Health Information and Quality Authority

An tÚdarás Um Fhaisnéis agus Cáilíocht Sláinte

Overview of HIQA unannounced infection prevention and control inspections in 2015

Inspections conducted in public acute hospitals against the *National Standards for the Prevention and Control of Healthcare Associated Infections*

31 March 2016

About the Health Information and Quality Authority

The Health Information and Quality Authority (HIQA) is an independent Authority established to drive high quality and safe care for people using our health and social care and support services in Ireland. HIQA's role is to develop standards, inspect and review health and social care and support services, and support informed decisions on how services are delivered. HIQA's ultimate aim is to safeguard people using services and improve the quality and safety of services across its full range of functions.

HIQA's mandate to date extends across a specified range of public, private and voluntary sector services. Reporting to the Minister for Health and the Minister for Children and Youth Affairs, the Health Information and Quality Authority has statutory responsibility for:

- Setting Standards for Health and Social Services — Developing person-centred standards, based on evidence and best international practice, for health and social care and support services in Ireland.
- Regulation — Registering and inspecting designated centres.
- Monitoring Children's Services — Monitoring and inspecting children's social services.
- Monitoring Healthcare Quality and Safety — Monitoring the quality and safety of health services and investigating as necessary serious concerns about the health and welfare of people who use these services.
- Health Technology Assessment — Providing advice that enables the best outcome for people who use our health service and the best use of resources by evaluating the clinical effectiveness and cost-effectiveness of drugs, equipment, diagnostic techniques and health promotion and protection activities.
- Health Information — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information about the delivery and performance of Ireland's health and social care and support services.

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Foreword

This report presents an overview of findings of unannounced inspections completed in 2015 by the Health Information and Quality Authority (HIQA) in Irish public acute hospitals against the *National Standards for the Prevention and Control of Healthcare Associated Infections*, referred to in this report as the Infection Prevention and Control Standards.[1] This inspection programme aims to continually promote a reduction in Healthcare Associated Infections, and in so doing protect patients using Irish public acute hospitals.

Infection prevention and control should be an essential patient-safety focus for all hospitals. Our monitoring programme focuses on identifying the presence of, and reporting on, the effective implementation of infection prevention and control strategies that are known to reduce harm to patients and improve patient safety. In 2015, the programme aimed in particular to promote the importance of:

- good hand hygiene practices
- a clean and safe hospital environment
- the effective use of care bundles to reduce infection related to invasive devices
- high-quality usage of antibiotics through effective antimicrobial stewardship.

The focus in 2015 on care bundles was an expansion of HIQA's monitoring programme for the prevention and control of Healthcare Associated Infections compared to 2014. A separate report outlining our findings in relation to antimicrobial stewardship will be published separately over the coming weeks.

This overview report has been designed to distil some of the overall learning from our inspections from 2015. In doing so, it is hoped that hospitals may use this document as a tool to further inform their improvement efforts to reduce the risk of infection to patients who rely on our public acute hospitals.

Mary Dunnion
Director of Regulation,
Health Information and Quality Authority

Introduction

This report presents an overview of 39 unannounced inspections carried out by HIQA in 32 public acute hospitals in 2015. Throughout the year, we published inspection reports for each hospital inspected on our website www.hiqa.ie.

This year there was a significant increase in the number of re-inspections required, with 22% of hospitals inspected requiring a follow-up inspection. Re-occurring reasons for follow-up inspections were:

- poor hygiene standards observed during inspections
- poor maintenance and management of the environment and facilities which impacted on compliance with infection prevention and control standards.

Progress was observed in hand hygiene training levels and general awareness across hospitals. Compliance with the Health Service Executive (HSE) national target of 90%[2] for national hand hygiene audits had also progressively increased. Varying progress with implementing the World Health Organization's (WHO's)[3] multimodal strategy was evident in all hospitals inspected. In general, hospitals were committed to achieving and embedding good hand hygiene practices at all levels within their organizations.

However, we also observed poor levels of cleanliness in most hospitals inspected in 2015. It is clear from the findings of our unannounced inspections that there is considerable room for improvement required in this area. The importance of effective environmental hygiene cannot be overemphasized, particularly in the role good hygiene plays in reducing the transmission of infection in hospitals and in the context of growing pathogen resistance. The factors which contributed to the poor standards of hygiene seen by HIQA inspectors are outlined in this report.

It is especially important that areas in hospitals where high risk invasive procedures are carried out should be meticulously clean to reduce the risk of the transmission of infection to patients. Our programme in 2015 placed a particular focus on inspecting such areas incuding operating theatres, interventional radiology suites and endoscopy, intensive care, oncology, neonatology and renal dialysis units.

The increased focus on these high risk areas has highlighted the need to review the current infrastructure and its maintenance in Irish hospitals. Inspectors found many cases where the infrastructure and facilities provided were inadequate, outdated and or poorly maintained, and where the infrastructure did not always support the implementation of best infection prevention and control practices. Notwithstanding these challenges, older infrastructures need to be maintained and can still be cleaned with the provision of effective management and oversight, adequate

resources and staff who are trained and deemed competent to perform the necessary cleaning tasks.

It is a concern that in many instances, infrastructural deficiencies and maintenance issues appeared to have been addressed in direct response to 2014 inspections by HIQA rather than through a proactive programme of management. Inspectors found that infrastructural and maintenance risks identified in the 2015 inspection reports had largely been identified locally by each hospital already, but had not been effectively addressed through hospital and Health Service Executive (HSE) corporate risk management systems. The most frequently cited reasons given by hospitals for failing to address maintenance and infrastructural issues were a lack of resources and high occupancy and activity levels.

In 2015, HIQA started to assess compliance with care bundles as part of its unannounced inspections. Care bundles are a set of evidence-based actions that when applied consistently to specific activities during routine patient care have been shown to improve patient safety. Particular focus was placed on the implementation of peripheral and urinary catheter care bundles and the monitoring of device-related infections. Varying levels of compliance with the Standards[1] were seen. The implementation of peripheral catheter care bundles was more advanced than urinary catheter care bundles, indicating a need to improve in the latter area. In general, good awareness and knowledge was demonstrated by staff relating to peripheral vascular care bundles.

Scope to improve preparation, labelling and storage of intravenous medication in the clinical area was a re-occurring finding in 19 of the 32 inspections. Inspectors found risks relating to the preparation of intravenous anaesthetic and emergency medicines and intravenous fluids in advance of giving these medicines to patients. These medicines had been stored inappropriately, left unattended and were not sufficiently and safely labelled. This was especially noticeable in operating theatres.

While there are a number of different areas of learning, we would like to take this opportunity to highlight three key areas of required improvement based on HIQA's collective experience from 2015.

1. Better management of hygiene standards and maintenance of the hospital environment.

Significant scope for improvement in cleaning performance and maintenance of the physical environment in hospitals was identified in 2015 – performance disimproved when compared to findings in 2014.

Better training and oversight of cleaning staff performance is required. The challenges associated with cleaning and maintaining older hospital infrastructure also needs to be taken into consideration when allocating cleaning resources. Planned proactive maintenance programmes should be in place in all healthcare facilities to sustain the fabric of hospital buildings and ensure compliance with the Standards. Regular risk assessment of the environment from an infection prevention and control perspective, with action to address infrastructure related risk should occur. There is a need for targeted investment in hospital infrastructure to address deficiencies, prioritised on the basis of risk across the health system.

2. More widespread implementation of infection prevention care bundles.

Infection prevention care bundles can reduce the incidence of infection and protect patients. They have been recommended in a series of national guidelines dating back over the past few years. While progress has been made in some hospitals with implementation, this has not been widespread.

All hospitals need to work to ensure compliance with relevant national guidelines in implementing infection prevention care bundles. Learning from the successful implementation of these care bundles in some hospitals should be shared collectively to aid in this process. Central-venous-catheter care bundles and ventilator-associated-pneumonia care bundles should be progressed as a priority in specialized areas such as intensive care units. In addition, surveillance systems need to be put in place to collate infection incidence related to invasive device usage. This information should be fed back to staff and managers in a timely way to drive improvement in reducing such infection.

3. Improvement in preparing, labelling and storing intravenous medicines in clinical areas.

There is a need for all hospitals to assess and where necessary improve practices in relation to the preparation, labelling and storage of intravenous medicines in clinical areas. In particular, HIQA identified during a number of inspections a practice of pre-preparation of intravenous medicines in advance of usage which were left unattended, and insufficiently labelled in a number of high risk areas, including operating theatres. Such practice is unnecessary and presents a risk of potentially avoidable microbiological contamination, medication error and breach in medicine security. Outbreaks of bloodstream infection associated with such practices have been reported internationally.

In situations where it is judged that ready access to such intravenous medicine is required for emergency purposes, arrangements should be made to ensure that there is planned access to prelabelled medication rather than a relying on preparation of medicines in the clinical area in a piecemeal fashion.

Susan Cliffe
Head of Healthcare,
Health Information and Quality Authority

Our mission

The mission of HIQA is derived from the statutory functions described in the Health Act 2007 and can be summarised as:

"Drive high quality and safe care for people using our health and social services."

Our values

- **Putting people first** — we will put the needs and the voices of service users, and those providing them, at the centre of all of our work.
- **Fair and objective** — we will be fair and objective in our dealings with people and organisations, and undertake our work without fear or favour.
- **Open and accountable** — we will share information about the nature and outcomes of our work, and accept full responsibility for our actions.
- **Excellence and innovation** — we will strive for excellence in our work, and seek continuous improvement through self-evaluation and innovation.
- **Working together** — we will engage with people providing and people using the services in developing all aspects of our work.

Find out more on the Authority's website: www.hiqa.ie

About this report

This report outlines the findings of 39 unannounced inspections carried out by HIQA in 32 public acute hospitals in 2015. These inspections continue HIQA's commitment to supporting ongoing quality improvement within the country's public healthcare facilities and the provision of clean and safe environments for patients.

The aim of unannounced inspections is to assess the compliance of public acute hospitals against the *National Standards for the Prevention and Control of Healthcare Associated Infections*.[1] The findings of these inspections, in addition to other work carried out by HIQA and information it receives, helps to build a picture of the safety and cleanliness of Irish public acute hospitals. This information can help determine the future focus of inspections or monitoring by HIQA. Other aims of this monitoring programme are to:

- improve the quality of hygiene in the hospitals inspected
- contribute to a reduction of Healthcare Associated Infections
- share good practice
- help assure the public that hospitals cleanliness is being actively improved.

The inspection process continues to evolve since the first inspections were carried out against the Standards[1] in the last quarter of 2012. In addition to assessing environmental hygiene and hand hygiene in 2015, HIQA expanded its focus to include inspection of progress in implementing infection prevention care bundles. Hospitals are assessed against these three selected National Standards during an unannounced inspection. These three areas — good hand hygiene compliance, well maintained hospitals with high standards of cleanliness and the implementation of care bundles — have been shown to significantly contribute to reducing Healthcare Associated Infections.[1] The inspection process is outlined in Appendix 1 of this report.

HIQA's inspection process is a dynamic one, which has evolved in recent years. Changes to the inspection process are made in response to findings of inspections; feedback from service providers and service users; the changes and challenges faced within the health service as it develops; the needs and experiences of the service user; evolving, scientific evidence-based best practice; and meeting the Authority's own business objectives.

In 2015, inspectors revisited a number of areas or wards that were inspected during 2014. The aim of each revisit was to check on the progress made since those

inspections and to help provide assurance to the public that hospitals are acting to improve compliance with the Standards.

Inspectors also reviewed quality improvement plans devised by hospitals following 2014 inspections by HIQA, the findings of which will be discussed in this report.

During the course of the 39 inspections in 2015, 64 clinical areas were inspected, covering a range of treatment specialities.

HIQA had increased the inspection of high-risk areas in 2014 and expanded this focus in the unannounced inspections of 2015. The high-risk areas inspected included:

- haematology units
- oncology units
- day infusion services
- intensive care units
- coronary care units
- operating theatres
- endoscopy suites
- interventional radiology suites and
- renal dialysis units.

A breakdown of the 64 areas inspected is demonstrated in Figure 1.

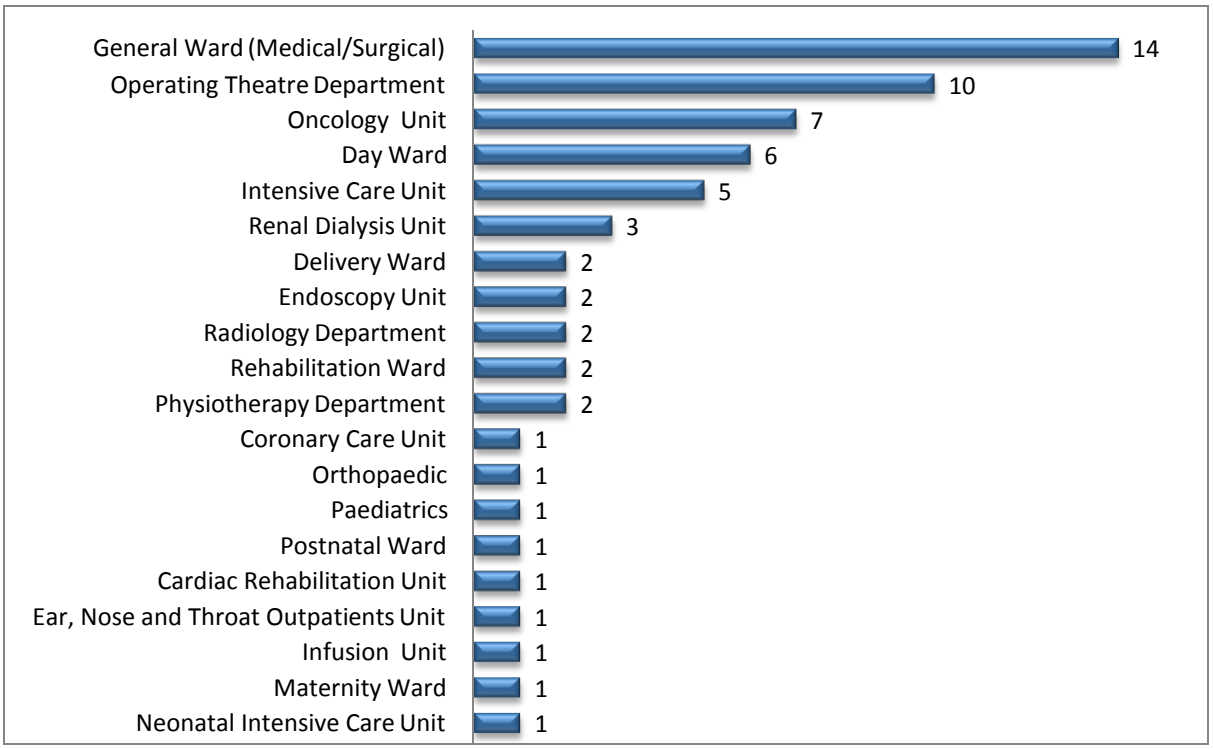
Operating theatres and interventional radiology suites were inspected by HIQA against the *National Standards for the Prevention and Control of Healthcare Associated Infections* for the first time in 2015. HIQA continued to inspect general surgical and medical wards, and also assessed physiotherapy departments and laundering facilities for reusable cleaning textiles such as cleaning cloths and mopheads.

HIQA carried out unannounced inspections between 29 January 2015 and 16 December 2015. These included re-inspections within six weeks in seven hospitals[†]

[†] Re-inspections were carried out in the following seven hospitals: Midland Regional Hospital, Mullingar; Portiuncula Hospital, Ballinasloe; South Infirmary Victoria Hospital, Cork; Our Lady of Lourdes Hospital, Drogheda; Letterkenny General Hospital; Kerry General Hospital; and the National Maternity Hospital, Holles Street, Dublin.

where high-risk findings were observed during the first inspection and which needed immediate mitigation.

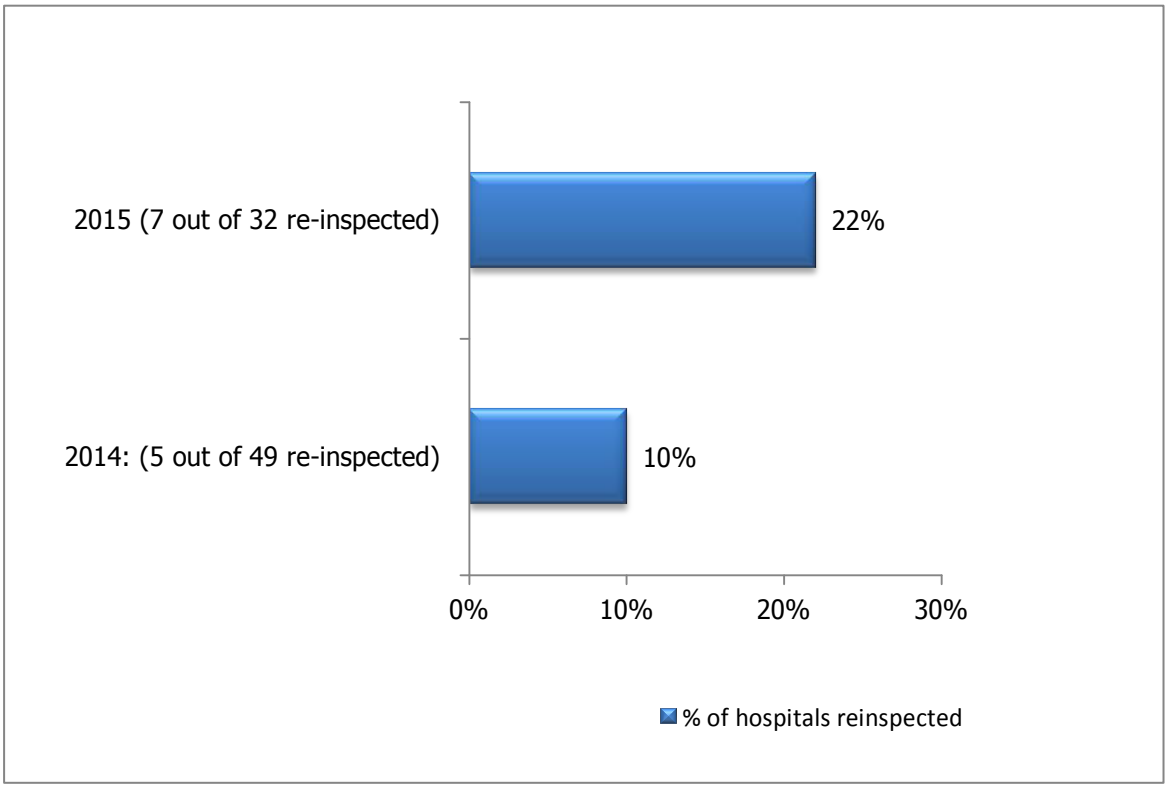
Figure 1. Breakdown of the 64 areas inspected in 32 hospitals inspected in 2015



Follow-up inspections are carried out to assess progress made by hospitals in addressing highlighted risks and to propel rapid improvement between inspections. The seven re-inspections arising from the 32 inspections in 2015 represent an increase when compared with five re-inspections arising from 49 inspections in 2014. The percentage ratio of re-inspections carried out against the overall number of inspections in 2014 and 2015 is shown in Figure 2.

A single inspection report was prepared and published on the HIQA website, www.hiqa.ie, for each of the seven hospitals where a re-inspection was carried out. Therefore, a total of 32 inspection reports outlining the findings of the 39 inspections were published. These reports included findings from both the initial inspection and the re-inspection. A list of the 32 hospitals inspected and details of the reports published is shown in Appendix 2.

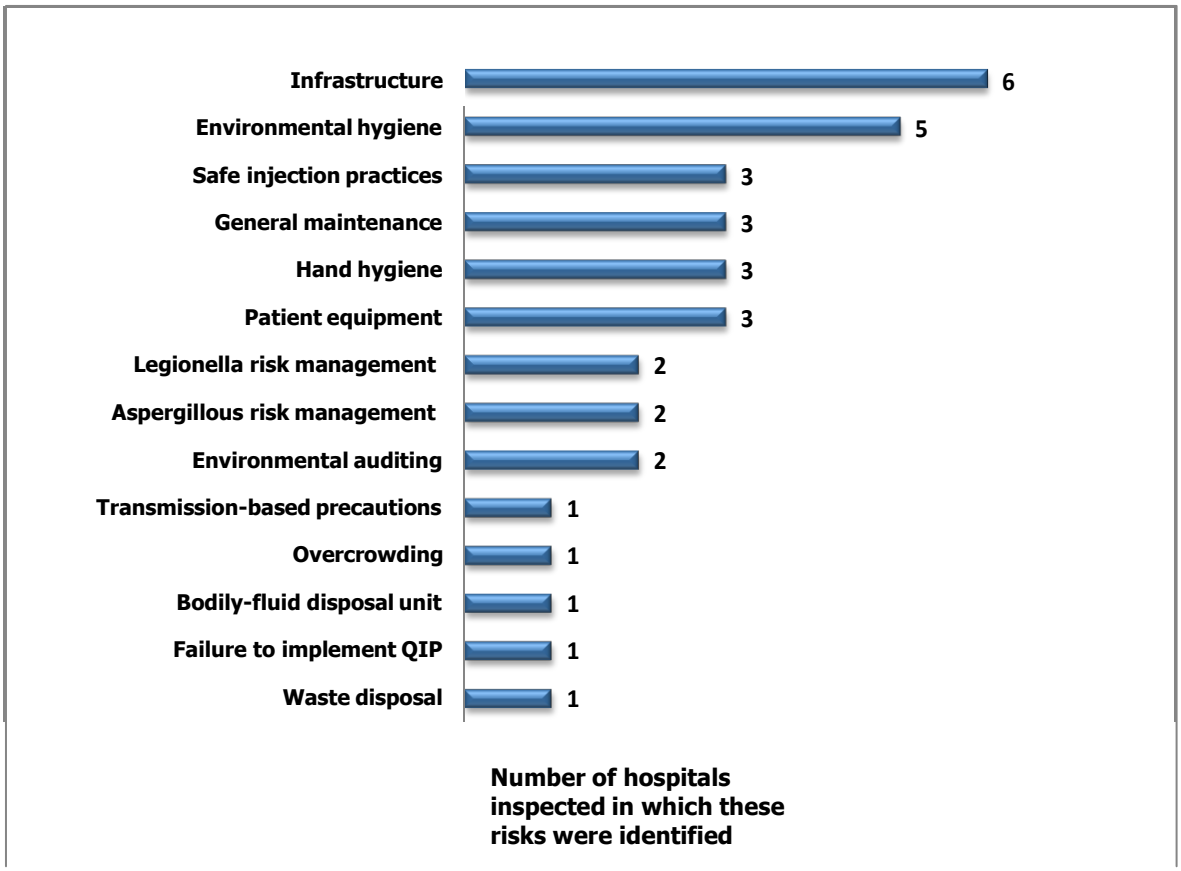
Figure 2. Comparison between the proportions of inspections resulting in re-inspections carried out by HIQA in 2014 and 2015



High risks which impacted on compliance with effective infection prevention and control were identified during some inspections. Therefore, the relevant inspection team sent letters to 10 of the 32 hospitals inspected seeking further clarification and or information on how the risk was being managed. In 7 hospitals out of the 10, the high-risk letters notified the hospitals that re-inspections would be carried out within six weeks of the first inspection. The main high-risk issues identified by the inspectors are represented in Figure 3. The decision to carry out a follow-up inspection was made on the basis of risk identified during inspections. In six of the seven hospitals re-inspected, several risks identified during inspection when considered together, presented a high risk and prompted re-inspection within six weeks.

Quality improvement measures which had been implemented by hospitals who were deemed to require a follow-up inspection were assessed during the seven re-inspections. In six of the seven re-inspections, hospitals had addressed most of the risks identified. However, no improvement was observed in the standard of environmental hygiene in one hospital re-inspected.

Figure 3. Areas of risk which prompted re-inspections of hospitals by HIQA within six weeks after an initial inspection



Key: QIP = quality improvement plan

HIQA noted that one hospital that required a follow-up inspection made a commendable effort to share the learning gained from the findings of the inspections across the hospital and at hospital-group level. Such sharing of information is recommended, but was not always evident within hospitals that required re-inspection.

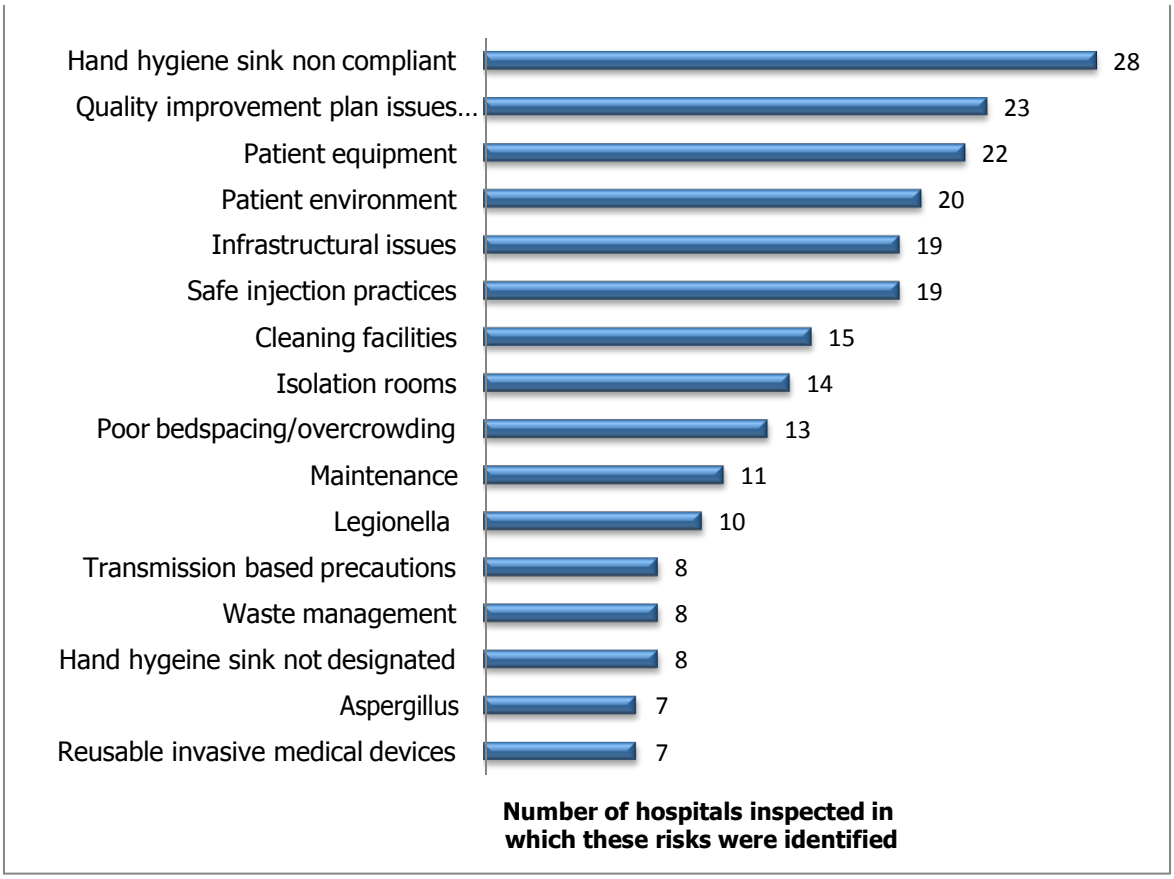
While some improvements were made relating to maintenance and infrastructure, hospitals reported that many of the issues remained outstanding due primarily to limited availability of capital funding. Occupancy and activity levels also impacted on the ability of some hospitals to address deficiencies due to a lack of access to specific clinical areas.

Key findings of unannounced inspections in 2015

A clean and safe environment in hospitals and healthcare facilities is a fundamental expectation of staff, patients and visitors who use the service. It is an essential element of basic infection prevention and control and should be an important priority for all healthcare organisations. In this report, the findings of the unannounced inspections in 2015 are presented in relation to compliance with each Standard, from the *National Standards for the Prevention and Control of Healthcare Associated Infections*, which was assessed.

While the main focus of the inspection relates to Standards 3, 6 and 8,[1] non-compliances with other Standards observed during these inspections were also reported. Many of these non-compliances are presented under Standard 7 in this report and relate to the prevention, management and control of communicable or transmissible diseases.

Figure 4. Re-occurring areas of non-compliance with the National Standards highlighted during the 2015 inspections of public acute Irish hospitals by HIQA



It is important to note that the Standards may not be assessed in their entirety during an inspection. Therefore, the findings reported are related to a particular

aspect or criteria within a Standard observed during an inspection. Inspectors saw good practice and evidence of compliance with the Infection Prevention and Control Standards[1] in all hospitals inspected in 2015. However, non-compliances with the Standards were identified in a significant number of hospitals inspected. Findings which were most frequently observed are represented in Figure 4.

Standard 3. Environment and facilities management

Standard 3. Environment and facilities management

The physical environment, facilities and resources are developed and managed to minimize the risk of service users, staff and visitors acquiring a Healthcare Associated Infection.

Hospital infrastructure and maintenance

The 2015 inspections were focused on high-risk areas where invasive procedures are carried out. These potentially pose the highest risk to patients from acquiring a Healthcare Associated Infection. Infrastructural deficiencies and maintenance issues were re-occurring findings in the majority of inspections undertaken in 2015, but were more apparent in high-risk areas where they had a greater impact on the effective implementation of infection prevention and control practices.

Infrastructural deficiencies were one of the high risks identified in six out of seven inspections which prompted follow-up inspections in 2015. Many Irish acute hospitals have an ageing infrastructure. It was evident that there were many new buildings, refurbishment and upgrade programmes in the planning stages or underway in 2015. These should address some of the infrastructural deficiencies identified in inspections carried out in 2015.

While the upgrade of hospital facilities is a positive development, a risk-based approach to redevelopment and upgrade works was not strongly evident in some hospitals, which resulted in a failure to prioritise allocated funding to the areas of highest risk in all cases. It was reported to inspectors that the ability to address infrastructural issues and much of the outstanding maintenance issues observed in 2015 was hindered by limitations on capital spending allocations, high occupancy and high activity levels in hospitals. High bed occupancy rates and activity levels, leading to limited access, are regarded as barriers to resolving maintenance and infrastructural issues in clinical areas. Meanwhile, some recent upgrades and new builds viewed by HIQA demonstrated infrastructures — with high specifications and compliance with current recommendations — which facilitated effective cleaning and compliance with the Infection Prevention and Control Standards.

The need for greater support for hospitals to better address infrastructural deficiencies through hospital-group structures and corporate-level HSE support was strongly emphasized during the 2015 inspections. HIQA acknowledges that it will be challenging for some hospitals to perform well in addressing some of the risks

identified, particularly relating to infrastructural deficiencies, bed spacing and occupancy rates. However, full compliance with the Infection Prevention and Control Standards cannot be achieved in circumstances where these risks are not fully resolved.

The following are re-occurring issues related to infrastructural deficiencies which were identified during the 2015 inspections.

- HIQA inspected six oncology units, one haematology unit, one combined oncology and haematology clinic and one infusion clinic in 2015. The majority of the units inspected were clearly not designed or configured in line with best practice recommendations[4] or subsequent increases in service demands. The following findings indicate improvements are required in relation to the built environment of the units inspected:
  - outdated and inadequate infrastructure from an infection prevention and control perspective for the volume and needs of patients receiving treatment at the time of inspection
  - open plan space with limited spatial separation between patients
  - insufficient or no designated isolation facilities
  - insufficient toilet facilities
  - inadequate medication preparation and storage areas
  - medication safety issues
  - scope for improvement relating to Aspergillus risk management controls
  - lack of appropriate waiting areas, storage space for patients' personal belongings, a dedicated procedure room, a quiet room or patient privacy screens to facilitate patient privacy and dedicated rooms for the storage of cleaning equipment
  - insufficient cleaning resources and equipment
  - oncology units not self-contained — ancillary areas such as a 'dirty'[±] utility room, ward pantry, linen, cleaning and equipment stores being located outside the unit
  - mixed procedure case load of day-ward procedures such as endoscopies and day-ward activity co-located with cytotoxic chemotherapy procedures (cancer medicines)
  - inappropriate storage of sterile supplies on open carts in patient areas increasing the risk of inadvertent contamination from the environment.

- Outdated infrastructures and designs were in evidence in operating theatres and critical care units that were not fit for purpose, did not comply with Standards

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

and did not facilitate effective cleaning. In some cases, they were not suitable for the increased demands placed on the service.

- There was a failure to separate functional areas which often resulted in rooms being used inappropriately for multiple functions. This meant that in some cases clean and dirty activities were not segregated and happened in the one room.
- Limited spacing between patients' beds meant that there was limited space for patients to sit out and for staff to circulate or manoeuvre patients or equipment. In some cases, limited spacing impacted on hand hygiene compliance as patient zones and healthcare zones could not be clearly defined.
- Overcrowding was an issue, with extra beds observed on wards. This issue also contributed to an increasing prevalence and cultural acceptance of mixed-gender wards, and extra cots in very high-risk areas such as neonatal intensive care units.
- There were insufficient isolation facilities, and isolation facilities which did not comply with standards expected in a modern healthcare facility.
- A lack of proactive maintenance programmes resulted in long-term ongoing maintenance issues such as worn and poorly maintained surfaces, including floor covering, finishes, woodwork, paintwork and wall finishes. This did not facilitate effective cleaning.
- Allocated funding and maintenance were not always prioritised by risk.
- There were inadequate and inappropriate areas for the preparation of intravenous medicines.
- There was a lack of appropriate storage facilities leading to inappropriate storage of clean and sterile supplies in patient areas.
- There was a lack of patient toilet and washroom facilities to meet the needs of the patient population attending the hospital.
- A failure by hospitals to address infrastructural deficiencies and some maintenance issues were reported to be due to a lack of resources and support from hospital-group and corporate-HSE structures.

It is recognized that addressing the ageing infrastructure in many Irish hospitals will take time and a significant amount of funding. However, before new units are built or other units upgraded, risks to patients must be mitigated to help ensure that the environment in which they are accommodated and cared for is as clean and safe as possible. Lessons learnt from failures in healthcare in other jurisdictions[5] emphasize the importance of ensuring that hospital environments facilitate the implementation of effective infection prevention and control and that maintaining the environment is a priority. It is therefore important that hospitals identify on an annual basis infection prevention and control risks related to their facilities and infrastructure. Hospitals need to be adequately funded and resourced to be able to address these risks as a priority within the health service governance structures.

What needs to improve?

- More support is required for hospitals from hospital-group level and corporate-HSE level to address infrastructural deficiencies.
- Allocated funding should be prioritised on the basis of high risks in the area of infection prevention and control.
- Maintenance programmes need to be more proactive.

Environmental hygiene

Cleaning in a hospital environment is a highly important and specialized technical activity, which presents much greater difficulties than cleaning in other public locations such as domestic, office or commercial settings. The consequences of poor performance in cleaning in a hospital environment are also greater and may put patients at risk.

Therefore, individuals tasked with cleaning in hospitals need to be trained and competent to perform the assigned cleaning tasks in line with infection prevention and control principles.[6] HIQA checks the general cleanliness of equipment, fittings, fixtures and furnishings within the environment to determine the overall environmental hygiene in a particular area at the time of the inspection. In general, hospitals found to have good standards of cleanliness at the time of inspection had the following measures in place:

- good and thorough cleaning processes
- local ownership of issues relating to hygiene
- adequate cleaning resources
- provision of designated cleaning staff to an area which can create better accountability and ownership at local level
- effective monitoring and auditing of cleaning services
- good oversight of cleaning services at all levels within the hospital
- clear reporting structures.

There were a significant number of hospitals inspected in 2015 where an improvement in the cleanliness of the clinical environment was required. Environmental hygiene was also an issue which had been identified in the 2014 inspections. Variable levels of cleanliness were observed within some hospitals, which were frequently related to an identified deficit of local ownership of performance in cleaning within that area.

The findings relating to environmental hygiene indicates that governance arrangements in relation to managing and monitoring cleanliness levels within many hospitals inspected needs to improve. It is the responsibility of the chief executive or equivalent of the hospital to provide the governance structures, systems, processes and resources to ensure that the required standards of hygiene are consistently achieved.[1]

In many cases, poor performance in relation to hospital hygiene is a wider management issue and should not be considered as the sole responsibility of hospital cleaners. Therefore, hospital managers need to ensure the following recommendations are in place as stated in the HSE's Cleaning Manual for Acute Hospitals:

> At an operational level hospitals should ensure that each staff member with responsibility for cleaning has the right level of training, the appropriate equipment, knows what needs cleaning and how often and is properly supervised to ensure that things are done correctly in accordance with the standard as laid down. It should also be documented as to who has responsibility for cleaning for every item requiring cleaning in the hospital.[7]

It is of concern to HIQA that in 2015 its inspectors saw evidence of repeatedly poor adherence to national guidance for cleaning services in Irish hospitals. It is acknowledged that increased activity levels, high occupancy levels and resource issues can impact negatively on standards of cleaning, if tolerated. However, in addition to the overall management of the facility, it is the responsibility of each hospital and its staff to contribute to and ensure the provision of a clean and safe environment for all service users.

During inspections, HIQA inspectors consider dust levels as one of the indicators of overall cleaning performance in hospitals. Poor dust control measures were frequently observed in busy patient areas. Varying levels of dust was present on floor edges and in corners in most areas inspected. The levels of dust observed were frequently more than what should be expected in patient areas that are cleaned daily. Some of the dust-control measures, using flat mops, seen by inspectors did not comply with best practice and could not effectively control dust levels. For example, in one hospital inspected, dust control and mopping of floors was completed using the same mop head. The dust collected was then gathered up with a brush and pan. Dust control should be performed prior to floor mopping in line with national cleaning guidelines.[7] Poor management of mophead cleaning was also observed by inspectors following cleaning sessions.

It is recommended that hospitals review dust-control methodology to help ensure that systems and processes are as effective as possible. For example, HIQA found

that providing new vacuum cleaners and increased frequency of vacuuming in two hospitals that had been re-inspected due to poor hygiene standards significantly contributed to reducing dust levels and subsequently improving environmental cleanliness levels.

Inadequate cleaning resources can contribute to poor compliance with hygiene standards. Such a situation was observed in two of the seven hospitals requiring re-inspection. Insufficient provision of cleaning resources — such as appropriate staffing levels, consumables, equipment and lack of oversight of cleaning services — were reported as contributing to the poor quality of cleaning observed during the inspections. The following non-compliances were observed:

- poor hospital oversight of cleaning services
- insufficient staff and time allocated to clean areas with high-activity levels
- lack of permanent allocation of staff to a ward, particularly high-risk specialist areas contributing to poor standards of cleaning
- inadequate frequency of cleaning
- incomplete recording of daily and weekly cleaning tasks in checklists
- allocation of dual catering and cleaning responsibilities to clinical-based staff
- poor dust control measures
- laundering of reusable cleaning textiles was not in line with best practice.

Inappropriate designated facilities for the laundering of reusable cleaning textiles were observed. The facilities observed could not be effectively cleaned and did not support functional separation of the clean and dirty phases of the laundering process. It is the responsibility of hospitals to ensure that contracted external services such as hygiene services which relate to the prevention and control of Healthcare Associated Infections are effectively and efficiently governed, monitored and performance managed.[8]

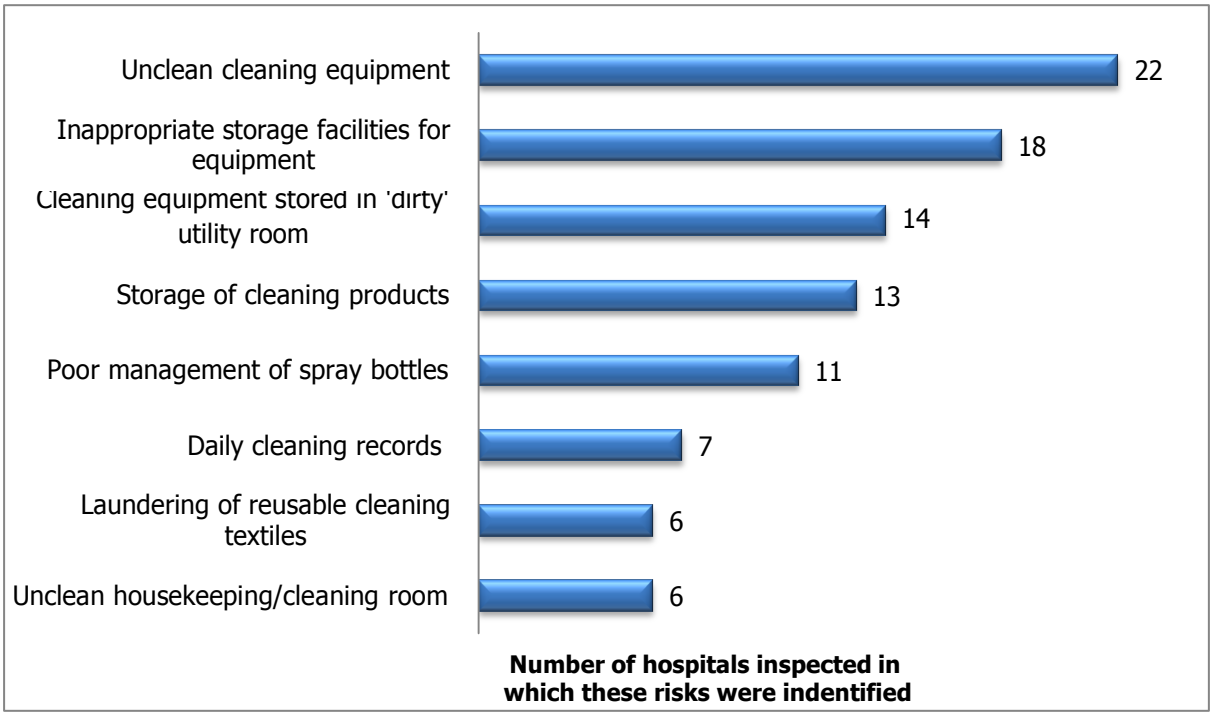
Further non-compliances included:

- inadequate laundering of reusable cleaning cloths at ward level
- sharing single mopheads in multiple areas
- poorly maintained cleaning equipment resulting in visibly unclean equipment
- inadequate or a lack of cleaning storage areas leading to inappropriate storage of cleaning equipment in 'dirty' utility rooms, stairwells and ward corridors and increased risk of cleaning equipment contamination
- reusable spray bottles containing detergent for general purpose cleaning were not effectively cleaned and dried at the end of each cleaning session.

In addition, the majority of the spray bottles observed were either unlabelled or insufficiently labelled. Poorly maintained spray containers may facilitate the growth of bacteria and subsequent use may result in environmental contamination. The use of reusable spray containers for detergent in high-risk areas in which particularly vulnerable patients are accommodated needs to be reviewed in the context of the risks posed.

A breakdown of issues frequently observed by inspectors relating to hospital cleaning is shown in Figure 5.

Figure 5. Number of inspections identifying poor cleaning processes during 2015 inspections



Effective systems to evaluate and monitor the quality of hygiene services are important measures to direct improvement in cleaning services, provide assurances that cleanliness levels are being regularly monitored, and demonstrate effective leadership and management of environmental hygiene. It was evident that all hospitals inspected were monitoring and measuring compliance with locally agreed standards of hygiene.

Multidisciplinary hygiene audit teams, which included a member of the infection prevention and control team, were in place in most hospitals. Regular local hygiene audits were carried out by staff at ward level, while hygiene services audits were carried out by hygiene supervisors either employed directly by the hospital or by

external cleaning contractors. There was evidence that executive management walkabouts were undertaken in many hospitals.

However, high levels of compliance with internal hygiene audits demonstrated in most hospitals inspected did not always reflect the standard of cleanliness observed by HIQA during the 2015 inspections. This disparity is a concern. Opportunities for improvement in environmental auditing processes were observed in five of the seven hospitals that required re-inspection.

In all healthcare settings, individuals tasked with environmental auditing must be trained and competent to do so.[6] In addition, HIQA recommends that a standardised audit tool and audit process should be used to provide assurance that standards of cleanliness achieved are consistent, reliable and accurately reflect the standard of hygiene achieved.

The following non-compliances in relation to measuring, overseeing and auditing of the quality of cleaning were frequently observed by inspectors:

- inadequate supervision of cleaning processes and cleaning services provided
- failure to fully address issues listed in action plans devised following environmental audits — it was notable that maintenance issues requiring additional resources were frequently not addressed in a timely manner
- follow-up audits were not always carried out whenever poor compliance with levels of cleanliness was identified
- failure to adhere to local auditing schedules— activity levels and insufficient resources were the reasons commonly cited for poor adherence with auditing schedules
- insufficient frequency of auditing for some high-risk functional areas, which indicated that audit frequencies were not determined by risks associated with high-risk functional areas
- lack of awareness and feedback at local level of cleanliness levels achieved during audit.

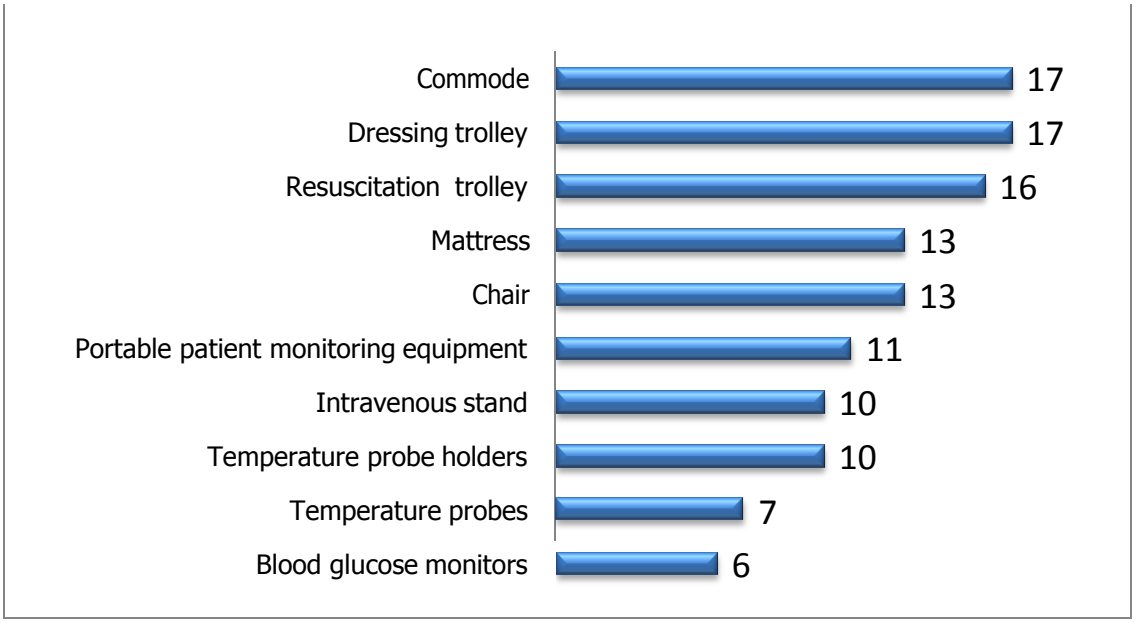
In addition, infrastructural deficiencies were frequently not captured during the audit process employed in many of the hospitals inspected. These deficiencies impacted on their ability to effectively clean the environment and implement infection control measures. This is an area that needs to be included in hospital audits given the extent of the aging hospital infrastructure and the challenges these deficiencies pose.

Patient care equipment

Although some improvements in the cleanliness of patient equipment were seen in the 2015 unannounced inspections when compared to the previous year, many of the issues related to unclean patient equipment identified by HIQA during 2014 continued to be observed in 2015. Figure 6 shows the breakdown of items of equipment frequently found to be unclean during 2015 inspections.

While unclean commodes were an issue in three out of four inspected hospitals in 2014, this situation improved in 2015 with unclean commodes seen in just over a half of hospitals inspected. However, this level of unclean commodes remains a concern as poor cleaning of commodes has the potential to contribute to the spread of *Clostridium difficile.* Therefore, the importance of cleaning of commodes must remain a focus for improvement in all hospitals.

Figure 6. Number of hospitals where unclean items of patient equipment were observed in clinical areas inspected during 2015



In 20 hospitals inspected in 2015, there was inadequate cleaning of patient beds and trolleys, while in many hospitals there is a need to improve the cleaning of the under-surfaces of bedframes, patient chairs and shelving of dressing trolleys. Unclear lines of responsibility for cleaning equipment were identified as a contributing factor to inadequate cleaning of some patient equipment assessed by HIQA.

Reiterating HIQA's 2014 overview report, the findings in 2015 show responsibility for cleaning of each element or item within a functional area must be clearly defined in

line with best practice. Cleaning specifications were not available to inspectors to review in a minority of hospitals; these specifications should schedule:

- each item to be cleaned
- how the item is to be cleaned
- the frequency of cleaning needed
- and person responsible for cleaning the equipment.[6-7]

Incomplete cleaning checklists for patient equipment were observed in several hospitals, similar to 2014 findings. The main reasons given for incomplete cleaning checklists observed during 2015 inspections were insufficient resources or resources deployed elsewhere. In some cases, there was a lack of local ownership and oversight of cleaning checklists by either household supervisors or ward managers.

Mobile patient-observation monitoring equipment was not always cleaned after use between different patients. In some areas inspected, cleaning wipes or equipment were not readily accessible for staff to facilitate the cleaning of such patient equipment at the point of care. This is of concern to HIQA as the failure to clean patient equipment between use on different patients increases the risk of infections being transmitted between these patients.

Dedicated patient equipment was evident in many of the isolation rooms inspected — this is to be welcomed as a mitigating measure to reduce the risk of cross infection. Poor hygiene standards in hospitals reflect on all staff who work there. The general manager of a hospital or equivalent has overall responsibility for the standards of cleanliness in the hospital; however, all staff have a role to play in working to ensure that the hospital environment is clean. This message needs constant reinforcement across hospitals in order to improve standards and protect patients.

What needs to improve?

- Better lines of responsibility for the cleaning of patient equipment.
- Better oversight for the cleaning of patient equipment.

Waste management

Waste management was generally good in the hospitals inspected in 2015. However, inspectors identified areas of concern in eight hospitals during the year, as follows:

- unsecured waste sub-collection areas in a number of hospitals
- a failure to dispose of clinical risk waste at the point of care in two hospitals
- the lack of a clinical risk waste bin in some isolation facilities
- double handling of clinical risk waste in one hospital.

What needs to improve?

- Appropriate and secure waste storage areas in all hospitals.
- Adherence to best practice on waste management where deficiencies had been identified in HIQA reports.

Standard 6. 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.

HIQA continued to monitor hand hygiene practices during the 2015 inspections, with all hospitals inspected demonstrating a commitment to improving hand hygiene awareness and practices. There was evidence that most hospitals were improving staff attendance at hand hygiene training. Many hospitals offered a combination of hand hygiene training options to facilitate staff to attend hand hygiene training, including ward-based training sessions and updates, classroom-based education and online training. More staff had been trained to deliver hand hygiene training at ward level.

Exemplary use of hand hygiene posters was observed in one hospital inspected. Signage which promoted 'bare above the wrist zone' and barriers to the correct hand hygiene technique were posted at the entrance to each clinical area in another hospital. Hand hygiene audit results were displayed on notice boards in clinical areas in a number of hospitals. Inspectors saw evidence of patient and hygiene surveys, in addition to awareness days with a focus on hand hygiene. Such initiatives are to be welcomed and should be encouraged in all hospitals.

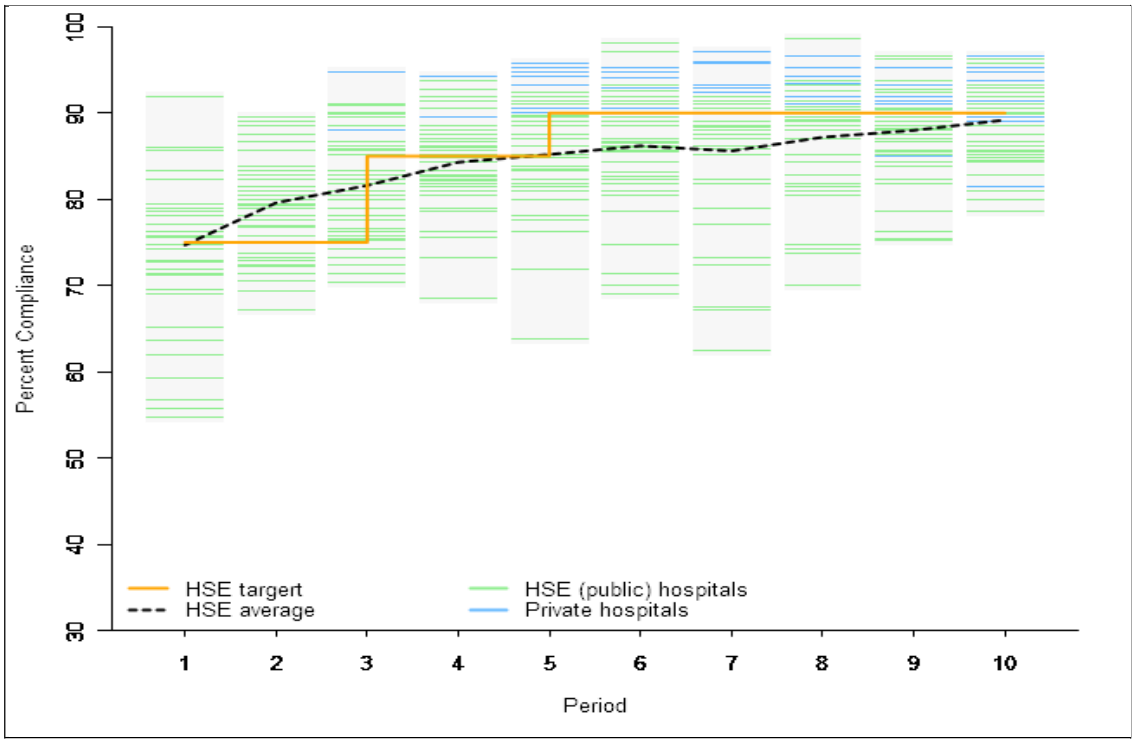
Public acute hospitals undertake HSE national hand hygiene audits twice a year. Each audit period generally occurs between May and June and October and November every year. Results are published on the HSE's Health Protection Surveillance Centre (HPSC) website, www.hpsc.ie. The HSE sets national targets in its annual service plan which facilitates measuring hand hygiene performance in hospitals. The national target or key performance indicator[±] for hand hygiene in 2015 was 90% compliance.[2] The results of national hand hygiene audits demonstrated that compliance by hospitals participating in these audits has continued to increase in a sustained way since 2011 when the national hand hygiene audits first began. The average hand hygiene compliance rate achieved by participating Irish acute hospitals for 2015 was 89.2%.[9]

The graph below indicates compliance achieved by public acute hospital over 10 audit periods which commenced in June 2011 up to October and November 2015. A review of the data indicates that cumulative performance has improved up to Period

[±] A key performance indicator is a means to measure performance that are used by hospitals or organisations to measure how well they are performing against a set target or expectation.

10 in working to achieve national targets set by the HSE[2]. However, more work needs to be done to achieve 90% compliance in all hospitals as demonstrated in Figure 7.

Figure 7. Hand hygiene compliance by public hospitals during national audits conducted between May and June 2011 (Period 1) and October and November 2015 (Period 10) (Data source HSE HPSC)



Courtesy of HSE HPSC hand hygiene results [9]

Inspectors observed a total of 173 hand hygiene opportunities during the 2015 inspections. This was well below the 210 opportunities required to be observed and recorded by each hospital when participating in the HSE national audits. This represents a significant reduction on the number observed in 2014, and relates to the high-risk areas inspected and activities within clinical areas at the time of the inspections, which made observation more difficult.

A multifaceted approach in line with the World Health Organization's (WHO's) multimodal strategy[10] to improving hand hygiene compliance was seen in all hospitals inspected. However, it was also evident that some hospitals were more advanced than others in achieving and sustaining a culture of good hand hygiene practices. The following non-compliances were observed during the inspections carried out in 2015:

- A failure to differentiate patient and healthcare zones contributed to poor compliance with the WHO's 'five moments of hand hygiene' observed at the time of the inspection. In some areas, lack of adequate space between patients was a contributory factor. This was also a finding of the 2014 inspections.
- There was a lack of local auditing in a small number of hospitals. Such auditing facilitates regular measurement of hand hygiene compliance and promotes sustainable levels of compliance. Regular hand hygiene audits are recommended.[10]
- Access to clinical hand-wash sinks was restricted due to curtain placement or space limitations in multi-occupancy patient rooms.
- Similar to the findings of the 2014 inspections, inappropriate use of disposable gloves by healthcare workers contributed to poor hand hygiene compliance. In some cases, staff were observed wearing gloves while transferring and mobilizing patients when there was no indication for using gloves.
- There was poor adherence to mandatory hand hygiene training in a small number of hospitals.
- While inspectors observed frequent hand hygiene actions taken by staff in all areas inspected, many of these actions observed were not linked to the key five moments of hand hygiene. This may indicate a possible lack of understanding of the underlying principles of patient-focused good hand hygiene practices, which ultimately aim to reduce the risk of patients acquiring a Healthcare Associated Infection.
- There was a lack of visibility of hand hygiene posters in some patient areas.
- Patient education and participation on hand hygiene was not always seen. Patients should be encouraged and empowered to take a more active role in their own care.
- The placement of hand hygiene gels and hand moisturiser over clinical hand-wash sinks in some hospitals may lead to use of the wrong product for hand washing.
- Hand washing was favoured over alcohol hand gel in one hospital, which contributed to poor hand hygiene compliance at the point of care.
- Hand gel dispensers were poorly located in a small number of areas inspected which meant that they could not be readily seen or accessed.

These findings should be considered as part of hand hygiene improvement initiatives.

What needs to improve?

- Appropriate glove use needs to improve.
- Staff awareness of what constitutes patient and healthcare zones needs to improve.
- Patient participation in hand hygiene should be increasingly encouraged.
- There needs to be better sharing and feedback on hand hygiene compliance audit findings in some hospitals.

Standard 8. Invasive medical device related infections

Standard 8. Invasive medical-device related infections

Invasive medical-device related infections are prevented or reduced.

Invasive medical devices such as intravascular and urinary catheters are frequently used in the delivery of patient treatment. Catheter-related blood stream infections and catheter-associated urinary tract infections are possible complications associated with the use of invasive devices. Research shows that the risk of infections is significantly reduced when a collection of evidence-based practices are consistently and regularly applied in the management of invasive devices.[11]

Care bundles are a group of such evidence-based practices which, when applied together, can reduce catheter-related infections and improve patient outcomes. The introduction of care bundles in healthcare settings has been recommended in national guidelines.[12-13]

HIQA recommenced monitoring the use of, and compliance with, care bundles within Irish hospitals in 2015. From June 2015 onwards, 14 hospitals were assessed, seven of which were at an advanced stage of implementing peripheral-vascular-catheter care bundles. The findings of the inspections indicated that most hospitals assessed have peripheral-vascular-catheter care bundles in place. In some areas inspected, such as areas with a quick turnaround of patients, alternative processes were in place to monitor and document the insertion and removal of invasive devices that would only be in place for a short time. However, overall, improvements are required in the compliance with care bundles, auditing, training, surveillance of device-related infections and feedback to staff. In addition, while the majority of patients that HIQA spoke with had awareness as to why an invasive device had been inserted, an improvement in patient participation is recommended. Information leaflets relating to invasive devices were not displayed or routinely given to patients with invasive devices in most hospital areas assessed. The role of the patient in the prevention and control of infection in relation to invasive devices should be further emphasised and encouraged. Opportunities for improvement were seen in the following areas:

- updating local policies to include use of care bundles
- no policy in place in some hospitals
- adhering to policy and documentation

- providing appropriate training
- auditing regularly
- feeding back relevant information to staff, such as compliance with care bundles and device-related infection rates
- monitoring patient outcomes through surveillance of device-related infections
- providing information on invasive devices to patients, encouraging participation in their own care and emphasising the patient role in prevention of device-related infections.

Care bundles for indwelling urinary catheters

Urinary catheters fixed in a patient's body for a prolonged or sustained time period (called indwelling urinary catheters) are frequently required for the care of patients in healthcare settings. Urinary catheters may be inserted for short periods of time during an acute illness phase and are known as short-term indwelling catheters. Some urinary catheters referred to as long-term indwelling catheters may be in place for long periods of time depending on the needs of the patient.

Healthcare-associated urinary tract infections are one of the most common types of infections experienced by patients in hospitals. There is an increased risk of catheter-associated urinary tract infections related to the length of time a catheter is in place. For this reason, indications for the presence of urinary catheters needs to be regularly reviewed to ensure that they are promptly removed when no longer needed.

Urinary catheter care bundles were in the early stage of implementation in those hospitals assessed in 2015. Managing urinary catheters was included in patient care plans, which in general included the evidence-based practices of a care bundle. However, regular monitoring of compliance with this format of documenting care was not evident at the time of inspections. Five of 14 hospitals inspected had urinary care bundles in place, while a small number of hospitals were in the very early stages of implementation. Systematic surveillance of catheter-associated urinary tract infections and feedback to staff were not evident in the majority of hospital areas inspected. Such findings indicate that implementation of these care bundles needs to be prioritised and progressed in line with best practice.[13]

Surveillance of device-related infections

The fundamental aim of infection prevention care bundles is to improve patient outcomes by reducing or preventing device-related infections. In order to evaluate the impact of the implementation of these care bundles, surveillance of device-related infections is required. In general, most hospitals inspected did not have comprehensive formalized systems in place to collate invasive-device-related

infections. Limited surveillance was in place in some hospitals. The surveillance of catheter-associated urinary tract infections needed to be improved in most of the 14 hospitals inspected. It is recommended that this surveillance should be included in hospital surveillance programmes.

National reporting systems related to device-related infections are not in place and need to be progressed nationally using internationally validated surveillance definitions so that results can be compared. Surveillance of *Staphylococcus aureus* blood stream infections has been mandatory in Ireland since 2004. However, participation in enhanced surveillance — which reports additional information relating to patient demographic, clinical data and patient outcomes — is conducted on a voluntary basis. Support for surveillance in hospitals needs to be reviewed and better coordinated from a national level to promote improvement in hospital surveillance programmes.

Audit and feedback

Those hospitals demonstrating a high level of compliance with Standard 8 had infection prevention care bundles embedded in practice across all areas of the hospital inspected. Staff awareness levels were high in these hospitals. In addition, in nine of the 14 hospitals inspected, there was regular auditing with feedback to staff on compliance and surveillance, including device-related infection rates.

In one hospital, results of care bundle audits and rates of device-related infections were displayed on notice boards outside each ward. Such sharing of information and regular feedback to staff is to be commended. Feedback to staff is particularly important as it allows staff to link performance relating to care bundle compliance with patient outcomes.

What needs to improve?

- Infection control care bundles should be implemented in all acute hospitals where they are not already in place.
- Surveillance systems and feedback to staff on device-related infections need to be rolled out to all hospitals.
- Patient information should be provided, patient participation in their own care should be further encouraged and the role patients play in the prevention of device-related infections needs to be further emphasised.

Standard 7. Communicable and or transmissible disease control

Standard 7. Communicable and or transmissible disease control

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

In an infection prevention and control context, the term 'standard precautions' refers to a collection of recognized infection control practices that should be applied by all staff at all times during routine care to protect both patients and staff alike from the risk of infection. In addition to standard precautions, extra infection control practices may be required in certain circumstances to manage, control and prevent the spread of communicable or transmissible diseases within healthcare settings. These are known as 'transmission-based' precautions.

Good compliance with standard precautions and transmission-based infection control precautions was evident in many hospitals inspected in 2015. The following section looks at general findings of the 2015 unannounced inspections with regard to both.

Safe injection practice

Safe injection practice is an infection prevention and control standard precaution. Failure to adhere to safe injection practices may potentially increase the risk of transmission of infection and has been identified as a contributing factor in outbreaks of blood-borne viruses among patients in healthcare settings.[14,15,16,17] Safe injection practices needed to greatly improve in 59% of hospitals inspected in 2015 (19 out of 32 hospitals). The following observations fell below best practice[18-19] standards and were deemed unsafe from a patient safety perspective:

- pre-prepared syringes of anaesthetic and other medicines not prepared in aseptic compounding facilities which were:
  - unlabelled
  - insufficiently labelled
  - inappropriately stored in advance of administration
  - left unattended and unsecured between preparation and administration.

Practices which increased the risk of inadvertent contamination of pre-prepared medicines were also observed. For example:

- used syringes placed in injection trays holding unused medications which increase the risk of cross-contamination
- the priming of multiple bags of intravenous fluids well in advance of administration
- use of multi-dose vials which were not always patient-specific or labelled to indicate date of opening
- poor observed clean and or aseptic techniques (techniques applied by healthcare workers to minimize the risk of patients experiencing an infection as a result of invasive procedures)
- batch preparation of intravenous medication where more than one intravenous medication is prepared concurrently and increases the risk of a medication administration error
- unlocked medicine fridges, which were unclean and some of which had an ice build-up indicating poor maintenance
- not all medication fridges had monitored temperature control
- inadequate and inappropriate intravenous medication preparation areas
- equipment used during patient care not removed from injection trays after use
- inadequately cleaned equipment such as injection trays
- storage of sterile consumables used in open storage trolleys within patient areas, which increases the risk of inadvertent contamination from the environment
- failure to comply with hospital policy, procedures and guidelines relating to safe injection practice and medication safety
- no defined policies about preparing medicines in advance of use, particularly in relation to pre-prepared anaesthetic medications.

Hospitals are responsible for making sure that infection-control standard precautions (and any related policies, procedures and guidelines) are adhered to by all staff groups within each clinical area. Intravenous medicines should be prepared as close to administration time as possible.[19] Where the need for rapid administration of an intravenous medicine may be anticipated, efforts should be made to mitigate any potential risk associated with microbiological contamination during preparation in the clinical area by sourcing pre-prepared syringes where available.[18]

Adhering to safe injection practice is an essential element of a patient safety strategy and needs to be monitored more effectively by hospitals. HIQA recommends that action is taken to effectively mitigate the potential risk of microbiological contamination and medication administration error posed by these findings.

What needs to improve?

- Hospitals must review and monitor their injection practices from a hospital-wide medication safety perspective to help assure compliance with best practice guidelines and to improve patient safety.

Reprocessing of invasive medical devices

Opportunities to improve reprocessing of invasive medical devices were observed in seven of the 32 hospitals inspected. Reprocessing of reusable invasive devices refers to a combination of actions (such as cleaning, disinfecting, sterilizing, testing, packaging and labelling of devices) carried out to help ensure that the device is safe for handling by staff and to be used on patients. Processes and facilities in place for decontaminating reusable invasive medical devices were viewed during inspections of high-risk areas such as endoscopy units, operating theatres and interventional radiology departments. There was scope for improvement in the following areas:

- The infrastructure of reprocessing facilities in a small number of hospitals should be reviewed to assess compliance with current standards.[20] Assurance was not provided at the time of inspection that the segregation of clean and dirty functions in the reprocessing of invasive devices was fully adhered to at all times. Inadequate staff changing rooms were also observed.
- Reprocessing of endoscopes was observed in three theatre departments inspected. The facilities viewed did not support separation of clean and dirty functions and did not meet current good practice guidelines. Decontamination of reusable invasive medical devices was observed in an annex of an operating theatre — this area was unfit for this purpose.
- In one interventional radiology department inspected, HIQA was not assured that practices — for disinfecting intracavity transducer probes, such as transrectal and transvaginal probes[ϕ] used during ultrasound diagnostic examinations — were in line with best practice. The minimum acceptable standard for reprocessing these transducer probes is high-level disinfection. Probes must be fully cleanable and be cleaned appropriately prior to disinfection in appropriate facilities.
- There was a lack of recommended dedicated endoscopy decontamination technicians observed in some hospitals. In some cases, staff involved in

[ϕ] An intracavity transducer probe is a medical ultrasonic device that when placed on or in the body can transmit ultrasound pulses and echoes received from organs and tissues. These pulses and echoes can be converted into images. The resulting clinical image or scan is used in clinical practice. A number of speciality probes have been developed for interventional and surgical procedures.

endoscopy decontamination were assigned to clean and dirty activities of reprocessing, the cleaning of the facility and in one case portering and general duties outside the decontamination unit. Decontamination Units should be managed by trained staff dedicated to the management of the facility. Staff movement, between dirty and clean areas of the reprocessing facility should be restricted and the correct attire and personel protective equipment must be worn.

What needs to improve?

- Designated areas for the reprocessing of invasive medical devices, and the processes applied, should facilitate the separation of clean and dirty functions and should comply with best practice.
- Trained dedicated staff should be assigned to decontamination duties.
- Hospital should only invest in probes and equipment that can be effectively cleaned and decontaminated.

Isolation facilities

Isolation facilities are one of the measures used to help prevent the spread of infection in hospitals. An isolation facility refers to a single room with ensuite shower and toilet facilities, clinical hand-washing facilities and is assigned to accommodate patients with infectious diseases. Some isolation rooms have pressurised ventilation sytems with engineering controls and an access lobby. These rooms may have negative air pressure which helps prevent the transmission of airborne disease such as seasonal influenza or tuberculosis, or positive air pressure which is used to protect patients with weakened immune systems. There was scope for improvement in the following areas:

- Insufficient and inadequate isolation facilities were seen in many of the hospitals inspected and were of particular concern in high-risk areas such as critical care units, oncology units and infusion day unit.
- Not all isolation rooms had en-suite toilet facilities.
- In some areas inspected, inspectors found the doors of isolation rooms were open. In some circumstances, patients at risk of harm and in need of close observation due to safety reasons may warrant the isolation room door being left open. However, this approach should only be considered following a documented risk assessment and in the context of controlling the transmission of infection to other patients.

- Cohorting of patients with multidrug resistant organisms with poor adherence to transmission-based precautions.
- Lack of appropriate signage outside isolation rooms.
- A lack of education and lack of local monitoring of negative pressure in isolation rooms was observed in one hospital. Staff should be aware of what the correct air pressure should be in isolation facilities with negative and positive air pressure engineering controls. The air pressure in the room should be monitored at local level to help ensure that staff and patients are protected from the risk of infection which may be caused by failures in the ventilation system and controls.

What needs to improve?

- Increase in the provision of isolation facilities through ongoing upgrade of hospital facilities.
- Adherence to transmission-based precautions.

Bed spacing

Sufficient space should be provided between patient-bed spaces and points of care to prevent cross-contamination and facilitate activities of care to be carried out in line with national recommendations[21] and best practice.[22] Inspectors observed that bed spacing in some areas assessed was restricted in that there was limited space for patients to sit out or for staff to circulate freely around patients.

Treatment of patients in close proximity to each other increases the risk of spread of many infections including bacterial infections and seasonal influenza. It is recommended that bed spacing on inpatient wards and treatment chair spacing in day care facilities be re-evaluated in all hospitals in consideration of infection prevention and control risks and in line with the National Standards.

What needs to improve?

- More appropriate spatial separation between patient zones, such as patient beds, is routinely required in public acute hospital wards and patient treatment areas.

Legionella bacteria control measures

Opportunities to improve control of the risk of *Legionella* bacteria in water systems were identified in 10 of the 32 hospitals inspected in 2015. *Legionella* spp. are a family of bacteria commonly found in water supplies. Legionellosis is an illness which is caused by *Legionella* bacteria and can result in a mild flu-like illness to severe pneumonia which can be fatal. Hospital water systems are vulnerable to *Legionella* contamination. Measures which control the risk of contamination of water systems with *Legionella* need to be put in place in line with national guidelines.[23]

It is recommended that a *Legionella* risk assessment is performed by an independent competent assessor in all hospitals, and that this type of risk assessment is then reviewed again by an independent competent assessor every year. In addition, the operation of the risk management programme should be audited at least every two years. Up-to-date records of *Legionella* control measures carried out should also be kept. The following issues were observed in areas inspected:

- *Legionella* risk assessments had not been completed in two of the 32 hospitals inspected.
- While the majority of hospitals had *Legionella* control measures in place, it was of concern that water sampling was not being carried out in one hospital.
- Independent annual reviews of *Legionella* risk assessments, in line with national guidelines, were not completed in four hospitals inspected.
- The performance of risk assessment programmes were not independently audited within two years in six hospitals.
- Records of control measures and works completed were not available to HIQA inspectors to review at the time of the inspection in three hospitals.
- Actions outlined in risk assessments were not completed in a hospital with persistent *Legionella* positive water sampling identified during the testing of water quality.
- Shower heads in multiple affected areas of one hospital were removed as a mitigating measure for persistent positive water samples. This measure was in place for a prolonged period of time, which resulted in inadequate showering facilities for patients.
- Records of control measures and works completed were not available internally in some hospitals inspected.
- Persistent *Legionella* positive water samples were reported in two hospitals inspected.
- Nebulisers which were for single use were being reused which is not in line with best practice.

What needs to improve?

- The management and monitoring by hospitals of *Legionella* control schemes needs to improve in line with national guidelines.
- All necessary control measures are implemented in all hospitals.

Aspergillus control measures

Opportunities to improve control of *Aspergillus*, a mould that causes infection, were identified in seven of the 32 hospitals inspected in 2015. *Aspergillus* species refers to a family of fungi that can be found in soil, water, debris and decomposing vegetation. Aspergillus spores can be spread by airborne transmission when disturbed during dust generation as a consequence of construction-related activity.

Outbreaks of invasive aspergillosis, an infection caused by *Aspergillus*, can potentially cause fatal infections in immunocompromised patients and have been linked to construction activities in hospitals. The following issues were observed during inspections in 2015:

- Dust control barriers were not fully sealed or were not in place in some hospitals where renovation or construction activities were ongoing.
- There was inadequate monitoring of the efficiency of the controls in place to contain dust generated from hospital construction, along with inadequate compliance with other control measures in place.
- Windows were not closed or fully sealed to prevent the access of dust into patient areas at the time of the inspection.
- There was a lack of comprehensive ongoing education for staff and construction workers to ensure compliance with infection control measures and to provide an understanding of the risk of invasive aspergillosis to vulnerable patients.
- A lack of effective communication to relevant staff on aspergilllus control was seen in two hospitals.
- Patient information leaflets on Aspergillosis during construction work was not displayed or provided to patients.

HIQA recommends that all hospitals should have appropriate assurance mechanisms in place to ensure that *Aspergillus* control measures are in line with national guidelines[24] and are consistently implemented.

What needs to improve?

- A more rigorous approach to implementing and monitoring *Aspergillus* control measures put in place in response to building work in some hospitals.

Clostridium difficile infection rates

Clostridium difficile (*C. difficile*) is a spore forming bacterium that causes inflammation of the colon, with symptoms including watery diarrhoea, fever, appetite loss and nausea. It can spread to patients or contaminate surfaces through hand contact.[¥] HIQA found that five hospitals had an increased (and in some cases persistent) local incidence of *Clostridium difficile* at the time of the 2015 inspections.

The desirable HSE key performance indicator for *Clostridum difficile* infection is less than or equal to (≤) 2.5 cases per 10,000 bed-days used.[2] Reasons reported by hospitals for the increased incidence of *Clostridum difficile* were related to the following:

- antimicrobial consumption rates and patterns
- inadequate cleaning of shared patient equipment
- increased activity and high occupancy levels
- resource deficiencies
- poor hand hygiene practice
- poor environmental hygiene which potentially contributed to cross infection in outbreak scenarios
- more sensitive testing methods used to detect *Clostridum difficile*.

Based on the findings of 2015 inspections, HIQA recommends hospitals implement and adhere to recommended control measures in line with national guidelines.[25] The management and cleanliness of the patient environment and equipment (mainly commodes and frequently used equipment that is shared between patients), the provision of appropriate isolation facilities and appropriate antimicrobial usage should be a focus of ongoing quality improvement to mitigate the risk of transmission of *Clostridium difficile*.

¥ See: Clostridium difficile Infection Information for Patients, Centers for Disease Control and Prevention (online), http://www.cdc.gov/hai/organisms/cdiff/Cdiff-patient.html.

What needs to improve?

- Implementation and adherence to recommended control measures for *Clostridium difficile*.
- Appropriate antimicrobial usage.
- Better systems in place for cleaning commodes.

Management of blood spillages

Inconsistent management of, and clean-up following, blood spillages was evident in one hospital inspected in 2015. Spillages of blood and other bodily fluids may transmit blood-borne viruses and therefore should be managed in a consistent way in line with best practice. All staff should be fully informed on what to do when a blood spillage is encountered in clinical areas.

Compliance with multidrug resistant organism guidelines

While all hospitals inspected reported compliance with screening for Meticillin-Resistant *Staphylococcus aureus* (MRSA) — an example of a multidrug resistant organism — a large proportion of hospitals reported poor compliance in 2015 with enhanced screening for multidrug resistant organisms other than MRSA in line with national guidelines.

Resource deficiencies were frequently reported by hospitals as the reason for failure to adhere to the recommendations of national guidelines.[26] Emergent resistance to antibiotics in organisms is a growing concern internationally. Hospitals should be supported by their hospital group and at national HSE level to implement the recommendations of these national guidelines.

Management of outbreaks of infection

The need to improve the management and communication of an infection outbreak in progress at the time of inspection was observed in two hospitals inspected in 2015.

What needs to improve?

- The management of blood spillages should be consistent in all areas of hospitals.
- Compliance with national guidelines for the management of multidrug resistant organisms needs to be rolled out in all hospitals.
- Prompt communication of suspected or confirmed outbreaks to all relevant staff, patients and visitors in a timely and effective manner and monitoring of compliance with outbreak control measures.

Other findings during inspections

- Processing and storage of clinical specimens in one hospital was not in line with best practice in one hospital inspected.
- There was a notable lack of surgical-site infection surveillance in the majority of hospitals inspected which was reported to be primarily related to the lack of available resources.

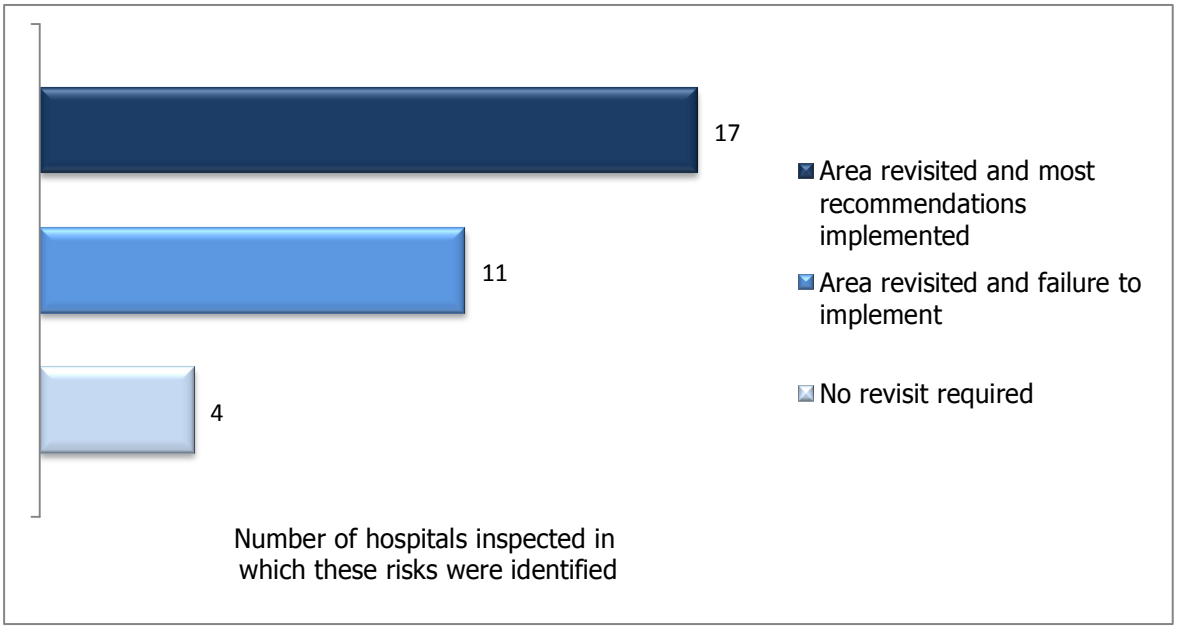
Quality improvement plans

HIQA monitored quality improvement plans that had been developed by hospitals after publication of their 2014 unannounced inspections by HIQA. Areas assessed during the 2014 inspections were revisited during 2015 inspections. Progress made by hospitals since the 2014 inspections were reported by HIQA in the 2015 unannounced inspection reports for individual hospitals.

Overall, HIQA found that all of the 32 hospitals inspected in 2015 had produced quality improvement plans following their 2014 inspection. Hospitals are requested to publish approved quality improvement plans on their website within six weeks of an inspection report being published. Two hospitals did not publish such a plan on their website but their plan was available to inspectors to review during the 2015 inspections.

In four hospitals, a revisit of the areas inspected was deemed unnecessary during the 2015 inspections as these hospitals had demonstrated good compliance with the Standards assessed in their 2014 inspections. Figure 8 demonstrates that 17 of the remaining 28 hospitals had addressed the majority of issues identified by HIQA in their previous 2014 inspection, while 11 had not.

Figure 8. Compliance by hospitals in 2015 to address issues identified in quality improvement plans following 2014 inspections



Failure to fully address issues identified during inspections, and which may impact on patient safety and welfare, is a concern. Many issues required additional resources

and time to be fully addressed and therefore remained unresolved by the time of the 2015 inspection. In spite of deficiencies relating to infrastructure, maintenance and resources — which can be difficult to address when faced with barriers such as high bed occupancy and resource limitations — HIQA found that more could be done to prioritize and allocate resources to address identified infection prevention and control risks.

What's next for 2016?

During 2016, HIQA will continue its monitoring programme of unannounced inspections of public acute Irish hospitals against the *National Standards for the Prevention and Control of Healthcare Associated Infections*.[1] The focus of the unannounced inspections will be based on continued emphasis on functional areas that pose the highest risks to patients and will build upon the inspection approach taken in 2015.

Conclusion

In 2015, HIQA continued to monitor how public acute Irish hospitals comply with the Infection Prevention and Control Standards. Scope for improvement was identified in a significant number of hospitals relating to those hospitals' infrastructure, maintenance of environmental hygiene, implementation of care bundles, and safe injection practices.

A clean hospital plays an essential role in preventing the transmission of multidrug resistant organisms and a clean, safe hospital environment promotes confidence in patients and staff. Despite the infrastructural challenges in older hospital infrastructures, an acceptable standard of basic cleanliness and maintenance is both essential and achievable. Better management and oversight of cleaning processes is required to help ensure that standards of cleanliness are consistent, reliable and accurately reflect the standard of hygiene achieved.

In general, the majority of hospitals which required a follow-up inspection in 2015 addressed the risks identified as allowed by the six-week time frame. It is of concern that there was no improvement in the environmental hygiene observed during the re-inspection of one hospital.

Commitment to improving hand hygiene compliance was demonstrated in all hospitals through various initiatives. Improvement in hand hygiene compliance was seen in national HSE hand hygiene audits. However, hospitals need to continue to work towards improving hand hygiene practices at all levels in order to instil and maintain a culture of compliance with hand hygiene to protect patients from Healthcare Associated Infections.

The implementation of infection control care bundles was at varying stages of development and needs to be progressed in all hospitals to ensure compliance with national guidelines.

Unsafe medication practices seen in 19 hospitals are a significant concern to HIQA and to people using services. In many cases, the findings of the 2015 inspections, particularly relating to anaesthetic medications, demonstrate a concerning cultural acceptance of poor practices being the norm. Practices relating to pre-preparation of anaesthetic, emergency and intravenous medication did not comply with international best practice.

In particular, the findings relating to prior preparation of intravenous medication with incomplete labelling and inappropriate storage presents an unnecessary and potentially avoidable risk to patients and is unsafe practice. Hospitals need to take action to ensure that hospital-wide safe injection practices are in place and adhered to by all clinical staff.

The identification, prioritisation and mitigation of risks identified in annual infection prevention and control risk assessments need to improve. Risks identified should be addressed proactively and as part of the overall hospital quality and patient safety strategies. Relying on external monitoring by HIQA to address risks already identified locally indicates poor overall management and monitoring of the prevention and control of Healthcare Associated Infections.

Feedback from hospitals resulting from inspection generally demonstrated a commitment to addressing identified issues through the development and implementation of quality improvement plans. Hospitals repeatedly reported insufficient resources, high activity and occupancy levels and the lack of capital funding as barriers to resolving findings identified through HIQA inspection. HIQA recommends that hospitals be supported within their hospital-group structures and at corporate HSE level to address the deficiencies identified in order to achieve sustained compliance with the *National Standards for the Prevention and Control of Healthcare Associated Infections*.[1]

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Appendix 1 — The inspection process

The aim of the inspection is to gather information about the cleanliness of the hospital's environment and its facilities, as well as the hospital's performance in relation to hand hygiene. The main focus of the inspection relates to Standards 3, 6 and 8 of the Infection Prevention and Control Standards, but other Standards may be observed and reported on if concerns arise during the course of an inspection.

It is important to note that the Standards may not be assessed in their entirety during an inspection and therefore findings reported are related to a particular criterion within a standard which was observed during an inspection.

In line with our inspection programme for 2014, re-inspections were carried out in some hospitals within six weeks of the first inspection where immediate high risks were identified during the initial inspection. The format for the re-inspections was tailored towards inspecting the issues identified during the first inspection and assessing any improvements seen between the first and second inspections. The aim of the re-inspections was to promote rapid improvement in relation to the immediate high risks identified.

Before inspection

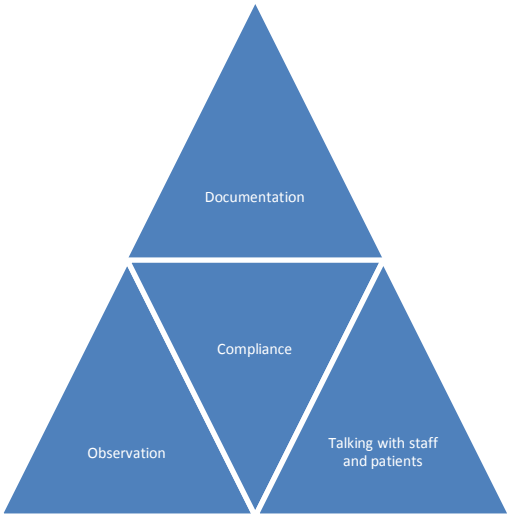
Prior to an inspection, key pieces of information relating to the hospital — such as previous inspection reports, any relevant information received by HIQA relating to the hospital, and data that the hospitals have published, including quality improvement plans and their performance in the national HSE hand hygiene audits — are examined by the inspection team. Particular issues that may need to be addressed during the inspection are discussed by the inspection team in preparation for the inspection.

During inspection

On the day of the unannounced inspection, the inspection team contacts the hospital's chief executive officer (CEO) and or general manager on arrival at the hospital reception and meets with the relevant hospital representative to outline the general plan for the inspection. Hygiene observation tools are used by the inspection team to gather information about the cleanliness of the environment and equipment as well as monitoring hand hygiene practice in one to three clinical areas, depending on the size of the hospital.

The inspection team may talk with staff and patients during the inspection and review documentation at both ward and senior management levels. At least three sources of information are gathered and analysed by the inspection team to assess the level of compliance with the Infection Prevention and Control Standards. This process is known as 'triangulation' and is illustrated in Figure A below.

Figure A. Triangulation of evidence



Details on key findings from the inspection are communicated by the inspection team to ward managers and senior management during the inspection. In addition, any specific issues identified by the inspection team which are considered to present a risk to the health or welfare of patients are assessed to determine the likelihood and the impact of the identified risks.

HIQA's inspection team will inform senior management during the inspection of any high risks which require immediate action to allow them to put the necessary actions in place to address these risks. In addition, the hospital CEO and or general manager is notified in writing of the identified risk and required to formally report back to the inspection team with an action plan to reduce and effectively manage the risk. Senior management in the Health Service Executive (HSE) is also notified in writing of the identified risk.

After inspection

A report detailing the findings from the inspection is published on HIQA's website. Where a re-inspection occurs, a single inspection report is prepared following the second inspection and includes the findings of both first and second inspections and any improvements observed between these inspections.

The HIQA inspection team may also write to hospitals after inspections to notify them of any high risks which have been identified. The purpose of these letters is to clearly explain the high risks identified and to seek assurances that the high risks are being dealt with appropriately by the hospital.

Quality improvement plans

HIQA asks each hospital to publish a quality improvement plan within six weeks of the publication of an inspection report. The plan should prioritise the improvements that are necessary in the hospital in order to address the findings of the inspection and bring the hospital into compliance with the Infection Prevention and Control Standards.

This quality improvement plan must be approved by the hospital's CEO and or general manager. HIQA asks each hospital to publish its plan on its website, and provide the Authority with details of the website link to the plan.

It is the responsibility of the hospital to formulate, resource and implement its quality improvement plan to completion. The inspection team monitors the publication of the quality improvement plan and reviews progress with the implementation of the plan when conducting subsequent inspections are being carried out.

Appendix 2 — Unannounced inspections completed between January 2015 and December 2015.*

Name of hospital	Report	Date(s) inspected	Report published
Bantry General Hospital	Report of the unannounced inspection at Bantry General Hospital, Bantry, Co Cork	11 Mar 2015	17 Apr 2015
Beaumont Hospital	Report of the unannounced inspection at Beaumont Hospital, Dublin	12 Aug 2015	1 Oct 2015
Cappagh National Orthopaedic Hospital	Report of the unannounced inspection at Cappagh National Orthopaedic Hospital, Dublin	29 Apr 2015	28 July 2015
Cavan General Hospital	Report of the unannounced inspection at Cavan General Hospital, part of the Cavan Monaghan Hospital Group	3 Mar 2015	17 Apr 2015
Connolly Hospital, Blanchardstown	Report of the unannounced inspection at Connolly Hospital, Blanchardstown, Dublin	12 Feb 2015	17 Apr 2015
Coombe Women and Infants University Hospital	Report of the unannounced inspection at the Coombe Women and Infants University Hospital, Dublin	29 Jan 2015	17 Apr 2015

* Links to reports on www.hiqa.ie current at time of preparing this report.

Name of hospital	Report	Date(s) inspected	Report published
Kerry General Hospital	Report of the inspections at Kerry General Hospital, Tralee.	8 Jul 2015 20 Aug 2015	10 Nov 2015
Letterkenny General Hospital	Report of the inspections at Letterkenny General Hospital, Letterkenny, Co. Donegal.	18 Jun 2015 23 Jul 2015	8 Oct 2015
Mallow General Hospital	Report of the unannounced inspection at Mallow General Hospital	6 Mar 2015	17 Apr 2015
Mater Misericordiae University Hospital	Report of the unannounced inspection at Mater Misericordiae University Hospital	2 Jul 2015	8 Oct 2015
Mayo General Hospital	Report of the unannounced inspection at Mayo General Hospital, Castlebar, Co. Mayo	12 Mar 2015	17 Apr 2015
Mercy University Hospital	Report of the unannounced inspection at Mercy University Hospital	7 Jul 2015	10 Nov 2015
Midland Regional Hospital at Mullingar	Report of the unannounced inspections at Midland Regional Hospital at Mullingar	19 Feb 2015 25 Mar 2015	17 Apr 2015
Midland Regional Hospital at Tullamore	Report of the unannounced inspection at Midland Regional Hospital , Tullamore, Co. Offaly	28 May 2015	2 Dec 2015
Mid Western Regional Hospital Nenagh	Report of the unannounced inspection at Mid Western Regional	17 Sept 2015	19 Nov 2015

Name of hospital	Report	Date(s) inspected	Report published
	Hospital Nenagh, Co. Tipperary		
Naas General Hospital	Report of the unannounced inspection at Naas General Hospital, Co. Kildare	12 May 2015	28 Jul 2015
National Maternity Hospital, Holles Street	Report of the inspections at the National Maternity Hospital, Holles Street, Dublin 2	7 Oct 2015 17 Nov 2015	15 Feb 2016
Our Lady of Lourdes Hospital Drogheda	Report of the unannounced inspections at Our Lady of Lourdes Hospital, Drogheda	11 Jun 2015 16 Jul 2015	1 Oct 2015
Portiuncula Hospital, Ballinasloe	Report of the unannounced inspections at Portiuncula Hospital, Ballinasloe, Co. Galway	11 Mar 2015 21 Apr 2015	28 Jul 2015
Roscommon Hospital	Report of the unannounced inspection at Roscommon Hospital	16 Sep 2015	19 Nov 2015
Rotunda Maternity Hospital	Report of the unannounced inspection at Rotunda Maternity Hospital	25 Jun 2015	1 Oct 2015
Royal Victoria Eye and Ear Hospital	Report of the unannounced inspection at the Royal Victoria Eye and Ear Hospital, Dublin	9 Apr 2015	28 Jul 2015
Sligo Regional Hospital	Report of the unannounced inspection at Sligo Regional Hospital, Sligo	4 Mar 2015	17 Apr 2015
South Infirmary Victoria University	Report of the inspections at South Infirmary	16 Apr 2015	28 Jul 2015

Name of hospital	Report	Date(s) inspected	Report published
Hospital	Victoria University Hospital, Cork, Co. Cork	21 May 2015	
South Tipperary General Hospital	Report of the unannounced inspection at South Tipperary General Hospital, Clonmel	6 Feb 2015	17 Apr 2015
St Columcille's Hospital	Report of the unannounced inspection at St Columcille's Hospital, Dublin	6 May 2015	28 Jul 2015
St Luke's General Hospital, Kilkenny	Report of the unannounced inspection at St Luke's General Hospital, Kilkenny	15 Dec 2015	15 Feb 2016
St Luke's Hospital, Rathgar	Report of the unannounced inspection at St Luke's Hospital, Dublin	25 Jun 2015	8 Oct 2015
St Michael's Dún Laoghaire	Report of the unannounced inspection at St Michael's Hospital, Dún Laoghaire, Dublin	26 Feb 2015	17 Apr 2015
Tallaght Hospital	Report of the unannounced inspection at Tallaght Hospital, Dublin	23 Sep 2015	2 Dec 2015
University Waterford Hospital	Report of the unannounced inspection at University Hospital Waterford	16 Dec 2015	15 Feb 2015
Wexford General Hospital	Report of the unannounced inspection at Wexford General Hospital	5 Feb 2015	17 Apr 2015

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