hygiene is recognised internationally as the single most important preventative measure in the transmission of Healthcare Associated Infections in healthcare services. It is essential that a culture of hand hygiene practice is embedded in every service at all levels. Although the hospital has exceeded the desired target in national hand hygiene compliance audits, some scope for improvement was observed in relation to the small sample of hand hygiene opportunities observed on the day of inspection. There is also scope for a more comprehensive system for routine hand hygiene education for medical staff.

Overall, the Authority found that the hospital is working towards compliance with Standard 8 of the Infection Prevention and Control Standards and is committed to improving the management of invasive devices.

4. Next steps

South Infirmar-y-Victoria University Hospital, Cork 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 HIQA with details of the web link to the QIP.

It is the responsibility of the South Infirmar-y-Victoria University Hospital to formulate, resource and execute its QIP to completion. HIQA 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.

5.References[¥]

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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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