



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the unannounced inspection at South Infirmary Victoria University Hospital, Cork

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

Date of on-site inspection: 26/03/2014

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

Preventing and controlling infection in healthcare facilities is a core component of high quality, safe and effective care for patients. In order to provide quality assurance and drive quality improvement in public hospitals in this critically important element of care, the Health Information and Quality Authority (the Authority or HIQA) monitors the implementation of the *National Standards for the Prevention and Control of Healthcare Associated Infections*.¹

These Standards will be referred to in this report as the Infection Prevention and Control Standards. Monitoring against these Standards began in the last quarter of 2012. This initially focused on announced and unannounced inspections of acute hospitals' compliance with the Infection Prevention and Control Standards.

The Authority's monitoring programme will continue in 2014, focusing on unannounced inspections. This approach, 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 – will include scope for re-inspection within six weeks where necessary. The aim of re-inspection is to drive rapid improvement between inspections.

The purpose of unannounced inspections is to assess hygiene as experienced by patients at any given time. The unannounced inspection focuses specifically on observation of the day-to-day delivery of hygiene services and in particular environment and equipment cleanliness and adherence with hand hygiene practice. Monitoring against the Infection Prevention and Control Standards¹ is assessed, with a particular focus, but not limited to, environmental and hand hygiene under the following standards:

- Standard 3: Environment and Facilities Management
- Standard 6: Hand Hygiene.

Other Infection Prevention and Control Standards may be observed and reported on if concerns arise during the course of an inspection. It is important to note that the Standards may not be assessed in their entirety during an unannounced inspection and therefore findings reported are related to a criterion within a particular 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. Although specific clinical areas are assessed in detail using the hygiene observation tools, Authorised Persons from the Authority also observe general levels of cleanliness as they follow the patient's journey through the

hospital. The inspection approach taken is outlined in guidance available on the Authority's website.²

This report sets out the findings of the unannounced inspection by the Authority of South Infirmery Victoria University Hospital's compliance with the Infection Prevention and Control Standards.¹ It was undertaken by Authorised Persons from the Authority, Rachel Flynn and Katrina Sugrue, on 26 March 2014 between 08:45hrs and 12:30hrs.

The area assessed was:

- Children's Ward

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

2. The South Infirmity Victoria University Hospital Profile[‡]

The South Infirmity Victoria University Hospital (SIVUH) is committed to providing the highest quality service to all its patients in a friendly, safe and caring environment. It aims to provide individual patient-centred care to each patient and their families.

The South Infirmity Victoria University Hospital came into existence on 1 January 1988 as a result of the amalgamation of the South Charitable Infirmity and the Victoria Hospital and is a major teaching hospital of University College Cork. The SIVUH employs approximately 850 staff.

The South Infirmity Victoria University Hospital is undergoing transformation as part of the reconfiguration of acute hospital services in Cork and Kerry. In 2011, cardiology and medicine for the elderly transferred out and in 2012 the Emergency Department closed with acute medicine and acute surgery transferring to other organisations within the city. Since 2011 a large number of services have transferred in to the SIVUH from the HSE and the following include the services now provided:

- elective orthopaedics, orthopaedic trauma rehabilitation, orthopaedic paediatrics, plastic surgery, otorhinolaryngology (regional centre), maxillo-facial surgery, general surgery, gynaecology surgery, pain medicine (regional centre), rheumatology (regional diagnostics and ambulatory centre), dermatology (regional centre), endocrinology (ambulatory care and day care centre), oncology and endoscopy.

The SIVUH has approximately 185 operational beds, 131 of those inpatient beds. In 2012 there were just over 28,000 admissions, with close to 8,500 of those being inpatient admissions.

Day care facilities include a standalone Day Surgical Unit with an operating theatre, a Minor Procedures Room and pre-admission assessment; a stand-alone Day Medical Unit with an operating theatre; a stand-alone Pain Medicine Unit with procedure rooms; and an Oncology/Infusion Day Unit.

[‡] 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

On inspection at South Infirmity Victoria University Hospital on 26 March 2014, there was evidence of both compliance and non-compliance with some of the criteria in the Infection Prevention and Control Standards.¹ In the findings outlined below, observed non-compliances with some of the criteria in the Standards are grouped and described alongside the relevant corresponding Standard/criterion.

3.1 Environment and Facilities Management

Standard 3. Environment and Facilities Management

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.

Criterion 3.6. The cleanliness of the physical environment is effectively managed and maintained according to relevant national guidelines and legislation; to protect service-user dignity and privacy and to reduce the risk of the spread of Healthcare Associated Infections. This includes but is not limited to:

- all equipment, medical and non-medical, including cleaning devices, are effectively managed, decontaminated and maintained
- the linen supply and soft furnishings used are in line with evidence-based best practice and are managed, decontaminated, maintained and stored.

Children's Ward

Children's Ward is a 14-bedded elective surgical unit. It consists of three two-bedded rooms with en-suites facilities and two four-bedded rooms. At the time of the inspection, there were 11 inpatients, none of whom required isolation.

Overall, Children's Ward was observed to be clean with some exceptions at the time of the inspection.

Environment and equipment

- Light dust was visible on a patient locker, skirting board, and bed frame in a patient area and on a baby bath frame in the 'dirty'[±] utility room. A moderate layer of dust was observed on the resuscitation trolley and heavy dust was observed on the window frame in the dirty utility room.
- Splash staining was visible on the side of a reclining armchair in a patient area; dirt and grit were also observed on the foot area of the same armchair.
- The vinyl covering of a chair was visibly cracked, hindering effective cleaning
- Heavy dust was visible on the air conditioning vent on the ceiling in the corridor of the ward.
- Tiles on the ceiling on the corridor, and on the ceiling outside the playroom were visibly stained.
- A shower basin in a patient bathroom was visibly chipped, hindering effective cleaning.
- The wheel areas of a dressing trolley inspected in the clean utility room were unclean.
- Rust coloured staining was observed on the frame underneath the seat and wheel areas of a commode inspected in the dirty utility room and the lid of a domestic waste bin beside the hand hygiene sink adjacent to the work station.
- Sticky tape was observed underneath a shelf of a dressing trolley, hindering effective cleaning.
- Two emesis bags were observed in the hand hygiene sink in room 2.
- The Authority did not observe appropriate storage facilities for clean urinals and bedpans in the dirty utility room. For example, urinals were observed hanging in brackets on a baby bath trolley and a bedpan was stored on top of the bedpan washer.
- Paint work on the wall under the window in room 2 was visibly blistered and flaking, hindering effective cleaning. The Authority was informed by the ward manager that this issue was referred to the maintenance department and has been assessed. The ward manager had been informed that structural work is required to address the problem.

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

- Suction apparatus was observed on the floor near the office which had a biomedical service department maintenance request dated 29 January 2014. The Authority was informed that a request for maintenance had been sent electronically in January, the suction apparatus was not repaired on the day of the inspection.

Linen

- There was chipped paint on a wall in the linen room, hindering effective cleaning.
- Sticky residue was visible on some of the shelving, hindering effective cleaning.
- Empty sharps bins were inappropriately stored on the floor area, hindering effective cleaning.
- The labelling observed on shelving was adhered with sticky tape which may hinder effective cleaning.

Cleaning equipment

- Cleaning equipment such as mop head holders and floor cleaners/buffers were visibly unclean.
- The hospital cleaning storage room was unsecured at the time of the inspection.
- The hospital cleaning storage room was visibly cluttered and unclean at the time of the inspection.
- The Authority was informed by hospital staff that the spray bottles used to hold cleaning detergents are filled at the beginning of each day and emptied at the end of the day. However there was no system observed on the day of the inspection, or information provided that gave assurance to the Authority that a system was in place to ensure that the spray bottles are washed and dried after use each day.

Criterion 3.7. The inventory, handling, storage, use and disposal of hazardous material/equipment is in accordance with evidence-based codes of best practice and current legislation.

- Domestic waste was observed in the clinical waste bin in the dirty utility room which is not in line with best practice.

Summary

The Authority was informed that the hospital hygiene coordinator has overall responsibility for planning and implementing the programme of environmental hygiene audits. It was explained to the Authority that members of the executive team carry out regular environmental 'walkabouts'. The Authority viewed two quality improvement plans (QIP) following hygiene 'walkabouts' carried out on 23 February and 4 June 2013 by a multidisciplinary team. The QIPs viewed outlined the issues identified through the 'walkabout', the action required to address the issue, the person responsible for addressing these issues, and the progress and completion date. In addition, the Authority viewed QIPs carried out by the hygiene coordinator and the infection prevention control nurse manager on 2 September and 11 November 2013. All QIPs viewed showed a high level of compliance with criteria within standard three of the infection control standards¹. For example, in the November QIP, Level 1 Victoria Ward demonstrated 91% compliance with criterion 3.6 on the cleanliness of the physical environment and 89% with the cleanliness of the patient equipment. The Authority viewed results of other areas audited throughout the hospital in January, May and September 2013. Findings of environmental audits and the QIP 'walkabouts' are discussed at the hygiene committee meetings which meet on a quarterly basis and are then reported to the infection control committee.

On Children's Ward, daily and weekly cleaning records for medical equipment and the environment were viewed. All cleaning staff are responsible for cleaning the patient equipment. Environmental hygiene audits are carried out by the hygiene coordinator and issues identified are addressed at the time of the audit where possible. However, on the day of the inspection, the Authority was not provided with any hygiene audit reports or results to view that referred to the Children's Ward and therefore was unable to determine the Children's Ward level of compliance with previous hygiene audits.

In general, the environment and patient equipment in the Children's Ward were clean with some exceptions. The Authority found that improvements are required in the management of cleaning equipment on Children's Ward and in the hospital cleaning storage room which were observed to be unclean at the time of the inspection. Maintenance issues, such as the paintwork in room 2 should be reviewed to ensure that they are addressed in a timely manner.

3.2 Hand Hygiene

Assessment of performance in the promotion of hand hygiene best practice occurred using the Infection, Prevention and Control Standards¹ and the World Health Organization (WHO) multimodal improvement strategy.³ Findings are therefore presented under each multimodal strategy component, with the relevant Standard and criterion also listed.

WHO Multimodal Hand Hygiene Improvement Strategy

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

Standard 6. Hand Hygiene

Hand hygiene practices that prevent, control and reduce the risk of the spread of Healthcare Associated Infections are in place.

Criterion 6.1. There are evidence-based best practice policies, procedures and systems for hand hygiene practices to reduce the risk of the spread of Healthcare Associated Infections. These include but are not limited to the following:

- the implementation of the *Guidelines for Hand Hygiene in Irish Health Care Settings, Health Protection Surveillance Centre, 2005*
- the number and location of hand-washing sinks
- hand hygiene frequency and technique
- the use of effective hand hygiene products for the level of decontamination needed
- readily accessible hand-washing products in all areas with clear information circulated around the service
- service users, their relatives, carers, and visitors are informed of the importance of practising hand hygiene.

- The design of some clinical hand wash sinks on Children's ward did not conform to Health Building Note 00-10 Part C: Sanitary assemblies.⁴ The Authority has monitored the QIP⁵ published on the hospital's web site in response to the last inspection by the Authority on 23 April 2013, which states that hand wash sinks were reviewed throughout the hospital and will be replaced on a priority basis. Hand hygiene facilities were reviewed as part of two QIP audits which were viewed by the Authorised persons on the day of the inspection.
- Alcohol hand gel dispensers were observed on the ward by sinks and high up on walls at the entrance to the bedded bays. However alcohol hand gel was not located at the end of patient beds, due to them posing a possible risk to children. On the day of inspection, alternative methods to ensure hand gel accessibility at the point of care, for example single staff issue alcohol hand gel bottles (which can be attached to staff uniforms using toggles) were not observed to be in use.

3.3.2 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 handrubbing and handwashing, to all healthcare workers.*

Standard 4. Human Resource Management

Human resources are effectively and efficiently managed in order to prevent and control the spread of Healthcare Associated Infections.

Criterion 4.5. All staff receive mandatory theoretical and practical training in the prevention and control of Healthcare Associated Infections. This training is delivered during orientation/induction, with regular updates, is job/role specific and attendance is audited. There is a system in place to flag non-attendees.

- On the day of the inspection, the information system to record hand hygiene training at the South Infirmary Victoria University Hospital was under development. When completed, it is intended that this will allow the hospital to determine if staff have carried out hand hygiene training in the last two years and the overall percentage of staff who have attended such training. A summary

view of hand hygiene training compliance for hospital staff was therefore not available to view on the day of the inspection. A breakdown of staff that had attended hand hygiene mandatory training in 2011 up to quarter three of 2012 was provided for the Authority to view. A QIP for improving hand hygiene training attendance in 2013 was also viewed in which it was planned to train infection control link practitioners, to allow them educate other staff at ward level. However this did not occur in 2013. The Authority was informed that the infection prevention and control staffing levels were reduced in 2013, but they were now back to normal levels on the day of the inspection. Hand hygiene training attendance records for training sessions which took place on the 6, 11 and 27 March 2014 were viewed by the Authority. In addition, general induction training records were also viewed which showed 20 staff members from all staff groups had attended.

- The Authority viewed hand hygiene training records for Children's ward which demonstrated that 15 out of the 19 staff on the ward were up-to-date with hand hygiene training at the time of the inspection.

3.3.3 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.*

Criterion 6.3. Hand hygiene practices and policies are regularly monitored and audited. The results of any audit are fed back to the relevant front-line staff and are used to improve the service provided.

The following sections outline audit results for hand hygiene.

National hand hygiene audit results

- The South Infirmary Victoria University Hospital participates in the national hand hygiene audits which are published twice a year.⁶ The results below taken from publically available data from the Health Protection Surveillance Centre's website demonstrate compliance above 85% from October 2012 (Period 4) to October 2013 (Period 6). However, the overall compliance for 2013 was below the Health Service Executive's (HSE's) national target of 90%.⁷

Period 1-6	Results
Period 1 June 2011	No data available
Period 2 October 2011	71.4%
Period 3 June/July 2012	80.5%
Period 4 October 2012	88.6%
Period 5 May/June 2013	85.2%
Period 6 October 2013	86.6%

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

Hospital hand hygiene audit results

- The Authority was informed by members of the infection prevention and control team that in addition to the national hand hygiene audit results, hand hygiene audits were carried out as part of the QIPs on level 1 Victoria Ward in September and November 2013 which showed compliance level of 80% in both QIP audits. Ward based hand hygiene audits were not done. Results of the audits were emailed to the ward managers. Areas for improvement were identified in the 2013 national hand hygiene audits, such as moments four and five of hand hygiene opportunities which refer to after touching a patient and after touching patient surroundings respectively. The Authority was informed that posters were developed to highlight moments four and five and to improve compliance with hand hygiene opportunities related to these moments.
- It was explained to Authorised persons that an infection control link practitioner system is in place which consists of practitioners with a special interest in infection control acting as a support for the infection control nurse. It is hoped to train link practitioners as local hand hygiene auditors for 2014 to participate in hand hygiene audits within the hospital.
- The Authority viewed the hospital's infection prevention and control department annual report for 2012 which stated that one of the key performance indicators for 2013 was to improve hand hygiene compliance to above 90% in all areas. This target has not been reached for 2013 which was demonstrated in the hospital's results in the national hand hygiene audits and hospital QIPs. Furthermore nine of the fourteen wards submitted for periods five and six of the national hand hygiene audits in 2013 did not achieve 90%, for example, Children's Ward achieved 76.6% compliance in October 2013 national hand hygiene audits.⁶

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 WHO⁸ and the HSE.⁹ 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 eight hand hygiene opportunities in total during the inspection. Hand hygiene opportunities observed comprised of the following:
 - two before touching a patient
 - one after touching a patient
 - five after touching patient surroundings.
- All of the eight hand hygiene opportunities were taken.
- Of the eight opportunities which were taken, the hand hygiene technique was observed (uninterrupted and unobstructed) by the Authorised Persons for four opportunities. Of these, the correct technique was observed in four 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
- one hand hygiene actions where there were barriers to the correct technique, such as sleeves to the wrist.

^γ 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 workplace³: *prompting and reminding healthcare workers about the importance of hand hygiene and about the appropriate indications and procedures for performing it.*

- In general, hand hygiene advisory posters were available, up-to-date, clean and appropriately displayed throughout South Infirmary Victoria University Hospital. However the hand hygiene posters observed by the Authority around the hand hygiene sink near the office in the Children’s ward were propped up against the wall and need to be correctly adhered to the wall.

3.3.5 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 South Infirmary Victoria University Hospital achieved 85.9% compliance in 2013 in the national hand hygiene audits which is below the HSE’s national target of 90%.⁷ The hospital has not met its own key performance indicator on improving hand hygiene compliance above 90% for 2013. Therefore the hospital needs to improve hand hygiene practice and hand hygiene auditing to ensure that the risk of transmission of healthcare associated infections is reduced, and to achieve a sustained compliance that meets the HSE’s national target.⁷

3.4 Communicable/Transmissible Disease Control

Standard 7. Communicable/Transmissible Disease Control

The spread of communicable/transmissible diseases is prevented, managed and controlled.

- The Authority viewed two four-bedded rooms on Children’s Ward which on the day of the inspection had three patients in each room. The rooms appeared to have limited space between the three beds and monitoring equipment in use at the time of the inspection occupied a significant amount of space between the beds observed. The Authority was informed that in addition to the children accommodated in these rooms, parents often slept on mattresses on the floor space beside the beds. The hospital should review the bed spacing in these four-bedded rooms on Children’s Ward to ensure that the risk of spread of healthcare associated infections(HCAIs) is minimised and to assure itself that it is in compliance with the Infection Control Standards¹, national guidelines¹⁰ and best practice evidence^{11,12}. The Authority was informed that where the hospital had

refurbished/redesigned wards such as the Elective Orthopaedic Ward, the specifications regarding bed spacing complied with national guidelines⁹.

Criterion 7.6. Evidence-based best practice, including national guidelines, for the prevention, control and management of infectious diseases/organisms are implemented and audited. These include but are not limited to the:

- *National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis During Construction/Renovation Activities, National Disease Surveillance Centre, 2002.*

- The Authority was informed that there were building works ongoing in the hospital at the time of the inspection. Risk assessments were provided for the Authorised person to view at the time of the inspection which outlined the involvement of the infection prevention control team in the process. Environmental controls were observed to be in place on the day of the inspection and assurances were provided that patients who were at risk are accommodated away from any construction. The Authority viewed training attendance records for aspergillosis education which was last done in 2011 which does not provide assurance that all relevant staff have been educated on mitigating the risks associated with aspergillosis. Therefore it is recommended that education on aspergillosis should be updated to ensure all relevant staff are educated on the prevention of nosocomial invasive aspergillosis during construction/renovation activities in accordance with national guidelines¹³.

4. Summary

The risk of the spread of Healthcare Associated Infections is reduced when the physical environment and equipment can be readily cleaned and decontaminated. It is therefore important that the physical environment and equipment is planned, provided and maintained to maximise patient safety.

The Authority found that Children's Ward was clean with some exceptions but some improvements are required in the cleanliness and maintenance of the cleaning storage room and the cleaning of equipment.

Bed spacing in the Children's Ward should be reviewed to ensure compliance with national guidelines¹⁰.

The Authority recommends that the education of staff be updated as part of the overall Aspergillus risk mitigation strategy for current and future building work.

Hand hygiene is recognised internationally as the single most important preventative measure in the transmission of Healthcare Associated Infections in healthcare services. It is essential that a culture of hand hygiene practice is embedded in every service at all levels.

The Authority found that improvements in hand hygiene are required, in particular regarding training records and auditing to ensure that the hospital meets its own key performance indicator and the national target⁷.

The South Infirmary Victoria University Hospital must now revise and amend its quality improvement plan (QIP) that prioritises the improvements necessary to fully comply with the Infection, Prevention and Control 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 South Infirmary Victoria University 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 Infection Prevention and Control Standards and is making quality and safety improvements that safeguard patients.

5. References[‡]

1. Health Information and Quality Authority. *National Standards for the Prevention and Control of Healthcare Associated Infections*. Dublin: Health Information and Quality Authority; 2009. Available online from: <http://www.hiqa.ie/publication/national-standards-prevention-and-control-healthcare-associated-infections>
2. Health Information and Quality Authority. *Guide: Monitoring programme for unannounced inspections undertaken against the national standards for the prevention and control of Healthcare Associated Infections*. Dublin: Health Information and Quality Authority; 2014 Available online from: <http://www.hiqa.ie/publications?topic=17&type=All&date%5Bvalue%5D%5Byear%5D=>
3. World Health Organization. A Guide to the Implementation of the WHO Multimodal Hand Hygiene Improvement Strategy. Revised August 2009. Available on line from: http://www.who.int/gpsc/5may/tools/system_change/en/
4. Department of Health, United Kingdom. Health Building Note 00-10 Part C: Sanitary Assemblies. Available online from http://www.dhsspsni.gov.uk/hbn_00-10_part_c_l.pdf
5. Health Service Executive. Hygiene Quality Improvement Plan. Available online from: <http://www.sivuh.ie/AboutUs/News/HygieneQualityImprovementPlan.html>
6. The Health Protection Surveillance Centre. National Hand Hygiene Audit Results. Available from: <http://www.hpsc.ie/hpsc/A-Z/Gastroenteric/Handwashing/HandHygieneAudit/HandHygieneAuditResults/>
7. Health Service Executive – National Service Plan 2014. Available online from: <http://www.hse.ie/eng/services/Publications/corporate/serviceplan2014/nationalserviceplan2014.pdf>
8. World Health Organization. Guide to Hand Hygiene in Healthcare and WHO Hand Hygiene Technical Reference Manual. Available online from: http://whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf?ua=1.
9. Health Service Executive. Hand Hygiene Observation Audit Standard Operating Procedure April 2013. Available online from: http://www.hpsc.ie/hpsc/A-Z/Gastroenteric/Handwashing/HandHygieneAudit/HandHygieneAuditTools/File,12660_en.pdf.
10. Health Service Executive The Health Protection Surveillance Centre (HPSC) Infection Prevention and Control Building Guidelines for Acute Hospitals in Ireland. A Strategy for the Control of Antimicrobial Resistance in Ireland (SARI). Available online from: https://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHAI/Guidelines/File,3439_en.pdf
11. Department of Health, United Kingdom. Health Building Note 00.09 Infection Control in the built environment Available online: <https://www.gov.uk/government/publications/guidance-for-infection-control-in-the-built-environment>

[‡] The URLs referenced here were inserted at the time this document was being created.

12. Department of Health, United Kingdom. In-patient care Health Building Note 04-01: Adult in-patient facilities. Available online from:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/148502/HBN_04-01_Final.pdf
13. Health Service Executive. The Health Protection Surveillance Centre (HPSC). National Guidelines for the Prevention of Nosocomial Invasive Aspergillosis during Construction/Renovation Activities. Available online from:
<https://www.hpsc.ie/hpsc/A-Z/Respiratory/Aspergillosis/Guidance/>

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