



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the announced monitoring assessment at Our Lady's Children's Hospital, Crumlin

Monitoring Programme for the National Standards for the
Prevention and Control of Healthcare Associated Infections

Date of announced on-site monitoring assessment: 20 March 2013

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is the independent Authority established to drive continuous improvement in Ireland's health and personal social care services, monitor the safety and quality of these services 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.
- **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.

Table of Contents

1. Background	2
1.1. Essential elements for safe, high quality care	3
2. Overview	4
2.2. Our Lady's Children's Hospital, Crumlin.....	4
3. Findings.....	5
3.1. Theme 1: Leadership, Governance and Management.....	5
3.2. Theme 2: Workforce	9
3.3. Theme 3: Safe Care	11
4. Overall Conclusion	28
4.1. Overview	28
5. Recommendations	29
Appendix 1 – Theme and Essential Elements	30

1. Background

The Health Information and Quality Authority (the Authority or HIQA) has the national statutory role[‡] for developing standards for the quality and safety of healthcare services. The *National Standards for the Prevention and Control of Healthcare Associated Infections* (NSPCHCAI) were approved by the Minister for Health and Children on 26 May 2009. Under the Health Act 2007, the Authority has the statutory responsibility, amongst other functions, for monitoring compliance with National Standards and advising the Minister for Health and Children as to the level of compliance.

The NSPCHCAI provide a framework for health and social care providers to prevent or minimise the occurrence of Healthcare Associated Infections (HCAIs) in order to maximise the safety and quality of care delivered to all health and social care service users in Ireland. The NSPCHCAI aim to drive a culture of responsibility and accountability among all staff involved in the management and delivery of health and social care services – all of whom must play their part in preventing and controlling HCAIs. While services may differ in terms of scale, service-user population, the nature of care provided, staffing levels, location and history, the principles for the prevention and control of HCAIs are applicable to all health and social care services.

The Authority commenced Phase 1 of the monitoring programme for the *National Standards for the Prevention and Control of Healthcare Associated Infections* (the National Standards) in the last quarter of 2012. This initially focused on announced and unannounced assessment of acute hospitals' compliance with the National Standards.

Phase 2 commenced in January 2013, and will continue throughout 2013 and into 2014 to include announced assessments at all acute hospitals in Ireland, and the National Ambulance Service.

This phase of monitoring is a contributory phase towards preparing service providers for the eventual monitoring of services against the *National Standards for the Safer, Better Healthcare*. In line with this aim, the Authority reviewed the NSPCHCAI and framed them within three themes of the *National Standards for Safer, Better Healthcare*. These themes are:

- Theme 1: Leadership, Governance and Management
- Theme 2: Workforce
- Theme 3: Safe Care.

[‡] The Authority is given the remit for setting standards for quality and safety in healthcare services under section 8 of the Health Act 2007.

1.1. Essential elements for safe, high quality care

To facilitate the overall NSPCHCAI monitoring programme, the NSPCHCAI and their respective criteria were reviewed and amalgamated to develop **essential elements** as representative of what an organisation must have in place as the foundation for the provision of safe, quality care through the prevention and control of Healthcare Associated Infections (see Appendix 1). Accordingly, the monitoring methodology was developed to assess organisations for their compliance with these overarching essential elements. Therefore it is important to note that the Authority is not assessing against each of the individual standards and their criteria. It should also be noted that hygiene forms only one component of this assessment approach.

2. Overview

2.2. Our Lady's Children's Hospital, Crumlin

Our Lady's Children's Hospital, Crumlin, Dublin is an acute paediatric teaching hospital employing approximately 1,600 staff. There were 227 inpatient beds in use. It is Ireland's largest paediatric hospital and is responsible nationally for the provision of the majority of tertiary care services for children. It is the National Centre in Ireland for a range of paediatric specialities including childhood cancers and blood disorders, cardiac diseases, major burns, cystic fibrosis and rheumatology.

The Hospital is built on a site of approximately 5 hectares. It first opened its doors in 1956 and was specifically designed to care for and treat sick children.

Inpatients	10,278
Day cases	17,501
Outpatients	74,487
Emergency Department	34,699
Theatre operations	10,151

Authorised Persons from the Authority, Naomi Combe, Catherine Connolly Gargan and Breeda Desmond carried out the on-site component of the monitoring assessment on 20 March 2013 between 08:30hrs and 15:00hrs. The areas assessed were:

- St Michael's ward (respiratory and Cystic Fibrosis)
- Paediatric Intensive Care Unit
- Our Lady's ward (nephrology, renal care and paediatric surgery).

3. Findings

3.1. Theme 1: Leadership, Governance and Management

Theme 1: Leadership, Governance and Management

Robust leadership, governance and management structures and processes underpin what hospitals should have in place to assure the public and themselves that the arrangements for the prevention and control of Healthcare Associated Infections (PCHCAI) are effective.

There are robust local, monitoring and reporting arrangements in place thereby ensuring infection control is managed at a consistently high level of quality with minimal variation in the delivery of that care. There are effective regional and national PCHCAI reporting arrangements in place, infection control activities provided are compliant with the relevant legislation, clinical care programmes and evidenced-based practice and the organisation is acting on national standards and recommendations from statutory bodies.

Essential Element 1(a). A comprehensive corporate and PCHCAI governance structure supported by an integrated organisational framework is in place. The governance arrangements will include PCHCAI specific strategies, aligned cost effective initiatives and defined responsibilities for externally contracted services.

Findings Essential Element 1(a)

The following governance structures and processes relating to PCHCAI were noted by the Authority during the course of the monitoring assessment in Our Lady's Children's Hospital, Crumlin (OLCHC).

Infection Prevention and Control Committee

Our Lady's Children's Hospital, Crumlin has an Infection Prevention and Control Committee (IPCC). The IPCC has terms of reference in place, and meets every two months, as evidenced by minutes provided to the Authority. Membership of the Committee includes corporate and clinical representation. The Committee is chaired by the Consultant Microbiologist and the submitted terms of reference show that this Committee reports to the Hospital Governance Committee – Clinical.

Infection Prevention and Control Team

The hospital has an Infection Prevention and Control Team (IPCT), with terms of reference in place, which is accountable to the hospital group's Infection Control Committee. The Team comprises the Consultant Microbiologist, the Infection Control Nurses, the Surveillance Scientist and the Antibiotic Pharmacist. The Team meets every week, as evidenced by minutes provided to the Authority.

Drugs and Therapeutics Committee

There is a Drugs and Therapeutics Committee in Our Lady's Children's Hospital, Crumlin with terms of reference in place. This Committee has an antimicrobial stewardship subcommittee, with terms of reference, which met three times last year. The minutes of the Committee meetings showed discussion about the development of antimicrobial guidelines. The Authority observed that a mobile telephone application with antimicrobial guidelines had been developed and provided to staff in order to reduce the risk of HCAs. The efficacy of this development should be evaluated and the results shared with other organisations.

Discussions with staff and evidence provided to the Authority indicated that there was a comprehensive antimicrobial stewardship programme in place.

Corporate governance arrangements to support compliance with the NSPCHCAI

Our Lady's Children's Hospital, Crumlin is a stand-alone paediatric hospital. The governance structure is as follows. The Infection Prevention and Control Team reports to the Infection Prevention and Control Committee, which reports to the Hospital Clinical Governance Committee. The Hospital Clinical Governance Committee reports to the Corporate Management Team, which reports to the Board of Directors. The Authority was informed that the structure has been revised recently, to include two governance committees, in order to improve accountability. Documentation, such as minutes of meetings, submitted to the Authority indicates that information flows effectively between the committees/teams in the structure and this was confirmed in discussions with staff. The Chief Executive Officer was identified in documentation as the accountable person for the quality and safety of services provided in the hospital, including PCHCAI, and this was confirmed in a meeting during the monitoring assessment. The Chief Executive reports to the Board of Directors. Although it was reported to the Authority that the new corporate and

clinical governance arrangements in the hospital were structured to facilitate compliance with the NSPCHCAI, it was of concern that prevention and control of infection is not a standing item on the agenda for meetings of the hospital's Corporate Management Team or its Board of Directors. However, it is a standing item on the CEO's monthly report to the Board of Directors.

Essential Element 1(b). There is clear monitoring and reporting of defined PCHCAI performance metrics, with trend analysis, reciprocal quality improvement initiatives and reporting at a local, regional and national level.

Findings Essential Element 1(b)

Our Lady's Children's Hospital, Crumlin provided documentation and described in detail the systems and structures in place for the monitoring and reporting of PCHCAI performance metrics with trend analysis and quality improvement initiatives in place within the Infection Prevention and Control Committee (IPPC) and Infection Prevention and Control Team (IPCT). Documentation provided to the Authority demonstrated that the hospital is undertaking regular surveillance and trending of methicillin-resistant *Staphylococcus aureus* (MRSA) and Staph aureus bacteraemia cases, Extended Spectrum Beta Lactamase (ESBL) and Vancomycin-resistant Enterococcus (VRE). The hospital also contributes data to national and international surveillance e.g. to the Health Protection Surveillance Centre (HPSC) for MRSA, the Point Prevalence Study Report for 2012 for HCAs, and antimicrobial use in Ireland, mandatory infectious diseases notifications to the Director of Public Health and European Antimicrobial Resistance Surveillance Network (EARS Net). Evidence was demonstrated of quality improvement initiatives implemented in response to monitoring of performance metrics, e.g., improvement in management of patients with Carbapenem-resistant Enterobacteriaceae (CRE) and the implementation of care bundles.

Essential Element 1(c). A clear PCHCAI communication strategy, supported by robust operational arrangements, to assure the effective communication of appropriate and timely information throughout the service, to service providers and appropriate agencies is in place.

Findings Essential Element 1(c)

Our Lady's Children's Hospital, Crumlin has a new PCHCAI communication strategy in place. The strategy did not focus on goals and objectives and did not reflect the level of formal and informal quality of communication within the hospital, evidenced in documentation and reported to the Authority. While discussion with staff confirmed adequate operational arrangements to assure the effective communication of appropriate and timely information throughout the service, to service providers and appropriate agencies, the Authority did not find that the hospital's communication strategy reflected this.

Theme 1: Leadership, Governance and Management – Conclusion

A comprehensive corporate and PCHCAI governance structure supported by an integrated organisational framework had just been introduced at the time of the assessment. In documentation submitted by the hospital, the governance structure was clearly described. The documentation identified the hospital's Chief Executive as the accountable person for the quality and safety of services. It was of concern to note that although prevention and control of infection is a standing item on the CEO's monthly report to the Board of Directors, it is not a standing item on the meetings of the hospital's Corporate Management Team nor Board of Directors. However, there is clear monitoring and reporting of defined PCHCAI performance metrics, with trend analysis, reciprocal quality improvement initiatives and reporting at a local, regional and national level. There is a new PCHCAI communication strategy in place that requires amendment to include detail on strategy and concentrate on goals and objectives.

Theme 1: Leadership, Governance and Management – Recommendations

Recommendation 1. *The Hospital should ensure that PCHCAI is a standing item on the Corporate Management Team and Board of Directors' agendas.*

Recommendation 2. *The Hospital should develop the PCHCAI Communication Strategy, making it more strategic in approach, focusing on goals and objectives.*

3.2. Theme 2: Workforce

Theme 2: Workforce

The hospital should always be in a position to assure the service users, the public and themselves that everyone working in the service is contributing to the prevention and control of Healthcare Associated Infections. The individual members of the workforce must be skilled and competent, they must be supported to continuously update and maintain their knowledge and skills, whether they are directly employed or in contractual employment.

Essential Element 2(a). Members of the core PCHCAI team must have the appropriate qualifications, specific training, skills and competencies in infection control, antimicrobial stewardship and HCAI surveillance. They must undergo continuing professional education and development on a regular basis.

Findings Essential Element 2(a)

Documentation submitted to the Authority gave assurance that members of the Infection Prevention and Control Team (IPCT) and Infection Prevention and Control Committee (IPCC) in Our Lady's Children's Hospital, Crumlin are all appropriately qualified and competent in infection control, antimicrobial stewardship and HCAI surveillance. In discussion, it was confirmed that members of the core team are undertaking continuing professional education and development as required.

Essential Element 2(b) All hospital staff receive mandatory theoretical and practical training in relation to the prevention and control of Healthcare Associated Infections.

Findings Essential Element 2(b)

Discussion with members of Our Lady's Children's Hospital, Crumlin IPCT and Corporate Management Team outlined that theoretical and practical training in relation to the prevention and control of HCAs was mandatory. However, the same teams confirmed that attendance at hand hygiene training had been problematic, with a low uptake from staff in 2012. Training records for 2012 confirmed poor attendance by some groups of staff. IPCC members confirmed that there had been inadequate 'buy-in' from some staff and that significant numbers of staff had not attended hand hygiene training in 2012. However, there was evidence that the Corporate Management Team had recently begun to prioritise hand hygiene education and training in order to meet the National Standards and reduce the risks to patients. This included the following:

- A 'zero tolerance' approach to non-attendance at mandatory training.
- The inclusion of a teaching element in their hand hygiene audits i.e. if an individual is observed to miss a hand hygiene opportunity or to have incorrect technique during an audit, then there is immediate on-the-spot training for that individual.
- Improved lectures at hand hygiene education sessions.
- The introduction of a 'bare below the elbow' policy.
- Two 'grand rounds' focusing on HCAs each year.

At the time of the assessment, all hospital staff were not receiving mandatory theoretical and practical training in relation to the prevention and control of Healthcare Associated Infections. However, evidence presented to the Authority indicates that the Corporate Management Team has introduced improvements to the system in order to reduce this risk to patients in OLCHC.

Essential Element 2(c) There are arrangements in place to ensure visiting clinical, undergraduates and agency staff are competent in the core principles for the prevention and control of HCAs.

Findings Essential Element 2(c).

It was confirmed in discussions with staff that there are arrangements in place to ensure that agency and contract staff are competent in the core principles for the prevention and control of HCAs. The Authority was informed that the agency or contract firms verify this and that volunteers are obliged to attend the hospital hand hygiene education sessions. It was reported to the Authority that the Human Resources Department and the infection prevention and control nurses ensure that

all visiting staff have either completed HCAI training before arrival at the hospital, or that they undertake the hospital HCAI education programme when they arrive.

Theme 2: Workforce: Conclusion

Members of the core PCHCAI team are appropriately qualified and undergo continuing professional education and development on a regular basis. Attendance at hand hygiene training was problematic in 2012, with a low uptake from staff. There was evidence that the Corporate Management Team had recently begun to prioritise hand hygiene education and training in order to meet the National Standards and reduce the risks to patients. It is too early to assess adequately the impact of new controls introduced. However, results of hand hygiene observations by the Authority, referred to in detail later in the report, were much improved on the Authority's previous monitoring assessment in Our Lady's Children's Hospital, Crumlin in December 2012.

Theme 2: Workforce – Recommendations

Recommendation 3. *Our Lady's Children's Hospital, Crumlin should undertake rigorous audit within the next three months to assess the success of the new controls recently implemented around hand hygiene.*

3.3. Theme 3: Safe Care

Theme 3: Safe Care

The hospital recognises that the prevention and control of Healthcare Associated Infections is paramount. The cleanliness of the physical environment and equipment is effectively managed and maintained. The hospital learns from all information relevant to the provision of safe PCHCAI services, in addition to when things go wrong.

There is an embedded focus on quality and safety improvement, evidence-based decision making and active engagement in local, national and international initiatives to minimise the risk of HCAs.

Essential Element 3(a). There is 24-hour seven-days-a-week access to specialist microbiological advice and services

Findings Essential Element 3(a)

The consultant microbiologist is on call 24 hours, seven-days-a-week to offer specialist microbiological advice and services. When the microbiologist is on leave, cover is provided by the consultant microbiologist from the National Maternity Hospital. There is formal documentation to support this arrangement in the form of policies and procedures.

Essential Element 3(b). There are specific care bundles and/or policies and procedures developed, communicated, implemented and their efficacy monitored with the use of:

- peripheral intravenous catheter
- urinary catheter
- central venous catheter.

Findings Essential Element 3(b).

One quarter of all HCAs are related to the use of invasive medical devices (devices that are put into a patient's body or skin, for example, urinary catheters, peripheral intravenous catheters or central venous catheters). To increase patient safety, all services should have a specific set of processes to improve patient outcomes, for example, care bundles for the prevention and control of invasive medical device related infections.

Paediatric Intensive Care Unit (PICU)

The Authority was informed that urinary catheter (UC), central venous catheter (CVC) and ventilator-assisted pneumonia (VAP) care bundles were implemented in the Paediatric Intensive Care Unit (PICU). The PICU Clinical Nurse Managers 3 and 2 and staff who spoke with the HIQA Authorised Persons were very knowledgeable regarding care bundles and reported that they were an invaluable asset in reducing the incidence of infection. Senior ward staff mentor junior staff at clinical level on a day-to-day basis regarding care bundles to ensure understanding and compliance. The Intensivist undertakes education sessions with non-consultant hospital doctors (NCHDs) in January and August each year – when new doctors rotate into the unit – to ensure their understanding and compliance with care bundles.

The PICU recently changed from paper-based records to computerised recording, which is password coded where each staff member have their individual code identifier. This enables tracking of compliance as well as non-compliance. Computerised recordings allow audit and trending of results and these are discussed at weekly 'risk meeting' in the unit. Data is also submitted to the Paediatric Intensive Care Audit Network (PICA Net). This is a network aligned with 32 hospitals in UK and Ireland from which each hospital may benchmark.

The Authority reviewed the VAP care bundle. Staff demonstrated the routine daily safety checks which are performed as well as the VAP specific daily checks which included:

- assessment of readiness for extubation
- sedation weaning readiness
- oral hygiene
- head of bed elevated at 30°
- drain ventilator tubing away from patient
- change ventilator tube monthly or more frequently when indicated
- filter changed daily.

Staff demonstrated positive outcomes for patients since introducing the CVC care bundles with no incidence of infection in CVCs since January 2013.

While the care bundles were quite comprehensive, they did not include a check to ensure hand hygiene was undertaken prior to or subsequent to a clinical intervention. This was brought to the attention of the PICU CNM 3 during the monitoring assessment.

Our Lady's ward (nephrology, renal and paediatric surgery)

While staff on the nephrology ward did not use care bundles, they used patient care plans for urinary catheters (UC), peripheral vascular catheters (PVC) and central venous catheters (CVC), which were developed to support the use of these devices. The Authority viewed the guidelines in place to support their care. The Clinical Nurse Managers had recently developed a daily checklist to be completed when a patient required any of these invasive devices. This included rationale for insertion, date of insertion, duration catheter is in situ, dressing status and cleaning solution used, decontamination, ensuring the catheter was still necessary, whether there was any swelling, inflammation or redness, and whether hand hygiene was performed pre-

and post-procedure. As this was only recently introduced, audit of compliance had not yet been undertaken.

St Michael's ward (medical and Cystic Fibrosis)

Care plans were in use on St Michael's ward for central venous catheters and peripheral vascular catheters, where care was recorded continually. Monitoring of peripheral vascular catheters was recorded in daily checklists. There was also a checklist as part of the fluid balance sheet whereby the catheter was checked hourly if fluids were continuous, or eight-hourly when the infusion was intermittent. A standard operating procedure was in place to support care of PVC, which included guidelines for duration and change protocol. The care plans and daily checklists for CVCs were comprehensive and included a check to ensure hand hygiene was undertaken prior to or subsequent to a clinical intervention. However, hand hygiene was not part of the PVC daily check list. There were no audits undertaken in relation to care plans and their supportive documentation, to analyse and trend data to improve outcomes for patients.

While urinary catheters are not generally used on this ward, staff outlined that policies are in place to support them in their role to care for a patient with a UC to ensure best practice. The use of differing practices across the hospital may present a risk to patients of PCHCAIs and the roll-out of care bundles across the hospital should be expedited to reduce this risk.

Essential Element 3(c). There are defined PCHCAI performance metrics and audit process in place with a particular emphasis on:

- surgical site infection rates
- environmental and equipment hygiene
- antimicrobial prescribing
- hand hygiene
- infection related to the use of invasive medical devices
- HCAI trend rates and analysis.

Findings Essential Element 3(c)

Surgical site infection rates

Surgical site infections are one of the most common Healthcare Associated Infections (HCAIs).[¥] The rate of surgical site infections is recognised as an important indicator of patient care and quality. Documentation submitted to the Authority demonstrated that data for surgical site infections in Our Lady's Children's Hospital, Crumlin is collected and analysed quarterly by the Surveillance Scientist. Findings are presented to the Infection Control Committee quarterly and to the Corporate Management Team on an annual basis. Documentation submitted to the Authority, together with conversation with staff indicated that arrangements are in place to implement mitigating actions in relation to surveillance findings.

Antimicrobial prescribing audit

Antimicrobial prescribing feedback is a significant strategy that has shown demonstrable benefits in the prevention and control of HCAIs. There is a part-time antimicrobial liaison pharmacist in the hospital. Antimicrobial prescribing guidelines were in place and observed by the Authority. Documentation provided to the Authority regarding antimicrobial prescribing showed that data had been contributed to the Antimicrobial Point Prevalence Study and to the European Antimicrobial Resistant Surveillance System (EARRS). Documentation submitted to the Authority confirmed that arrangements are in place for regular internal antimicrobial prescribing audit, with appropriate action taken as necessary.

Hand hygiene

There was some evidence of good practice which included the following:

- HIQA Authorised Persons spoke with staff in the areas assessed, who demonstrated their knowledge verbally and in practice regarding hand hygiene best practice.

- The Authority viewed laminated posters instructing appropriate hand hygiene technique and appropriate use of hand hygiene solutions by sinks used for hand hygiene. Reminder hand hygiene notices were located at various high visibility points throughout the hospital.

Observation and hand hygiene opportunities

[¥] 'Surveillance of Surgical Site Infection in Ireland,' *A Strategy for the Control of Antimicrobial Resistance in Ireland (SARI)*, Health Protection Surveillance Centre.

The Authority observed 32 hand hygiene opportunities during the monitoring assessment. These hand hygiene opportunities comprised:

- 15 opportunities before touching a patient
- 11 opportunities after touching a patient
- 1 opportunity before a clean/aseptic procedure
- 5 after touching the patient's surroundings.

Of the 32 opportunities available, 30 were taken, all of which complied with best practice hand hygiene technique. The two hand hygiene opportunities not taken were before touching a patient.

The Authority recognises that the hospital had implemented a comprehensive quality improvement process in relation to hand hygiene training, compliance and monitoring. Local and national auditing was also in place for hand hygiene. Ongoing monitoring is necessary to ensure that all staff take all opportunities to comply with hand hygiene procedures to minimise risk to patients contracting HCAs.

Conclusion

The increased level of hand hygiene training and compliance in Our Lady's Children's Hospital, Crumlin since the previous monitoring assessment may be indicative that a culture of hand hygiene best practice is becoming operationally embedded in most areas throughout the hospital. However, it is essential that systems are improved and implemented to support an ongoing improvement in hand hygiene practices.

Infection related to the use of invasive medical devices

There was evidence of audit being undertaken on the newly introduced care bundles in PICU. Audit has also been undertaken on peripheral intravenous catheters (PVC) throughout the hospital. However, Our Lady's Children's Hospital, Crumlin needs to undertake audit on the use of all invasive medical devices in order to be assured that infection is being effectively prevented and managed in relation to such devices.

HCAI trend rates and analysis

The hospital is reporting methicillin-resistant *Staphylococcus aureus* (MRSA) and Clostridium Difficile (C Diff) rates nationally, as required. The hospital also submitted data for the HPSC Point Prevalence Study report for 2012 and to the HSE's 2012 hand hygiene audit.

Essential Element 3(d). There is proactive reporting, identification, evaluation and management of information to include PCHCAI-related adverse events, risks, patient complaints, audits and satisfaction surveys.

Findings Essential Element 3(d)

The hospital submitted information to the Authority that indicated that no HCAI-related adverse complaints were documented in 2011 or 2012. However, on discussion with staff members it was clarified that HCAI related complaints had been reported to the Risk Management Department in that period, and had been dealt with. This was confirmed by documentation, i.e., the quarterly risk management reports. It is unclear to the Authority why complaints regarding PCHCAIs are dealt with by the Risk Manager, rather than via the complaints path. The Authority is concerned as to how information and learning from patient complaints regarding HCAs is categorised, analysed and disseminated. The CEO and the Director of Nursing both sit on the Risk Management Committee, which reports to the Hospital Clinical Governance Committee. Issues are escalated to the Corporate Management Team via the Hospital Clinical Governance Committee where necessary. There is evidence of some reporting, identification, evaluation and management of information. However, Our Lady's Children's Hospital, Crumlin would benefit from a more cohesive, integrated approach to the management of information and subsequent dissemination of learning with regard to PCHCAI. The Authority has been informed that OLCHC has recently launched an online reporting system, which includes a report mechanism for both incidents and complaints. This will facilitate the recording of parental complaints managed at local level within the patient advocacy unit.

Essential Element 3(e). The cleanliness of the physical environment and equipment is effectively managed and maintained.

Findings Essential Element 3(e)

Our Lady's Ward (nephrology, renal and paediatric surgery)

Overall, the Authority found the area assessed to be very clean with some minor exceptions. The Authority was informed that it is anticipated that structural challenges to PCHCAI compliance on Our Lady's ward will be overcome imminently as it is relocating to a newly refurbished location within the hospital.

Environment and equipment

The Authority observed the following:

- Following the unannounced assessment of Our Lady's ward on 19 December 2012, a patient toilet/shower area located in a room which also contained clinical equipment storage was brought to the attention of hospital management by the Authority as an area of immediate risk to patients. The Authority viewed this room during this announced assessment and found it to be fully decommissioned and inaccessible to patients.
- The surface of the stairways and the lobby area to Our Lady's ward on the third floor was found to be clean. There was no inappropriate equipment evident in the ward lobby area facilitating effective cleaning.
- Displayed information was appropriate, up to date and laminated or covered with a washable surface for effective cleaning in all areas throughout the general environment and patient areas assessed.
- Work stations and equipment in all areas assessed, including telephones and keyboards, was observed to be free of dust and clutter.
- All patient and non-patient equipment, floors and surfaces were found to be clean, free of dust, rust, dirt, spillages and clutter.

- Breast and formula milk storage refrigerators, each with clear temperature displays, were located in the clean utility/treatment room. This room was key code locked restricting unauthorised access, minimising the risk of cross infection and promoting rigid adherence to recommended storage procedures.

However, there was also evidence of some practice that was not compliant with the *National Standards for the Prevention and Control of Healthcare Associated Infections*, such as:

- Paint was missing from some surface areas of the stair rails in the ward lobby. Paint was also missing from small areas of the walls and radiators in some patient and non-patient areas. However, there was evidence of painting in progress; the lift doors and doorframes in patient areas had been freshly painted, thereby improving effective cleaning of these surfaces.
- Alcohol hand hygiene gel was available in both the 'dirty'* utility and cleaning room. Hand hygiene soap and towels were also available in the 'dirty' utility area. However, there were no hand-wash sinks available in either area.
- The bedpan washing unit was placed on a concrete base, the surface of which was not sealed, thus hindering effective cleaning. Small amounts of dust and grit were found on the surface of the concrete base. The floor surface surrounding the sluice hopper was heavily stained.
- Urinals were decontaminated after each use and were stored on a shelf but were not in an inverted position in line with hygiene best practice.

Waste segregation

There was evidence of good practice, such as the following:

- Clinical waste information posters identifying waste segregation were observed in the 'dirty' utility room and waste segregation areas in each area assessed.

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

- Waste management was found to be in line with best practice, and waste bins were intelligently placed and appropriate. The Authority was informed that recycling of paper waste was in place and subsequent labelling of paper waste bins was in place.
- A waste management policy was demonstrated, approved in November 2012 and due for review in November 2013. The Authority was informed that staff attended waste management training.

Cleaning equipment

There was evidence of good practice, such as the following:

- Cleaning staff spoken with by the Authority were knowledgeable regarding infection prevention and control protocols.
- The Authority observed that rooms containing potentially hazardous cleaning solutions were locked and were inaccessible to the public, in line with best practice.
- Cleaning equipment was clean and a colour-coded system was in place and demonstrated.
- Appropriate advisory signage was observed for use of products used for cleaning and disinfection. Safety data sheets were accessible within the clinical areas.

Patient isolation rooms

There were two patients requiring care in isolation rooms.

- Appropriate clear signage was in place identifying isolation procedures in progress, which described the precautionary measures to be undertaken on entering the rooms.
- Doors to isolation rooms were in a closed position at all times during the assessment, as is best practice.

- Foot operated clinical non-risk and clinical risk waste bins were in place in the rooms being used for isolation purposes. All recommended personal protective equipment was appropriately worn and discarded in line with best practice.

Linen

There was evidence of good practice, such as the following:

- Clean linen was stored appropriately. Used linen was segregated in line with best practice, evidenced by colour-coded linen bags and alginate bags used in the clinical areas.
- The linen storage room was found to be clean and free of dust, dirt, grit or inappropriate equipment. Linen examined was free of stains and was intact.
- The Authority reviewed records which demonstrated that curtain changing was undertaken every six months as standard by household staff and on each patient discharge from the isolation rooms.

Water outlet flushing

There was evidence of good practice, such as the following:

- Records of routine water outlet flushing were demonstrated. Water flushing records were demonstrated for a shower and water taps in a room no longer used for patients.

St Michael's ward

Overall the Authority found that the St Michael's ward patient environment and the equipment assessed was generally clean, with some exceptions.

Environment and equipment

The Authority observed the following:

- Floors and surfaces throughout the clinical areas were observed to be clean and free of dirt, grit and spillages.
- Hand hygiene sinks in clinical areas assessed were found to comply with the HSE's Health Protection Surveillance Centre's *Guidelines for Hand Hygiene* (2005).
- Daily and weekly environmental and equipment cleaning schedules were displayed and sign-off sheets were up to date.

However, there was also evidence of practice that was not compliant with the *National Standards for the Prevention and Control of Healthcare Associated Infections*, such as:

- There was light dust found on some of the surfaces of cot bumpers and underneath the frame under the mattresses on some cots assessed.
- There was light dust and grit on some areas of the patient bathroom floor.
- Shelves in the equipment storage room had a light layer of dust on parts of their surfaces.
- Although soap and hand towels were found within easy access to a designated hand-wash sink, alcohol hand hygiene gel was not available in the clean utility room.
- The wheels on one commode were slightly dusty and rusted. There were splashmarks on the surface of one bedpan decontaminated and available for use.

Waste segregation

There was evidence of good practice, such as the following:

- Waste information posters identifying waste segregation were displayed in the 'dirty' utility and waste segregation area.
- The Authority was informed that all waste, including clinical waste was tagged before leaving the point of production ensuring traceability if necessary. There were no waste bags awaiting collection observed during the assessment.

Cleaning equipment

There was evidence of good practice, such as the following:

- HIQA Authorised Persons observed that rooms containing potentially hazardous cleaning solutions were locked and such rooms were inaccessible to unauthorised persons, in line with best practice.
- Cleaning equipment was clean with an established cleaning process evident. A colour-coded system was in place and demonstrated in the area assessed.
- Appropriate advisory signage was observed for use of products used for cleaning and disinfection. Product safety data sheets were accessible within the area.

Patient isolation rooms

There was evidence of good practice, such as the following:

- Appropriate displayed signage was in place identifying isolation procedures in progress and describing the precautionary measures to be undertaken on entering the rooms.
- Foot operated clinical non-risk and clinical risk waste bins were in place in the rooms being used for isolation purposes. All recommended personal protective equipment was appropriately worn and discarded in line with best practice.
- Patients were isolated in rooms with integrated negative pressure technology.

Linen

There was evidence of good practice, such as the following:

- Clean linen was stored appropriately in a dedicated linen cupboard. Used linen was segregated in line with best practice, evidenced by colour-coded linen bags and alginate bags used in the clinical areas.
- Clean linen assessed by the Authority was found to be intact and free of stains.
- The Authority was informed that, as standard, curtains were changed on a six-monthly basis by household staff. Curtains were changed following each patient discharge in the isolation rooms. Local records of curtain changing were demonstrated.

Water outlet flushing

There was evidence of good practice, such as the following:

- Records of weekly water outlet flushing were demonstrated.

Paediatric Intensive Care Unit (PICU)

Overall the Authority found the PICU environment and patient equipment assessed was found to be exceptionally clean on the day of the announced assessment.

Environment and equipment

There was evidence of good practice, such as the following:

- Hand-wash facilities were located at the entrance to the unit for parents, visitors and staff entering the area. A room was also available at the entrance to the unit for parents and visitors to store coats, handbags etc. minimising the risk of cross-infection to patients in this area.

- Each patient was cared for in a single occupancy or isolation room with electronically controlled access as standard.
- Floors and all environmental surfaces throughout were observed to be clean and free of dirt, grit and spillages.
- Personal protective equipment was available at multiple points throughout the unit. Hand-wash sinks were fully compliant with the HSE's Health Protection Surveillance Centre's *Guidelines for Hand Hygiene* (2005). Soap and alcohol hand hygiene gel was available.
- Hospital-specific hand hygiene instruction posters were displayed advising on appropriate use of hand hygiene products available.
- Patient equipment was decontaminated in a designated area. A red line on the floor separated decontaminated equipment from equipment awaiting decontamination. This practice explicitly identified the stage of equipment cleaning to staff while minimising risk of contamination to equipment already cleaned.
- All signage displayed throughout the unit was laminated, appropriate and up to date.

However, there was also evidence of practice that was not compliant with the *National Standards for the Prevention and Control of Healthcare Associated Infections*, such as:

- Light dust was found on a bedrail in one of the patient areas assessed.

Waste segregation

There was evidence of good practice, such as the following:

- Clinical waste information posters identifying waste segregation were displayed in the area assessed.
- The Authority was informed that all waste including clinical waste was tagged before leaving the point of production ensuring traceability if necessary. The

door was electronically operated, restricting unauthorised access to the room where hazardous and non-hazardous waste was placed, in line with best practice.

Cleaning equipment

There was evidence of good practice, such as the following:

- Cleaning equipment was clean with an established cleaning process evident. A colour-coded system was in place and demonstrated in the area assessed.
- Appropriate advisory signage was observed for use of products used for cleaning and disinfection.
- Cleaning schedules were displayed in all areas and recorded each time cleaning was completed.
- Cleaning staff spoken with by the Authority were very knowledgeable in all areas of infection prevention and control protocols and procedures.

Linen

There was evidence of good practice, such as the following:

- Clean linen was stored in a dedicated linen cupboard which was intact, neatly arranged, easily accessible, free of dust, grit or spillages. Segregation of linen was demonstrated and found to be in line with best practice.

Theme 3: Safe Care – conclusion

In conclusion, Our Lady's Children's Hospital, Crumlin has 24-hour, seven-days-a-week specialist microbiological advice and services. Overall the Authority found that care bundles were established and effective in the Paediatric Intensive Care Unit with positive outcomes identified for the patients with a significant reduction in infection incidences. The Authority was informed that care bundles will be rolled out to the remainder to the hospital in a phased basis in conjunction with infection control nurses and intravenous nurses. Hospital staff will have the resource of PICU

staff to assist them in this process as well. Both Our Lady's and St Michael's wards had comprehensive care plans with supportive documentation in place. However, further PCHCAI related audits are required to adequately inform care and improve outcomes for patients.

There are many defined PCHCAI performance metrics and audit processes in place.

There was evidence of audit being undertaken on the newly introduced care bundles in PICU. Audit has also been undertaken on peripheral intravenous catheters (PVC) throughout the hospital. However, Our Lady's Children's Hospital, Crumlin needs to undertake audit on the use of all invasive medical devices in order to be assured that infection is being effectively prevented and managed in relation to such devices.

There is proactive reporting, identification, evaluation and management of information to include PCHCAI-related adverse events, risks, patient complaints, audits and satisfaction surveys. However, some HCAI-related patient complaints were not reported as such, but instead managed as risk issues.

The Authority found that the ward area environment and equipment was very clean, with the exception of the St Michael's ward where light dust was found on some patient equipment and environment.

Some hand hygiene sinks in the areas assessed did not comply with the HSE's Health Protection Surveillance Centre's *Guidelines for Hand Hygiene* (2005). The Authority was informed that a sink replacement programme is ongoing.

Appropriate information was displayed outside isolation rooms. Linen was stored and segregated appropriately. Clinical and non-clinical waste was dealt with appropriately, supported by an up-to-date local waste management policy.

Theme 3: Safe care – Recommendations

Recommendation 4. *Our Lady's Children's Hospital, Crumlin should take a more centralised and integrated approach to the management of PCHCAI information.*

Recommendation 5. *Our Lady's Children's Hospital, Crumlin should put in place arrangements to ensure that care bundles are rolled out throughout the hospital as planned, and that their efficacy is monitored on an ongoing basis.*

4. Overall Conclusion

4.1. Overview

A comprehensive corporate and PCHCAI governance structure supported by an integrated organisational framework is newly in place in Our Lady's Children's Hospital, Crumlin. It was of concern to note that although prevention and control of infection is a standing item on the CEO's monthly report to the Board of Directors, it is not a standing item on the hospital's Corporate Management Team or Board of Directors' meetings. However, there is clear monitoring and reporting of defined PCHCAI performance metrics, with trend analysis, reciprocal quality improvement initiatives and reporting at a local, regional and national level. There is a new PCHCAI communication strategy in place that requires amendment to include detail on strategy and concentrate on goals and objectives.

Training records confirmed that attendance at hand hygiene training had been problematic in 2012, with a low uptake from staff. There was evidence that the Corporate Management Team had recently begun to prioritise hand hygiene education and training in order to meet the National Standards and reduce the risks to patients. It was too early to assess adequately the impact of new controls introduced.

The Authority found that care bundles were established and effective in the Paediatric Intensive Care Unit with positive outcomes identified for the patients with a significant reduction in infection incidences. Both Our Lady's and St Michael's wards had comprehensive care plans with supportive documentation in place. However, further PCHCAI related audits are required to adequately inform care and improve outcomes for patients.

There are many defined PCHCAI performance metrics and audit processes in place.

There was evidence of audit being undertaken on the newly introduced care bundles in PICU. Audit has also been undertaken on peripheral intravenous catheters (PVC) throughout the hospital. However, Our Lady's Children's Hospital, Crumlin needs to undertake audit on the use of all invasive medical devices in order to be assured that infection is being effectively prevented and managed in relation to such devices.

There is proactive reporting, identification, evaluation and management of information to include PCHCAI-related adverse events, risks, patient complaints, audits and satisfaction surveys. However, some HCAI related patient complaints were not reported as such, but were instead managed as risk issues.

5. Recommendations

Recommendation 1. *The Hospital should ensure that PCHCAI is a standing item on the Corporate Management Team and Board of Directors' agendas.*

Recommendation 2. *The Hospital should develop the PCHCAI Communication Strategy, making it more strategic in approach, focusing on goals and objectives.*

Recommendation 3. *Our Lady's Children's Hospital, Crumlin should undertake rigorous audit within the next three months to assess the success of the new controls recently implemented around hand hygiene.*

Recommendation 4. *Our Lady's Children's Hospital, Crumlin should take a more centralised and integrated approach to the management of PCHCAI information.*

Recommendation 5. *Our Lady's Children's Hospital, Crumlin should put in place arrangements to ensure that care bundles are rolled out throughout the hospital as planned, and that their efficacy is monitored on an ongoing basis.*

Appendix 1 – Theme and Essential Elements

NSPCHAI Standard	Theme	Essential Element
<p>1,2,3, 4,5,6, 7,8,9, 10,11, 12.</p>	<p>Leadership, Governance and Management</p> <p>Robust leadership, governance and management structures and processes underpin what hospitals should have in place to assure the public and themselves that the arrangements for the prevention and control of Healthcare Associated Infections (PCHCAI) are effective.</p> <p>There are robust local monitoring and reporting arrangements in place thereby ensuring infection control is managed at a consistently high level of quality with minimal variation in the delivery of that care. There are effective regional and national PCHCAI reporting arrangements in place; infection control activities provided are compliant with the relevant legislation, clinical care programmes and evidenced-based practice; and the organisation is acting on national standards and recommendations from statutory bodies.</p>	<p>1(a) A comprehensive corporate and PCHCAI governance structure supported by an integrated organisational framework is in place. The governance arrangements will include PCHCAI specific strategies, aligned cost-effective initiatives and defined responsibilities for externally contracted services.</p> <p>1(b) There is clear monitoring and reporting of defined PCHCAI performance metrics, with trend analysis, reciprocal quality improvement initiatives and reporting at a local, regional and national level.</p> <p>1(c) A clear PCHCAI communication strategy supported by robust operational arrangements to assure the effective communication of appropriate and timely information throughout the service, to service providers and appropriate agencies is in place.</p>

NSPCHAI Standard	Theme	Essential Element
<p>1, 4, 5, 6.</p>	<p>Workforce</p> <p>The hospital should always be in a position to assure the service users, the public and itself that everyone working in the service is contributing to the prevention and control of Healthcare Associated Infections. The individual members of the workforce must be skilled and competent, they must be supported to continuously update and maintain their knowledge and skills, whether they are directly employed or in contractual employment.</p>	<p>2(a) Members of the core PCHCAI team must have the appropriate qualifications, specific training, skills and competencies in infection control, antimicrobial stewardship and HCAI surveillance. They must undergo continuing professional education and development on a regular basis.</p> <p>2(b) All hospital staff receive mandatory theoretical and practical training in relation to the prevention and control of hospital acquired infections.</p> <p>2(c) There are arrangements in place to ensure that visiting clinical, undergraduates and agency staff are competent in the core principles for the prevention and control of HCAs.</p>

NSPCHAI Standard	Theme	Essential Element
1,2,3, 6,7,8, 9,11,12.	<p>Safe Care</p> <p>The hospital recognises that the prevention and control of Healthcare Associated Infections is paramount.</p> <p>The cleanliness of the physical environment and equipment is effectively managed and maintained.</p> <p>The hospital learns from all information relevant to the provision of safe PCHCAI services, in addition to when things go wrong. There is an embedded focus on quality and safety improvement, evidence-based decision making and active engagement in local, national and international initiatives to minimise the risk of HCAs.</p>	<p>3(a) There is access to specialist microbiological advice and services, 24 hours a day, seven days a week.</p> <p>3(b) There are specific care bundles and/or policies and procedures developed, communicated, implemented and their efficacy monitored with the use of:</p> <ul style="list-style-type: none"> ▪ peripheral intravenous catheter, ▪ urinary catheter ▪ central venous catheter. <p>3(c) There are defined PCHCAI performance metrics and audit process in place with a particular emphasis on: surgical site infection rates, environmental and equipment hygiene, antimicrobial prescribing, hand hygiene, infection related to the use of invasive medical devices, HCAI trend rates and analysis.</p> <p>3(d) There is proactive reporting, identification, evaluation and management of information to include PCHCAI-related adverse events, risks, patient complaints, audits and satisfaction surveys.</p> <p>3(e) The cleanliness of the physical environment and equipment is effectively managed and maintained.</p>

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