# Report of the announced inspection of medication safety at the Rotunda Hospital, Dublin.

**Date of announced inspection:**

**22 March 2017**

## 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.[1] 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.[2]

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* [3] 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* [4] which is available on HIQA's website: www.hiqa.ie.

An announced medication safety inspection was carried out at the Rotunda Hospital by Authorised Persons from HIQA; Kathryn Hanly, Dolores Dempsey Ryan, and Kay Sugrue. The inspection was carried out on 22 March 2017 between 10:30hrs 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 Master), the Chief Pharmacist, and the Head of Risk Management.
- Group two: The Secretary Manager, the Director of Midwifery/Nursing and the Practice Development Co-Ordinator.

Inspectors visited the following clinical areas, spoke with staff and reviewed documentation:

- The Neonatal Intensive Care Unit
- The Lillie Suite (Postnatal Ward)

In addition a survey was conducted among outpatients in the Outpatients Department.

HIQA would like to acknowledge the cooperation of staff who facilitated and contributed to this announced inspection, and the patients in the hospital Outpatients Department who spoke with inspectors.

## 2. Findings at the Rotunda Hospital

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

### 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.

The Rotunda Hospital had formalised governance arrangements and organisational structures with clear lines of accountability in place to support the safe use of medications.[5]

The hospital had an established Drugs and Therapeutics Committee with the role of achieving optimal patient care and safety within the hospital through evidence based medicine and rational drug therapy. The roles and functions of the Drugs and Therapeutics Committee were clearly articulated in the Committee's terms of reference. The Committee was responsible for the governance and oversight of the hospital's medication management system and for ensuring its safety.

Membership of the Drugs and Therapeutics Committee was multidisciplinary to reflect the fact that the safe and effective use of medicines is the responsibility of a number of clinical professional groupings. The Committee was chaired by the Master and composed of actively participating physicians, pharmacists, nurses and midwives, administrators, and other representative staff who were involved in the medication-use process.

The Drugs and Therapeutics Committee reported to the hospital's Quality and Safety Committee. The Quality and Safety Committee was operationally accountable to the Executive Management Team, and through the Master, reported to the hospital board's subcommittees which included the Risk Committee and the General Purpose Committee. It was evident that medication safety was strongly supported at executive level in the hospital. Medication safety was a standing agenda item for discussion at the Drug and Therapeutics, the Clinical Risk and the Quality and Safety Committees.

A formal process for evaluating requests for the supply and evaluation of new medications in the hospital had been recently developed, and approved by the Drugs and Therapeutics Committee. Documentation reviewed during the course of the

inspection indicated that amendments to the formulary were considered at Drugs and Therapeutics Committee meetings. Error potential was a standing item for discussion and evaluation on all medications being considered for formulary addition.

There was a clear structure relating to medication safety in place in the Rotunda Hospital, with individuals aware of their roles and responsibilities. Operational implementation of the medication safety programme was effectively led and overseen by two multidisciplinary operational teams, an adult medication safety team and a seperate neonatal medication safety team. Both teams reported to the hospital's Drugs and Therapeutics Committee. This arrangement was described as effective by the hospital due to considerable difference in the type of medications used for adults and neonates.

The main source of medication error surveillance in the Rotunda Hospital was the voluntary reporting system. There was an established system for reporting and addressing medication errors and near misses with dedicated medication incident report forms. The rate of patient safety incident reports in the hospital had increased in recent years. This reflects the emphasis placed on patient safety by the Pharmacy Department and the willingness of front-line staff to provide information that is ultimately intended to reduce the risks of care. However, HIQA was informed that despite recent success in improving incident reporting rates, medication-related near misses were still likely under reported at the hospital. High incident reporting rates are generally associated nationally and internationally with a strong patient safety culture.[6] Medication incidents and near misses were tracked and trended to assess progress and to identify emergent medication safety concerns.

Hospital management reported a non-punitive incident reporting culture. However, inspectors were informed that following errors while administering medications nurses and midwives involved were reminded of the "five rights[*]" of medication administration and may be required to undertake additional training.[†] The five rights are the goals of safe medication practice. In evaluating this approach to error mitigation, HIQA acknowledges the importance of promoting a culture of professional responsibility for practice, and the use of a standardised checking system to try to spot error. However it is important that such an approach is complemented by an evaluation of potential system related causes for latent error, which should also form a focus for error reduction efforts allied to improved midwife/ nurse vigilance.[7,8]

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[*] The right patient, the right drug, the right dose, the right route, and the right time.
[†] Suring the due process phase of preparing this report, inspectors were informed that the limitations of the five rights were specifically addressed within medication safety training sessions for nursing and midwifery staff.

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.[3,9] Inspectors were informed that the hospital had a policy in place to promptly inform patients when medication-related incidents occurred. Staff who spoke with inspectors could provide examples of when this open disclosure policy was adhered to. Inspectors were informed that a recent audit carried out by the Quality Assurance and Verification Division of the Health Service Executive (HSE) provided assurances that the process was operating effectively in the Rotunda Hospital.

Medication safety activity and performance measures were reported by the Drugs and Therapeutics Committee to the Hospital's Executive Management Team and the Board of Governors through the Hospital's Quality and Safety Committee. Inspectors were informed that regular scheduled multidisciplinary meetings were held with risk management and supported by senior management, to discuss medication incident reports, review recurring trends and identify key areas for improvement. The hospital inputted all medication incidents and near misses reported within the hospital to the National Incident Management System.[‡]

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.[10] The Rotunda Hospital used a variety of additional information sources to identify strengths and weaknesses in the hospital medication management system including retrospective chart review, direct observation, audit, risk assessment, and staff surveys.

High-risk medicines can cause significant harm when system errors occur. The hospital had recently identified a list of high-alert medicines[§] used within the organisation, and was taking appropriate actions to ensure that they were stored, prescribed, dispensed and administered safely. For example, practitioners who work in the delivery units may administer a variety of high alert medications during the birthing process. These medications, such as oxytocin (used to induce and augment labour) and magnesium sulphate (used to treat pre-eclampsia and delay preterm birth), are frequently administered intravenously. The hospital sought to reduce unwarranted clinical variation through the use of evidence based risk reduction

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[‡] 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).*

[§] 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.

strategies[11] such as the development of standardised medication concentrations and dosing regimens for oxytocin, magnesium sulphate, and other high-alert medication infusions.

The Executive Management Team met with the Clinical Risk and Claims Manager and Quality and Patient Safety Manager on a weekly basis to receive up-to-date information on clinical risk reviews and an overview of all complaints. Issues which were considered to potentially compromise the safe administration of medication were included on the hospital risk register. The Risk Committee was responsible for maintaining the risk register and reported directly to the Board of Governors following each meeting.

## 2.2 Audit and evaluation

**Line of enquiry**:
➢ The effectiveness of medication management systems are systematically monitored and evaluated to ensure they are effective.

Clinical audit at the Rotunda Hospital was well organised and supported at the time of this inspection. The Clinical Audit Department supported a structured approach to evaluating care against local, national and international standards. The Department had a framework to support effective clinical audit that relied on strategic planning and prioritisation. In addition to an annual audit plan, additional audits were initiated in a timely way should a concern be identified at any time that needed further evaluation of the risk. This resulted in a rapid implementation of mitigating interventions if needed.

All clinical audits were registered so that processes and outcomes could be monitored and the maximum benefit gained for the organisation. The Clinical Audit Department held weekly meetings to review and approve audit applications. All audit reports and action plans received were also reviewed at this time. Quality improvement plans were developed following audit to address identified issues requiring improvement. The Clinical Audit Department ensured that clinical audit was a cyclical process.[12] Once a cycle of data collection was complete, action plans were developed, and the progress in implementing action plans was monitored.

The Clinical Audit Department provided clinical audit training sessions to hospital staff. Updates of audit activity were shared locally via the hospital intranet. Twice yearly audit days were held where staff were encouraged to present an overview of audits they had undertaken.

Clinical audit activity reports were submitted to the quarterly meeting of the Board of Governors and the monthly Quality and Safety Committee meeting. The Drugs and

Therapeutics Committee also reviewed audits related to medication management and safety.

The inspection team was provided with examples of hospital-specific medication safety and medication management audits which included:

- audits of postnatal pain management
- antenatal steroids
- compliance of drug administration and prescription charts with the medication management policy
- epidural medication safety
- timing of first antiretroviral to infants born to HIV positive mothers
- time to first dose IV antibiotics.

In addition, midwifery metrics[**] were monitored across the hospital to review practice around some aspects of medication storage, prescription and administration. Inspectors noted incremental improvements in prescribing and administration metrics over the previous year.

Evidence was submitted and reviewed by inspectors which verified that clinical audit activities at the Rotunda Hospital had led to changes aimed at improving the delivery of clinical services.

## 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 or protocols.

The hospital undertook a multidisciplinary medication safety self-assessment in 2015.[13] Following the self-assessment, the Adult and Neonatal Medication Safety Teams collaborated to develop a four year medication safety strategy. In the absence of national guidance in this area, international guidelines[14,15] which outlined best practice in relation to medication safety strategic planning and quality improvement were used. The medication safety strategy set out general principles related to safety, efficiency, effectiveness, good clinical governance and risk management, and the delivery of medicines through a proactive process adapted according to local and national needs and drivers. Risk mitigation strategies were

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

ordered by hierarchy of effectiveness of risk reduction strategies in medication safety (appendix 2).

It was evident that the medication safety strategy was being actively progressed through the 2017 medication safety operational plans which had been developed by the Adult and Neonatal Medication Safety Teams. The Drugs and Therapeutics Committee and the Executive Management Team were responsible for oversight and implementation of the medication safety operational plans.

In addition, inspectors saw examples of quality improvement initiatives that had been implemented and evaluated. For example, medication administration in the neonatal population is a high-volume, high-risk activity with a narrow margin of error between therapeutic benefits and potentially harmful consequences. As part of a research project, a medication safety bundle containing multi-faceted risk reduction strategies was implemented to reduce the risks associated with the use of high alert continuous infusions[††] in the Neonatal Intensive Care Unit (NICU). Risk reduction strategies included:

- electronic dose calculator for high alert continuous infusions
- standard concentration intravenous infusions
- electronic prescriptions and syringe labels for high alert continuous infusions
- smart pump technology.

The numbers of medication therapy issues which warranted intervention by the clinical pharmacist in the NICU were measured before and after implementation of the medication safety bundle. Inspectors were informed that implentation of the care bundle had resulted in a significant reduction in the number clinical pharmacist interventions related to high alert continuous infusions in the NICU.

The Pharmacy Department led medication safety "huddles"[‡‡] for nursing and midwifery staff on the adult wards and in the neonatal unit. The format of the medication safety huddles was a short informal presentation on a chosen topic followed by a group discussion. The aim of the medication safety huddles was to increase communication between the multidisciplinary team, to educate staff on specific topics relating to medication, to highlight areas for improvement and to encourage discussion around medication safety.[16] The topics discussed were then uploaded to the hospital's document management system to disseminate to staff not present. Inspectors were informed that ten medication safety huddles had taken

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[††] Heparin, Dopamine, Insulin and Morphine.
[‡‡] Safety huddles are brief and routine meetings for sharing information about potential or existing safety problems facing patients or workers. They aim to increase safety awareness among front-line staff, allow for teams to develop action plans to address identified safety issues, and foster a culture of safety.

place to date in the NICU and two medication safety huddles had taken place to date on the postnatal ward. Examples of topics included:

- updates on local medication safety initiatives
- medication safety alerts issued by external organisations
- antiseptic use in the NICU
- allergy and anaphylaxis
- look alike sound alike drugs (SALADS).

Hospital management reported that their experience in implementing medication safety huddles had been positive.

Each clinical area had nominated a midwife/ nurse to be a medication safety champion. These individuals acted as local leaders for medication safety quality improvement initiatives. It was reported at interview that the medication safety champions acted as a link between the local team and the medication safety teams. Having a designated medication safety champion at ward or department level demonstrated the organisation's commitment to safety and may encourage other staff members to feel more comfortable about sharing information and asking questions.

The Rotunda 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. The hospital had developed "Thrombocalc", which was a venous thromboembolism (VTE) electronic risk assessment tool used to ensure all pregnant women admitted to the hospital were appropriately assessed for VTE risk.[18] It was explained that this had markedly improved the proportion of women who had a documented VTE risk assessment performed.

The hospital had resourced the majority of clinical areas with a designated clinical pharmacist[§§]. There are currently no agreed national standards outlining requirements for the provision of clinical pharmacy services in hospitals. However, international studies support the role of clinical pharmacists in hospital wards in preventing adverse drug events.[19,20,21,22,23,24] At the Rotunda Hospital, clinical pharmacists reviewed inpatient medication prescription charts to prevent, identify, and intercept medication prescribing-related incidents. Clinical pharmacists also participated in clinical audit activities, developed protocols and engaged with the

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

multidisciplinary team in managing medication use within the hospital. This service was provided from Monday to Friday.

It was reported that due to resource deficiencies, clinical pharmacy provision was not standardised practice across all clinical areas in the hospital. The hospital identified the need for additional resources in relation to clinical pharmacist staffing to facilitate the provision of a more robust clinical pharmacy services to the NICU. Published studies indicate patients in the NICU are more likely to experience a medication error than other hospitalised patients and to experience more harm when a medication error does occur.[25,26] Inspectors were informed that risks in relation to clinical pharmacy service deficiencies in the NICU was on the hospital risk register. However, there was no agreed period during which these deficiencies would be addressed. In the interim, the hospital must ensure that there is a system in place to ensure that there is consistent cover to ensure the safe provision of pharmacy services in the NICU as recommended in the National Model of Care for Paediatric Healthcare Services in Ireland.[27]

Inspectors were informed that medication reconciliation was initiated by doctors, nurses and midwives within the hospital. However, the effectiveness of this process had not been audited and no training program was in place to support staff in performing formalised medication reconciliation. Medication reconciliation at time of admission is a systematic process conducted by an appropriately trained individual, to obtain an accurate and complete list of all medications that a patient was taking prior to admission.[5,28,29,30,31] The medication reconciliation process needs to be further developed and fully formalised, particularly in high risk areas such as the NICU. It was reported that an audit of neonatal patient medication lists on transfer to the Rotunda Hospital had been commenced.

Inspectors were informed that the Maternal and Newborn Clinical Management System (an Electronic Health Record) will include functionality which would allow clinicians by the bedside to have each patient's current and complete list of medications which in turn would facilitate medication reconciliation. Inspectors were informed that the system was being rolled out in maternity units nationally on a phased basis. The new system was due to be implemented in the Rotunda hospital in September 2017.

## 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. The Rotunda Hospital had systems in place to support the provision of patient information and education in relation to medication. Inspectors were informed that clinical midwife specialists, for example, in diabetes mellitus management provided disease-specific patient education as required. Inspectors were informed that parents were provided with medication information in the NICU. Information regarding medication use was also available in leaflet format and on the hospital's website. Information included:

- medications used during pregnancy
- pain relief after birth
- pain relief after leaving hospital
- pain relief medications and breastfeeding
- care after an epidural.

The Rotunda Hospital carried annual surveys of patient experience within the Hospital. The survey had provided some information about patient's understanding of the potential side effects of their medication. Quality improvement plans were developed to address the issues raised in previous surveys. This included staff training to improve staff communication with patients. This element of the survey had seen notable improvement in recent years. The 2016 survey showed that patients felt they had received acceptable explanations about side effects of medications.

In addition patient and comment feedback forms were reviewed and monitored on an ongoing basis. Following the review of patient complaints relating to post natal[***] pain management, the hospital implemented a post natal pain management quality improvement initiative which aimed to ensure optimal pain management for mothers on the post natal ward. This included a pain management ward round, undertaken by a multidisciplinary pain team including anaesthetic, pharmacy and midwifery staff, to review pain management in post natal patients. In addition postnatal analgesia Group Medication Protocols[†††] were revised and patient information leaflets on pain relief were developed. Inspectors were informed that the hospital also planned to

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[***] the period of time following childbirth; after delivery
[†††] Medication protocols are written directions that allow for the supply and administration of a named medicinal product by a nurse or midwife prescriber in identified clinical situations.

undertake regular audits of post natal pain management to assess the pain relief provided and satisfaction with the medication prescribed.

As part of this HIQA inspection, a small sample of hospital people attending the Outpatients Department completed an anonymised questionnaire in relation to prescribed medications. The questionnaire was completed by four people who had been inpatients in the Rotunda Hospital within the past year and who were prescribed regular medications. Of the four people surveyed:

- all patients said that a staff member had explained the purpose of new medication in a way that they could understand.
- three patients said that a staff member told them about possible medication side effects to look out for following discharge home.
- all patients said they received instruction on how to take their medications at home.

It is acknowledged that the sample size of patients who completed the anonymised questionnaire in relation to prescribed medications at the Outpatients Department was small, and therefore was not representative of all recently discharged patients taking prescribed medication. The small sample size was also likely to reflect the patient population attending the Outpatients Department, the majority of which do not require medication. This information did however, provide some information about outpatients understanding of medications.

## 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.

The Pharmacy Department in conjunction with the Drugs and Therapeutics Committee and Practice Development Department had developed and implemented a suite of medication management policies, procedures, protocols and guidelines to support safe medication management systems within the hospital. Medication-related policies, procedures and guidelines were approved by the relevant committee prior to implementation. Medication policies, procedures, protocols and guidelines were readily available to staff through the hospital's controlled document management system.

Implementation of new policies, procedures or guidelines was supported by communication and education provided by clinical pharmacists and the Nurse Practice Development Department.

A medicines information service was provided by the Pharmacy Department. This service provided ready access to expert advice in the management of medication-related queries, and was open to all staff. In addition, ward based clinical pharmacy staff provided key information about medication to medical, nursing/ midwifery and other clinical staff, as well as to patients.

A number of decision support tools were available to staff in clinical areas including intravenous medication monographs***, standardised treatment protocols, up-to-date medicines reference material and online access to the British National Formulary. The Pharmacy department also had access to online medication information services including Lactmed[‡‡‡], Reprotox[§§§] and Toxbase[****].

The hospital had developed a smart phone application to facilitate easy access to antimicrobial guidelines. The use of mobile technology gave prescribers easy access to the guidelines at the point of prescribing.

Medication safety alerts were developed by the Pharmacy Department in response to medication incidents and near misses reported locally in addition to guidance, alerts, recalls and recommendations issued by external bodies. The Medication Safety Teams used a range of media to communicate with staff employed at the hospital. Efforts were also made to share learning with other hospitals nationally.[32]

Healthcare staff require 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. Clinical staff had access to patient's diagnostic results on computers in clinical areas across the hospital.

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[‡‡‡] LactMed® database contains information on drugs and other chemicals to which breastfeeding mothers may be exposed.
[§§§] Reprotox® contains summaries on the effects of medications, chemicals, infections, and physical agents on pregnancy, reproduction, and development.
[****] Toxbase is the clinical toxicology database of the National Poisons Information Service.

## 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.

The hospital had implemented a medication safety training programme for staff with medication management responsibilities. The implementation of changes to hospital policies, procedures and guidelines were supported by staff education and information sessions.

Inspectors were informed that non consultant hospital doctors were provided with induction training which included medication safety, from the Pharmacy Department staff.

All nursing and midwifery staff due to commence employment in the hospital completed an intravenous medication workshop and were required to complete the Health Service Executive medication management online training programme.[33] The Pharmacy Department collaborated with the Practice Development Department to provide additional education sessions for nursing and midwifery staff. For example, nursing and midwifery staff attended an epidural study day and received insulin safety training as part of the diabetes study day.

A regular pharmacy staff journal club[††††] included patient case studies, medication safety initiatives, new developments and clinical audit at the hospital.

The hospital was preparing to implement the Maternal and Newborn Clinical Management System, an Electronic Health Record (EHR) for all women and babies who access the Maternity Services in Ireland. The hospital had planned a comprehensive staff training programme for implementation of the system in the Rotunda Hospital. Inspectors were also informed of collaboration during the implementation phase between the Pharmacy Departments in maternity hospitals nationally.

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[††††] A journal club has been defined as an educational meeting in which a group of individuals discuss current articles, providing a forum for a collective effort to keep up with the literature.

## 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.[1] 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.

The Rotunda 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 significant period of time, driven by effective local leadership and executive management support and resource allocation. The Drugs and Therapeutics Committee participated in performance improvement activities related to procurement, prescribing, dispensing, administering, monitoring, and overall use of medications.

The hospital had a well established medication safety programme in place, which was evident during this inspection. HIQA found that the medication safety strategy was being actively progressed through the annual medication safety operational plans at the Rotunda Hospital. Medication safety was prioritised at organisational level with clear leadership from the Chief Pharmacist and the support of the Senior Management Team and staff at the hospital. There appeared to be a very good working dynamic within the multidisciplinary team working collaboratively to maximise the quality of the medication safety programme.

Prevention of medication errors is dependent on the presence of a well-organised reporting system, supported by a culture of openness around reporting, and greater awareness amongst staff of the systemic nature of many of these errors.[10] Inspectors found that the hospital had implemented a number of quality improvement initiatives to reduce medication errors and had developed a number of medication policies.

Important lessons can be learned from analysis of medication-related incidents and near misses.[10] Reporting of incidents is of little value unless the data collected are analysed and recommendations are disseminated. Medication-related incidents and near misses were analysed and actions were taken to address them with further recommendations made to prevent reoccurrences of such variances. Healthcare staff were aware that their hospital had a medication incident reporting system. However further scope for improvement in the degree of near miss error reporting was identified by the hospital.

Audit represents a key component of all effective clinical governance programmes. Medication safety was systematically monitored and evaluated at the Rotunda Hospital.[34] Clinical audit in the Rotunda Hospital was well supported by, and reported through, the clinical governance structure and was part of a structured organisational quality and risk management programme.

The hospital had successfully implemented a number of core medication safety interventions and had a good programme of clinical interaction in place to promote best practice around medication usage for patients. None of these strategies is meant to replace vigilance, but each can greatly augment the safety of practice.

NICUs are high-risk areas of care where complex medical interventions are performed. This critical care environment together with the vulnerable nature of the specialty population served, poses risks for neonatal medication errors and patient harm.[25,26] While there was a clinical pharmacist assigned to the NICU, this post holder also had a senior management role. Increased paediatric pharmacy staffing levels to provide safe, accessible and effective services were recommended in the National Model of Care for Paediatric Healthcare Services in Ireland.[27]

The process of medication reconciliation is intended to ensure accurate and consistent communication of patient's medication information through transitions of care. The hospital should ensure that medication reconciliation is carried out in a structured manner by trained and competent health professionals with the necessary knowledge, skills and expertise.[28,29,30,5]

It is recommended that this report is shared with senior managers, clinicians and other relevant staff at the Rotunda 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.

The Rotunda Hospital is a member of the Royal College of Surgeons in Ireland Hospital Group. HIQA recommends that hospital continue to collaborate within the hospital group's structure, to share good practice pertaining to medication safety and to develop and implement national policies and practices for medication management.

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## 5. Appendices

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

| Area to be explored | Line of enquiry[1] | National Standards for Safer Better Healthcare |
|---|---|---|
| Clear lines of accountability and responsibility for medication safety | Patient safety is enhanced through an effective medication safety programme underpinned by formalised governance structures and clear accountability arrangements. | 3.1, 5.1, 5.2, 5.4, 5.5, 5.6, 5.8, 5.9, 5.10, 7.1 |
| Patient involvement in service delivery | Patients and or carers are informed about the benefits and associated risks of prescribed medicines in a way that is accessible and understandable. | 1.4, 1.5, 1.7, 3.1, 4.1 |
| Policies procedures and guidelines | Hospitals develop effective processes to promote medication safety that are implemented and supported by clear and up-to-date policies, procedures and or protocols. | 2.1, 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 5.8, 5.11, 8.1 |
| Risk management | There are arrangements in place to identify report and manage risk related to medication safety throughout the hospital. | 3.1, 3.2, 3.3, 3.5, 3.6, 3.7, 5.8, 5.10, 5.11, 8.1 |
| Audit and evaluation | The effectiveness of medication management systems are systematically monitored and evaluated to ensure they are effective. | 2.8, 3.1, 5.8, 8.1 |
| Education and training | Safe prescribing and drug administration practices are supported by mandatory and practical training on medication management for relevant staff. | 6.2, 6.3 |
| Access to information | 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. | 2.5, 8.1 |

**Appendix 2: Hierarchy of Effectiveness of Risk Reduction Strategies in Medication Safety** [11]
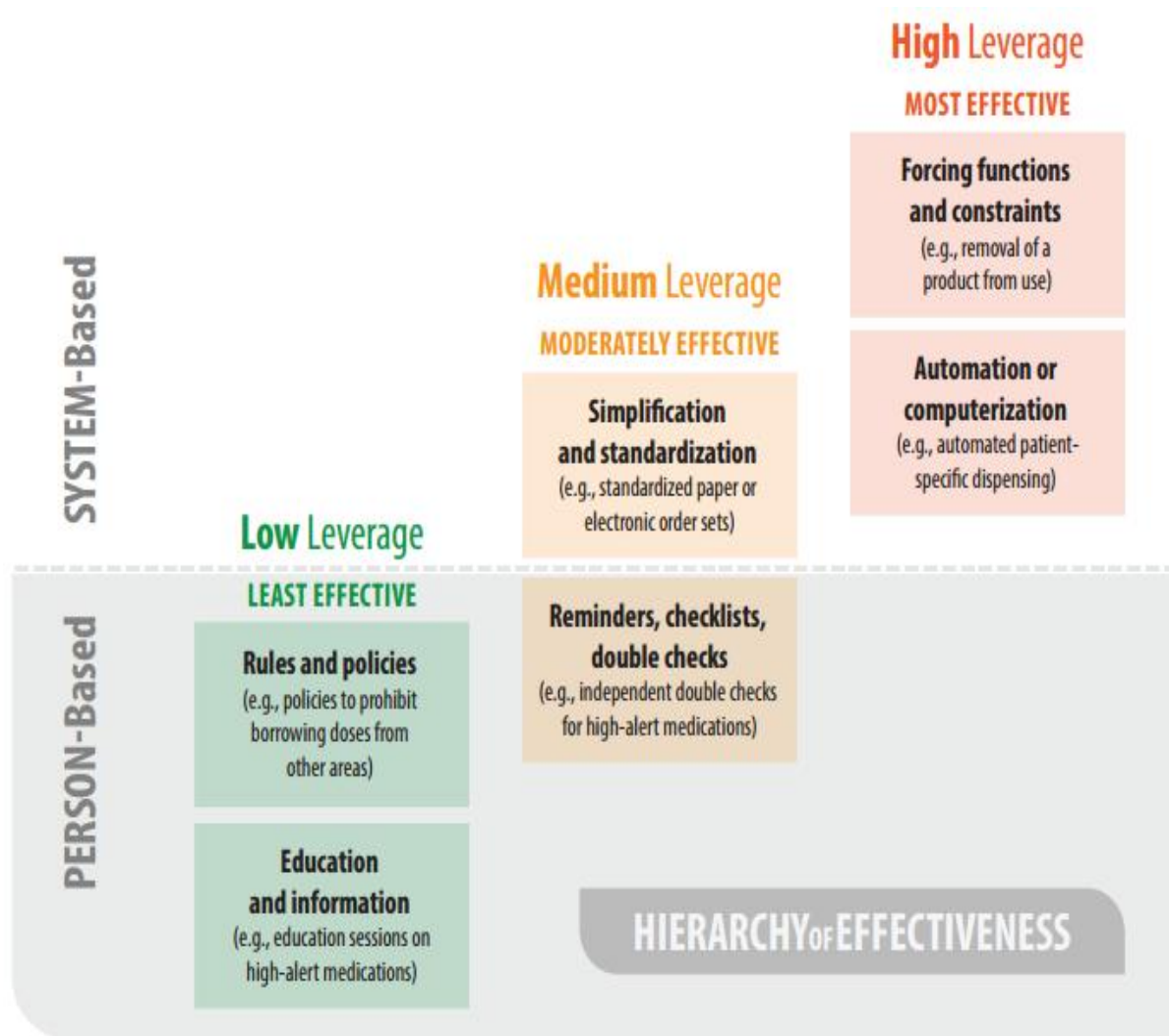


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