Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Report of the unannounced inspection at Beaumont Hospital, Dublin

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

Date of on-site inspection: 12 August 2015

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is the independent Authority established to drive high quality and safe care for people using our health and social care services. HIQA's role is to promote sustainable improvements, safeguard people using health and social care services, support informed decisions on how services are delivered and promote person-centred care for the benefit of the public.

The Authority's mandate to date extends across the quality and safety of the public, private (within its social care function) and voluntary sectors. 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 those health and social care services in Ireland that by law are required to be regulated by the Authority.
- **Supporting Improvement –** Supporting services to implement standards by providing education in quality improvement tools and methodologies.
- **Social Services Inspectorate** – Registering and inspecting residential centres for dependent people and special care units and inspecting children detention schools, foster care services and child protection services.
- **Monitoring Healthcare Quality and Safety** – Monitoring the quality and safety of health and personal social care services and investigating as necessary serious concerns about the health and welfare of people who use these services.
- **Health Technology Assessment** – Ensuring the best outcome for people who use our health services and best use of resources by evaluating the clinical and cost effectiveness of drugs, equipment, diagnostic techniques and health promotion activities.
- **Health Information** – Advising on the efficient and secure collection and sharing of health information, evaluating information resources and publishing information about the delivery and performance of Ireland's health and social care services.

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1. Introduction

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

The aim of unannounced inspections is to assess hygiene in the hospital as observed by the inspection team and experienced by patients at any given time. It focuses specifically on the observation of the day-to-day delivery of services and in particular environment and equipment cleanliness and compliance with hand hygiene practice. In addition, following the publication of the 2015 *Guide: Monitoring Programme for unannounced inspections undertaken against the National Standards for the Prevention and Control of Healthcare Associated Infections*,[2] the Authority will assess the practice in the implementation of infection prevention care bundles. In particular this monitoring will focus upon peripheral vascular catheter and urinary catheter care bundles[3-4], but monitoring of performance may include other care bundles as recommended in prior national guidelines[5-6] and international best practice[7].

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 Beaumont Hospital on 12 August 2015 by Authorised Persons from the Authority, Sean Egan, Aileen O' Brien, Katrina Sugrue, Rachel McCarthy and Anna Delany between 10:15hrs and 17:15hrs. The areas assessed were:

- The Department of Radiology, which comprises three general x-ray rooms, three ultrasound rooms, two nuclear medicine rooms, two computed tomography (CT) rooms, two interventional radiology procedure rooms, two magnetic resonance imaging (MRI) rooms, two mammography rooms, and two fluoroscopy rooms.
- Coleman K. Byrne (CKB) Haematology Day Unit, which provides chemotherapy administration, assessment and supportive care to haematology outpatients and comprises eight patient treatment spaces and two consultation rooms
- The Oncology Day Unit, which provides chemotherapy administration, assessment and supportive care to oncology outpatients and comprises 17 treatment spaces and four consultation rooms
- A.B. Cleary Ward, which is a 35 bedded vascular and general surgery ward. On the day of the inspection, there was also one additional bed located on the ward, which was placed there to accommodate a patient who would otherwise have been accommodated in the hospitals Emergency Department. This was in response to the hospitals escalation policy to deal with ED overcrowding.

In addition, St Mary's Ward, St Brigid's Ward and St Martin's Ward (Room 1), which were inspected during an unannounced inspection by the Authority on 30 October 2015, were re-visited to assess the level of progress which had been made following the 2014 inspection.

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

2. Beaumont Hospital Profile[‡]

Beaumont Hospital is a large academic teaching hospital 5km north of Dublin City Centre. The hospital provides emergency and acute care services across 54 medical specialties to a local community of some 290,000 people. It is the national referral centre for neurosurgery, renal transplantation, and cochlear implantation. In addition, it is a designated cancer centre and the regional treatment centre for ear, nose and throat, and gastroenterology.

It is the lead Level 4 hospital in the new Royal College of Surgeons in Ireland (RCSI) Hospitals Group, which includes Connolly Hospital, Rotunda Hospital, Cavan/Monaghan hospitals, Louth/Meath hospitals, and RCSI. It employs approximately 3000 staff and has 820 beds. It is the principal teaching hospital for the RCSI and has close links with Dublin City University, especially in the area of nurse training, and with other academic institutions in respect of training and research.

St Joseph's Hospital, Raheny is under the management of the Beaumont Hospital Board since August 2004. The hospital is integrated under the governance of Beaumont Hospital. The hospital provides scheduled day and five day surgery, rehabilitation services, radiology and a number of medical day services. Beaumont Hospital manages a 100 bedded Community Nursing Unit on the St Joseph's Hospital campus.

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

3. Findings

This report outlines the Authority's overall assessment in relation to the inspection, and includes key findings of relevance. A list of additional low-level findings relating to non-compliance with the Standards has been provided to the hospital for completion. However, the overall nature of the key areas of non-compliance are within this report.

This report is structured as follows:

- **Section 3.1** outlines the level of progress made by St Mary's Ward, St Brigid's Ward and St Martin's Ward (Room 1) since the previous unannounced inspection conducted by the Authority on 30 October 2014.
- **Section 3.2** presents the key findings of the unannounced inspection on 12 August 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 12 August 2015.
- **Section 3.4** describes the key findings relating to infection prevention care bundles during the unannounced inspection on 12 August 2015.

3.1 Progress since the last unannounced inspection on 30 October 2014

The Authority reviewed the QIP[7] published by Beaumont Hospital following the 2014 unannounced inspection. Inspectors revisited St Mary's Ward, St Brigid's Ward and St Martin's Ward as part of this review to determine the progress made. Overall, it was apparent that in all areas, significant progress had been made in addressing the findings of the 2014 inspection. The Authority observed evidence that issues identified during the 2014 inspection were addressed in a proactive manner and that there was multi-disciplinary input. Most issues outlined in the QIP had been addressed and work was underway to complete all outstanding issues.

During the revisit of the above mentioned wards, the Authority noted a directorate audit metrics board which exhibited a comprehensive visual representation of the the audits carried out and metrics measured in each of the wards or clinical areas within the directorate. The display board was an effective means of sharing information with staff, visitors and patients and may contribute to healthy competition between clinical areas in driving the improvement in quality of care and practices within the hospital. Such measures should be encouraged across the hospital.

3.2 Key findings of the unannounced inspection on 12 August 2015

Overall, the areas inspected at Beaumont Hospital were generally clean and well maintained on the day of the inspection. The following key issues were identified by the Authority as requiring ongoing attention by the hospital. Additional good practice in relation to hand hygiene and infection prevention care bundle implementation are contained in sections 3.3 and 3.4 respectively.

Legionella control

During the inspection, the Authority viewed minutes from the hospitals water management committee which outlined that the hospital has persistently identified significantly high levels of *Legionella species* bacteria from routine sampling of water outlets in a number of clinical areas. This problem has persisted for a number of months. Discussion with management at the hospital in relation to this matter revealed that the hospital has enacted measures to mitigate the risk of transmission to patients with legionella via these water outlets. In addition, an ongoing programme of chemical treatment of the water supply has been enacted, and the hospital has progressed the purchase of a water treatment system, with the aim of further reducing the incidence of legionella proliferation in the water system – at the time of this inspection, installation of this system was imminent. Hospital management communicated to the Authority that they were assured that any immediate risk to patients has been effectively addressed by the hospital.

Beaumont Hospital is a level 4 hospital accommodating and providing care to patients highly susceptible to infection. Notwithstanding the mitigation and management measures described by the hospital to address this issue, the Authority notes that the hospital last completed a detailed independent Legionella risk assessment of the entire water system, in a form that was available to use for the purpose of preventative maintenance, in 2012. It was explained to the Authority by hospital management that a subsequent independent risk assessment was conducted in 2014. However hospital management reported that this was not available to use by the hospital due to operational process issues.

National guidelines recommend that every risk assessment be reviewed on an annual basis and independently reviewed every two years,[8] and it is of concern to the Authority that the measures enacted by the hospital had been insufficient to ensure full compliance with these guidelines in relation to this matter. It was evident from viewing documentation that the hospital has undertaken a gradual programme of works to upgrade the water system during this timeframe. However it was identified that a small number of actions from the 2012 risk assessment remained outstanding at the time of this inspection. It is recommended that the hospital adopts a more thorough and systematic approach to the management of legionella, through more timely independent risk assessment, and full implementation of any

required preventative or corrective maintenance measures identified in line with national guidance[8]. It is imperative that the hospital continues to work to fully and effectively resolve this problem.

Isolation of patients

A number of patients requiring isolation precautions were accommodated in single rooms on A.B. Cleary Ward. On the day of inspection, it was identified that four out of the five single room doors had been left in the open position, and it was explained to the Authorised Persons that where patients had a greater risk of falling, isolation room doors were left open to ensure effective patient supervision by staff. A similar observation was made on St Brigid's Ward. While it is acknowledged that in some circumstances this approach will be valid from a patient risk management perspective, the Authority has concerns that such arrangements may not effectively control the spread of infection to others in certain circumstances. It is recommended that where possible, isolation rooms doors should be kept closed.[9] The hospital should review its approach to patient risk assessment to ensure an appropriate balance is routinely achieved between the undoubted risks presented by patient falls with the need to sufficiently isolate patients who may also present an infection transmission risk.

Prior inspection by the Authority at Beaumont hospital has revealed potential for improvement in the hospital's approach to isolation room door signage informing staff and visitors around patient isolation requirements. Inspection on A.B. Cleary Ward revealed that as yet this issue has not been effectively addressed by the hospital, and this needs to be resolved. In addition, the Authority notes that the hospital has identified that the insufficient availability of single rooms needed to isolate patients from an infection prevention and control perspective represents a significant risk. The provision of additional single room accommodation to allow for greater isolation of patients should occur with future upgrade work at the hospital, in line with national Standards.[1]

Infrastructure of Coleman K. Byrne (Haematology) Unit

The infrastructure of Coleman K. Byrne Unit was not optimal from an infection prevention and control perspective as overall the treatment area for patients was cramped and cluttered. As such the configuration and design of the unit was inadequate for the large volume of patients currently attending. The treatment area consists of eight treatment chairs within an open plan space. However, at the time of inspection an additional seven smaller chairs were located in between treatment chairs to accommodate either additional patients requiring blood tests or patients' companions. At one stage during the inspection there were 13 people seated in the open plan area of whom nine were patients and four were visitors. Best practice

guidance for cancer treatment facilities state that 'open-plan areas should be divided into smaller zones of no more than six chairs'.[10] Treatment of patients in such close proximity to each other increases the risk of cross infection in particular droplet and contact transmission of respiratory pathogens such as influenza. Currently, the unit does not have designated isolation facilities to manage patients with transmissible infection.

There was no facility next to patient's treatment chairs for personal belongings so these were stored on the floor nearby. Communal coat hooks were used which is not ideal from an infection control perspective. The only horizontal surface within each patient zone was one small table to accommodate tea trays and intravenous medication trays as required. There was little space for staff to manoeuvre and no privacy screening if needed around treatment chairs. Facilities for beverage preparation were located adjacent to a hand wash sink which is not ideal from an infection prevention perspective. Access to an additional exit door near the patient toilet was obstructed with equipment and the unit also housed a fish tank.

The footprint and design of this unit was in direct contrast to the adjacent Oncology Day Unit which had better facilities and greater spacing between patients. This is of concern given that both areas provide cytotoxic chemotherapy to patients who are vulnerable to infection. A National Cancer Control Programme (NCCP) Oncology Medication Safety Review Report published in February 2014 stated that 'the designated day ward space in some hospitals was never intended to cater for the volume of patients currently attending the service' which appears to be the case in this unit. It was also noted in the NCCP report that there was less than a metre between patients receiving treatment in some units.[11]

The patient treatment area and clean utility area used to store sterile consumables and prepare intravenous medication were adjoined in the open plan part of the unit without a door separating the two. It was possible to enter the unit through the medication preparation area, and in addition staff removing urine collection jugs needed to pass through this area or the reception area to access a shared 'dirty' utility room at the far end of the Oncology Day Unit. This area was cluttered and there was insufficient storage space for supplies. Medication should be drawn up in a designated clean medication room that is free of any potentially contaminated items.[7]

On occasions during the inspection the nurse's office containing staff belongings was used as a consultation room to review patients. It is recommended that this room is used either as an office or a consultation room but not both. There was only one designated patient toilet within the unit which may not be sufficient to comfortably meet patients' needs.

The Authority was informed that a business case is under consideration by the hospital management team to extend the footprint of this unit to meet increased service demand and mitigate the inherent infection prevention and control risks.

It is recommended that risks identified in the haematology day unit facility are effectively addressed in line with current best practice and infrastructural guidelines.

Safe injection and medication storage practices

Observation of medication administration practice on both the Oncology Day Unit and the Coleman K. Byrne Haematology Day Unit revealed a practice of batch preparation of intravenous fluid bags, with pre-priming of administration sets at the start of the working day. This practice increases the risk of microbial contamination of intravenous fluids and should cease. It is recommended that intravenous mediation should be prepared immediately prior to administration.[7]

Opportunities for improvement in relation to staff work flow patterns were identified. At the time of inspection staff were observed leaving the patient zone to discard used medication trays and gloves in the medication preparation room. It is recommended that used syringes and supplies should be disposed of at the point of care into an approved container.[12] Mobile carts with pull out drawers containing sterile supplies were taken into the patient zone. Some red staining was present on the surface of one trolley which was addressed at the time of inspection. As the design of these trolleys does not fully protect drawer contents from the ingress of dust or contaminants, it is recommended that only the required supplies for an individual procedure are brought into the patient zone.[12] These trolleys also contained unwrapped cotton balls and gauze swabs. It is recommended that swabs used to stem blood flow following device removal or blood-letting in potentially immunosuppressed patients should be sterile, similar to all other items used for such procedures.

A ceiling tile was missing directly over the medication preparation worktop in the Oncology Unit which combined with an open window could facilitate the ingress of dust and debris into the medication preparation area. Intravenous medication vials were stored on a worktop adjacent to a sink used for hand washing in the clean utility room. It is recommended that sterile items are not stored adjacent to a sink to avoid potential contamination.

Blood samples were stored in the medication fridge on A.B. Cleary Ward. This should not occur due to the risk of medicine contamination.

Risks identified were highlighted at the time of the inspection for immediate mitigation.

Hand hygiene

Opportunities for improvement were also identified in relation to hand hygiene practice in the Oncology Unit. Hand wash sinks were available in all patient treatment areas but alcohol hand rub was not available at each point of care in either the Oncology Day Unit or Coleman K. Byrne Unit. During the inspection some staff administering medication left the patient zone and entered the medication preparation room to remove gloves and discard intravenous medication trays and then returned to the corridor to use alcohol gel dispensers. It is recommended that removal of gloves and disposal of supplies followed by hand hygiene is performed at the point of care.

Prevention of water related infection

The drainage outlets of all clinical hand wash sinks in both the Oncology Day Unit and Coleman K. Byrne Unit were unclean and stained. What appeared to be lime scale in sink outlets may have facilitated a build up of grime that was not effectively addressed in the regular cleaning schedule. Sinks need to be effectively cleaned to reduce the risk of waterborne pathogen transmission to healthcare workers hands in the clinical setting.[12]

'Dirty'[±] utility facilities

It was of concern to the Authority that there was no designated 'dirty'[±] utility room with a body fluid disposal unit or a facility for the washing of equipment or instruments in the Department of Radiology. In the absence of such facilities, bodily fluids were collected in containers and sealed before being transported out of the unit for disposal. Equipment or instruments requiring decontamination were transported to the hospital's central decontamination unit. A 'dirty' utility room is essential for effective infection control practices and should be located proximal to clinical areas to reduce the risk of cross-contamination during the transportation of waste and fluids. The lack of a 'dirty' utility room in the Department of Radiology is not in line with best practice.[13] The Authority recommends that this issue be reviewed as a matter of urgency, particularly in the context of the risks posed by the high risk invasive procedures carried out there.

Decontamination of reusable invasive medical devices

The Authority was not assured that practices for disinfecting intracavity transducer probes such as transrectal and transvaginal probes used during ultrasound diagnostic examinations was in line with best practice. The risk of microbial

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

transmission can be significantly increased during intracavitary ultrasound examination procedures when there is contact with mucous membranes, blood and body fluids. The minimum acceptable standard for reprocessing these transducer probes is high-level disinfection. It is critical that the probes are cleaned prior to disinfection to reduce the microbial load and allow for effective disinfection. The disinfection procedure described to inspectors at the time of the inspection, did not indicate that the probes were cleaned appropriately after use and prior to disinfection. The decontamination of several probes was carried out in some of the ultrasound procedure rooms which did not have the appropriate facilities for the reprocessing of transducer probes. In addition, access to chemical agents used in the disinfection of these probes was not restricted in all cases and a hand hygiene sink was inappropriately used for the rinsing of the probes after disinfection which is unacceptable practice.[14]

Surfaces of ultrasound machines were unclean and ultrasound gels bottles were uncapped. A number of outbreaks of infection have been associated with contaminated ultrasound gel.[14]

The Authority recommends that the hospital reviews the policies and procedures in place regarding the reprocessing of ultrasound transducer probes and ultrasound equipment. Such policies and procedures should provide assurance that the cleaning and disinfection procedures, the necessary occupational health controls and required personal protective equipment are in line with best practice.

Maintenance

The Authority observed that the access door to the interventional radiation area in the Department of Radiology was damaged. Authorised Persons were informed that the damaged occurred over a year ago and, although the damage had been reported, it had not been repaired at the time of the inspection. This allowed unauthorised access to what should be a restricted area. Staff in the unit were mindful of the risks associated with unauthorised access to the area and informed the Authority they attempted to monitor and control access to the area. The interventional radiology area carries a high infection control risk by the nature of the procedures provided to patients. Invasive treatment areas or diagnostic departments are considered to be high risk functional areas[15] and should be secured.

Patient Equipment

Staff in the Radiology Department informed the Authority that several trolleys observed to contain sterile equipment had been prepared first thing in the morning for procedures listed for the day of the inspection. The trolleys were covered with sterile drapes and stored inappropriately in an unsecure storage area adjacent to the damaged entrance door and in the patient recovery area. It is recommended that

sterile instruments should not be laid out in advance of interventional radiology procedures[16] and such sterile items are prepared inside the interventional radiology room suite in which they are due to be used and the practice of pre preparing trolleys and covering them with sterile drapes is not recommended.[17] The Authority recommends that the hospital reviews this practice.

While a cleaning schedule for lead aprons was in place, the schedule did not include the cleaning of lead aprons privately owned by individual staff members. Some of the privately owned lead aprons were unclean at the time of the inspection. in addition, an audit of lead aprons carried out in the adjacent Theatre Department showed poor compliance with cleaning whereby seven of nine aprons audited were visibly stained with blood. The Authority recommends that the hospital reviews its processes with regard to the cleanliness of lead aprons.

Patient environment

The majority of the areas inspected at Beaumont Hospital on the day of inspection were clean and well maintained. The Oncology Unit and Coleman K. Byrne Unit were both generally clean, albeit the latter was cramped and cluttered as previously described. The Department of Radiology was found to be generally clean. There was evidence of good local ownership with regard to hygiene in general. However, improvements were identified in the areas of decontamination of instruments and maintenance in the department. Some opportunities for improvement in both cleaning and general maintenance were identified on A.B. Cleary Ward.

3.3 Key findings relating to hand hygiene

3.3.1 System change[18]: *ensuring that the necessary infrastructure is in place to allow healthcare workers to practice hand hygiene*.

- The majority of clinical hand wash sinks in the areas inspected conformed to Health Building Note 00-10 Part C: Sanitary assemblies[19], in line with current best practice guidelines. Clinical hand wash sinks in some utility rooms were non compliant.

3.3.2 Training/education[18]: *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*.

- Beaumont hospital provides mandatory hand hygiene training every two years to all staff who may need to visit clinical areas to fulfil at least part of their role. On the day of the inspection, the hospital were able to provide the Authority with a detailed breakdown of the number of staff in each job role who were compliant with hand hygiene training. This data indicated that 93% of these staff were up to date with hand hygiene training.
- Hand hygiene training is conducted through the provision of scheduled sessions and hand hygiene "blitz" events which also integrate standard precautions training. Training is blended, and may comprise either face-to-face sessions, HSELanD e-learning training programme (the HSE's online resource for learning and development)[20], and automated hand hygiene training.
- Hand hygiene training is delivered annually to all staff on AB Cleary Ward. Overall, 100% of nursing staff on A.B. Cleary Ward were up-to-date with hand hygiene training.
- 100% of nursing staff on both the Coleman K. Byrne Unit and the Oncology Day Unit were up-to-date with training.
- Training records viewed in the Radiology Department indicated that 96.7% of all staff in the department had been trained in the past two years.

- **3.3.3 Evaluation and feedback[18]:** *monitoring hand hygiene practices and infrastructure, along with related perceptions and knowledge among health-care workers, while providing performance and results feedback to staff*.

  - The Authority was informed that hand hygiene compliance results may be readily accessed electronically at the hospital to allow for rapid comparision of performance across clinical areas and by directorate.
  - Hand hygiene results were also displayed on notice boards in some wards. These results were displayed in poster format under the heading "How are we

doing". Performance per quarter was displayed alongside other associated key performance indicator results such as intravascular device related exit site infection rates, bloodstream infection rates, central intravenous catheter care related process performance, and the number of new Meticillin Resistant *Staphylococcus aureus* (MRSA) positive cases per quarter.

National hand hygiene audits

- Beaumont Hospital participates in the HSE national hand hygiene audits which are published twice a year[21]. Results contained in Table 1 are publically available on the Health Protection Surveillance Centre's website. The hospital has failed to achieve minimum compliance targets set by the HSE since October/November 2011 to May/June 2014. However the hospital has achieved the HSE's 90% target[20] in October/ November 2014.

Table 1: HSE national hand hygiene audit results

Hand Hygiene Audit Period	Hand Hygiene Compliance Result
October/ November 2011	79.3%
May/June 2012	75.7%
October/ November 2012	86.2%
May/ June 2013	82.2%
October/ November 2013	82.6%
May/ June 2014	86.2%
October/ November 2014	90.7%

Source: Health Protection Surveillance Centre – national hand hygiene audit results.[21]

Local hand hygiene audits

The Authority was informed that the result of the most recently available hand hygiene audits for all four of the areas inspected was greater than 90%, which complies with the HSE national target.[22]

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 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[23] and the HSE.[24] 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 37 hand hygiene opportunities in total during the inspection. Hand hygiene opportunities observed comprised the following:

- six before touching a patient
- seven before a clean/aseptic procedure
- eight after bodily fluid exposure risk
- six after touching a patient
- nine after touching patient surroundings
- one which was a combination of after bodily fluid exposure risk and after touching patient surroundings.

- 28 of the 37 hand hygiene opportunities were taken. The 9 opportunities which were not taken comprised the following:
  - three before touching a patient
  - one before a clean/aseptic technique
  - one after bodily fluid exposure
  - two after touching a patient
  - two after touching a patients surroundings

- Of the 28 opportunities which were taken, the hand hygiene technique was observed (uninterrupted and unobstructed) by the Authorised Persons for 26 opportunities and the correct technique was observed in 19 hand hygiene actions.

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

3.3.4 Reminders in the workplace[18]: *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 all of the areas inspected.

3.3.5 Institutional safety climate[18]: *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*.

Hand hygiene compliance at Beaumont Hospital has steadily improved in national audits since 2011, and performance in the most recently published audit in October/November 2014 was higher than the HSE National Target. Training levels at the hospital were consistently high on the day of inspection, and a good awareness in relation to the systems and processes adopted to promote good hand hygiene performance were identified by the Authority at both ward and senior management level. In addition, hospital senior management and infection prevention and control specialist staff outlined to the Authority ongoing and future plans to further support performance which included an intention to recruit more hand hygiene champions, especially amongst medical staff.

Ensuring good hand hygiene performance is the single most important factor in preventing the transmission of infection in healthcare settings and is a critical component of any infection prevention and control programme.[12] Sustained high performance in large organisations such as acute hospitals is challenging, and requires a collective commitment from all staff. It also requires strong leadership, and active engagement from all staffing groups. The embedded practices around training and audit identified on the day of inspection were indicative of extensive work at the hospital over a period of time to drive improvement. Having recently achieved compliance with targets in national audits, it is important that Beaumont Hospital continues in its efforts to sustain this performance into the future.

3.4 Key findings relating to infection prevention care bundles*

The Authority examined progress on A.B Cleary Ward in relation to the implementation of infection prevention care bundles. Through observation of practice, review of documentation and discussion with staff it was evident that the use of peripheral vascular catheter, central vascular catheter and urinary catheter care bundles were in use, and were operationally embedded in practice. It was explained to the Authority that the hospital has recently introduced the urinary catheter care bundle into practice, but that peripheral vascular catheter and central vascular catheter care bundles had been in use for some time.

The implementation of each care bundle was supported through the use of a specifically designed care bundle insertion and documentation recording sheet. The peripheral vascular catheter care bundle documentation sheet contained the date and site of insertion, and also included a prompt to record the expected date of removal. The person inserting or removing the device needed to sign and date this activity on the sheet. The sheet also contained section to record the Visual Infusion Phlebitis Score (a measure of insertion site inflammation), and other aspects of the daily assessment of the site which comprise the overall care bundle. Likewise, similar adapted sheets were observed in use for urinary and central venous catheter care bundles. The urinary catheter bundle sheet included prompts to record the reason for insertion of the catheter and other key daily care components. The central venous catheter care bundle sheet integrated reminders around the need for aseptic non-touch technique and a visual inspection score.

Evidence was observed both on the ward and in discussion with senior management and infection control specialists, of an active audit and feedback programme around implementation of infection prevention care bundles, with data feedback to ward level regarding compliance on a regular basis, and re-audit where performance is below target. The hospital also has a programme of invasive device infection surveillance, which provides further feedback to ward level on performance, and afforded ward staff with an awareness of blood stream infection rates. Feedback on such performance is especially important as it allows staff to tie performance with process measures (bundle compliance and hand hygiene), with patient outcome measures (the prevention of morbidity and mortality associated with bloodstream infection)

Review of documentation in the Radiology Department also identified use of a central line insertion checklist sheet to incentivise best practice in relation to central

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

line insertion, and in doing so mitigate the risk of device infection associated with insertion practice. Likewise, the revisit to St Martin's Ward (a haemodialysis unit), identified the usage of central venous catheter care bundles adapted for haemodialysis patients.

The implementation of infection prevention care bundles have been demonstrated to reduce and prevent invasive device related infection internationally, and have been recommended for use in a series of national guidelines[3-6]. Inspection at Beaumont hospital revealed that the implementation of infection prevention care bundles was extensive, and the level of staff awareness was high indicating an embedded practice. Feedback in relation to care bundle compliance and device related infection rates was evident, and promoted the ongoing sustainability of these bundles. The progress made by Beaumont Hospital in relation to the implementation of infection prevention care bundles is to be commended.

4. Summary

During this inspection, the Authority inspected four varied clinical areas, and also revisited three others. In general terms, the hospital performed well, with a high standard of environmental hygiene demonstrated in most areas. There was also evidence of progress in relation to implementation of the hospitals QIP since the Authority's previous inspection, with good local ownership in relation to the resolution of issues displayed.

Given the varied nature of this inspection a number of different issues for further resolution by the hospital were identified by the Authority. The hospital needs to adopt a more systematic approach to the ongoing assessment of its water supply system in line with national guidelines, and needs to continue work to fully mitigate the risk posed by the ongoing identification of legionella in some water outlets. Practices in relation to the isolation of patients for infection prevention and control reasons who are also at risk of falling should also be reevaluated. The infrastructure and treatment chair spacing on Coleman K. Byrne Ward also needs to be reviewed, and progression of the business plan for expansion of the unit should be fully explored to enable the unit to properly meet current and possible future demand for services. In the interim, measures need to be put in place to better mitigate any risks presented by the limitations of the current unit within current resources.

The Radiology department was generally clean on the day of inspection. However the lack of a dedicated 'dirty' utility room in the department needs to be addressed. In addition the hospital needs to review to ongoing suitability of practices for the decontamination of transrectal and transvaginal probes in the unit. Moreover, the pre-preparation of sterile supplies in the unit as outlined in this report should cease. The Oncology unit was clean and well maintained.

Hand hygiene performance at Beaumont Hospital has steadily improved over the past number of years, and this has been supported through the establishment of an extensive and effective programme of training, audit and feedback. Senior management support for hand hygiene was also evident to the Authority, and there was good institutional awareness as to its importance generally. The hospital needs to continue its efforts to sustain this improvement over time.

The hospital has extensively introduced infection prevention care bundles which are embedded into practice. In addition, care bundle implementation is supported by regular audit with feedback on process measure implementation, and surveillance and feedback on device related infection rates. The approach by the hospital in implementing these measures, and indeed adapting them to special populations is to be commended. There is significant potential for other hospitals to learn from the

approach adopted by Beaumont hospital with respect to infection prevention care bundle implementation.

5. Next steps

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

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

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