



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the announced inspection of medication safety at Midland Regional Hospital Tullamore.

Date of announced inspection: 22 January 2019

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 Office of the Chief Inspector within HIQA is responsible for registering and inspecting residential services for older people and people with a disability, and children's special care units.
- **Regulating health services** — Regulating medical exposure to ionising radiation.
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- **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.

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1. Introduction

HIQA's medication safety monitoring programme began in 2016 and monitors public, acute hospitals in Ireland against the *National Standards for Safer, Better Healthcare* to ensure patient safety in relation to the use of medications.¹ The programme aims to examine and positively influence the adoption and implementation of evidence-based practice in relation to medication safety in acute healthcare services in Ireland.

Medications are the most commonly used intervention in healthcare. They play an essential role in the treatment of illness, managing chronic conditions and maintaining health and wellbeing. As modern medicine continues to advance, increasing medication treatment options are available for patients with proven benefit for treating illness and preventing disease. This advancement has brought with it an increase in the risks, errors and adverse events associated with medication use.²

Medication safety has been identified internationally as a key area for improvement in all healthcare settings. In March 2017, the World Health Organization (WHO) identified medication safety as the theme of the third Global Patient Safety Challenge.³ The WHO aims to reduce avoidable harm from medications by 50% over 5 years globally. To achieve this aim the WHO have identified three priority areas which are to:

- improve medication safety at transitions of care
- reduce the risk in high-risk situations
- reduce the level of inappropriate polypharmacy.*

Medication safety has also been identified by a number of organisations in Ireland as a key focus for improvement.^{4,5,6,7,8,9} Medication safety programmes have been introduced in many hospitals to try to minimise the likelihood of harm associated with the use of medications, and in doing so maximise the benefits for patients. These programmes aim to drive best practice in medication safety by working to encourage a culture of patient safety at a leadership level and through the introduction of systems that prevent and or mitigate the impact of medication-related risk.¹⁰

HIQA's medication safety monitoring programme 2019

HIQA published a national overview report of the medication safety monitoring programme '*Medication safety monitoring programme in public acute hospitals- an overview of findings*'¹¹ in January 2018 which presented the findings from thirty-

* Polypharmacy: the use of many medications, commonly five or more.

four public acute hospital inspections during phase one of the programme. This report identified areas of good practice in relation to medication safety and areas that required improvement, to ensure medication safety systems were effective in protecting patients. A number of recommendations were made focusing on improving medication safety at a local and national level. The recommendations are detailed in the report which is available on the HIQA website (www.hiqa.ie).

The final phase of HIQA's medication safety monitoring programme has been updated and developed and the current approach is outlined in eight lines of enquiry[†]. The lines of enquiry are based on international best practice and research, and are aligned to the National Standards¹ (see Appendix 1). The monitoring programme will continue to assess the governance arrangements and systems in place to support medication safety. In addition, there will be an added focus on high-risk medications and high-risk.

High-risk medications are those that have a higher risk of causing significant injury or harm if they are misused or used in error.¹² High-risk medications may vary between hospitals and healthcare settings, depending on the type of medication used and patients treated. Errors with these medications are not necessarily more common than with other medications, but the consequences can be more devastating.¹³

High-risk situation is a term used by the World Health Organization³ to describe situations where there is an increased risk of error with medication use. These situations could include high risks associated with the people involved within the medication management process (such as patients or staff), the environment (such as higher risk units within a hospital or community) or the medication.

International literature recommends that hospitals identify high-risk medications and high-risk situations specific to their services and employ risk-reduction strategies[‡] to reduce the risks associated with these medications (Appendix 2).¹⁴

System-based risk-reduction strategies have a higher likelihood of success because they do not rely on individual attention and vigilance, and a small number of higher-level strategies will be more likely to improve patient safety than a larger number of less effective strategies.¹⁴ Therefore, risks associated with the procurement, dispensing, storage, prescribing, and administration of high-risk medications need to be considered at each step of the medication management pathway.¹⁵

Information about this inspection

[†] Lines of enquiry are the key questions or prompts that inspectors use to help inform their inspection, assessment or investigation.

[‡] Risk reduction strategies: a term used to describe different ways of dealing with risks. Strategies include risk avoidance, transfer, elimination, sharing and reducing to an acceptable level.

An announced medication safety inspection was carried out at Midland Regional Hospital Tullamore by Authorised Persons from HIQA; Nora O' Mahony, Aoife Lenihan, Kay Sugrue and Maeve Mc Garry. The inspection was carried out on 22 January 2019 between 09:00hrs and 16:40hrs.

Inspectors spoke with staff, reviewed documentation and observed systems in place for medication safety during visits to the following clinical areas:

- Operating theatre department
- Medical 2
- Orthopaedic trauma.

Two group interviews were held in the hospital with the following staff:

- Group one: the chairperson of the Pharmacy and Therapeutics Committee, the chief pharmacist, the quality manager and the risk manager.
- Group two: the director of nursing, the general manager and the clinical director.

HIQA would like to acknowledge the cooperation of staff that facilitated and contributed to this announced inspection.

Information about the hospital

The Midland Regional Hospital Tullamore is a model 3[§] public acute hospital in the Dublin Midlands Hospital Group providing acute-care hospital services including a 24/7 emergency department and is the regional centre for orthopaedics, otolaryngology, oncology, haematology, nephrology and rheumatology.

§ Model 3 hospital admits undifferentiated acute medical patients; provide 24 hour/7day week acute surgery, acute medicines and critical care.

2. Findings at Midland Regional Hospital Tullamore

Section 2 of this report presents the general findings of this announced inspection.

The inspection findings are outlined under each of the eight lines of enquiry and opportunities for improvement are highlighted at the end of each section.

2.1 Leadership, governance and management

Hospitals should have governance arrangements in place to support the development, implementation and maintenance of a hospital wide medication safety system.^{15,16} The Midland Regional Hospital Tullamore had a Pharmacy and Therapeutics Committee chaired by a medical consultant which was responsible for governance of medication safety within the hospital. The committee reported to the Clinical Governance Committee which was chaired by the hospital's clinical director.

During the last HIQA medication safety inspection¹⁷ the hospital had the required governance structures and arrangements in place for oversight of medication safety. However, during 2018 governance and oversight of medication safety at the hospital had been severely impacted by unplanned reductions in pharmacy resources. As a result the Pharmacy and Therapeutics Committee was not functioning in line with its terms of reference and had only held two meetings in 2018. In addition the Medication Safety Committee, which was a subcommittee of the Pharmacy and Therapeutics Committee, had been suspended since March 2018. Inspectors found little evidence of contingency arrangements to continue the work of the Medication Safety Committee.

The reduction in pharmacy resources also had a direct impact on the provision of other essential elements required for medication safety (this will be covered in more detail throughout this report). The following services, which had been in place and functioning well during the previous HIQA inspection were impacted and reduced:

- clinical pharmacy services available to clinical areas
- the undertaking of medication reconciliation on admission
- the reporting, analysis, trending and tracking of medication incidents
- the monitoring and evaluation of medication safety.

Inspectors found that the overall approach to medication safety was currently more reactive than proactive in nature. The hospital informed inspectors that they aimed to return to a more proactive approach once resources were restored to previous levels, and sought as a priority to re-establish the workforce through local recruitment of approved pharmacy posts, which included a medication safety officer.

Membership of the Pharmacy and Therapeutics Committee was multidisciplinary, including a recently joined community pharmacist. However attendance for consultant members as outlined in the terms of reference was optional and attendance at meetings was variable. This was similar to the findings during the previous inspection, and therefore had not been fully addressed by the hospital.

In addition, inspectors found the hospital did not have a medication safety strategy to clearly set out the short and long-term goals for the organisation. Hospitals should have a clear corporate strategy that sets out the organisation's mission, values, role, functions and actions to be taken to meet organisational goals.^{10,18}

Opportunities for improvement

- The hospital needs to address deficiencies in clinical pharmacy resources and while addressing this put in place contingency arrangements to ensure that governance, accountability and oversight arrangements for medication management and safety are effective and that the Pharmacy and Therapeutics Committee is functioning appropriately.
- The hospital should review the membership of the Pharmacist and Therapeutics Committee to ensure it is reflective of the services provided by the hospital, with representatives from all the major specialities in attendance.
- The hospital should look to develop a medication safety strategy to clearly articulate the short and long-term operational goals for medication safety.

2.2 Risk management

The hospital had undertaken some proactive medication safety risk assessments to identify and manage risks. Medication related risks requiring additional control measures were documented on the hospital's risk register. Some risks had been on the risk register for an extended period of time, although they had been recently reviewed.

Medication incidents^{**} that occurred in the hospital were reported to the State Claims Agency using the National Incident Management System^{††} (NIMS).¹⁹ Inspectors were informed that pharmacists also reported medication incidents onto the pharmacy's electronic system which were then transferred to NIMS. A total of

^{**} An incident is an unplanned, unexpected or uncontrolled occurrence which causes (or has the potential to cause) injury, ill-health, and /or damage. An incident can be a harmful incident (adverse event), a no harm incident, a near miss, dangerous occurrence or complaint.

^{††} 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).

2,899 medication incidents were reported in 2017 however, the number of reported medication incidents fell significantly to 621 in 2018.

Inspectors were informed that the marked decrease in medication incidents reported was related to the reduction in pharmacy resources, with only the higher level medication incidents reported onto the pharmacy system now being inputted to the NIMS.

Inspectors were also informed that the majority of medication incidents were reported by pharmacy staff, with very low numbers of medication incidents reported by nurses and doctors.

One factor which increases incident reporting is the timely provision of feedback to staff on medication incidents reported and the actions required to avert future risks.^{20,21} However, on the day of the inspection staff who spoke with inspectors reported that although they received feedback on individual incidents they reported, they did not receive feedback on all incidents which occurred in their unit or hospital wide. The hospital should review the feedback mechanism in place to provide staff with information regarding incidents which have occurred in order to facilitate shared learning and promote medication safety.

Analysis of incidents

Inspectors reviewed medication safety reports for 2017 presented by the Medication Safety Committee. These reports used the National Coordinating Council for Medication Error Reporting (NCC MERP) index to categorise medication incidents (see Appendix 3). The Medication Safety Committee, when functioning, reviewed medication incidents above NCC MERP category D^{**} and identified areas for improvement.

However, since the suspension of the Medication Safety Committee in 2018 the routine analysis of medication incidents had not occurred to identify trends or patterns in relation to risk.

The reporting of incidents is of little value unless the data collected is analysed to identify trends or patterns in relation to risk and the resulting recommendations for improvement are shared with frontline staff.²¹

^{**} Category D: an error occurred that reached the patient and required monitoring to confirm that it results in no harm to the patient and or required intervention to preclude harm.

Alerts and recalls

The chief pharmacist received and acted on alerts and recalls^{§§} related to medication. An example of the action taken in response to a recent alert was outlined to inspectors.

Opportunities for improvement

- The over reliance on pharmacy staff to report medication incidents needs to be addressed. The hospital must promote incident reporting among all clinical staff, within a just culture,^{***22} to strengthen reporting of medication incidents, so that safety surveillance is improved.
- The hospital must ensure that incidents are reported, analysed and trended so that latent risk can be identified and systems put in place to minimise the risk to patients.

2.3 High-risk medications

The Midland Regional Hospital Tullamore had developed a high-risk medications list, using international literature and locally identified high-risk medications. The hospital had implemented a combination of associated risk-reduction strategies^{†††} which were observed by inspectors in practice. Staff who spoke with inspectors had an awareness of the high-risk medications available in their clinical areas and the risk-reduction strategies in place.

The following sample of high-risk medications was reviewed in detail during this inspection to identify the risk-reduction strategies in place:

- anticoagulants^{***}
- oral methotrexate
- concentrated potassium chloride
- medication management during the perioperative period.

Anticoagulants

The hospital had a combination of risk-reduction strategies in place to mitigate against the risks associated with anticoagulants such as: segregated storage,

^{§§} Recalls are actions taken by a company to remove a product from the market. Recalls may be conducted on a firm's own initiative or by authorised authority.

^{***} The framework of a just culture ensures balanced accountability for both individuals and the organisation responsible for designing and improving systems in the workplace.

^{†††} Risk reduction strategies: a term used to describe different ways of dealing with risks. Strategies include risk avoidance, transfer, elimination, sharing and reducing to an acceptable level.

^{***} Anticoagulants: are commonly referred to as blood thinners that prevent or treat blood clots, but these medicines also carry an increased risk of bleeding or clots, so patient education and regular monitoring of blood levels are essential to maintain patient safety and ensure good patient outcomes.

labelling, clinical pharmacy review, an anticoagulant clinical nurse specialist service, medicines information and the medication record^{§§§} design.

High-risk labels were placed on anticoagulants prior to dispensing in line with the hospital's labelling high-risk medication policy. Oral anticoagulants were stored in a separate high-risk section of the medication cupboard and medication trolley. Higher dose low molecular weight heparins^{****} were also labelled as high-risk and segregated from lower strengths. Inspectors were informed that unfractionated heparin was not routinely stocked on the clinical areas visited. When unfractionated heparin was required, only one strength was stocked and was labelled as high-risk.

The medication record had a separate section for the prescribing of oral anticoagulants. This included a section to enter details identifying:

- who provided counselling on commencement of the anticoagulation
- who was responsible for long term monitoring
- the indication for the anticoagulant
- the duration and target of the anticoagulant
- the therapeutic monitoring results.

The hospital had developed easily accessible evidence-based anticoagulant pharmacy information sheets to guide staff. The contents of these information sheets included:

- comparison between direct oral anticoagulants⁺⁺⁺⁺ (DOACS)
- changing between anticoagulants
- drug interactions with each of the DOACS
- use of DOACS in special populations such as pregnancy, hepatic impairment and swallowing difficulties
- guidance on perioperative management of warfarin and DOACS.

Inspectors were informed that patient education on anticoagulants was predominantly provided by the anticoagulant clinical nurse specialist.

The hospital had implemented a quality improvement to administer once daily doses of low molecular weight heparin and warfarin between 1600hrs and 1800hrs. The action was implemented to help reduce:

- doses missed at transition of care

^{§§§} The Medication Record is the medication prescription and administration record, drug kardex or drug chart.

^{****} Heparin is an anticoagulant specifically used in the initial treatment and prevention of deep vein thrombosis, pulmonary embolism, and arterial thromboembolism.

⁺⁺⁺⁺ Direct oral anticoagulants: Options for anticoagulation have been expanded recently with the introduction of new anticoagulants called direct oral anticoagulants.

- inappropriate administration of additional dose
- administration of incorrect drug, strength or dose
- patients scheduled for morning procedures failing to receive anticoagulants.

Oral methotrexate

The hospital had a number of high level risk-reduction strategies in place for oral methotrexate. Inspectors were informed that oral methotrexate was not stocked in clinical areas and a pharmacy request for methotrexate triggered a pharmacist review. The hospital only stocked one strength methotrexate tablets, and these were dispensed with a high-alert cytotoxic label in single patient doses. During review, the pharmacist would indicate the day of the week the oral methotrexate was to be administered and block out all other days with an 'x' on the medication record to prevent inadvertent daily administration.

Concentrated potassium chloride

Inspectors viewed a number of risk-reduction strategies which were embedded over a long period of time to mitigate against the risks associated with concentrated potassium chloride.

Potassium chloride was administered in pre-mixed solutions on these clinical areas, stored separately to other solutions and labelled with a high-risk label.

Concentrated potassium chloride ampoules were not stocked routinely in general clinical areas. Inspectors were informed that if concentrated potassium was required on a general ward the request was first reviewed by a pharmacist for appropriateness. The concentrated potassium chloride was then dispensed for a named individual patient, with a high-alert potassium label, and stored securely in the controlled drugs cupboard. Staff were also required to sign out any concentrated potassium chloride used.

Medication management during the perioperative period

A hospital's operating theatre presents a unique situation with the use of multiple high-risk medications, high patient throughput and complex procedures.²³ A diverse range of medications are used which have the potential for a serious adverse event if administered incorrectly.²⁴ Therefore, the perioperative period is a high-risk situation in relation to medication safety.

Examples of risk-reduction strategies in place to mitigate against the risks of medications used within the theatre department are outlined below:

- medications were prepared, labelled and administered by the same doctor
- medications used were reconciled and discarded at the end of each procedure

- emergency medications were located in a separate work area away from routinely used medications for anaesthesia
- colour coded labelling differentiated drugs such as paralysing agents, high-risk and short-dated stock
- high-risk medications were stored, segregated from other medications in an organised, logical and uncluttered manner
- patient identification and drug allergies were checked prior to drug administration
- central and peripheral infusion lines were labelled.

Some areas for improvement were observed by inspectors during the inspection such as:

- propofol was found to be unlabelled by inspectors. All medicines should be individually labelled in line with best practice regardless of identifiable traits²⁵
- medications in the emergency medication trays were presented uniformly in white boxes with white labels without clear differentiation between medications, posing a risk for inadvertent selection and administration of the wrong medication.
- Hospital staff also identified that sterile labelling of medications within the sterile field, and the use of infusion pumps for paediatrics as opportunities for improvement within the department.

There was evidence of good communication regarding medications administered at transitions of care throughout the perioperative patient pathway. The communication points and documentation were audited with good compliance demonstrated.

Other high-risk medications

Examples of risk-reduction strategies in place to mitigate the risks for other high-risk medications and situations were also identified during this inspection and are outlined below:

- The hospital has a list of sound-alike look-alike medications (SALADs)^{****} which inspectors viewed, displayed on medication cupboards in clinical areas. This list outlined medications which sounded or looked alike which were dispensed with a SALAD label.

^{****} SALADS are 'Sound-alike look-alike drugs'. The existence of similar drug/medications names is one of the most common causes of medication error and is of concern worldwide. With tens of thousands of drugs currently on the market, the potential for error due to confusing drug names is significant.

- Inspectors were also informed that pharmacy staff followed criteria when procuring new medications to ensure that where possible they were not similar to current stock. For example the hospital had procured different strength intravenous paracetamol from separate suppliers to avoid similarities in packaging.
- The medication record had an insulin section which included additional prescribing and administration information and advice to contact the diabetes team when this section of the medication record was commenced. Staff reported that the diabetes clinical nurse specialist provided information and guidance to patients on insulin.
- Insulins not in use were stored in a temperate controlled fridge with a high-risk and blank flag label.^{§§§§25} Insulins in use for patients were stored in a separate box in the medication trolley with individual patients details recorded on the flag label.
- Intravenous paracetamol was used for patients with moderate pain or fever where the oral route was not clinically indicated. Information to guide staff was provided on a pharmacy information sheet on injectable analgesia and on a paracetamol intravenous drug administration guide. This guide included information for staff on intravenous paracetamol administration for adults over 50kg, and for children or adults under 50kg.

Procedural sedation was administered in a number of non-theatre areas. Inspectors were informed of systems in place to support safe administration of procedural sedation within the endoscopy unit, including oversight arrangements. However, systems in place for procedural sedation were not standardised across the hospital or supported by a hospital wide policy. This should be reviewed by the hospital following this inspection.

Overall, the Midland Regional Hospital Tullamore had implemented evidence-based safety measures for high-risk medications as a result of sustained efforts in relation to medication safety over a number of years and should be commended on this. Inspectors found evidence that these measures were implemented and that staff were aware of the risk-reduction strategies employed to protect patients from the risk of harm.

However, if the pharmacy workforce is not restored or contingency plans put in place, there is a risk that measures already implemented to improve safety of high-

§§§§ Flag labels : a method of attaching labels to small syringes and containers where part of the label is applied to the syringe, leaving an exposed 'flag' portion to ensure that details on the labels can be read, and the markings and contents of the pen remains visible.

risk medications and future requirements to manage emergent risks could be hampered.

Opportunities for improvement

- The hospital should review the systems and oversight arrangements in place for procedural sedation.

2.4 Person centred care and support

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.^{26, 27}

National patient experience survey

The Midland Regional Hospital Tullamore National Patient Experience Survey^{*****} was completed by 408 patients discharged from the hospital in May 2018. Two questions related directly to medication in the National Patient Experience Survey. The scores for the Midland Regional Hospital Tullamore and the national scores for both 2017 and 2018 are illustrated in table 1 below.

Questions	Year	Midland Regional Hospital, Tullamore score	National score
Q44. Did a member of staff explain the purpose of the medicines you were to take at home in a way you could understand?	2018	8.2	8.0
	2017	8.1	7.8
Questions	Year	Midland Regional Hospital, Tullamore score	National score
Q45. Did a member of staff tell you about medication side effects to watch for when you went home?	2018	5.6	5.2
	2017	5.8	5.1

***** The National Patient Experience Survey was a nationwide survey which asked people for feedback about their stay in hospital. The survey was a partnership between the Health Service Executive (HSE), HIQA and the Department of Health. All adult patients discharged during May 2017 who spent 24 hours or more in a public acute hospital, and have a postal address in the Republic of Ireland were asked to complete the survey.

Table 1: Comparison between Midland Regional Hospital Tullamore and national scores for Questions 44 and 45 of the National Patient Experience Survey 2017 and 2018.

Overall the results show that the Midland Regional Hospital Tullamore scored higher than the national average. The response for Question 44 received an overall score⁺⁺⁺⁺ of 8.2 which was higher than the national average score of 8.0.²⁸ Question 45 received an overall score of 5.6, although higher than the national average score of 5.2, was a disimprovement on the 2017 score of 5.8, and still provided an opportunity for improvement.

Patient information

Inspectors were informed that patient information was predominantly provided by clinical nurse specialists working in areas such as diabetes, respiratory, stroke and anticoagulation, with some patient information provided by nurses, doctors and pharmacist, but this was neither structured nor formalised.

No patient information leaflets were observed by inspectors during the inspection. However, inspectors were informed that some information leaflets were provided by clinical nurse specialists such as information about anticoagulant medications.

Medication reconciliation

Medication reconciliation is a systematic process conducted by an appropriately trained individual, to obtain an accurate and complete list of all medications that a patient is taking on admission, discharge and other transitions in care.^{29, 30,31}

Medication reconciliation was undertaken by clinical pharmacists on their assigned wards for patients on admission. Clinical areas where a clinical pharmacist was not assigned could request medication reconciliation be undertaken for patients by the pharmacist assigned to 'interventions'.⁺⁺⁺⁺

The pharmacist undertaking medication reconciliation recorded his/her findings in the patient's healthcare record, and signed and dated the front of the medication record to indicate that they had completed this review.

However, HIQA found that there had been a substantial reduction in the number of patients receiving medication reconciliation on admission due to staff shortages since the previous HIQA inspection, the hospital reporting a reduction from approximately 75% to 25%.

Systems to support medication safety and optimisation

⁺⁺⁺⁺ Score out of 10 was given for each question belonging to a stage of care or a stage as whole. A score of 0 indicates a very negative experience and a score of 10 indicates a very positive experience.

⁺⁺⁺⁺ Interventions: each day pharmacist(s) were assigned to respond to a request for patient medication review or a request for information for clinical areas not assigned a clinical pharmacist.

Some systems were in place to support medication safety and optimisation in relation to the:

- prescribing and administration of crushed medications
- prescribing and administration of medications intended for nasogastric administration
- prevention of unintended administration of enteral medication through the intravenous route.

Patient weight measurements are important for medications that require an individual weight-based dose.³² Patient weights and allergies were documented on all medication records reviewed by inspectors during the inspection. This was compared to a hospital audit undertaken in December 2018 which demonstrated 100% compliance with recording of patient allergies on the medication record, but there was only 18% to 60% compliance with the recording of patient's weights on this record.

Opportunities for improvement

- The hospital should look to have formal structured systems in place for patient education on medication, and also review the availability of medication information leaflets for patients.
- The hospital needs to work towards re-establishing medication reconciliation for patients on admission, and progressing towards the development of this service to include patients on discharge.

2.5 Model of service and systems in place for medication safety

International studies support the role of clinical pharmacists^{§§§§§} in hospital wards in preventing adverse drug events.^{33,34,35,36,37,38} Inspectors found that clinical pharmacy services had decreased since the previous inspection with services only provided in the medical 4 short stay unit, medical 2, the coronary care unit and the emergency department. Other clinical areas including high-risk areas such as the intensive care unit did not have a clinical pharmacy service and that may pose a risk to patient safety.

An antimicrobial and renal pharmacist provided a clinical service for patients on antimicrobials and renal patients throughout the hospital. Inspectors were also informed that pharmacists were assigned to 'interventions' on a daily basis. The number of pharmacists allocated to this function depended on the pharmacy resources available on the day. The pharmacist assigned to 'interventions' responded

§§§§§ Clinical pharmacy describes the activity of pharmacy teams in ward and clinic settings.

to requests from nurses or doctors for clinical pharmacy review for patients on clinical units not supported by a clinical pharmacy service.

The hospital had a list of medications approved for use in the hospital, also referred to as a formulary.^{*****} The purpose of maintaining this list is to ensure appropriate governance of medications approved for use within the hospital and that a safety evaluation occurs before new medications are introduced.³⁹ The hospital had a system in place for the approval of new medicines which was under the governance of the Pharmacy and Therapeutic Committee. However, the hospital did not periodically review the list of medications approved for use within the hospital.⁴⁰

Opportunities for improvement

- The hospital should continue to progress the recruitment of pharmacy staff to re-establish the clinical pharmacy service for clinical areas of the hospital.
- The hospital should conduct a periodic review of the medications approved for use within the hospital.

2.6 Use of information

Hospitals should support clinical staff in achieving safe and effective medication use through the availability of up-to-date evidence-based information and decision support tools for medications.¹⁵

The hospital's pharmacy department had developed pharmacy information sheets which were approved by the Pharmacy and Therapeutics Committee and provided staff with concise evidence-based information on a variety of topics such as:

- perioperative management of warfarin
- injectable analgesia
- administration time of once daily doses of low molecular weight heparins and warfarin.

Inspectors found that clinical staff had access to up-to-date information at the point of care. Medicines information was accessible to staff on the pharmacy information folder on computers, with some information available in hard copy such as:

- intravenous medication administration guide
- antimicrobial guide
- British National Formulary.

^{*****} Formulary: a managed list of preferred medications that have been approved by the hospital's Drugs and Therapeutics Committee for use at the hospital.

It is recommended, by both the Health Service Executive⁴¹ and the National Clinical Effectiveness Committee⁴² that policies, procedures and guidelines are reviewed and updated every three years. Policies, procedure and guidelines viewed by inspectors during the inspection were up-to-date however, some policies, procedure and guidelines submitted by the hospital pre-inspection were overdue for review.

2.7 Monitoring and evaluation

Monitoring of medication safety should be formally planned, regularly reviewed and centrally coordinated with resulting recommendations actioned and the required improvements implemented.¹⁵

Evidence of monitoring and evaluation of medication safety provided to inspectors for the past two years consisted of nursing audits of:

- nursing and midwifery quality care metrics⁺⁺⁺⁺⁺⁴³
- nursing medication management audits of the medications record, compliance with the 'red apron initiative'⁺⁺⁺⁺⁺ and medication custody and storage.

There was no evidence of formal planned multidisciplinary monitoring and evaluation of medication safety. This was again symptomatic of the reactive rather than proactive approach currently in place in the hospital.

There was also an opportunities for improvement in relation to audit and monitoring of the risk-reduction strategies in place for high-risk medicines and situations, to ensure that the systems in place were effective in reducing risk.

Opportunities for improvement

- Evaluation and monitoring of the use and safety of medication should be planned in line with the hospital's overall priorities and aligned to a medication safety strategy.

2.8 Education and training

Staff education can effectively augment error prevention when combined with other strategies that strengthen the medication-use system.⁴⁴

Midland Regional Hospital Tullamore had developed a bespoke medication record elearning programme which staff could access though the HSELand site and

⁺⁺⁺⁺⁺ Metrics are parameters or measures of quantitative assessment used for measurement and comparison or to track performance.

⁺⁺⁺⁺⁺ Red 'do not disturb' aprons: were worn by nurses to reduce interruptions during medicines administration as interruptions during medication administration rounds can contribute to medications errors.

inspectors were informed that staff received protected time to complete this programme.

In addition:

- nurses attended a medication education session and intravenous drug administration training on induction, and completed the HSE LanD^{§§§§§§} medication management module⁴⁵
- non consultant hospital doctors attended a medication safety education session on induction, grand rounds, journal clubs and weekly educational meetings.

Records of staff that had attended education session and completed elearning programmes could be accessed, but were not actively monitored by the hospital for all medication safety education, to identify who had or had not completed training.

During the inspection inspectors found that although there was awareness among some staff of the educational and learning opportunities within the hospital, this was not universal across all areas visited by inspectors.

Opportunity for improvement

- The hospital should ensure that professionals have the necessary competencies to deliver high-quality medication safety through induction and ongoing training. This could be supported by developing a structured targeted ongoing programme of education for medication safety aligned to the hospital's medications safety programme.¹¹

^{§§§§§§} The health service elearning and development service

3. Summary and conclusion

Medications play a crucial role in maintaining health, preventing illness, managing chronic conditions and curing disease. However, errors associated with medication usage constitutes one of the major causes of patient harm in hospitals and the impact of medication errors can be greater in certain high-risk situations. Understanding the situations where the evidence shows there is higher risk of harm from particular medications and putting effective risk-reduction strategies in place is key for patient safety.

Overall, the Midland Regional Hospital Tullamore had established systems in place for high-risk medications that had been developed over a long period of time and as a result of sustained effort and focus in relation to medication safety. The hospital had identified high-risk medications in use, and had implemented evidence-based safety measures to protect patients from the risk of harm associated with these high-risk medications. Inspectors found staff had a good awareness of the risk-reduction strategies in place.

However, since the last HIQA inspection in March 2017 there had been a disimprovement in relation to progress with medication safety at the hospital. The governance and oversight arrangements in place were not functioning in line with outlined terms of reference and the Medication Safety Committee had been suspended. The hospital explained that a reduction in pharmacy staffing had a direct impact on the provision of services, such as clinical pharmacy services and medication reconciliation, which had been in place and functioning well on the previous HIQA inspection.

The hospital did not have a medication safety strategy to set out a clear plan for medication safety and inspectors found limited monitoring of medication safety. In addition there was a lack of analysis, trending and tracking of medication incidents in the previous year.

Despite the reduction in pharmacy resources, the pharmacists provided a responsive service for patient review or staff information on request, and the pharmacy department had provided easily accessible evidence-based medication information sources to support frontline staff.

Hospital management must work towards re-establishing the services required for medication safety and as a priority restore its medication safety programme to ensure that the essential elements required for medication safety are implemented and improvements are sustained.

The hospital should look to expand responsibility for medication safety to include other disciplines and departments so that all opportunity to sustain current progress

and identify opportunities for further improvement in relation to medication safety can be utilised.

This report should be shared with relevant staff at the Midland Regional Hospital Tullamore and the Dublin Midlands Hospital Group to highlight the findings from this inspection including what has been achieved to date and to foster collaboration in relation to opportunities for improvement.

The opportunities for improvement highlighted in this report requires renewed focus for leadership and management at the hospital to ensure that medication safety is seen as a priority and that patients are protected from known and avoidable harm.

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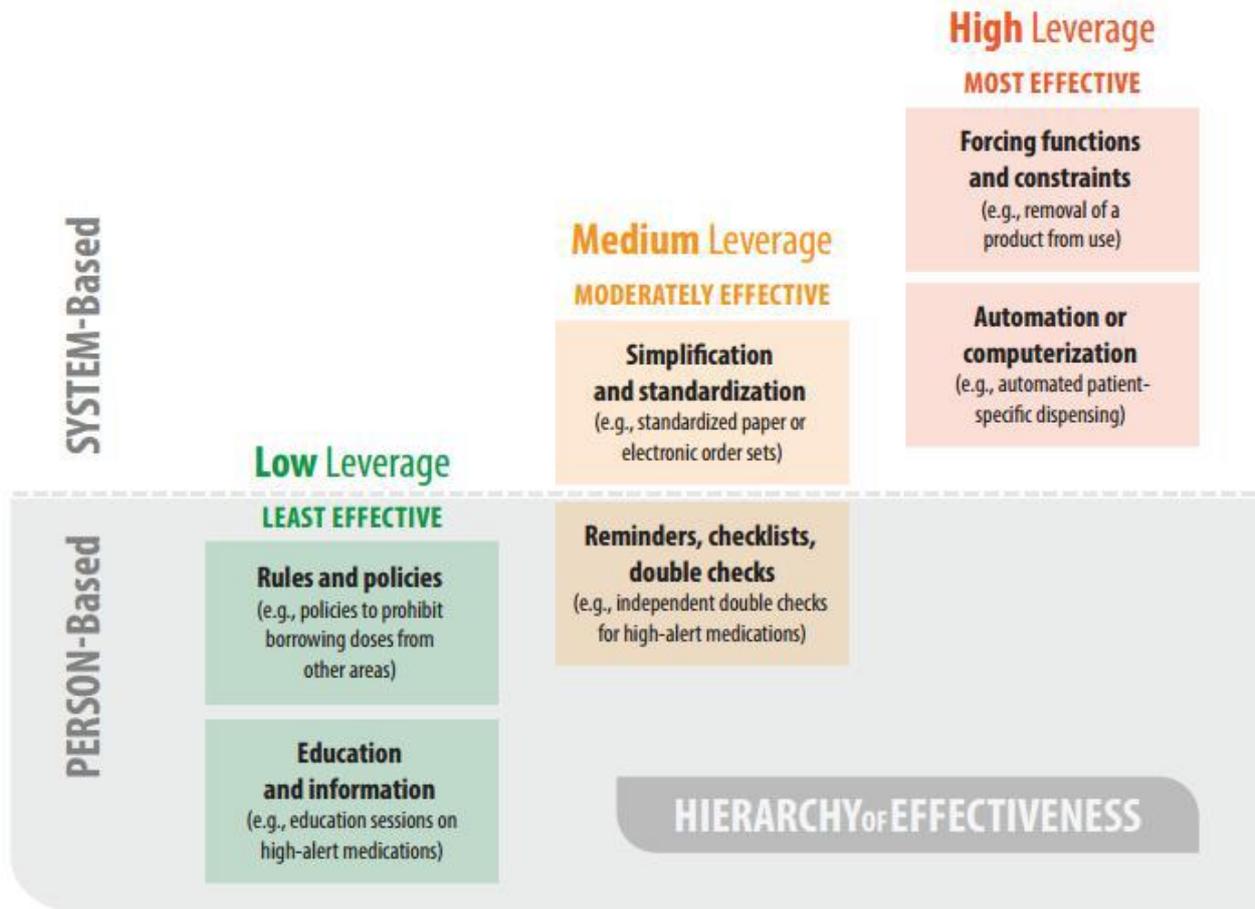
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5. Appendices

Appendix 1: Lines of enquiry and associated National Standards for Safer Better Healthcare.

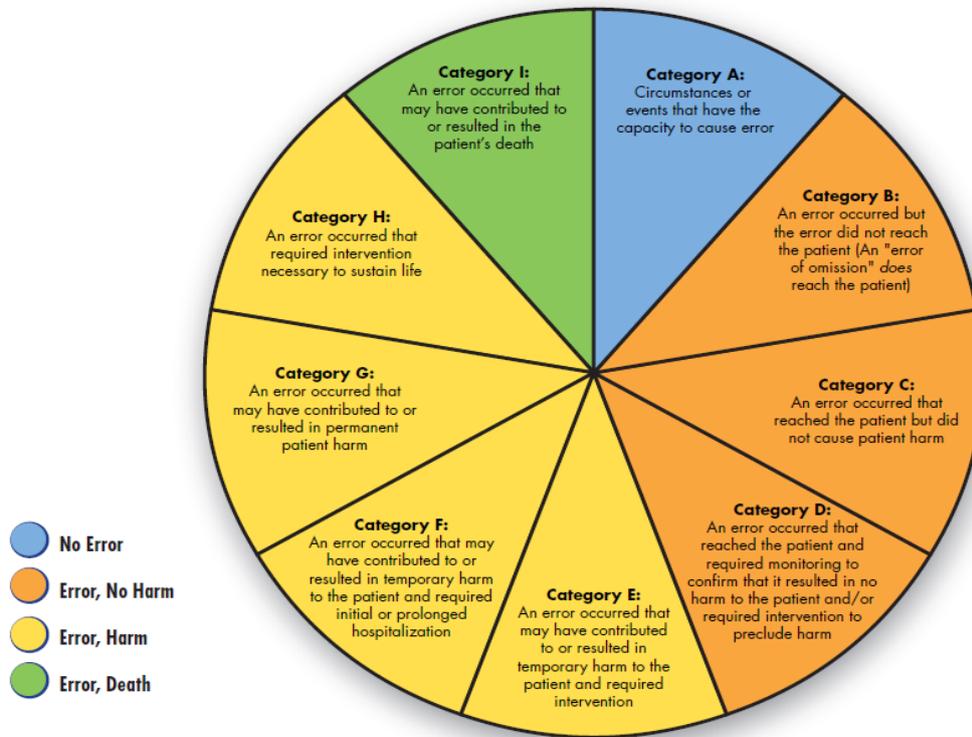
Area to be explored	Lines of enquiry	Dimensions/ Key Areas	National Standards
Leadership, governance and management	1. Patient safety is enhanced through an effective medication safety programme underpinned by formalised governance structures and clear accountability arrangements.	Capacity and capability	3.7, 5.1, 5.2, 5.5, 5.4, 5.6, 5.11
Risk management	2. There are arrangements in place to proactively identify report and manage risk related to medication safety throughout the hospital.	Quality and Safety	3.1,3.2,3.3,3.6, 5.8, 5.11, 8.1
High-risk medications	3. Hospitals implement appropriate safety measures for high-risk medications that reflect national and international evidence to protect patients from the risk of harm.	Quality and Safety	2.1, 3.1
Person centred care and support	4. There is a person centred approach to safe and effective medication use to ensure patients obtain the best possible outcomes from their medications.	Quality and Safety	1.1, 1.5, 3.1, 2.2, 2.3
Model of service and systems for medication management	5. The model of service and systems in place for medication management are designed to maximise safety and ensure patients' healthcare needs are met.	Quality and Safety	2.1, 2.2 ,2.3, 2.6, 2.7, 3.1,3.3, 5.11, 8.1
Use of Information	6. Essential information on the safe use of medications is readily available in a user-friendly format and is adhered to when prescribing, dispensing and administering medications.	Quality and Safety	2.1, 2.5, 8.1
Monitoring and evaluation	7. Hospitals systematically monitor the arrangements in place for medication safety to identify and act on opportunities to continually improve medication.	Quality and Safety	2.8, 5.8
Education and training	8. Safe prescribing and drug administration practices are supported by mandatory and practical training on medication management for relevant staff.	Capacity and capability	6.2, 6.3

Appendix 2: Hierarchy of effectiveness of risk-reduction strategies in medication safety.



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Appendix 3: National Coordinating Council for Medication Error Reporting and Prevention. Index for categorising medication errors.



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.)

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