Report of the announced inspection of medication safety at Mayo University Hospital.

Date of announced inspection:

24 August 2017
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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 services in Ireland. HIQA’s role is to develop standards, inspect and review health and social care services and support informed decisions on how services are delivered.

HIQA aims to safeguard people and improve the safety and quality of health and social care 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, HIQA 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 services in Ireland.

Regulation — Registering and inspecting designated centres.

Monitoring Children’s Services — Monitoring and inspecting children’s social services.

Monitoring Healthcare Safety and Quality — Monitoring the safety and quality 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 services.
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1. Introduction

Medications are the most commonly used intervention in healthcare, and advances in medication usage continue to play a key role in improving patient treatment success. However, where medicines are used, the potential for error, such as in prescribing, administering or monitoring, also exists. While most medication errors do not result in patient harm, medication errors have, in some instances, the potential to result in catastrophic harm or death to patients.

Medication related events were the third most common type of adverse event recorded in the Irish National Adverse Events Study. Medication safety has also been identified internationally as a key focus for improvement in all healthcare settings and it is estimated that on average, at least one medication error per hospital patient occurs each day.

HIQA’s medication safety monitoring programme, which commenced in 2016, aims to examine and positively influence the adoption and implementation of evidence-based practice in public acute hospitals around medication safety. HIQA monitors medication safety against the National Standards for Safer Better Healthcare to determine if hospitals have effective arrangements in place to protect patients from harm related to medication use.

An expert advisory group was formed to assist with the development of this medication safety monitoring programme. The advisory group membership included patient representation, alongside members with relevant expertise from across the Irish health service. Specific lines of enquiry were developed to facilitate medication safety monitoring. The lines of enquiry which are aligned to HIQA’s National Standards for Safer Better Healthcare are included in Appendix 1 of this report. Further information can be found in a Guide to the Health Information and Quality Authority’s Medication Safety Monitoring Programme in Public Acute Hospitals 2016 which is available on HIQA’s website: www.hiqa.ie

An announced medication safety inspection was carried out at Mayo University Hospital by Authorised Persons from HIQA; Dolores Dempsey Ryan, Kathryn Hanly and Nora O’ Mahony. The inspection was carried out on 24 August 2017 between 09:00hrs and 16:00hrs. Interviews were held in the hospital with the following groups of managers and clinical staff:

- Group one: the Chairperson of the Drugs and Therapeutics Committee, the Chief Pharmacist, and the Quality and Patient Safety Manager.
- Group two: the Deputy General Manager, the Associate Clinical Director for the Women’s and Children’s Directorate, and the Interim Director of Nursing and Midwifery.
Inspectors visited the following clinical areas and spoke with staff and reviewed documentation:

- The Elderly Medicine Ward
- The Paediatric Ward.

In addition, a survey was conducted among outpatients in the Outpatient’s Department.

HIQA would like to acknowledge the cooperation of staff who facilitated and contributed to this announced inspection and the hospital’s outpatients who completed an anonymised questionnaire.
2. Findings at Mayo University Hospital

The following sections of this report present the general findings of this announced inspection which are aligned to the inspection lines of enquiry.

2.1 Governance and risk management

Lines of enquiry:

- Patient safety is enhanced through an effective medication safety programme underpinned by formalised governance structures and clear accountability arrangements.
- There are arrangements in place to identify report and manage risk related to medication safety throughout the hospital.

Mayo University Hospital is a Model 3 hospital within the Saolta University Health Care Group delivering a number of acute services including women’s health, general surgery, medicine, paediatrics and emergency medicine.

Mayo University Hospital had formalised governance arrangements and organisational structures with clear lines of accountability in place to support the safe use of medications.

The hospital had an established Drugs and Therapeutics Committee that was responsible for the governance and oversight of the hospital’s medication management system and for ensuring its safety. The Committee had recently updated its terms of reference which clearly outlined the Committee’s aims and objectives, membership, responsibilities of members, accountability, reporting relationships and frequency of meetings.

Membership of the Committee was multidisciplinary to reflect the fact that medicines management was the responsibility of a number of clinical professional groupings. Membership included clinician representatives from each directorate, the Chief Pharmacist, nurses, the Finance Manager, hospital management, the Chair of the Antimicrobial Stewardship Committee and other healthcare professionals who may participate at the discretion of the chairperson as required. Documentation reviewed by inspectors indicated that attendance at these meetings was consistent with its terms of reference to reflect a commitment by hospital clinicians and the senior Hospital Management Team to medication safety.

Inspectors were informed that the hospital had established communication with a local community pharmacy and with general practitioners (GPs) to seek feedback on the development of a new discharge prescription. The hospital planned to organise a teleconference system for general practitioners to link into Drugs and Therapeutics
Committee meetings. General Practitioners requested that the hospital share their bridging anticoagulation guidelines and this was agreed by the Drugs and Therapeutics Committee.

There were two permanent sub-committees of the Drugs and Therapeutics Committee know as the

- Medication Safety sub-committee
- Antimicrobial Stewardship sub-committee.

All sub-committees provided regular feedback on activities using a standardised report template to the Drugs and Therapeutics Committee. HIQA found that the hospital’s Drugs and Therapeutics Committee had made a considerable amount of progress in governance of medication safety systems since it was set up in 2015.

The Drugs and Therapeutics Committee reported to the Hospital Management Team every two months using a standardised template in accordance with its terms of reference. The Hospital Management Team was operationally accountable to the General Manager who reported into the Saolta Group Executive Council. To support the Saolta Group governance and oversight of medication safety, a group Drugs and Therapeutics Committee was set up and the hospital General Manager and the Chair of the Drugs and Therapeutics Committee reported that they attended these meetings. In addition, it was reported at interview that the chief pharmacist also linked in with other chief pharmacists within the Saolta Group to collaborate and share for example, medicines protocols.

Inspectors found that medication safety was effectively led and coordinated by the Chief Pharmacist with the support of the Drugs and Therapeutics Committee, the Senior Hospital Management Team, the Medication Safety Committee and healthcare staff at the hospital. It was evident that medication safety was supported at executive level in the hospital. Medication safety was a standing agenda item for discussion at the Drug and Therapeutics Committee and the Hospital Management Team meetings. Documentation viewed by inspectors showed that a standardised report template was used by the Chief Pharmacist to provide feedback on a monthly basis from the Medication Safety Committee to the Drug and Therapeutics Committee and the Hospital Management Team. It was reported to inspectors at interview that the new governance structures in place worked well for medication safety.

* "Bridging" therapy involves temporarily converting a patient’s blood thinning medication from a long acting tablet, to a short acting injection, so that their blood thinning might be temporarily reversed to allow a surgical or other procedure to occur. Such a procedure requires good coordination between hospital and community care.
For a Drugs and Therapeutics Committee to be effective, there must be a structured drug selection system that is explicit in its methodology, transparent and evidence-based. The hospital should consider developing a formulary to ensure that appropriate governance exists with the Drugs and Therapeutics Committee around what is approved for use and that in doing so, a proper safety evaluation occurs before medications are introduced into practice at the hospital. As Mayo University Hospital is part of the Saolta Group, the potential for hospitals to work together to develop and share a medicines formulary should be considered within the group.

Despite the lack of a written formulary, the Drug and Therapeutics Committee did have processes in place to manage emergency medication requests, medication recalls and reviewed the hospital’s unlicensed medication list annually. The hospital had a new drug submission form to support the application of a new medicine based on efficacy, safety, current treatment, the intended use for the drug and target patient population. Inspectors were informed that completion of this new drug submission form depending on the cost and safety concerns relating to a request for a new medicine. Documentation reviewed during the course of the inspection indicated that amendments to the hospital stock list were considered at Drugs and Therapeutics Committee meetings. Inspectors were informed that there were currently no clinical trials active in the hospital at the time of this inspection, but the Drugs and Therapeutics Committee would be informed if they were taking place.

The hospital had a Medication Safety Committee which was chaired by a consultant physician and reported into the Drugs and Therapeutics Committee through the Chief Pharmacist. The hospital reported that attendance at these meetings were in line with its terms of reference June 2017, which were in draft form at the time of the inspection. This Committee had developed a medication safety strategy and progress update report for 2016/2017. This report provided an update on the four priorities identified by the Committee for completion which included medication safety incident reporting, audit, education and training and medication reconciliation. The Committee had also devised a short, medium and long term priorities plan for 2017/2018. Each priority had an action plan with an identified lead person or committee assigned to each action with a target date for completion. It was evident at interview that the medication safety committee’s priorities plan was being actively progressed within the hospital.

**Risk Management**

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1. A formulary is a hospital’s preferred list of medicines that staff can use as a reference document to ensure safe and cost-effective prescribing.
The main source of medication incident surveillance in the Mayo University Hospital was the voluntary incident reporting system. The hospital had an electronic system for reporting and addressing medication incidents and near misses. Emails were automatically generated to alert department managers that an incident had been reported. The Chief Pharmacist graded all medication incidents using the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP) Medication Error Index to categorise incidents in terms of patient harm. The index considered factors such as whether the error reached the patient and, if the patient was harmed, to what degree (Appendix 2).

The hospital reported that the majority of incidents were inputted to the National Incident Management System (NIMS) system and graded using the Health Service Executive (HSE) risk matrix. Issues which were considered to potentially compromise medication safety were included on the hospital’s risk register. Inspectors viewed the Pharmacy Department’s risk assessment tool and noted that risks relating to medication safety were recorded with existing and additional controls identified and responsible person for actions outlined.

Inspectors were informed at interview that serious medications incidents were reviewed in the relevant Directorate meetings and where required were escalated to the Saolta Serious Incident Management Team (SIMT). Hospital managers provided inspectors with an example of a serious medication incident which had occurred within the hospital relating to a patient receiving the wrong medication. This incident was investigated by a hospital incident review team. The hospital implemented risk reduction strategies, underpinned by a standard operating procedure, to mitigate this risk. This had yet to be audited to assess the effectiveness of the mitigation strategies implemented. The Saolta Group’s Serious Incident Management Team (SIMT) and the Saolta Group’s Drugs and Therapeutics Committee were informed about this incident to support shared learning on the mitigation strategies implemented with other hospitals within the group.

Important lessons can be learned from analysis and trending of medication-related incidents and near misses. Reporting of incidents is of little value unless the data collected is analysed and recommendations are disseminated. It was reported at interview that medication incidents and near misses were tracked and trended to assess progress, identify emergent medication safety concerns and prioritise medication safety activities. For example, following the analysis of medication incidents, the hospital identified that a number of detected medication-related incidents related to the use of direct oral anticoagulant medications (DOACs) and

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1 The State Claims Agencies (SCA) National Incident Management System (NIMS) is a risk management system that enables hospitals to report incidents in accordance with their statutory reporting obligation to the SCA (Section 11 of the National Treasury Management Agency (Amendment) Act, 2000).
2 Medication used in the management of venous thromboembolism, which is when a blood clot forms in a vein.
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had introduced a workshop training session on DOACs for medical and nursing staff. The hospital reported that they saw an increase in incident reporting relating to DOACs following the workshop training.

Monthly incident reports were submitted to the Hospital Management Team and to each directorate by the Quality and Patient Safety Executive Committee. For example, inspectors viewed the Women’s and Children Directorate Committee minutes April 2017, and noted that the number of incidents reported had been discussed including incidents relevant to the directorate which were escalated to SIMT.

Inspectors were informed at interview that a total of 320 medications incidents were reported from March 2016 averaging about 25 medication incidents per month. The hospital reported that the majority of medication incidents were reported by clinical pharmacists, and this was directly related to the presence of a clinical pharmacist on a limited number of wards including the Elderly Medical and Orthopaedic wards. Nonetheless, the absence of a clinical pharmacy service in the majority of wards in the hospital, including the paediatric and maternity wards, meant there was likely underreporting in these areas. As a result key medication related risks in these areas could not be understood, recorded, escalated or mitigated effectively. Therefore, the culture of reporting medication incidents needs to continue to include other healthcare staff, rather than reliance on clinical pharmacists, so that safety surveillance is improved, learning is shared, and a safety culture is promoted and enhanced across the organisation.

Senior management acknowledged the low numbers of medication related incidents being reported. Low numbers of incidents reported does not necessarily mean a low number of incidents occurring. Studies have found a positive association between incident reporting and safety culture, where an increase in incident reporting was indicative of a positive reporting culture within the hospital. To improve the culture of reporting medication incidents, feedback had been provided to each ward area and to medical and nursing staff with key points for learning and consideration. This information was stored in a ward folder for all staff to access which inspectors viewed. For example, in April 2017, medication incident feedback had been provided on a vancomycin prescribing and administration incident relating to dosage and therapeutic drug monitoring. This feedback initiative led to a recent improvement in medication incident reporting from 25 a month to 60 a month by clinical pharmacist, nursing and some medical staff. Ward staff confirmed to inspectors that regular feedback on medications incidents encouraged more reporting of incidents.

Medication-related incident reporting facilitates the identification of risk and opportunities for improvement. However, on its own it does not provide a complete picture of all potential sources of risk and patient harm. Mayo University Hospital
used a variety of additional information sources to identify strengths and weaknesses in the hospital medication management system including retrospective chart review, clinical pharmacy intervention data, direct observation, audit, risk assessment, and feedback from the national patient experience survey.

Open disclosure occurs when staff in the health and social care service communicate with patients in an open and honest manner when things go wrong with patient care.\textsuperscript{15} Inspectors were informed that the hospital had a process in place to promptly inform patients when medication-related incidents occurred. Examples were given of when this open disclosure policy was adhered to.

2.2 Audit and evaluation

**Line of enquiry:**

- The effectiveness of medication management systems are systematically monitored and evaluated to ensure they are effective.

Audit represents a key component of all effective clinical governance programmes.\textsuperscript{16} While elements of medication safety practices were audited at the hospital, these audits were not aligned to a formalised medication safety audit programme. Furthermore, audit activity throughout the hospital was neither strategically driven nor centrally coordinated. The hospital reported to inspectors that they had limited resources available to centrally coordinate audits. Notwithstanding the lack of resources to centrally coordinate audits, the Medication Safety Committee had devised an audit plan for 2017 for nursing staff and the pharmacy department. The Medication Safety Committee reviewed all medication audits findings that were reported by the Chief Pharmacist to the Drugs and Therapeutics Committee and formed part of the monthly report for the Hospital Management Team.

Current arrangements with regard to medication safety audits should be strengthened and broadened out in the hospital to include other healthcare professions to ensure that there is a more systematic approach to audit selection and dissemination of audit findings across the hospital. This in turn would assure the senior Hospital Management Team and other healthcare professionals about medication safety at the hospital. The hospital stated that they had conducted a number of audits in the following areas:

- potassium usage and storage audit - April 2017
- insulin audit - June 2017
- a patient admission and discharge audit - April 2017
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- preventing venous thromboembolism** (VTE) prophylaxis in medical patients (part of the National Medication Safety “Safermeds” programme within the Health Service Executive (HSE) Quality Improvement Division) - 2017
- medication fridge audit - April 2017
- antimicrobial stewardship audits - 2017
- medicines reconciliation audit - March 2017
- medication management audit - Sept 2016
- drug trolley audit - July 2017
- custody and storage monthly audits
- missed omitted drugs audit - June 2017
- adherence to prescribing guidelines for fastrack of orthopaedic patients - June 2017
- mental health audits – benzodiazepine and “z hypnotics” - June 2017.

Medication safety audit results and relevant data were used as the basis for decision-making, action and change. For example, the hospital completed an insulin audit in June 2017. The audit summary highlighted insulin pens in use with no patients’ labels or labelled incorrectly. In response to the audit findings, the hospital drafted an insulin prescribing, storage and administration policy for adult patients to highlight how insulin pens were to be stored and labelled. In addition, the hospital also drafted a policy on safe use of intravenous potassium policy following an audit on potassium usage and storage April 2017.

**Key performance indicators**

Hospital management reported that key performance indicators were used to evaluate medication safety. Inspectors viewed nursing metrics medication key performance indicators and noted that the overall result for the Women’s and Children’s Directorate was 88% to 94% and for the Elderly Medicines Directorate was 82% to 92% from April to June 2017. Feedback in relation to these performance parameters was given to the Drugs and Therapeutics Committee and to the Hospital Management Team to provide oversight on medication safety.

2.3 Medication safety support structures and initiatives

**Line of enquiry:**

- Hospitals develop effective processes to promote medication safety that are implemented and supported by clear and up-to-date policies, procedures and

**Thromboembolism:** when a blood clot breaks loose and travels in the blood.
Medication safety quality improvement initiatives were strategically driven by learning gained from analysis of medication incidents or near misses. For example, in response to a medication incident identified on a discharge prescription by a community pharmacist, a quality improvement initiative was implemented. This initiative involved a collaborative process with the general practitioners, the community pharmacist and hospital clinical staff to provide a patient information letter at discharge to oncology patients with their medications for particular treatment regimens. In addition, a new discharge prescription included information on the patient’s drug allergies or sensitivities, drugs stopped, changed and doses increased or decreased.

Inspectors found that the Medication Safety Committee had progressed with the implementation of their priorities plan for 2017/2018 for medication safety which included the development of monthly medication incident feedback reports for medical, nursing and pharmacy staff in all clinical areas, review of intravenous guidelines, bridging management of anticoagulation guidelines, introduction of a medication safety newsletter and ‘Knowing My Medicines’ leaflet.

Additional quality improvement initiatives implemented included the following:

- roll-out of new controlled drug books
- prefilled anaesthetic drugs and individual patient tray system in theatre
- generic drug assessment tool
- generic storage of medications in the dispensary
- generic storage of medications in wards B and D and the Emergency Department
- pre-assessment medication list
- delivery of medications in sealed boxes or bags to the clinical areas
- introduction of the red ‘do not disturb’ aprons during medication administration
- adult and paediatric medication prescription and administration record review.

Mayo University Hospital was also participating in the Health Service Executive (HSE) Quality Improvement Division venous thromboembolism quality improvement collaborative.17 This is a collaborative among multidisciplinary teams in Irish adult acute public and voluntary hospitals who are working together to achieve appropriate thromboprophylaxis for their hospital’s inpatients, to reduce the risk of
venous thromboembolism and to minimise harm and expenditure associated with unnecessary thromboprophylaxis.

High-risk medicines†† can cause significant harm when system errors occur.6 The hospital used the Institute of Safe Medication Practices high-alert medications list to guide prioritisation of safety initiatives.18 Prior to circulating the list hospital wide, the Pharmacy Department was implementing measures to ensure high alert medications were stored, prescribed, dispensed and administered safely. For example, intravenous concentrate potassium solutions were stored in a separate locked cupboard and underpinned by a policy, which was in draft form at the time of the inspection. In the paediatric ward visited, insulin pens were also stored in a locked press and labelled with the patient’s name and relevant details.

**Clinical pharmacy services**

There are currently no agreed national standards outlining requirements for the provision of clinical pharmacy services in Irish hospitals. However, international studies support the role of clinical pharmacists in hospital wards in preventing adverse drug events.19,20,21,22,23,24 Hospital managers told inspectors that the hospital was not sufficiently resourced to provide a clinical pharmacy service in all ward areas to prevent, identify, and intercept medication prescribing-related incidents.

Inspectors found on the day of inspection that the clinical pharmacy service within the hospital was limited to the Elderly Medical Ward only, allied to an antimicrobial pharmacist service which covered all adult wards. A proportion of the Pharmacy Department resources at Mayo University Hospital were also dedicated to the supply of medication to an off-site location. In addition, inspectors found that there was no clinical pharmacist assigned to the paediatric ward visited, the special care baby unit or maternity services, despite the fact that these were areas where high risk drugs were routinely used. The lack of a clinical pharmacist for the paediatric and midwifery service was highlighted by hospital managers and ward staff as a significant deficiency in support of medication safety practices in these ward areas. This risk was also recorded on the hospital’s risk register. The hospital informed HIQA that business cases for clinical pharmacists were devised and escalated to the Hospital Management Team and the Saolta Group including the Health Service Executive.

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†† High-Alert Medications are medicines that bear a heightened risk of causing significant patient harm when they are not used correctly. Errors with these medicines may not be more common than those from other groups but their consequences can be more devastating as they have smaller margins of safety than other medications and therefore warrant particular caution in their handling.
Inspectors were informed that wards without clinical pharmacy provision had access to a pharmacist by phone to address medication queries. In addition, it was reported that the recent appointment of a 0.5 whole time equivalent Medication Safety Pharmacist would endeavour to provide some oversight regarding medication safety practices across the hospital. However, the hospital will need further support in terms of clinical pharmacy resourcing in order to further progress the medication safety agenda at the hospital.

**Medication reconciliation**

Medicines reconciliation is a formal, systematic process for obtaining a current and accurate list of medicines that the patient was taking when admitted to the hospital, and reconciling this medicines list against the patient’s medicines prescribed at admission, transfer and discharge. Medication reconciliation was not formalised or supported by a medication reconciliation policy. The hospital had an informal process in place for medication reconciliation on admission in designated adult inpatient wards. Medication reconciliation service was not provided at patient discharge.

On a medical ward visited by inspectors, where a clinical pharmacist was assigned, they reported that they reviewed new patients’ medication administration record to prevent, identify, and intercept medication prescribing-related incidents. Inspectors were informed that a clinical pharmacist would also undertake medication reconciliation on this ward by talking with the patient, contacting the patient’s community pharmacist, their general practitioner and checking with the patient’s family if they had a query relating to a patient’s medication.

Ward staff who spoke with inspectors on the paediatric ward visited said that while medication reconciliation was not formalised, they would check the medication list for children with complex needs with their parents, or communicate with the referring children’s hospital where there was a system in place to share care and treatment if required.

To address the lack of available clinical pharmacists to complete medication reconciliation across the hospital, the hospital had plans in place to send two pharmacy technicians for medication reconciliation training to facilitate the completion of the initial stage of the medication reconciliation process. This was a positive development to use resources effectively to implement medication reconciliation.

In addition, the hospital planned to introduce a ‘Knowing My Medicines’ leaflet for patients to keep a record of their medicines and this practice was planned to support medication reconciliation. The Pharmacy Department highlighted, through a
‘medication incident feedback key point for learning and consideration’ information leaflet that verifying a patient’s medication history with the most recent medication list and acting promptly on any discrepancies was the responsibility of all healthcare staff.

Senior managers informed HIQA that failure to implement a formalised medication reconciliation process was due primarily to resource deficiencies in the Pharmacy Department. HIQA acknowledges the challenges, complexity and resource requirement to implement an effective medication reconciliation process, but recommends that the hospital continues to prioritise a multidisciplinary process as a fundamental building block for medication reconciliation.

2.4 Person-centred care

Line of enquiry:

- Patients and/or carers are informed about the benefits and associated risks of prescribed medications in a way that is accessible and understandable.

Patients should be well informed about any medications they are prescribed and any possible side effects. This is particularly relevant for those patients who are taking multiple medications.29, 30

Inspectors were informed that clinical pharmacists offered counselling to all patients newly prescribed oral anticoagulant medication before discharge. Clinical nurse specialists‡‡ also provided education to patients on newly prescribed medication. For example, the cardiac nurse specialist service introduced an education session called ‘teach back’ whereby patients were provided with three days education sessions relating to heart failure and medications. Following this ‘teach back’ programme patients were asked questions about their understanding of heart failure and the medicines they were prescribed. Patient information leaflets were available at the point of care.

As part of the HIQA inspection, HIQA requested that a small sample of patients attending the Outpatient Department complete an anonymised questionnaire in relation to prescribed medications. Eighteen patients who had been inpatients in Mayo University Hospital within the past year, and who were prescribed regular medications, completed the questionnaire. Of the 18 patients surveyed, 15 patients

‡‡ A clinical nurse specialist has specially focused knowledge and skills, required to improve the quality of patient care with a clinical focus on assessment, planning, delivery and evaluation of care given to patients and their families
had been prescribed new medicines and three patients had not been prescribed any new medicines. Of these 15 patients:

- Nine patients said that while in hospital, a staff member had explained the purpose of new medication in a way that they could completely understand.
- Eight patients said that prior to discharge from hospital, a staff member told them about the possible medication side effects to look out for following discharge home.
- Eleven patients said that they received complete instruction on how to take their medications at home.

It is acknowledged that the sample size of patients who completed the anonymised questionnaire was small, and therefore was not representative of all recently discharged patients taking prescribed medication. However, patient education is an integral component of the safe, effective and cost-effective use of medications. This patient questionnaire did provide some baseline information about outpatients.

2.5 Policies procedures and guidelines and access to information

**Lines of enquiry:**

- Hospitals develop effective processes for medication management that are implemented and supported by clear and up to date policies, procedures and/or protocols.
- Essential information supporting the safe use of medicines is readily available in a user friendly format and is adhered to when prescribing, dispensing and administering medications.

Medication policies, procedures, protocols and guidelines were readily available to staff through the hospital’s document control management system. All medication-related policies, procedures and guidelines were reviewed by the Drugs and Therapeutics Committee prior to implementation.

The adult clinical area visited by inspectors had access to printed copies of the Galway University Hospital’s intravenous drug administration guides with a sticker indicated that these guidelines were approved by the Mayo University Hospital’s Drugs and Therapeutics Committee. Inspectors were informed at interview that the British National Formulary for children was approved for use within the hospital. Ward staff told inspectors that the Medication Safety Committee planned to develop a paediatric medication administration policy.

Multiple sources of medication information were readily available to staff involved in medication use including;
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- British National Formulary in print and electronic formats
- British National Formulary for Children in print 2016-2017
- Paediatric Intravenous Drug Administration Guide May 2017
- Intravenous Medicines for Adults Drug Administration Guide
- Prescriber’s Guide Department of Trauma and orthopaedic Surgery 2012
- Prescriber’s Guide Department of Surgery 2012
- Galway Antimicrobial Prescribing Policy/Guidelines (available via smartphone application)
- Medicines Complete.

Inspectors were informed at interview that hospital management were aware of some of the applications available and used by medical staff to support prescribing practices, but acknowledged the need to have governance over such applications.

Clinical staff had access to patient’s diagnostic results on computers in clinical areas across the hospital. Healthcare staff required access to complete and accurate patient information, relevant to the safe use of medications, at the point of clinical decision making to help ensure patient safety.

### 2.6 Training and education

**Line of enquiry:**
- Safe prescribing and drug administration practices are supported by mandatory and practical training on medication management for relevant staff.

Staff education can effectively augment error prevention when combined with other strategies that strengthen the medication-use system. Medication safety awareness in the hospital was promoted through staff communication including circulation of medication safety alerts, safety reminder posters, medication incident feedback including key points and through medication safety education and policies.

Hospital managers told inspectors that medication safety education was included in non-consultant hospital doctor’s induction training and nursing staff’s induction training. Information was provided to doctors by a clinical pharmacist. New nursing staff completed the Health Service Executive medication management online training programme and nurses also completed this online training following a medication incident to support ongoing professional development. In addition, nursing graduate and adaptation nurses completed competency training on the administration of medications as part of their induction training.
Documentation provided to inspectors indicated that ongoing education had been provided to staff which included anaphylaxis management, injection technique, peripheral intravenous drug administration and oral anticoagulation therapy. In addition, non-consultant hospital doctor’s had been provided with an update education session on oral anticoagulants therapies in February 2017. Monthly training was also provided to staff on incident reporting. A patient safety and quality symposium in November 2016 included presentations on ‘seamless pharmaceutical care, optimising anticoagulation management in the preoperative period’ and enhancing patient safety in the operating theatre by introducing a red theatre hat for patients who have a known drug allergy.

The hospital had introduced ‘safety pause/huddles’ on the wards and in the Pharmacy Department to provide education sessions or updates to ward staff on specific topics relating to medication, to highlight areas for improvement and to encourage discussion around medication safety.

The hospital reported that as they share care with a children’s hospital as part of the National Network for Paediatric Services, nursing staff would attend this children’s hospital for additional training on intravenous catheter devices. In addition, a Share Care Manager also visited Mayo University Hospital to provide additional training updates on shared care treatments programmes for paediatric nurses if required.
3. Conclusion

Medications represent the primary measure for treatment intervention in hospitalised patients. Error associated with medication usage constitutes one of the major causes of patient harm in hospital. Medication-related events were the third most common type of adverse event recorded in the recently published Irish National Adverse Events Study. Medication safety should therefore be a priority area for all acute hospitals as they seek to ensure a high quality and safe service for patients.

Mayo University Hospital had established governance arrangements in place with systems, processes and practices to support medication safety practices in the hospital. It was evident that this had been progressed over a period of time, driven by effective local leadership and supported by Hospital Management and the Saolta Group. HIQA recommends that the hospital continues to collaborate with the Saolta Group structure to share good practice pertaining to medication safety and to share learning, experience and resources.

The hospital had an established Drugs and Therapeutics Committee that provided governance and oversight of the medication management safety systems within the hospital. HIQA found that the hospital's Drugs and Therapeutics Committee had made a considerable amount of progress in governance of medication safety systems since 2015. Notwithstanding this progression, inspectors found that the hospital did not have a hospital wide drug formulary in place, and this represents a further opportunity for improvement following this inspection. A hospital wide drug formulary system should be established to manage the risk associated with the introduction of new medicines in particular, and ensure a considered multidisciplinary approach to risk management related to medicine availability and use in practice. As Mayo University Hospital is part of the Saolta Group, the potential of hospitals to work together to develop and share a medicines formulary should be considered within the group.

The hospital had a system for reporting and addressing medication errors and near misses. The hospital promoted an open reporting culture for learning from medication-related incidents and near misses through regular feedback on medication incidents with key points for learning. However, the hospital acknowledged that medication incident reporting was low. While there was a limited clinical pharmacy service available in medical and orthopaedic ward areas, the absence of a clinical pharmacy service in a number of hospital wards including the paediatric and maternity wards, meant that in addition to the other deficits that such a situation presents, there was likely underreporting of incidents in these areas. As a result key medication related risks in these areas could not be understood, recorded, escalated or mitigated effectively. Therefore, the culture of reporting medication incidents needs to be broadened out to include other healthcare staff, rather than
reliance on clinical pharmacists, so that safety surveillance is improved, learning is shared, and safety culture is promoted and enhanced across the organisation.

The hospital had a medication safety strategy in place with a short, medium and long term priorities plan for 2017/2018. It was evident at interview that this medication safety strategy priorities plan was being actively progressed at the hospital. The hospital had implemented a number of core medication safety interventions supported by policies. None of these strategies are meant to replace vigilance, but each can greatly augment the safety of practice. In addition, the inspection team was provided with examples of hospital-specific medication safety audit activity. However, current medication safety auditing arrangements should be strengthened and formalised with an audit plan to regularly provide assurance to Mayo University Hospital Management Team about medication safety at the hospital.

The Hospital Management Team should build on their work to date to continue to develop and implement their medication safety strategy and priorities plan that sets out a clear vision for medication safety across the organisation.

Following this report, the hospital must focus its efforts to address the risks and findings identified in this report, and work to ensure that the necessary arrangements are in place to protect patients from the risk of medication-related harm. It is recommended that this report is shared with senior managers, clinicians and other relevant staff at Mayo Hospital to highlight both what has been achieved by the hospital in implementing medication safety activities to date, and to foster further collective progression from this time point.
4. References


5. Appendices

Appendix 1: Medication safety monitoring programme Phase One: Lines of Enquiry and associated National Standard for Safer Better Healthcare

<table>
<thead>
<tr>
<th>Area to be explored</th>
<th>Line of enquiry</th>
<th>National Standards for Safer Better Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear lines of accountability and responsibility for medication safety</td>
<td>Patient safety is enhanced through an effective medication safety programme underpinned by formalised governance structures and clear accountability arrangements.</td>
<td>3.1, 5.1, 5.2, 5.4, 5.5, 5.6, 5.8, 5.9, 5.10, 7.1</td>
</tr>
<tr>
<td>Patient involvement in service delivery</td>
<td>Patients and or carers are informed about the benefits and associated risks of prescribed medicines in a way that is accessible and understandable.</td>
<td>1.4, 1.5, 1.7, 3.1, 4.1</td>
</tr>
<tr>
<td>Policies procedures and guidelines</td>
<td>Hospitals develop effective processes to promote medication safety that are implemented and supported by clear and up-to-date policies, procedures and or protocols.</td>
<td>2.1, 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 5.8, 5.11, 8.1</td>
</tr>
<tr>
<td>Risk management</td>
<td>There are arrangements in place to identify report and manage risk related to medication safety throughout the hospital.</td>
<td>3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 5.8, 5.10, 5.11, 8.1</td>
</tr>
<tr>
<td>Audit and evaluation</td>
<td>The effectiveness of medication management systems are systematically monitored and evaluated to ensure they are effective.</td>
<td>2.8, 3.1, 5.8, 8.1</td>
</tr>
<tr>
<td>Education and training</td>
<td>Safe prescribing and drug administration practices are supported by mandatory and practical training on medication management for relevant staff.</td>
<td>6.2, 6.3</td>
</tr>
<tr>
<td>Access to information</td>
<td>Essential information of the safe use of medications is readily available in a user-friendly format and is adhered to when prescribing, dispensing and administering medications.</td>
<td>2.5, 8.1</td>
</tr>
</tbody>
</table>

Definitions

Harm
Impairment of the physical, emotional, or psychological function or structure of the body and/or pain resulting there from.

Monitoring
To observe or record relevant physiological or psychological signs.

Intervention
May include change in therapy or active medical/surgical treatment.

Intervention Necessary to Sustain Life
Includes cardiovascular and respiratory support (e.g., CPR, defibrillation, intubation, etc.)
Report of the announced inspection of medication safety at Mayo University Hospital.
Report of the announced inspection of medication safety at Mayo University Hospital.

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