Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the unannounced inspection at the Rotunda Hospital, Dublin 1

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

Date of on-site inspection: 09 August 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 HIQA is outlined in guidance available on the 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 began assessing the practice of the implementation of infection prevention care bundles. In particular this monitoring 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 will focus on the observation of the day-to-day delivery [2] 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 minimize 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.

An unannounced inspection was carried out at the Rotunda Hospital on 09 August 2016 by Authorized Persons from HIQA, Aileen O' Brien and Gearóid Harrahill between 09:50hrs and 16:30hrs. The areas assessed were:

- **The Delivery Suite** which comprises nine single delivery rooms, of which two have en-suite facilities, and one five-bed assessment room with en-suite facilities.
- **Operating Theatre 3** which is located within the Delivery Suite. This is managed by the Operating Theatre Department.

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

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 standards has been provided to the hospital for inclusion in local quality improvement plans. However, the overall nature of the key areas of non-compliance is within this report.

This report is structured as follows:

- **Section 2.1** outlines the level of progress made by the hospital after the unannounced inspection on 25 June 2015.
- **Section 2.2** presents the key findings of the unannounced inspection on 09 August 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 strategy.[6]
- **Section 2.4** describes the key findings relating to infection prevention care bundles.

2.1 Progress since the last unannounced inspection on 25 June 2015

HIQA reviewed the quality improvement plan (QIP)[7] published by the Rotunda Hospital following the 2015 inspection. It was reported that the hospital had

systematically addressed the recommendations in the 2015 hospital legionella risk assessment. In line with current national guidelines the hospital had just completed a review of the 2015 legionella risk assessment and was working to implement recommendations arising from this. The hospital had also facilitated specialist training in relation to legionella control for relevant staff.

The hospital reported that policies and procedures around the decontamination of medical equipment had been revised and that the integrity of mattresses was audited on an ongoing basis. This was evident in the Delivery Suite at the time of inspection.

The hospital had successfully worked to improve the uptake of hand hygiene training among staff since the last HIQA inspection.

2.2 Key findings of the unannounced inspection on 09 August 2016

Delivery Suite Operating Theatre infrastructure

The design of an operating room located in the Delivery Suite did not meet the recommended infrastructural and ventilation specifications of a modern surgical facility.[8] This operating room called Operating Theatre 3 was located outside the main Operating Theatre Department and was situated in the Delivery Suite. Operating Theatre 3 was reported to be used regularly for emergency caesarean sections where there was an immediate risk to mother or baby and when rapid access to a theatre was required. The main Operating Theatre Department was located on the floor level below the Delivery Suite therefore making it less accessible in an emergency. It only had two operating rooms which may be in use for other surgical cases.

A single door separated Operating Theatre 3 from the main corridor in the Delivery Suite and the operating theatre comprised an operating room and a small preparation room in one open plan space. This arrangement meant that there was no protective zone between the operating room and the Delivery Suite corridor. The ventilation system in Operating Room 3 was not in accordance with recommended guidelines for operating theatre ventilation systems. Windows within Operating Theatre 3 could be opened which is not in keeping with current recommendations.

Floor space was limited in Operating Theatre 3 given the number of staff that are required to attend a patient undergoing an emergency caesarean section. A scrub sink, medical equipment and trolleys further reduced the space in the room. There were no ancillary rooms adjacent to the operating room so there were insufficient storage facilities for sterile supplies, patient equipment and designated cleaning equipment. There was no 'dirty' utility room beside the operating room. Sterile and

clean supplies and record books were stored on open shelves within the operating room which is not recommended. There should be minimal fixtures and shelves within an operating room.

It was reported that the hospital had no option but to use Operating Room 3 in the Delivery Suite for emergency caesarean sections where there was an immediate threat to the life of a woman or baby. Hospital management estimated that the hospital needs four operating rooms given current service demands.

There is a proposed national plan that the Rotunda Hospital will move to a new site in the grounds of Connolly Hospital in the future but this could take a number of years to complete. Hospital managers told inspectors that the hospital had explored a number of options in order to progress the expansion of operating theatre facilities within the existing hospital site. Progress in this regard had been unsuccessful due to the limited size of the hospital site and development restrictions because the hospital building is a protected structure. Challenges in relation to hospital infrastructure on the Rotunda Hospital site are acknowledged by HIQA. Documentation reviewed also indicated that the hospital also needs to expand the size of the Neonatal Intensive Care Unit. Given the time it will take to build and open a new hospital it is recommended that the Rotunda Hospital continues to explore all potential options to improve the current facilities.

Operating room infrastructure and ventilation facilities should be in line with best practice guidelines and standards.[9] Risks in relation to hospital infrastructure should be managed in line with the hospital group risk management process.

Patient equipment

Overall patient equipment in the Delivery Suite was generally clean with few exceptions. Surfaces of one commode were stained and rusted. It is recommended that damaged equipment that does not facilitate effective cleaning should be replaced. There were small stains on two reusable tourniquets. A used oxygen saturation probe had not been removed from a resuscitaire after use. There was dust on the same resuscitaire and on adjacent shelving on the corridor.

Sterile supplies were stored on open shelves in delivery rooms and next to a resuscitaire located on the corridor. Sterile supplies should be stored in fully enclosed storage units in order to prevent inadvertent contamination.

Environmental hygiene

Overall the environment in the Delivery Suite was generally clean with few exceptions. The under surface of one bed was splashed with organic matter and

there were stains on the under surfaces of three other beds. A curtain in one vacant delivery room was unclean. There were small red splashes on a fetal blood specimen analyser and on an adjacent paper towel dispenser. It is recommended that appropriate supplies for surface decontamination are located next to this machine.

Effective teamwork in relation to cleaning in general was evident during the inspection as vacant rooms were cleaned immediately after patient discharge. This was similar in Operating Theatre 3 where a team of staff cleaned the operating room immediately after it had been used. Roles and responsibilities in relation to cleaning were clearly defined. All of the elements to be cleaned were clearly identified in local cleaning specifications which included the required cleaning method and frequency. Daily cleaning checklists in the Delivery Suite had been consistently signed off to indicate that cleaning had been completed. There was good local ownership of hygiene in general in the Delivery Suite.

The hospital had established a Decontamination of Medical Equipment (DOME) Group. Decontamination of medical equipment audits were performed monthly in the Delivery Suite by infection prevention and control staff and infection prevention and control link midwives. Results of an audit of equipment and environmental hygiene in the Delivery Suite at the end of July 2016 showed 97% compliance with desirable standards.

In addition to audits performed by ward managers, environmental hygiene audits were also performed regularly in clinical areas by senior hospital managers. Documentation reviewed showed that the Delivery Suite had been audited twice in 2016. Deficiencies identified in relation to cleaning or maintenance were clearly described in audit reports which included the action required, the person responsible and the date completed.

Documentation provided showed that the overall compliance score for hospital-wide environmental hygiene audits was 94%. Findings on the day of inspection were consistent with good overall compliance in this regard.

Infrastructure and facilities

The hospital had a total of nine single delivery rooms and one five-bedded room, within the Delivery Suite, and three operating rooms which are not sufficient to meet increasing service demands with over 8,500 deliveries per year. The Delivery Suite opened in 1993 so aspects of the Delivery Suite infrastructure were outdated. Only two of the single delivery rooms had en-suite toilet facilities. Only one of the single delivery rooms had an ensuite shower. Modern delivery rooms should all be single patient occupancy with en-suite facilities. Horizontal ledges, exposed pipe work, and

the surfaces and finishes in patient rooms in the Delivery Suite did not facilitate effective cleaning. A resuscitaire and associated supplies were located in an alcove in a corridor in the Delivery Suite outside Operating Theatre 3. This is not an ideal location in which to provide care to a newborn. It was reported that due to space restrictions the resuscitaire was sometimes used in this area if required.

Storage space in the Delivery Suite was very limited due to the older design of the unit and increased supplies and equipment now used during labour, delivery and neonatal care. A fetal blood analyser was located in the Delivery Suite corridor which is not ideal from an infection prevention and control perspective. There was no clean utility room with the result that sterile supplies were stored in various cupboards and store rooms within the unit. In addition, a medication fridge was inappropriately located in a five-bedded patient room. There was no equipment storage room so multiple items of patient equipment, in addition to various trolleys required for care delivery, were located on a corridor outside delivery rooms. The Delivery Suite did not have designated facilities for multidisciplinary team discussion or for the partners of patients.

The hospital plans to renovate the Delivery Suite on a phased basis in order to minimize service disruption with works scheduled to commence in December 2016. Proposed designs for this work have been prepared by the hospital. In the short-term this planned renovation will address some but not all of the deficiencies identified during this inspection.

Safe injection practice

Multiple disposable finger-stick devices were located in a case containing a blood glucose monitor which had slight red stains. Blood glucose monitors must be thoroughly cleaned after each use, to reduce the risk of transmission of blood-borne viruses. It is recommended that only the equipment required for a single procedure should be brought to a patient bedside.

Anaesthetic medications for anticipated intravenous use in Operating Theatre 3 had been drawn up at 08.15hrs on the day of the inspection as indicated by a label on a box containing these syringes. It is recommended that such medications are drawn up immediately or very shortly before use in line with current best practice guidelines.[10]

2.3 Key findings relating to hand hygiene

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

- Alcohol gel dispensers were available at each point of care in the Delivery Suite.
- Clinical hand wash sinks along with supplies of soap and paper towels were available in each patient room and in ancillary rooms as appropriate. The design of clinical hand wash sinks observed in the Delivery Suite did not comply with the standard advised in Health Building Note 00-10.[11]
- It is recommended that an alcohol gel dispenser is located next to a fetal blood gas analyser in the Delivery Suite to facilitate hand hygiene by staff using the machine.
- The scrub sink for Operating Theatre 3 was located within the operating room rather than in a separate scrubbing-up room as expected in an operating theatre.

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

- It was reported that 90% of relevant hospital staff had undertaken hand hygiene training within the last two years.
- 95% of staff in the Delivery Suite and 100% of staff in the Operating Theatre Department were up to date with hand hygiene training. Systems were in place to identify staff that were due to undertake retraining.
- Hand hygiene training and infection prevention and control training was provided to relevant staff at induction and at two yearly intervals. Staff could also avail of hand hygiene training using the HSELanD e-learning training programme (the HSE's online resource for learning and development).[12] The hospital also had an automated interactive training tool to facilitate staff to perform hand hygiene training within clinical areas.

2.3.3 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 audits

The Rotunda Hospital participates in national hand hygiene audits, results of which are published twice a year. The hospital has consistently achieved the required Health Service Executive (HSE) national hand hygiene compliance target of 90%[13] as shown in Table 1, which is commendable. Documentation reviewed showed that the hospital hand hygiene compliance rate for Period 11, May/June 2016 was 96.7% which is a significant increase since last year and again exceeds the national compliance target.

Table 1: National Hand Hygiene Audit Results for the Rotunda Hospital

Time period	Result
May/June 2012	83.3%
Oct/Nov 2012	86.1%
May/June 2013	87.6%
Oct/Nov 2013	89.0%
May/June 2014	91.4%
Oct/Nov 2014	91.9%
May/June 2015	92.8%
Oct/Nov 2015	90.0%

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

Local hand hygiene audits

Inspectors were informed that three link midwives in the Delivery Suite have been trained to audit hand hygiene practice among staff and to train staff regarding hand hygiene technique. Hand hygiene audit results were communicated to department managers for dissemination to their staff. It was reported that the result of a hand hygiene compliance audit among staff was 95% in the Delivery Suite in April 2016. A hand hygiene compliance result of 92% was reported in the Operating Theatre. Action plans were implemented which included staff education and re-audit of practice in the event that hand hygiene compliance was less than 90% in a particular clinical area.

Observation of hand hygiene opportunities

Observation of hand hygiene practice was not performed during this inspection.

2.3.4 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 the areas inspected and in the hospital entrance lobby.

2.3.5 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*.

- In a 2016 patient satisfaction survey, the hospital reported that responses from participants were positive in relation to questions regarding hand washing by staff and the cleanliness of hospital facilities. When patients were asked if their team washed their hands, 90% of respondents said 'always yes'. Additionally 95% of respondents agreed that the hospital facilities were clean. Patient satisfaction surveys are helpful in determining patient understanding, attitudes and overall satisfaction levels.

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]

The hospital had implemented and successfully embedded peripheral vascular care bundles across inpatient clinical areas. Audit of care bundle compliance was performed monthly by either ward managers or infection prevention and control link midwives. Results were communicated to staff on the day of the audit. A re-audit of practice is recommended by the infection prevention and control team if compliance is less than 90% with care bundle components. Care bundle compliance audit results for five wards from January to June 2016 showed that there was good compliance, with some wards consistently scoring 100%. There was slight variation in practice in other wards. Audit reports highlighted any specific areas of practice requiring improvement. It is recommended that the hospital policy for the insertion and care of intravenous catheters is revised to reflect required care bundle elements.

In the Delivery Suite peripheral vascular catheters, if used, are removed where possible following delivery. Where a peripheral vascular catheter is required for longer, the presence of the device is recorded in the patient's medical record and a visual infusion phlebitis score is recorded in the Delivery Suite prior to transfer of a patient to the post-natal ward.

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

The hospital monitors clinically significant blood cultures among adults and newborns and advice is provided by the microbiology and infection prevention and control teams. Documentation reviewed showed the hospital plans to audit practice and provide training in relation to aseptic non-touch technique, intravascular device care and hand hygiene. The hospital also plans to establish surveillance of pyelonephritis among antenatal and post natal patients.

Caesarean section surgical site infection surveillance

The Rotunda Hospital has recently established a surveillance system to monitor the incidence of wound infection following caesarean section among inpatients, and readmitted or returned patients. Surveillance data and documentation reviewed showed that the hospital had commenced data collection in 2016 and had produced quarterly surveillance reports with recommendations for practice as indicated. Surgical site infection surveillance represents an important patient safety and quality assurance initiative, and the establishment of this system is a positive development by the hospital. It is acknowledged that this surveillance system is only in its early stages of development. However HIQA note that ideally, surgical site infection surveillance should be performed so that all caesarean section patients are followed for signs of infection until 30 days after the operation. In working to enhance the current system, efforts should be extended to explore the potential for more comprehensive patient follow up to capture a complete picture of infection rates following this procedure at the hospital. This will likely require additional resource.

While there may be further scope for enhancement of this surveillance programme at the hospital, the proactive approach the Rotunda Hospital have taken in systematically monitoring wound infection rates following caesarean section is important. A recent national review by HIQA identified the need for an improved approach to surveillance and quality assurance in the area of infection prevention and control and antimicrobial resistance nationally.[15] The need for greatly enhanced surveillance of surgical site infection in particular was identified. Efforts similar to those commenced at the Rotunda Hospital should also be explored in other similar hospitals.

3. Summary

The infrastructure and design of Operating Theatre 3 which is located within the Delivery Suite does not meet international best practice guidelines for operating theatre infrastructure. The hospital has explored a number of options to improve its surgical facilities but has not been able to progress such development due to a lack of space and development restrictions on the current hospital site. It is

recommended that the hospital continues to explore all possible options whereby operating theatre facilities could be improved upon.

Notwithstanding the infrastructural challenges identified during this inspection, overall patient equipment and the environment in the areas inspected were generally clean with few exceptions. An opportunity for improvement was identified in relation to the management of point-of-care blood testing equipment. There was evidence of good local ownership and teamwork in relation to hygiene in general, and the hospital had an effective system in place in relation to cleaning and associated assurance arrangements in the Delivery Suite.

The hospital had exceeded the required Health Service Executive (HSE) national hand hygiene compliance target of 90% and improved the uptake of hand hygiene training among staff which is commendable. The hospital has also implemented and embedded peripheral vascular care bundles across inpatient clinical areas in line with best practice guidelines.

Surveillance was performed in the hospital to monitor the incidence of wound infection following caesarean section. This represents good practice and demonstrates a commitment to monitoring the quality of patient care. Ideally, surgical site infection surveillance should be performed so that caesarean section patients are followed for signs of infection until 30 days after the operation, and efforts should be extended to enhance this important programme in this regard.

4. Next steps

The Rotunda Hospital must now revise and amend its quality improvement plan (QIP) that prioritizes 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 Rotunda 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.

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