



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the unannounced inspection at Cappagh National Orthopaedic 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: 29 April 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 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 purpose of the unannounced inspection is to assess hygiene as experienced by patients at any given time. It focuses specifically on the observation of the day-to-day delivery of hygiene services, in particular environmental and hand hygiene under the following standards:

- Standard 3: Environment and facilities management
- Standard 6: Hand hygiene.

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 Cappagh National Orthopaedic Hospital on 29 April 2015 by Authorised Persons from the Authority, Aileen O'Brien, Katrina Sugrue, Anna Delany and Chris McCann between 11.23hrs and 16:00hrs. The areas assessed were:

The Operating Theatre Department which comprises six theatre suites; five functioning orthopaedic theatres and one theatre dedicated to plaster and injection procedures. Three of the theatres were newly built and opened in 2011. The remaining theatres had an older infrastructure. Four theatres were in use at the time of the inspection.

St. Mary's Ward which is a 42-bedded active rehabilitation unit comprising six multi-bedded rooms and one single room.

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

2. Cappagh National Orthopaedic Hospital Profile[‡]

Cappagh National Orthopaedic Hospital is Ireland's major centre for elective orthopaedic surgery. Cappagh National Orthopaedic Hospital is a voluntary hospital established in 1908 under the auspices of Sr Catherine McAuley and the Sisters of Charity.

The hospital provides the full range of orthopaedic services including major joint replacement (ankle, hip, knee, shoulder, elbow, and wrist), spinal surgery, primary bone tumour service, paediatric orthopaedics and sports injuries.

Since August 2012 Cappagh has a dedicated active rehabilitation unit to manage patients following an acute episode to sustain independent living.

The hospital has links with St. Vincent's University Hospital, Mater Misericordiae University Hospital, Beaumont Hospital, Children's University Hospital Temple Street, Connolly Hospital, Blanchardstown, St. Michael's Hospital, Dun Laoghaire, St. Columcille's Hospital, Loughlinstown and St James' Hospital.

[‡] 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** presents the key findings of the unannounced inspection on 29 April 2015.
- **Section 3.2** describes the key findings relating to hand hygiene under the headings of the five key elements of the World Health Organization (WHO) multimodal improvement strategy³ during the unannounced inspection on 29 April 2015.

3.1 Key findings of the unannounced inspection on 29 April 2015

Overall the Authority found that patient equipment in the Operating Theatre Department and St. Mary's Ward was generally clean. Non-compliances were identified in relation to the maintenance and cleaning of furnishings, surfaces and finishes in patient care areas. Dust was observed on high level horizontal surfaces in St Marys Ward and in the operating theatre recovery room. Facilities for and the application of contact precautions were not in line with best practice recommendations.

Hospital Quality Improvement Plan (QIP)

The Authority reviewed the QIP published by Cappagh National Orthopaedic Hospital following the 2014 inspection.

The Authority acknowledges that the hospital has addressed the majority of the findings of the 2014 unannounced inspection and had made some improvements including the replacement of some floor coverings in patient areas. However, a number of maintenance and refurbishment issues remain outstanding including the upgrading of patient washrooms, repainting of patient areas and assessment and change out of damaged bedframes as required. The Authority was advised that outstanding clinical hand wash sink and sluice hopper replacements were planned for 2015.

Maintenance of the general hospital and patient environment

Opportunities for improvement in the maintenance of the general environment in the older section of the Theatre Department were identified during the inspection. For

example, paint was damaged and scuffed on most doors and walls. The floor covering was not intact in a number of areas in the reception area and main Theatre Department corridor. A window pane was cracked and covered with masking tape on a main corridor. Issues relating to maintenance were also identified in the Recovery Room and in Theatre 3 anaesthetic room. However, the Authority was informed that a new Recovery Room with increased patient capacity was under construction and should address these issues as part of the programme of works for this project.

A window in the Theatre Department link corridor was open at the time of the inspection which is not in line with best practice. Doors and windows in theatre departments should be sealed in order to prevent entry of contaminated air and dust from areas outside the theatre.

Opportunities for improvement were also identified in St Mary's Ward. Flooring in corridor areas and some patients rooms was worn and damaged and therefore did not facilitate effective cleaning. In some areas tiled flooring was not flush with the wall skirting board and this flooring was much worn. There was uncovered pipe work in most rooms which readily facilitates the accumulation of dust and is not easily reached by cleaning equipment.

There was damage to the plaster, wood work and paintwork on the exterior facing wall of patient rooms in St Mary's Ward. For example, part of a skirting board in one patient room was in a state of disrepair and appeared to be disintegrating. The woodwork at the base of an architrave surrounding a sliding door in one patient room was damaged. Skirting board paintwork was damaged in many areas within the ward. The general infrastructure of an area used to store physiotherapy supplies was poor and this room did not appear to be fully sealed to the external elements which may have contributed to the significant amount of dust covering the majority of surfaces in the room.

The hospital management team is aware that parts of this building which is approximately 100 years old requires significant structural work. A timeframe for this work has not been identified due to competing priorities presently including the upgrade of the Recovery Room and the construction of a new gymnasium for patients. The hospital management team confirmed that funds were used for patient activity rather than hospital infrastructure improvement in the past year due to financial constraints.

The Authority notes the infrastructural challenges of the original older footprint of the hospital. Notwithstanding this, Cappagh Hospital as a provider of acute healthcare services should strive to address the identified maintenance issues in the Operating Theatre Department and St Marys Ward as a matter of priority.

Environmental Hygiene

Theatre suites 3 and 6 were inspected and were generally clean. However, unacceptable levels of dust were present on floor corners and edges on the main corridors of the Theatre Department. Varying levels of dust was observed on equipment trolleys stored on the main corridors. A labelling system which was inconsistently applied indicated that three of the trolleys had last been cleaned four weeks previously, which was not in line with recommended national minimum cleaning frequencies for high risk areas.⁴ The hospital itself identified similar issues relating to the presence of dust in an audit carried out on the common corridors in the Theatre Department in late March 2015.

Several computer keyboards inspected were visibly dusty. Inspectors observed cleaning equipment stored in some of the 'dirty' utility rooms' of the theatre suites. Cleaning equipment should be stored in a room designated for this purpose only in a manner that minimises the risk of equipment contamination.

The Authority recommends that the hospital review cleaning processes, cleaning frequencies and monitoring systems to ensure that all areas within the Theatre Department are cleaned to the specification required in this high risk area and to ensure the risks of transmission of infection are mitigated.

There were unacceptable levels of dust on most horizontal high level surfaces in patient rooms on St Mary's Ward. For example, dust was present on over-bed reading lights, curtain rails, door architraves, windows, doors, pipe work and some patient lockers. Dust and cobwebs were visible behind radiators and the design of many radiators did not facilitate effective cleaning.

A number of patient bedside chairs were splashed or stained particularly on the underside area of chair seats. The underside of one chair seat was visibly stained with a brown substance and strands of hair were visible on the under surface of the chair. Surfaces of some patient chairs were worn particularly the arm rests and the vinyl covering on one chair was damaged. There was grit and debris lodged in the junction of the upright and seat of some chairs. The finish of the under surface of many patient chairs did not facilitate effective cleaning. Hospitals should ensure that the design of furnishings in patient care areas facilitate and tolerate effective cleaning.

The undersides of many bedside tables used for mealtimes were grubby with visible staining and some splashes, it is essential that all surfaces of patient bed tables are cleaned thoroughly on a regular basis as contaminated hand contact areas may result in indirect spread of infection to a patient.

The foam filling of two of three patient bed mattresses inspected were visibly stained indicating that the covers of these mattresses may no longer be impermeable and may pose a risk of infection. An annual audit of mattresses is carried out by hospital staff. It is recommended that mattresses should be checked on a more frequent scheduled basis and replaced as required.

Safe injection practice

An intravenous infusion giving set was noted to be primed with medication for a femoral block in the Recovery Room in preparation for a post operative patient. The Authority was informed that this intravenous infusion giving set was primed for over one hour prior to the anticipated administration time. This practice of preparing medications for intravenous use in advance of anticipated administration time should be reviewed to ensure that the risk of contamination of either the medication or the equipment used to administer medication is prevented. Intravenous medications and solutions should, where possible, be prepared immediately prior to administration in a clean environment using an aseptic non-touch technique.

Transmission precautions

Authorised persons noted that the door to a cohort room accommodating patients requiring contact precautions was ajar on a number of occasions during the inspection. Doors to rooms of patients requiring contact precautions should be kept closed at all times. If a risk assessment indicates a requirement to leave the door open for safety reasons this deviation from established contact precaution etiquette should be clearly documented and communicated to staff and relevant visitors to the ward.

A contact precautions sign on a door to a cohort room indicated that a facemask should be worn by staff entering the room, this level of personal protective equipment is not routinely indicated for contact precautions. It is recommended that signage used to indicate the type of personal protective equipment worn by staff for transmission precautions reflects current guidelines.

Cohorting of patients in multi-bed rooms without ensuite facilities is not in line with best practice. The Authority recommends that deficiencies in isolation facilities should be reviewed to provide assurance that the hospital complies with Criterion 3.1 of Standard 3 of the *National Standards for the Prevention and Control of Healthcare Associated Infections*.

3.2 Key findings relating to hand hygiene

3.2.1 System change³: *ensuring that the necessary infrastructure is in place to allow healthcare workers to practice hand hygiene.*

- The design of some clinical hand wash sinks in the Theatre Department did not conform to Health Building Note 00-10 Part C: Sanitary assemblies⁵. The Authority was informed that hand hygiene sinks in the anaesthetic rooms of Theatres 3 and 4 will be upgraded as part of programmed works in progress in 2015.
- Hand hygiene sinks were compliant with Health Building Note (HBN) 00-10, Part C: Sanitary assemblies, 2013⁴ in clinical areas in St. Marys Ward with the exception of the clean utility room and 'dirty' utility room.

3.2.2 Training/education³: *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.*

- Authorised persons reviewed hospital training and education records which illustrated that 85.45% of all staff at the hospital had attended mandatory hand hygiene training in the previous two years. The hospital maintains and regularly updates these records on a database which highlights staff members who require hand hygiene training.
- Authorised persons also reviewed training records on St Mary's ward which documented that 75% of nursing and healthcare assistant staff on the ward had attended hand hygiene training in the previous two years. All nursing staff within the Theatre Department were up-to-date with hand hygiene training.
- The Authority was informed that the hospital provides hand hygiene training sessions monthly. In addition, hand hygiene training is also included in mandatory induction sessions attended by all non-consultant hospital doctors when they start work at the hospital. The HSEland e-learning training programme (the HSE's online resource for learning and development) is also used by the hospital for hand hygiene training.⁶

3.2.3 Evaluation and feedback³: *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

Cappagh National Orthopaedic Hospital participates in the national hand hygiene audits, results of which are published twice a year.⁷ The results in the table below are taken from publically available data from the Health Protection Surveillance Centre's website. Results for Cappagh National Orthopaedic Hospital demonstrate that compliance rates have improved significantly since 2011 and have exceeded the HSE national target of 90% since the latter end of 2013.⁸ The Hospital achieved 93.8% compliance in October/November 2014. Hand hygiene audits are carried out twice a year as part of the National hand hygiene audits. The Authority was

informed that there are two lead hand hygiene auditors in the hospital. It is planned to train additional staff as local hand hygiene auditors in the future.

Period	Result
Period 1 June 2011	75.6%
Period 2 October 2011	71.4%
Period 3 June/July 2012	91.0%
Period 4 October 2012	87.6%
Period 5 May/June 2013	86.2%
Period 6 October 2013	92.6%
Period 7 May/June 2014	90.5%
Period 8 Oct/Nov 2014	93.8%

Source: Health Protection Surveillance Centre – national hand hygiene audit results.⁶

Hospital hand hygiene audit results

- The Authority was informed that individual ward results for the Health Protection Surveillance Centre's twice yearly audits are provided back to each ward directly. Additionally these results are communicated to the hospital's Board through inclusion in the Integrated Governance Monitoring Report. Focused retraining on hand hygiene is provided to any clinical areas which are performing below the target and these areas would be re-audited to ensure compliance.
- Hand hygiene compliance audits are performed by the hospital's two lead hand hygiene auditors. The hospital plans to train an additional three staff to perform hand hygiene in order to increase audit frequency.

Local area hand hygiene audit results

- The Theatre Department achieved 86.4% compliance in the national hand hygiene audit carried out in October 2014. There was a lack of awareness in the Theatre Department about the results of a recent local hand hygiene audit at the time of the inspection.
- St Mary's ward achieved 92.5% in the October/November 2014 Health Protection Surveillance Centre audit and evidence of this was displayed on a notice board on the ward corridor. The Authority was informed that these results are also reported at departmental meetings.

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 WHO⁹ and the HSE.¹⁰ In addition, Authorised Persons may observe other important components of hand hygiene practices which are not reported in national hand hygiene audits but may be recorded as optional data. These include the duration, technique^γ and recognised barriers to good hand hygiene practice. These components of hand hygiene are only documented when they are clearly observed (uninterrupted and unobstructed) during an inspection. Such an approach aims to highlight areas where practice could be further enhanced beyond the dataset reported nationally.

The Authority observed 11 hand hygiene opportunities in total during the inspection. Hand hygiene opportunities observed comprised the following:

- five before touching a patient
- one after touching a patient
- five after touching patient surroundings.

Five of the 11 hand hygiene opportunities were taken. The six opportunities which were not taken comprised the following:

- four before touching a patient
- one after touching a patient
- one after touching a patient surroundings

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

In addition the Authorised Persons observed:

- five hand hygiene actions that lasted greater than or equal to (\geq) 15 seconds as recommended

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

- five hand hygiene actions where there were no barriers to the correct technique, such as sleeves to the wrist and wearing a wrist watch.

Authorised persons observed that although staff performed hand hygiene frequently during the inspection it was not always at the appropriate intervals such as before putting on gloves, in line with the five moments for hand hygiene.

3.2.4 Reminders in the workplace³: 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 areas inspected.

3.2.5 Institutional safety climate³: *creating an environment and the perceptions that facilitate awareness-raising about patient safety issues while guaranteeing consideration of hand hygiene improvement as a high priority at all levels.*

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

4. Summary

The risk of the spread of Healthcare Associated Infections is reduced with the application of fundamental infection control measures including hand hygiene, environmental hygiene and contact precautions for patients with transmissible infection. It is also important that the physical environment and equipment is planned, provided and maintained to maximise patient safety. It is essential that high risk areas such as operating theatres are maintained to recommended standards to facilitate effective cleaning and to minimise the risk of transmission of infection.

Although the hospital has exceeded the desired target in national hand hygiene compliance audits, some scope for improvement was observed in relation to the small sample of hand hygiene opportunities observed on the day of inspection. The hospital has identified a need to train additional staff as hand hygiene compliance auditors. This is recommended in order to increase the frequency of hand hygiene compliance auditing outside of the national hand hygiene audit timeframe and to improve and sustain high levels of compliance.

Overall the Authority found that patient equipment in the Operating Theatre Department and St. Mary's Ward was generally clean. However, non compliances were identified in relation to the maintenance and cleaning of furnishings, surfaces and finishes in patient care areas. Dust was observed on high level horizontal

surfaces in St Marys Ward and in the operating theatre recovery room. Facilities for and the application of contact precautions were not in line with best practice recommendations.

5. Next steps

Cappagh National Orthopaedic 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 Cappagh National Orthopaedic 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.

6. References[‡]

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