Health Information and Quality Authority

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the unannounced inspection of Mayo University Hospital, Castlebar.

Monitoring programme against the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services* during the COVID-19 pandemic

Date of inspection: 29 September 2020

About the Health Information and Quality Authority (HIQA)

The Health Information and Quality Authority (HIQA) is an independent statutory authority established to promote safety and quality in the provision of health and social care services for the benefit of the health and welfare of the public.

HIQA's mandate to date extends across a wide range of public, private and voluntary sector services. Reporting to the Minister for Health and engaging with the Minister for Children and Youth Affairs, HIQA has responsibility for the following:

- **Setting standards for health and social care services** — Developing person-centred standards and guidance, based on evidence and international best practice, for health and social care services in Ireland.

- **Regulating social care services** — The Chief Inspector within HIQA is responsible for registering and inspecting services for older people and people with a disability, and children's special care units.

- **Regulating health services —** regulating medical exposure to ionizing radiation.

- **Monitoring services** — Monitoring the safety and quality of health services and children's social services, and investigating as necessary serious concerns about the health and welfare of people who use these services.

- **Health technology assessment** — Evaluating the clinical and cost-effectiveness of health programmes, policies, medicines, medical equipment, diagnostic and surgical techniques, health promotion and protection activities, and providing advice to enable the best use of resources and the best outcomes for people who use our health service.

- **Health information** — Advising on the efficient and secure collection and sharing of health information, setting standards, evaluating information resources and publishing information on the delivery and performance of Ireland's health and social care services.

- **National Care Experience Programme** — Carrying out national service-user experience surveys across a range of health services, in conjunction with the Department of Health and the HSE.

Table of Contents

1.0   Information about this monitoring programme

Under the Health Act 2007, Section 8(1) (c) confers the Health Information and Quality Authority (HIQA) with statutory responsibility for monitoring the quality and safety of healthcare among other functions. In light of the ongoing COVID-19 pandemic, HIQA has developed a monitoring programme to assess compliance against the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services* during the COVID-19 pandemic.

The National Standards provide a framework for service providers to assess and improve the service they provide particularly during an outbreak of infection including COVID-19.

Inspection findings are grouped under the National Standards dimensions of:

1. **Quality and safety**
2. **Capacity and capability**

Under each of these dimensions, the standards are organised for ease of reporting.

Figure 1: National Standards for the prevention and control of healthcare-associated infections in acute healthcare services.
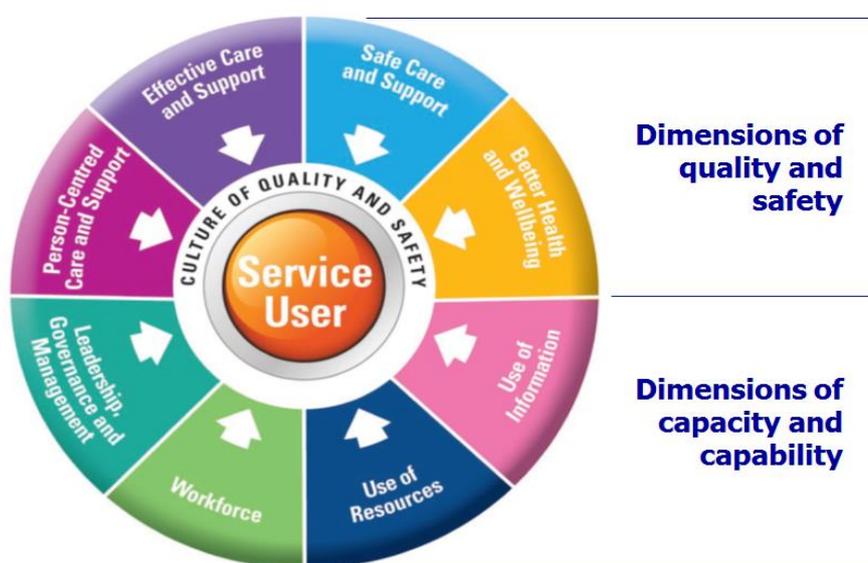
Report structure

The lines of enquiry for this monitoring programme of infection prevention and control in acute healthcare services will focus on six specific national standards within four of the eight themes of the standards, spanning both the capacity and capability and quality and safety dimensions.

This monitoring programme assesses Acute Healthcare Services' **capacity and capability** through the following standards:

Capacity and Capability	
Theme	**Standard**
5: Leadership, Governance and Management	**Standard 5.3:** Service providers have formalized governance arrangements in place to ensure the delivery of safe and effective infection prevention and control across the service.
6: Workforce	**Standard 6.1:** Service providers plan, organise and manage their workforce to meet the services' infection prevention and control needs.

HIQA also assesses Acute Healthcare Services' provision under the dimensions of **quality and safety** through the following standards:

Quality and Safety	
Theme	**Standard**
2: Effective Care & Support	**Standard 2.6**: Healthcare is provided in a clean and safe physical environment that minimises the risk of transmitting a healthcare-associated infection.
	Standard 2.7 Equipment is cleaned and maintained to minimise the risk of transmitting a healthcare-associated infection.
3: Safe Care and Support	**Standard 3.1**. Service providers integrate risk management practices into daily work routine to improve the prevention and control of healthcare-associated infections.
	Standard 3.8 Services have a system in place to manage and control infection outbreaks in a timely and effective manner.

Judgment Descriptors

The inspection team have used an assessment judgment framework to guide them in assessing and judging a service's compliance with the National Standards. The assessment judgment framework guides service providers in their preparation for inspection and support inspectors to gather evidence when monitoring or assessing a service and to make judgments on compliance.

Following a review of the evidence gathered during the inspection a judgment has been made on how the service performed. The following judgment descriptors have been used:

Compliant	Substantially compliant	Partially compliant	Non-compliant
A judgment of compliant means that on the basis of this inspection, the service is in compliance with the relevant National Standards.	A judgment of substantially compliant means that the service met most of the requirements of the National Standards but some action is required to be fully compliant.	A judgment of partially compliant means that the service met some of the requirements of the relevant National Standard while other requirements were not met. These deficiencies, while not currently presenting significant risks, may present moderate risks which could lead to significant risks for patients over time if not addressed.	A judgment of non-compliant means that this inspection of the service has identified one or more findings which indicate that the relevant standard has not been met, and that this deficiency is such that it represents a significant risk to patients.

1.1   Hospital Profile

Mayo University Hospital, Castlebar is a model 3 acute teaching hospital which is owned and managed by the Health Service Executive (HSE) and is part of the Saolta University Health Care Group.* The hospital provides a range of services including acute inpatient, maternity, outpatient and day services. The hospital has a bed capacity of 309 beds (38 of these beds were closed on the day of the inspection).

1.2 Information about this inspection

This inspection report was completed following an unannounced inspection carried out by Authorised Persons, HIQA; Kathryn Hanly, Siobhan Bourke and Kay Sugrue on 29 September 2020 between 09:30 hrs. and 15:50 hrs.

HIQA's focus during this inspection included a detailed evaluation of how, on the day of the inspection, the hospital organised themselves to minimise the spread of healthcare-associated infections; with a particular focus on systems to prevent, detect and manage COVID-19. Furthermore, HIQA noted that Mayo University Hospital experienced two significant COVID-19 outbreaks in April 2020. This report presents the findings on the day of inspection, inclusive of any learning applied since the April 2020 COVID-19 outbreaks.

Inspectors spoke with hospital managers, staff, representatives from the Infection Prevention and Control Committee and patients. Inspectors also requested and reviewed documentation, data and observed the clinical environment in a sample of clinical areas which included:

- Ward A: Medical ward (non COVID pathway)

- Ward C: Medical Ward (COVID pathway).

In addition, inspectors conducted a walkthrough of the Emergency Department.

HIQA would like to acknowledge the cooperation of the hospital management team and staff who facilitated and contributed to this inspection.

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* Hospital groups: The hospitals in Ireland are organised into seven hospital groups. 1. Ireland East Hospital Group. 2. Dublin Midlands Hospital Group. 3. South/South West Hospital Group. 4. Saolta University Health Care Group. 5. University of Limerick Hospitals Group. 6. RCSI Hospitals Group. 7. Children's Health Ireland Hospital Group.

2.0 Inspection Findings

The following sections present the general findings of this unannounced inspection. To present the general findings the report is structured as follows:

- Section 2.1 Capacity and Capability
- Section 2.2 Quality and Safety

2.1 Capacity and Capability

This section describes arrangements for the leadership, governance and management of the service at this hospital, and HIQA's evaluation of how effective these were in ensuring that a high quality safe service was being provided. It includes how the service provider is assured that there are effective governance structures and oversight arrangements in place for clear accountability, decision-making, risk management and performance assurance. This includes how responsibility and accountability for infection prevention and control is integrated at all levels of the service. This is underpinned by effective communication among staff. Inspectors also reviewed how service providers plan, manage and organise their workforce to ensure enough staff are available at the right time with the right skills and expertise and have the necessary resources to meet the service's infection prevention and control needs.

Theme 5: Leadership, Governance and Management

Standard 5.3: Service providers have formalized governance arrangements in place to ensure the delivery of safe and effective infection prevention and control across the service.

Judgment Standard 5.3: Substantially compliant

- While HIQA identified formalised governance arrangements in place to promote good infection prevention and control practices, findings relating to crowding in Emergency Department A, in the context of the lack of full utilisation of contingency bed capacity elsewhere, indicated a need to further review bed management oversight arrangements following this inspection.

Corporate and Clinical Governance

Inspectors found that there were clear lines of accountability and responsibility in relation to the prevention and control of healthcare-associated infection at the hospital. The general manager held overall accountability and responsibility for the prevention and control of healthcare-associated infection at the hospital.

The infection prevention and control programme was delivered by an infection prevention and control team. This team reported to the hospital's Infection Prevention and Control Committee. The terms of reference of the committee also showed that the committee reported to the Hospital Management Team on a monthly basis. The infection prevention and control team reported positive and supportive engagement from and with senior management.

The Infection Prevention and Control Committee at Mayo University Hospital along with other hospitals in the group, reported to the Saolta University Health Care Group Infection Prevention and Control Committee meetings, which were held quarterly. Scheduled meetings had continued via teleconference throughout the ongoing pandemic.

Good governance and managerial support are crucial to support outbreak management. Mayo University Hospital had established a COVID-19 Management Committee which reported to the Hospital Management Team. The COVID-19 Management Committee was responsible for developing and reviewing the COVID-19 escalation response plans. The committee had met regularly since the pandemic was declared. A daily COVID-19 safety huddle was also attended by senior management and nursing and medical staff.

A HSE Area Crisis Management Team was also established in response to the COVID-19 pandemic and included representatives from Mayo University Hospital.

COVID-19 preparedness and outbreak management will be further discussed in section 2.2 of this report.

Antimicrobial Stewardship Programme

The hospital had a progressive and well established antimicrobial stewardship programme. Regular performance updates in relation to antimicrobial stewardship were reported through established infection prevention and control governance structures. The antimicrobial pharmacist participated in outbreak control meetings as required.

However it was reported that clinical pharmacists were redeployed to the dispensary during the ongoing COVID-19 pandemic. As a result there was a significant curtailment of antimicrobial stewardship activities and a limited clinical pharmacy service provided at ward level since April 2020. This should be reviewed following this inspection.

Emergency Department and Hospital Capacity

The hospital had developed pathways to treat both COVID and non-COVID patients simultaneously.

Emergency Department B was located within the acute medical assessment unit (AMAU) and was dedicated to patients on the COVID-19 pathway. This department was under the clinical governance of medical consultants.

Emergency Department A was allocated to patients on the non COVID-19 pathway and was under the clinical governance of emergency medicine consultants.

Inspectors were informed that 38 beds were closed due to ongoing renovations of inpatient wards A and B at the time of this inspection. This temporarily reduced inpatient capacity in the hospital was contributing to an overcrowded[†] Emergency Department A (non-COVID pathway) on the day of the inspection.

To provide flexibility for a COVID surge, the HSE has identified that an 80-85% bed occupancy rate should be maintained.[1] The Full Capacity Protocol[‡] had been activated at the hospital at the time of the inspection, and temporary extra beds had been placed in the inpatient wards.

A new modular build for Emergency Department B comprising seven additional treatment bays was expected to be operational within the coming weeks. It was explained that this would free up capacity within the AMAU adding 17 additional escalation beds.

Inspectors also were informed that 40 additional acute inpatient beds had been made available offsite. However uptake of the additional beds was not maximised with 15 empty beds available within this unit on the day of inspection. Key to addressing the current capacity challenge is utilizing the uptake of these additional beds.

While accepting that the hospital was in a state of transition in terms of available capacity in response to measures required to improve accommodation as identified through the recent outbreak, it is necessary following this inspection for efforts to better utilise bed capacity to remain effective in the interest of reducing risks.

These findings were significant in the overall context of COVID-19 prevention and control. Findings related to the Emergency Department will be further discussed in section 2.2 of this report.

[†] Overcrowding refers to greater numbers of patients utilizing an area than that area has the capacity to accommodate.
[‡] The Full Capacity Protocol is the final step in the escalation protocol and is employed when other actions have failed to alleviate pressure on the ED

Monitoring, Audit and Quality Assurance Arrangements

The infection prevention and control surveillance programme included surveillance of 'alert' organisms[§], 'alert' conditions[**] and Notifiable Diseases.[2]

The Hospital Management Team was gathering and providing further assurance to the HSE and the general public through the reporting of nationally mandated key performance metrics against the 2020 HSE service plan targets.[3] Regular performance updates in relation to antimicrobial stewardship were reported through the established hospital governance structures.

Infection control surveillance software was used by the infection prevention and control team. This system assisted in the prompt identification of patients that needed to be isolated.

The infection control audits covered a range of topics, including general infection prevention and control, patient placement, glucometer audits, sharps audits, sluice room audits and validatory environmental hygiene audits.

The hospital had a number of assurance processes in place in relation to the standard of hospital hygiene. These included cleaning specifications and checklists, colour coding to reduce the chance of cross infection, infection control guidance, and monthly audits of equipment and environmental cleanliness. Hospital hygiene audit results were trended and clearly presented to hospital management in overview reports, which is good practice and facilitates the identification of areas for improvement.

Hospital wide environmental hygiene audits achieved an average 93.3% compliance in the previous year. The high levels of compliance achieved in environmental hygiene audits were also reflected on the day of inspection. Findings in this regard will be presented in section 2.2 in this report.

Overall compliance of 96.7% achieved in the national hand hygiene audits in May/ June 2020 was above the HSE's national target of 90%.

Policies Procedures and Guidelines

The hospital had a suite of infection prevention and control guidelines which covered aspects of standard precautions, transmission-based precautions and outbreak management. The hospital, along with other hospitals in the Saolta group, were in the process of updating their infection prevention and control guidelines.

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§ Alert organisms are identified in the microbiology laboratory and include organisms such as CPE and other antibiotic resistant organisms

** Alert conditions include physical symptoms such as skin rashes, vomiting, diarrhoea, respiratory illness that could be due to an infectious illness

In addition, inspectors also viewed COVID-19 escalation procedures developed to support and guide staff on the management of scheduled and unscheduled patient care during the pandemic.

Influenza Vaccination

It has been acknowledged that the health system and wider society should prepare for the potential for co-epidemics of COVID-19 and seasonal influenza in 2020/2021.

Uptake rates for influenza vaccine amongst staff failed to reach the national uptake target of 60% in the last influenza season.[4]

The hospital reported that an influenza vaccination programme had commenced with the aim of significantly improving the uptake in line with the 2020 national target.[3] Vaccinations were administered by a team of peer vaccinators in a dedicated tent located within the main foyer of the hospital.

Quality Improvement Plan (QIP)

Inspectors reviewed the quality improvement plan (QIP) developed following the HIQA inspection on 15 May 2018. Actions required for the 20 items identified on the QIP were listed and viewed. Fifteen items on the list were documented as complete at the time of the September 2020 inspection. The remaining five issues were in progress.

Theme 6: Workforce

> **Standard 6.1:** Service providers plan, organise and manage their workforce to meet the services' infection prevention and control needs.
>
> **Judgment Standard 6.1: Substantially compliant**
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> - A locum[††] microbiologist had been appointed to supplement services. However there was a need to fill this position on a permanent basis.
>
> - There were insufficient occupational health supports available. This resulted in additional demands placed upon other hospital staff inclusive of the infection prevention and control team.

The infection prevention and control team advised on all aspects of infection prevention and control, performed surveillance of alert organisms and delivered education to all grades of staff. The team visited clinical areas daily.

Dealing with COVID-19 had dominated the workload of the infection prevention and control team throughout 2020 up to the date of the inspection. The working hours

[††]A locum is a person who temporarily fulfils the duties of another.

and shifts of infection prevention and control nurses were adjusted at the onset of the pandemic to allow for seven day onsite cover.

Hospital management informed inspectors that additional support had been provided to the infection prevention and control team during the COVID-19 pandemic which included a locum consultant microbiologist and additional administration support. A number of health and social care professionals were redeployed to support the team during the COVID-19 pandemic. The infection prevention and control team comprised;

- one whole time equivalent (WTE) [‡‡] consultant microbiologist
- one locum microbiologist
- two microbiology Non-Consultant Hospital Doctors (NCHD)
- 2.8 WTE infection control nurses
- one WTE antimicrobial pharmacist
- one WTE surveillance scientist
- one WTE administrative support.

The hospital had identified that more resources were required to support the microbiology and infection prevention and control services. A business case for additional infection prevention and control personnel, inclusive of a second permanent consultant microbiologist had been submitted to the Saolta group.

COVID-19 champions promoted good practice in the prevention and control of infection whilst working in clinical areas. Observations and concerns regarding compliance with COVID-19 guidelines in clinical areas were discussed with the infection prevention and control team.

Inspectors were informed that additional laboratory staff positions had been approved to support the additional COVID-19 testing capacity in the hospital.

The regional occupational health service provided to the hospital was not resourced to meet the needs of the hospital during the ongoing COVID-19 pandemic. In the absence of a dedicated service, occupational health related queries service were frequently directed to the infection prevention and control team. Inspectors were informed that additional occupational health resources were required to support the management of outbreaks and to provide a responsive service to any emerging issues. Occupational Health resources will be further discussed in section 2.2 of this report.

[‡‡] Whole-time equivalent (WTE): allows part-time workers' working hours to be standardised against those working full-time. For example, the standardised figure is 1.0, which refers to a full-time worker. 0.5 refers to an employee that works half full-time hours.

Significant staff redeployment had taken place in order to generate capacity for COVID services. Staff redeployment and cohorting will be further discussed in section 2.2 of this report.

<u>Infection Prevention and Control Education</u>

Hand hygiene training was mandatory for staff at induction and every two years thereafter. Additional training in COVID-19 and standard and transmission based precautions including the appropriate use of personal protective equipment (PPE) had been incorporated into this training since the onset of the COVID-19 pandemic. A breakdown of infection prevention and control education attended by each staff group was viewed. The figures showed that 94% of clinical staff and 78% non-clinical support staff had attended training since the onset of the COVID-19 pandemic.

Fit testing^{§§} FFP2 and FFP3 facemasks^{***} to avoid COVID-19 transmission was provided to clinical staff likely to undertake procedures that involve or may involve the generation of aerosols (aerosol generating procedures or AGPs).

2.2 Quality and Safety

This section looks at how hospitals ensure that infection prevention and control outbreak/s including COVID-19, are managed to protect people using the healthcare service. This includes how the services identify any work practice, equipment and environmental risks and put in place protective measures to address the risk, particularly during a pandemic.

<u>Theme 2: Effective Care and Support</u>

Standard 2.6: Healthcare is provided in a clean and safe physical environment that minimises the risk of transmitting a healthcare-associated infection.

Judgment Standard 2.6: Non-compliant

- Overcrowded Emergency Department A (Non Covid-19) did not facilitate compliance with public health and infection prevention and control measures.

- A number of infrastructural and maintenance issues were identified in the wards inspected.

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§§ Tight-fitting facemasks rely on having a good seal with the wearer's face. In order to be effective the mask must fit tightly to the wearers face, fit testing should be undertaken by a trained professional.

*** An FFP2 facemask is recommended for patients with respiratory symptoms or suspected or confirmed COVID-19 who require an aerosol generating procedure.

Transmission-based precautions were applied in both areas inspected to patients suspected or confirmed to be infected with agents transmitted by the contact, droplet routes in line with national guidelines[5]. Personal protective equipment was readily available outside isolation rooms and appropriate signage was visible on the doors of isolation rooms. In addition, inspectors observed posters on walls throughout the hospital to raise awareness of COVID-19. The expertise of the infection prevention and control team is sought regarding isolation prioritisation whenever suitable rooms are not readily available.

Emergency Department Environment and Infrastructure

Patients admitted through Emergency Department A (Non COVID-19 zone) had been boarded (accommodated overnight), on trolleys and chairs for extended periods of time. Patient placement within this department was not optimal from an infection prevention and control perspective as overall the treatment areas were cramped and cluttered. Minimal spatial separation between trolleys did not comply with public health guidelines[6] for minimum physical spacing and increased the risk of cross infection.

In contrast, waiting areas and assessment rooms within Emergency Department B (COVID-19) zone adhered to national guidelines on social distancing. However the resuscitation room opened directly into Emergency Department A (Non COVID-19 zone). Therefore if patients required transfer from the resuscitation room to the intensive care unit they were transported through Emergency Department A. This should be reviewed.

A Ward Environment and Infrastructure

The hospital experienced an outbreak of COVID-19 in A ward in April 2020. Contributory factors listed in the hospital outbreak report included the infrastructure of A ward. Hospital management were working to mitigate risks in respect of the infrastructure on the ward through ongoing upgrading and ongoing refurbishment plans of existing facilities.

Fourteen beds were operational in A ward on the day of inspection. This comprised two single rooms with en-suite facilities and two six-bedded rooms. Physical distancing was maintained between beds in multi-occupancy rooms in line with national guidelines.[6]

On the day of the inspection, there was an additional patient trolley located on the corridor of A ward. Overcrowding in hospitals has been shown to increase the risk of

spreading infection. A Carbapenemase-Producing *Enterobacteriales* [†††](CPE) patient contact[‡‡‡] was isolated with transmission based precautions within a six bedded bay on A ward. Such an approach is not ideal in an acute hospital setting where instead it would be preferable to accommodate such patients in single rooms.

There was no hand hygiene sink in the clinical room. Antimicrobial soap was available in addition to plain soap at hand hygiene sinks throughout A ward. Alcohol-based hand rub was also available at the point of care. The use of antimicrobial soaps is associated with skin care issues and is not recommended for everyday clinical practices[7] and therefore should be reviewed.

Overall, on the day of inspection the general environment in A ward was clean with few exceptions.

C Ward Environment and Infrastructure

The 33 bedded ward comprised five single rooms with en-suite facilities, one four-bedded room and four six-bedded rooms. Physical distancing was maintained between beds in multi-occupancy rooms in line with national guidelines.[6]

Inspectors observed ward-wide issues related to maintenance. Surfaces and finishes were worn and poorly maintained and as such did not facilitate effective cleaning. Poor maintenance and poor environmental hygiene have been cited as contributory causal factors in serious outbreaks of infection in hospitals.

The environment in C ward was in general clean, however there were some exceptions. For example unacceptable levels of dust were present in the shelves of the sterile supplies storage unit in the clinical room.

Discussion with Patients

Patients were very positive in their feedback to inspectors and expressed satisfaction about the standard of environmental hygiene and the care provided within the wards inspected.

[†††] Carbapenemase-Producing *Enterobacteriaceae* (CPE), are a family of bacteria which can cause infections that are difficult to treat because they are resistant to most antimicrobials, including a class of antimicrobials called carbapenems which have typically been used as a reliable last line treatment option for serious infection. Bloodstream infection with CPE has resulted in patient death in 50% of cases in some published studies internationally.

[‡‡‡] A CPE patient contact is defined as a person that has shared a multi-bed area and/or shared toilet facilities with a person identified as colonised or infected with CPE. This includes time spent in the Emergency Department (ED) and Acute Medical Assessment Units (AMAUs). A person that has been cared for in an inpatient area (including ED and AMAU) by nursing staff who were simultaneously caring for one or more patients colonised with CPE in the absence of Contact Precautions. This might arise in relation to a patient who was not known to be colonised with CPE at the time in question.

Standard 2.7 Equipment is cleaned and maintained to minimise the risk of transmitting a healthcare-associated infection.

Judgment Standard 2.7: Compliant

Equipment Hygiene

Overall, equipment in the both areas inspected was clean and well maintained. Inspectors viewed daily and weekly equipment cleaning checklists and schedules and noted they were consistently completed and were monitored by Clinical Nurse Managers on an ongoing basis. It was observed at the time of the inspection that a green tagging system was in use to facilitate the identification of clean equipment.

Designated patient equipment such as monitoring equipment was available in each of the isolation rooms on C ward.

Storage space on A ward was severely limited due to the ongoing renovations. Excess items and patient equipment were stored on a communal corridor on A ward.

Evidence viewed indicated that blood glucose monitors and their holders which contained supplies of finger stick blood sampling devices were brought to the patient bedside when taking blood samples for monitoring the patient's blood sugar on A ward. This is not in line with best practice as it unnecessarily increases the risk of equipment contamination. It is recommended that only the equipment required for a single procedure on an individual patient should be brought to a patient bedside.

Theme 3: Safe Care and Support

Standard 3.1. Service providers integrate risk management practices into daily work routine to improve the prevention and control of healthcare-associated infections.

Judgment Standard 3.1: Compliant

Risk Management

Risks identified in clinical areas were addressed at clinical area level or were documented and escalated to directorate level or higher as required. Inspectors were informed by management that high risks were escalated in line with HSE risk management processes.[8] Overall, inspectors were satisfied that there was sufficient awareness of risks relating to infection prevention and control at the hospital. Risk registers were reviewed at monthly directorate committee meetings.

Infection prevention and control corporate risk register‡‡ risks included the following:

- Lack of isolation rooms
- Hospital infrastructure
- CPE
- COVID-19.

Incident Reporting

Hospital management informed inspectors that it was hospital policy to report incidents of healthcare-associated infection and non-compliance with infection prevention and control guidelines on the hospital incident management system. Incidents were tracked and trended and an overview of reported incidents was presented at monthly directorate committee meetings.

> **Standard 3.8** Services have a system in place to manage and control infection outbreaks in a timely and effective manner.
>
> **Judgment Standard 3.8: Substantially compliant**
> - While key improvements were made in response to the April COVID-19 outbreak, substantive infrastructural and capacity risks remained.
> - Initial screening for COVID-19 risk status on arrival at the emergency department was not undertaken by a senior decision maker in keeping with relevant HSE National Guidelines.

CPE Outbreak

The National Public Health Emergency§§§ to address CPE declared by the Minister for Health on 25 October 2017 is ongoing. The hospital experienced an outbreak of CPE from December 2019. Public Health were notified and an outbreak control team was convened in response to the CPE outbreak. Multimodal infection prevention and control strategies[9] were implemented and the outbreak was effectively contained. The outbreak was closed**** on 22 May 2020.

A further CPE outbreak had been declared in August 2020. Concerted infection prevention and control interventions, including weekly screening and contact isolation, had so far succeeded in containing the CPE outbreak to the date of this inspection.

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§§§ A public health emergency is described as any serious or unexpected event, due to an infectious disease, which causes, or threatens to cause, death or serious illness to large sections of the population, an individual region or a specific cohort of individuals and which will have a major impact on the normal functioning of the health system and on society in general.

**** A period of 90 consecutive days without a newly detected CPE patient assessed as a "probable" hospital associated case should be considered as reasonable evidence that transmission has ceased.

Measures to Prevent and Control the Risk of COVID-19

The COVID-19 Management Committee had developed a COVID-19 escalation plan. Pre-agreed trigger levels in terms of infection prevalence and hospital occupancy informed actions in response to surges of infection. The escalation plan was used in conjunction with the hospitals existing escalation policy and was reviewed, adjusted and updated as the National and local COVID-19 situation progressed.

Processes were in place to ensure separate COVID-19 pathways (at risk of COVID-19) and non-COVID-19 pathways (COVID-19 not clinically suspected). At entry to hospital, patients presenting for assessment were streamed[††††] based on COVID-19 symptoms, exposure risk, and severity of presentation and directed into the most appropriate patient pathway. However signage indicating Emergency Department B was the designated COVID-19 pathway could be improved.

Initial screening for COVID-19 risk status on arrival at emergency department was not however undertaken by a senior decision maker [‡‡‡‡] as recommended in national guidelines.[10] Screening questions to assess symptoms or exposure to COVID-19 were undertaken by clerical staff. Inspectors were informed at interview that the hospital had planned to address this, albeit a timeline for the completion of same was not provided to HIQA. It will be important that this is addressed in a timely fashion following this inspection.

Other measures implemented to decrease the potential incidence of COVID-19 outbreaks and staff infection included but were not limited to:

- visiting restrictions
- testing of all patients for SARS-CoV-2 on admission
- onsite SARS-CoV-2 testing for symptomatic staff
- onsite testing of asymptomatic staff on the non covid wards during the COVID-19 outbreak.
- appropriate use and supply of PPE
- posters displayed on walls throughout the facility to raise awareness of COVID-19
- enhanced communication in relation to COVID-19 and infection prevention and control including circulation of COVID-19 staff newsletters
- restricted group meetings and social interaction among staff.

[††††] Streaming is a hands off assessment that involves asking what the presenting complaint is and identifying risk factors for COVID-19. The outcome dictates which zone or service the patient moves to.

[‡‡‡‡] Senior decision makers are defined here as those who have undergone appropriate training to make independent decisions around patient admission and discharge: Registrar grade and above or Advance Nurse Practitioner.

Management of COVID-19 Outbreaks

Outbreaks of COVID-19 occurred on two inpatient wards between 13 April and 28 May 2020. A total of 75 confirmed cases were identified (33 patients and 42 staff). A multidisciplinary outbreak team was convened to advise and oversee the management of the COVID-19 outbreaks and the local Public Health Department was informed.

Outbreak investigation is one of the key components of outbreak management that feeds into quality care and prevention of disease transmission. The infection prevention and control team prepared outbreak reports at the conclusion of the COVID-19 outbreaks. The reports viewed by inspectors summarised how the outbreaks were detected, the investigations conducted and interventions carried out to control it. Learning and recommendations were detailed in the outbreak report viewed. Contributory factors listed in the outbreak report included;

- the initial delay in turnaround time for tests sent off-site for analysis
- the absence of a cohesive contact tracing process at the onset of the outbreak
- dated ward infrastructure and lack of appropriate isolation facilities
- staff crossover between non-COVID-19 wards at the onset of the outbreak
- asymptomatic transmission to staff and patients.

Acknowledging limited knowledge of this novel virus in April 2020, the extent to which asymptomatic or pre-symptomatic transmission occurred and how much it contributed to transmission was not recognised at the time of the onset of the outbreaks at the hospital. As per national guidelines at that time, masks were also not universally worn for all patient contact. Members of the infection prevention and control team informed inspectors that proactively advising staff to wear surgical masks for all patient interactions helped control the outbreaks.

Designated staff were assigned to care for patients with confirmed COVID-19 infection who were accommodated in isolation rooms/cohort bays. The majority of hospital staff were divided into separate COVID/ Non-COVID pathways in March. With effect from the end of April 2020 the majority of medical staff were also working within separate streams. Inspectors were informed that where this was not possible for operational reasons staff adhered to the required infection control guidelines.[5]

Bed capacity was reduced in multi-occupancy bays on the affected wards to maintain physical distancing. While the affected bays within the outbreak wards were closed to admissions, it was of concern to inspectors that it would appear that other areas of the wards remained open to admissions for two weeks after the

COVID-19 outbreak was declared. National guidelines[11] recommend that new admissions should be restricted on impacted wards to curtail outbreaks.

It is recommended that hospitals have on-site testing infrastructure for COVID-19 and other respiratory viruses to facilitate diagnosis and the safe cohorting of patients.[10] In response to delays in receiving test results at the onset of the outbreak, on-site SARS-CoV-2 testing capacity was made available within the hospital by installing new molecular testing equipment. The hospital had also invested in technology to assist with rapid microbiological testing capability to support patient flow. In addition to the introduction of new equipment, the working hours and shifts of laboratory medical technicians were adjusted to allow for more testing. These actions significantly increased onsite testing capacity and reduced turnaround time for test result availability. Staff and patients on affected wards were screened weekly for SARS-CoV-2 during the outbreaks.

Interruption of transmission within the facilities requires investigation and effective contact tracing efforts. The hospital did not have a dedicated occupational health service. Documentation reviewed indicated that initial contact tracing was not a cohesive process with contact tracing being undertaken by ward managers with no previous experience with contact tracing in collaboration with the infection prevention and control team.

While a number of key improvements were made in response to the COVID-19 outbreaks, substantive infrastructural and capacity risks remained at the time of the inspection including:

- lack of appropriate isolation facilities in the emergency department, inpatient wards and intensive care unit.
- insufficient numbers of ventilated isolation rooms[6] for aerosol-generating procedures e.g. tracheal intubation.
- overcrowding in Emergency Department A and the presence of escalation beds on inpatient wards.

Learning from the COVID-19 outbreaks indicated that multiple infection prevention and control measures were required to halt the transmission of COVID-19 within the hospital. If further outbreaks are to be avoided the hospital must urgently address ongoing risks through improvements in the wider hospital infrastructure, addressing Emergency Department overcrowding, and through the early closure of outbreak wards to new admissions.

3.0   Conclusion

Overall HIQA identified that, on the day of the inspection, Mayo University Hospital was compliant with two of the six of the *National Standards for the prevention and control of healthcare-associated infections in acute healthcare services* assessed. A judgment of substantially complaint was made against three standards and a judgment of non-complaint was made against one standard.

Mayo University Hospital experienced two COVID-19 outbreaks at the outset of the pandemic. Contributory factors included key information deficits relating to the nature of the SARS-CoV-2 virus at that time, inclusive of the potential for asymptomatic and pre-symptomatic spread, and the importance of mask wearing to prevent cross-transmission. These factors, allied to others relating to hospital infrastructure, processes and procedures were clearly articulated in subsequent outbreak reports.

During the course of this inspection, HIQA identified that the hospital had put in place a number of important measures to reduce the likelihood of further outbreaks, as informed from learning from its experiences in April 2020 and in accordance with frequently updated national guidelines. Significant areas of learning from the outbreaks had been applied. Furthermore, HIQA found that the hospital continued to work to put in place additional measures to further reduce risk to patients associated with the provision of acute healthcare. Going forward, in addition to those measures that have either been implemented or are currently being actively addressed, it will be very important to ensure that should further outbreaks of COVID-19 occur at the hospital, that learning relating to the need to prevent further admissions to impacted areas is also taken on board.

Notwithstanding the application of learning since the April 2020 outbreaks, HIQA has identified that more recently, the Emergency Department had become significantly busier, and inspectors witnessed a return to crowding of waiting rooms and delays in throughput. Furthermore such crowding had resulted in non-adherence to HSE physical distancing guidelines to prevent the risk of COVID-19 transmission. HIQA identified this to the hospital as a significant concern at the time of the inspection. Efforts to mitigate this risk, inclusive of better use of available bed capacity elsewhere within the hospital and other measures such as the planned expansion of the footprint of the emergency department through the addition of seven treatment bays in a new modular build, all need to be advanced following this inspection.

This finding is also of relevance in the context of possible future additional demands posed by the pandemic at the hospital over the coming winter months. It will be important that levels of hospital bed occupancy, and the potential for crowding are

closely monitored and effectively managed by the hospital, hospital group and National HSE.

Leadership, Governance and Management

Inspectors found that that there were clear lines of accountability and responsibility in relation to governance and management arrangements for the prevention and control of healthcare-associated infection at the hospital. Regular performance updates in relation to infection prevention and control were reported through the established hospital governance structures.

The COVID-19 Management Committee was responsible for preparing and overseeing the hospitals COVID-19 response in line with National Guidance. Pathways for streaming patients into COVID-19 and non- COVID-19 services had been identified, and insofar as possible each stream had separate infrastructure and staffing.

Workforce

Significant staff redeployment had taken place in order to generate capacity for COVID-19 services and patient pathways.

Inspectors also noted the extra challenges and workload experienced by the infection prevention and control team since March 2020 in achieving and implementing changes made to date. The hospital had identified that more resources were required to support the microbiology and infection prevention and control services. Inspectors were also informed that occupational health services were not resourced to meet the needs of the hospital during the ongoing COVID-19 pandemic.

Effective Care and Support

In the context of high community prevalence of COVID-19 and the potential of virus transmission from asymptomatic patients, treatment of patients in close proximity to each other in Emergency Department A increased the risk of spread of many infections including COVID-19 and those caused by multidrug-resistant organisms. Rapid SARS-CoV-2 testing capability was made available to assist patient flow in the Emergency Department. Management should continue to engage with clinical teams to optimise the use of the additional off-site acute beds.

Overall patient equipment and the environment in the wards inspected were generally clean with some exceptions. However a number of infrastructural and maintenance issues which had the potential to impact on infection prevention and control measures were identified during the course of the inspection. Hospital management were working to mitigate risks in respect of inpatient ward

infrastructure through upgrading and ongoing refurbishment plans of two inpatient wards.

Safe Care and Support

Systems were in place to identify and manage risk in relation to the prevention and control of healthcare-associated infections. Overall, senior management had good oversight of the infection prevention and control risks on the corporate risk register.

The COVID-19 pandemic has been characterised by rapid change, as hospitals learned from experience in Ireland and abroad. As would be expected with any pandemic involving a novel virus, national infection prevention and control guidelines have needed to updated over time as knowledge relating to the virus and disease evolved. HIQA identified that these updated recommendations had been implemented within the hospital.

Mayo University Hospital had taken on board the recommendations of their COVID-19 outbreak reports and was working towards improving the general facilities and clinical environment in the wards affected. The risk of outbreaks was mitigated through the application of standard precautions including wearing of face masks and the addition of transmission-based precautions where indicated.

However, given the continued risks posed to healthcare facilities by the ongoing presence of COVID-19 both among a cohort of patients in hospitals, and within the wider communities that they serve, every measure to reduce the potential for further outbreaks should be advanced where possible. This inspection identified that further interventions are required at Mayo University Hospital to address the risks posed by the wider hospital infrastructure and overcrowding.

Consequently, following this inspection, Mayo University Hospital, as a member of the SAOLTA Hospital Group, needs to be supported within group and national structures to effectively address issues in relation to hospital infrastructure, capacity and resources in order to meet non- COVID-19 unscheduled care demand and the potential for a resurgence of COVID-19 as the pandemic continues.

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