Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the unannounced inspection at University Hospital Waterford

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

Date of on-site inspection: 16 December 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 (HIQA, or 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 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. The Authority 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. The Authority'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 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 University Hospital Waterford on 16 December by Authorised Persons from the Authority, Katrina Sugrue, Aileen O' Brien, Kathryn Hanly and Shane Walsh, between 08.45 hrs and 17.00 hrs. The areas assessed were:

- The Intensive Care Unit (ICU): The ICU has one four-bedded ward and two single rooms and provides level 3 intensive care.
- Ardkeen Ward comprises four six-bedded wards, one three-bedded ward and four single rooms with ensuite facilities.
- The decontamination area for reprocessing cleaning textiles was visited during the inspection.
- In addition, Medical 1 Ward and Orthopaedic 2 Ward, which were inspected during an unannounced inspection by the Authority on 5 March 2014, were re-visited to assess the level of progress which had been made after the 2014 inspection.

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

2. University Hospital Waterford profile[*]

University Hospital Waterford is a model four acute teaching hospital and is a member of the South/South West Hospital Group. The hospital is a designated cancer centre and a regional trauma centre.

University Hospital Waterford provides regional surgical and medical services to the HSE South East area, population 500,000 and covers the counties Waterford, South Tipperary, Wexford, Carlow and Kilkenny.

Regional services include a 24/7 Trauma Orthopaedics, Elective Orthopaedics based in Kilcreene Hospital, ENT, Ophthalmology, Vascular Surgery, Cardiology (including Cardiac Cath. Laboratory), Radiology (including MRI, CT and Intervention Radiology), Nephrology, Haematology, Oncology, Dermatology, Rheumatology, Neurology, Palliative Care, Microbiology, Neonatology, Pain and Regional Pathology Laboratory.

In tandem with the provision of regional services the hospital provides a wide range of medical and surgical services for the population of Waterford City and County including 24/7 emergency medicine, general medicine, respiratory, gastroenterology, care of the elderly, endocrinology, acute medicine, paediatrics, obstetric, general surgery, urology and gynaecology services.

A full range of inpatient care, day-case procedures, outpatient and consult services are provided in addition to consultant led out-reach out-patient clinics.
University Hospital Waterford has 436 in-patient beds (including acute psychiatry beds) and 96 day beds. The hospital is one of the largest employers in the south east employing 1764 whole time equivalents.

Year	Emergency Attendances	In-patient Admissions	Outpatients	Day Cases	Dialysis Treatments
2014	50,320	22,503	151,762	20,920	20,478

[‡] 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 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 3.1** outlines the level of progress made by Medical 1 Ward and Orthopaedic 2 Ward after the unannounced inspection on 5 March 2014.
- **Section 3.2** presents the key findings of the unannounced inspection on 16 December 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 strategy[6] during the unannounced inspection on 16 December 2015.
- **Section 3.4** describes the key findings relating to infection prevention care bundles during the unannounced inspection on 16 December 2015.

3.1 Progress since the last unannounced inspection on 5 March 2014

HIQA reviewed the quality improvement plan (QIP)[7] published by University Hospital Waterford following the 2014 inspection. Particular focus was placed on embedding a culture of hand hygiene compliance across the hospital in the QIP. This resulted in an improved attendance at hand hygiene training, an increase in hospital hand hygiene compliance and two awareness campaigns held in the hospital with a focus on hand hygiene. Mattresses were replaced across the hospital, however a monitoring or auditing system for regular checks of mattress covers and bases had not been implemented.

Inspectors visited Medical 1 and Orthopaedic 2 Wards during the inspection. Inspectors were informed that improved adherence to isolation precautions and improvements in environmental hygiene were seen in Orthopaedic 2 Ward since the 2014 inspection. A recent hygiene audit carried out in December 2015 demonstrated 89% compliance. However, weekly cleaning logs viewed showed inconsistent recording of cleaning activities.

Mattress checks carried out on Orthopaedic 2 Ward did not include assessment of mattress cores following patient discharge; a mattress audit had not been completed at the time of the inspection. Similar to the finding of the 2014 inspection, hand hygiene audit results and compliance with regard to hand hygiene training were not

available at ward level during the re-visit. It is of concern that this issue had not been addressed in the interim between inspections.

3.2 Key findings of the unannounced inspection on 16 December 2015

Overall, the general environment and patient equipment in the Intensive Care Unit and Ardkeen Ward were generally clean and well maintained with some exceptions. Key findings were identified in relation to infrastructure, safe injection practices, hand hygiene, the cleaning of patient equipment and the processing of reusable cleaning textiles.

Intensive Care Unit infrastructure and facilities

Patient equipment and the environment in the Intensive Care Unit were generally clean with some exceptions. There was evidence of good local ownership with regard to hygiene in general.

The overall infrastructure of the ICU was not optimal from an infection prevention and control perspective. The configuration and design of the unit was outdated and did not meet the desirable standards of a modern day critical care facility.[8]

Bed spacing in the main Intensive Care Unit was not ideal in that there was limited space for patients to sit out or for staff to circulate or manoeuvre patients or equipment. Treatment of patients in close proximity to each other increases the risk of spread of many infections including those caused by multi drug resistant organisms.

Storage space was quite limited with consumables and phlebotomy equipment stored in mobile carts with pull out drawers containing sterile supplies in the main unit. Intravenous fluid stock were stored on open shelving in the entrance lobby. Storage of sterile items in this manner is not recommended in order to prevent inadvertent contamination. Sterile items should be stored in fully enclosed storage units or cupboards. A commode was inappropriately stored in a patient bathroom due to limited storage space in the 'dirty' utility room[±] .

There was a failure to appropriately separate functional activity areas in the unit. Contaminated equipment awaiting transfer to the hospital sterile supplies department for decontamination was stored inappropriately in the clean utility room which is not in line with good practice. A washer disinfector was used in the clean utility room and this is not an appropriate area for equipment decontamination. In addition a blood gas analyser was located in this room adjacent to sterile supplies and injection trays which is not recommended as there is a risk of contamination

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

with blood borne viruses. It was reported that staff from other areas of the hospital also use this blood analyser. Access to this blood gas analyser by staff from other areas should be reviewed in light of increased traffic through the open plan are of the unit which is not ideal.

There should be clear separation of functional activity and of clean and potentially contaminated items equipment or activities that could result in contamination. Storage areas should be appropriate for the operational requirements of each area.

Evidence provided to the Authority by the hospital demonstrated that the infection prevention and control risk relating to inadequate facilities in Intensive Care Unit has been documented on the hospital risk registers for a number of years. However, the Authority was informed on the day of the inspection that there were as yet, no funded plans or agreed timelines in place to address this issue. This was subsequently reconfirmed during the due process phase of completing this report.

Unsafe injection practice

During the inspection Authorised Persons identified opportunities for improvement in the preparation and storage of anaesthetic medication in the Intensive Care Unit. During inspection of the Intensive Care Unit, authorised persons observed a number of pre-prepared syringes containing intravenous medication that were inadequately labelled and stored in a refrigerator in the unit. One syringe was labelled as having been reconstituted on 15 December 2015, the day before this inspection. A further two syringes containing a white substance were unlabelled. There was no means of monitoring the temperature of this refrigerator. The practice of pre preparing intravenous medication may pose an increased risk of infection for patients. In situations where intravenous medication is not reconstituted in an aseptic clean room compounding unit, best practice dictates that it should ideally be administered immediately, or potentially within 24 hours if it is stored in an appropriate and clean environment.[9]

There was no dedicated clean surface for the preparation of intravenous medications in the Intensive Care Unit. Intravenous medications were prepared on a worktop at the nurses' station that was also used as an administrative area. These findings in relation to the preparation, storage and insufficient labelling of pre-prepared anaesthetic medication at the time of the inspection present an unnecessary and potentially avoidable risk and are an unsafe practice. HIQA recommends that action is taken to effectively mitigate the potential risk of microbiological contamination and medication administration error.

Sharps management

Authorised persons were informed that staff sometimes dispose of used sharps into a central sharps bin adjacent to the patient zone in the Intensive Care Unit. It is recommended that used syringes and supplies should be disposed of at the point of care into an approved container in order to reduce the risk of inoculation injury.[5]

Patient equipment

Red staining was observed on three of 11 injection trays inspected in the Intensive Care Unit. A red stain was also observed on a bedframe and on the surfaces of the blood gas analyser in the Intensive Care Unit. This was highlighted with managers at the time of inspection.

Four commodes were contaminated with organic matter in Ardkeen Ward. Insufficient cleaning of commodes was also found during the 2014 inspection of the hospital which would indicate that this issue requires revised attention.

Authorised persons observed large amounts of equipment, supplies and extraneous items stored on a corridor leading to the pharmacy department, hospital kitchen and waste disposal area. Several pieces of the equipment observed were labelled for repair or disposal. In many cases, the equipment was visibly unclean and stored proximal to clean supplies which were also stored on the same corridor. HIQA recommends that the hospital review the processes in place to provide assurances that equipment identified for decommissioning or repair should be adequately cleaned and stored appropriately. In addition, equipment for repair should be processed in a timely manner.

Management of communicable disease

The Authority was informed at the beginning of the inspection that there were a number of patients admitted on the previous night required enteric isolation precautions. However, there was a lack of clarity as to whether there was an ongoing norovirus outbreak. Signage at the entrance to Medical 1 Ward indicated that there was an outbreak on the ward. It was reported to inspectors at ward level that a norovirus outbreak had been ongoing for a couple of weeks prior to the inspection. The timely identification and management of outbreaks of infection is essential to prevent ongoing transmission of infection and service disruption. Internal communication relating to outbreaks of infection should be reviewed in light of the disparity observed by HIQA during the inspection.

Patient accommodation

HIQA was informed that admissions to the hospital via the Emergency Department were in excess of the bed capacity at the time of the inspection, which necessitated

the accommodation of extra patients on trolleys on several wards in line with the hospital's escalation policy. Two extra patients were accommodated on trolleys on the corridors of Ardkeen Ward and Orthopaedic 2 Ward during the inspection. While this practice is not ideal from an infection prevention and control perspective, the Authority acknowledges that any potential risk from what is a temporary arrangement must be weighed against the totality of the other risks associated with overcrowding in the hospitals Emergency Department. However it is important that this temporary measure does not become a long term solution to managing overcrowding in the Emergency Department.

Waste management

The external waste collection area in the hospital was unsecured to the general public during the inspection potentially allowing unauthorised access to the area. A number of healthcare risk waste bins were unlocked and the waste compound was generally cluttered and unclean which is not ideal from a pest control perspective and does not facilitate cleaning. These findings are not compliant with Criterion 3.7 of the Standards[1] or national guidelines.[10]

Cleaning process management

The laundering area for reusable cleaning textiles such as mop heads and cloths was inappropriate and unclean. This laundering area was separate from the hospital's main laundry department. It was not self contained and was located in the midst of an open plan area used for waste collection and storage of cleaning equipment. Doors were open to the external environment so that again pest control could not be assured in this open environment. Inappropriate storage of clean consumables and cleaning equipment adjacent to unclean waste bins was observed. The infrastructure of this laundering area did not support functional separation of the clean and dirty phases of the laundering process. The spring loaded laundry cart in use at the time of the inspection was heavily soiled and unclean. Appropriate personal protective equipment (PPE) for the handling of contaminated laundry were not in use at the time of the inspection. Hand hygiene facilities in this area were poor.

Overall, the laundering facility for reusable cleaning textiles and the processes in place during the inspection posed a risk of inadvertent environmental contamination of the cleaning textiles laundered there. The practices observed are not consistent with good practice and on that basis alternative arrangements should be made for the laundering of reusable cleaning materials in the hospital. Assurances should be in place that appropriate segregation of clean and dirty areas, processes and washing temperatures are followed in line with current best practice guidelines.

Designated cleaning store rooms were located adjacent to the Intensive Care Unit and outside Ardkeen Ward. However, these rooms did not appear to be used to their

full potential. The janitorial unit was out of order in the Intensive Care Unit cleaning store room. Inspectors were informed that the cleaning equipment room located outside Ardkeen Ward was shared with other areas which meant that there was not always sufficient room to store the cleaning trolley there. It was reported that the cleaning trolley for Ardkeen Ward was stored in a stairwell on the ward. There was no daily cleaning schedule for the ward which did not provide assurance that all areas were cleaned in line with national guidelines.[11-12] Furthermore, continuity and consistency of cleaning services could not be ensured in the absence of a daily or weekly ward cleaning record.

A draft hospital cleaning specification was viewed and was dated September 2015. The document had not previously been updated since 2004 which was two years before the publication of the national guidelines.[11] These specifications should be reviewed on a regular basis to incorporate changes made locally and in line with up-to-date evidence-based practice. HIQA recommends that the draft hospital cleaning specification viewed should be reviewed to include the necessary cleaning specifications and documentation required for the cleaning of each functional area within the hospital in line with best practice[11-13] and should be finalised as a matter of priority.

Reusable spray bottles containing detergent for general purpose cleaning were not dated or labelled in the Intensive Care Unit. Assurances were not in place that bottles had been emptied and washed out and dried following each cleaning session. Poor management of reusable containers can support bacterial growth in the solution which may result in the dispersal of bacteria into the clinical environment. It is recommended that local processes are improved in this regard.

Hand hygiene

3.3 Key findings relating to hand hygiene

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

- The clinical hand wash sinks in both areas inspected did not fully comply with Health Building Note 00-10 Part C: Sanitary assemblies.[14]
- Opportunities for improvement were identified in relation to hand hygiene facilities in the Intensive Care Unit. Only two hand wash sinks were available for four beds which is not in line with national guidelines.[15]
- There was no dedicated clinical hand hygiene sink in the 'dirty' utility room of the Intensive Care Unit. The sink used for hand hygiene was a stainless steel sink that was located directly beside the sluice hopper. This presents a risk of contamination of staff hands with faecal organisms and is a potential risk factor in the spread of enteric bacteria which can cause infection such as vancomycin resistant enterococci (VRE), Gram-negative bacteria and *Clostridium difficile*. This needs to be addressed as a priority.
- Some similar findings were observed in the 'dirty' utility room on Ardkeen Ward in that there was no designated hand hygiene sink available which meant that the sink used for the cleaning of patient equipment was also used for hand hygiene. This was also a finding in in 2014 inspection.
- The nozzle area of several of the alcohol hand hygiene gel dispensers inspected were unclean.
- Alcohol hand gel was available at the point of care and over hand wash sinks in the clinical areas inspected. Alcohol gel dispensers located over sinks in the Intensive Care Unit were not labelled. There is the potential that alcohol gel may be inappropriately used instead of liquid soap for hand washing in such circumstances.

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

- Regular hand hygiene training sessions are provided by the infection prevention and control team within the hospital. Hand hygiene is mandatory for all staff on induction and at least every two years. Records of staff attendance at hand hygiene training sessions were viewed during the inspection. Compliance with hand hygiene training in the hospital increased from 40% in March 2014 to 72.8% in November 2014. Documentation viewed indicated that 82.7% of hospital staff were trained within a two year period up to September 2015.

- High compliance in hand hygiene training was demonstrated in the areas inspected during this inspection.
- Hand hygiene technique was a focus for improvement in 2015.

3.3.3 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

University Hospital Waterford participates in the national hand hygiene audits which are published twice a year.[16] The hospital has achieved an average compliance of 90% or above in the 2014 and 2015 national audits, which is in line the national target of 90% set by the HSE.[17] It was reported to HIQA that the hospital has achieved 96.2 % in the October 2015 national audit. The results show a sustained improvement in hand hygiene compliance from May/June 2013 to the end of 2015.

Hand hygiene audit period 1-9	Hand hygiene compliance result
March/April 2011	86.1%
Oct/Nov 2011	82.9%
May/June 2012	77.6%
Oct/Nov 2012	91.4%
May/June 2013	87.1%
Oct/Nov 2013	89.0%
May/June 2014	90.5%
Oct/Nov 2014	94.3%
May/June 2015	95.2%

Source: Health Protection Surveillance Centre – national hand hygiene audit results.[16]

Local hand hygiene audits

- Local hand hygiene audits were carried out by the infection prevention and control team in 10 clinical areas within the hospital in 2015. An overall 96.1% hand hygiene compliance was achieved in these audits similar to results achieved in the October 2015 national hand hygiene audits. High risk areas were targeted for local hand hygiene audits. Inspectors were informed that six hand hygiene

auditors have been trained and it is planned to introduce regular local hand hygiene audits across all clinical areas in the future.

- Local hand hygiene audits conducted in Intensive Care Unit in January and December 2015 showed high compliance of 98.3% and 100% respectively. Good hand hygiene was also observed by inspectors during the inspection of the unit.
- It was reported that a hand hygiene audit was not carried out on Ardkeen Ward during 2015.
- Additional hand hygiene training is provided in clinical areas achieving less than 90% in national hand hygiene audits and a hand hygiene re-audit is carried out where less than 90% compliance is achieved.

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 WHO[18] and the HSE.[19] 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[ϒ] and recognised barriers to good hand hygiene practice. These components of hand hygiene are only documented when they are clearly observed (uninterrupted and unobstructed) during an inspection. Such an approach aims to highlight areas where practice could be further enhanced beyond the dataset reported nationally.

The Authority observed 29 hand hygiene opportunities in total during the inspection. Hand hygiene opportunities observed comprised the following:

- nine before touching a patient
- two before a clean/aseptic technique
- three after body fluid exposure risk
- nine after touching a patient
- six after touching patient surroundings

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

- 13 of the 29 hand hygiene opportunities were taken. The 16 opportunities which were not taken comprised the following:

  - eight before touching a patient
  - two before a clean/aseptic technique
  - one after body fluid exposure risk
  - three after touching a patient
  - two after touching patient surroundings

- Of the 13 opportunities which were taken, the hand hygiene technique was observed (uninterrupted and unobstructed) by the Authorised Persons for 13 opportunities and the correct technique was observed in 12 hand hygiene actions.

In addition the Authorised Persons observed:

- Inappropriate use of gloves by different staff groups on Ardkeen Ward contributed to poor hand hygiene compliance observed during the inspection. In some cases, staff were observed wearing gloves while transferring and mobilising patients when there was no indication for glove use.
- While inspectors observed frequent hand hygiene actions taken by all staff on Ardkeen Ward, a failure to differentiate patient and healthcare zones contributed to poor compliance with the five moments of hand hygiene at the time of the inspection.

3.3.4 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*.

- While hand hygiene advisory posters were available in Ardkeen Ward, they were not highly visible or sufficient**.** Improvement in the visibility of hand hygiene promotion posters across the hospital is recommended.

3.3.5 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*.

- University Hospital Waterford has demonstrated a consistently high level of performance in national hand hygiene audits in 2014 and 2015 which is over and above the national target set by the HSE.
- Patient Partnership Forum and infection prevention and control awareness days were held in September and October 2015 respectively. Hand hygiene was one of the topics of focus during these awareness days.

- Inspectors observed 45% compliance in hand hygiene practice during the inspection. The appropriate use of gloves and clarity regarding the patient and healthcare zone should be a focus of future hand hygiene training.
- Local auditing provides an effective method of evaluation and feedback on hand hygiene compliance and helps to build a culture of good hand hygiene practice. Internal hand hygiene audits should be implemented across the hospital to sustain high level compliance with hand hygiene practice in all clinical areas.

3.4 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]

Authorised persons looked at documentation and practices and spoke with staff relating to infection prevention care bundles in the areas inspected and visited. Overall peripheral vascular catheter care bundles have been well advanced and embedded in the hospital which is commendable. Care bundles for urinary catheters were not implemented; however a patient specific urinary catheter care plan was in place. Not all recommended elements of a urinary catheter care bundle were captured in the care plan.

The Authority viewed peripheral vascular catheter care bundle record sheets in use on the wards inspected which demonstrated good compliance in general with all the elements of the care bundle. It was reported that weekly audits of peripheral vascular catheter bundle compliance were performed in the Intensive Care Unit and monthly audits are completed in Ardkeen Ward.

Recent audit results demonstrated compliance ranging from 35% to 90% compliance with peripheral vascular catheter care bundles on Ardkeen Ward. In the Intensive Care Unit there was 100% compliance with peripheral vascular catheter care bundles. Results of audits and areas of concern are communicated to staff through safety pause meetings held daily on Ardkeen Ward and staff meetings in the Intensive Care Unit. Peripheral vascular catheter care bundle audits on Orthopaedic 2 Ward demonstrated compliance of 56% and 60% in two audits conducted during November 2015. It was reported that areas for improvement were related to documentation, daily reviews and documenting insertion history. The need for improvement in the management of peripheral catheter care bundles on Orthopaedic 2 Ward has been communicated to staff.

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

Quality improvement measures in place in the Intensive Care Unit to reduce the risk of central venous access device related infection included the introduction of antiseptic impregnated swabs for insertion site management, antiseptic impregnated central venous catheters and customised device insertion packs for the unit. Catheter related blood stream infection surveillance is performed in the Intensive Care Unit. In addition, six hourly care bundle related observations were recorded. A multidisciplinary team met on a quarterly basis to review catheter related blood stream infection, hospital acquired infections, blood culture isolates, sources of infection and definitions of infections.

Ventilator associated pneumonia and central venous catheter care bundles are also in place in the Intensive Care Unit. Data in respect of ventilator associated pneumonia and central venous catheter care bundle compliance has been collected but not analysed due to competing demands. It is recommended that resources in this regard should be reviewed.

Inspectors were informed that nurses received training with regard to the implementation of care bundles. Some nurses are trained in the insertion of peripheral venous catheters. Education for nursing staff in relation to care bundles is incorporated as part of induction training.

4. Summary

Overall, the environmental hygiene in the Intensive Care Unit and Ardkeen Ward was generally clean. Improvements are required in the management of patient equipment such as commodes, intravenous trays and the appropriate storage of equipment which is in use, waiting reprocessing and waiting for repair or disposal.

HIQA notes the infrastructural deficiencies in the Intensive Care Unit. Good local ownership in relation to hygiene and infection prevention and control was evident in the unit during the inspection and is commendable. University Hospital Waterford as an acute hospital providing critical care, surgical and other services should strive to maintain and improve the hospital infrastructure and environment.

Opportunities for improvement relating to medication management and unsafe injection practices were identified in the Intensive Care Unit during the inspection. HIQA recommends that the hospital take action to effectively mitigate the potential risk of microbiological contamination and drug administration error.

Improvements are required in the management of the hospital's waste compound to ensure compliance with national guidelines[10] and the Standards.[1]

The facilities allocated to the laundering of reusable cleaning materials inspected by the Authority on the day were unsuitable and posed a potential risk of contamination of cleaning textiles used in clinical areas within the hospital. The laundering processes for hospital cleaning textiles in this area should be revised as a matter of priority.

The hospital has demonstrated a consistently high compliance in national hand hygiene audits which is commendable. The Authority recommends that the implementation of internal hand hygiene audits in all clinical areas should be progressed to ensure sustainable compliance.

Peripheral venous catheter care bundles in University Hospital Waterford are at an advanced stage of implementation. Quality improvement initiatives in respect of invasive device management and related infection prevention and control were evident in the Intensive Care Unit.

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.

University Hospital Waterford 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.

5. Next steps

University Hospital Waterford 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 University Hospital Waterford 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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