Report of the announced inspection of medication safety at St Vincent’s University Hospital.

Date of announced inspection: 07 November 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.

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

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

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

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

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* 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 situations.

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

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

‡ Risk-term 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.
Information about this inspection

An announced medication safety inspection was carried out at St Vincent’s University Hospital by Authorised Persons from HIQA; Nora O’ Mahony, Dolores Dempsey Ryan and Emma Cooke. The inspection was carried out on 07 November 2019 between 09:00hrs and 16:45hrs.

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

- Interventional radiology
- Our Lady’s and St Joseph’s wards

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

- Group one: the chairperson of the Drugs and Therapeutics Committee, the chief pharmacist, the director of quality and patient safety, the patient safety and clinical risk advisor and the medication safety officer.
- Group two: the chief executive officer, clinical director and the director of nursing.

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

Information about the hospital

St Vincent’s University Hospital is a model 4 public acute hospital within the Ireland East Hospital Group. The hospital is also part of the St Vincent’s Healthcare Group (SVHG) which includes St Vincent’s Private Hospital, and St Michael’s Hospital, Dun Laoghaire. The hospital provides acute, chronic and emergency care across over 40 different medical specialities.
2. Findings at St Vincent’s University Hospital

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

St Vincent’s University Hospital had strong oversight arrangements in place for medication safety with formalised governance arrangements and clear lines of accountability in place for medication safety.¹⁶

There was clear evidence of a well-functioning Drugs and Therapeutics Committee operating in line with its terms of reference. However, the hospital had identified the need for a surgical representation on the committee, and were actively seeking a nominee.

In line with recommended practice¹⁰,¹⁷ the hospital had set clear objectives for medication safety and outlined short-term medication safety plans for 2019, medium-term plans for 2019-2021 and long-term plans for 2019-2023. Progress with these medication safety plans was evident to inspectors during this inspection. For example, the hospital was at an advanced stage of implementing a patient safety software system⁶ (a short term 2019 plan), and progress with the implementation of electronic prescribing was outlined to inspectors (a long-term plan 2019-2023).

Similar to findings from the previous medication safety inspection in 2017,¹⁸ St Vincent’s University Hospital continued to promote the medication safety agenda, which was driven by local leadership with executive management support and effective governance through the Drugs and Therapeutics Committee.

2.2 Risk management

The hospital had arrangements in place to identify, report, manage and escalate risks related to medication safety. At the time of the inspection there was only one medication-related risk escalated to the hospital’s corporate risk register. This risk related to the supply of medications and other products as a result of Brexit.

Medication incidents were reported on a paper-based medication incident reporting form and submitted to the medication safety officer who reviewed, collated and

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⁶ web-based patient safety software for healthcare risk management applications.
categorised the incidents. The hospital was in the advanced stages of introducing a patient safety software system through which staff would report future incidents.

The hospital used the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) Medication Error Index (Appendix 3) to categorise medication incidents in terms of severity of outcome. Only incidents category E** and above were submitted to the Quality and Patient Safety department for inputting onto the National Incident Management System.††

In 2016 the hospital had reported 1,055 medication incidents, this rose to 1,447 in 2017 and dropped again in 2018 to 1,152 (Figure 1). Similar to findings during the previous medication safety inspection in 2017,†† inspectors were informed that the majority of medication incidents were reported by pharmacists and nurses. There was also a large variation in medication incident reporting rates across clinical areas, and the hospital had identified the targeting of areas with low reporting rates as a medium-term medication safety plan for 2019-2021.

![Figure 1. Medication incidents reported 2016 to 2018](image)

** Analysis of incidents

The reporting of incidents is of little value unless the data collected is analysed to identify trends or patterns in relation to risk.20 Within St Vincent’s University Hospital medication incidents were effectively analysed by the medication safety officer and outlined in monthly reports in terms of numbers, location, NCCMERP category and most common medication group. Details of serious incidents which had occurred in

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** Category E: An incident happened which may have contributed to or resulted in temporary harm to the patient and required intervention.

†† 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).
the previous quarter were also included in the medication incident reports, as well as details of non-preventable or adverse drug reactions which had occurred.

Medication incident reports were submitted to the Drugs and Therapeutics Committee and to the Clinical Incident Review Group for review and discussion. Actions were identified to mitigate the risk of reoccurrence. For example, the redesign of the medication record included a designated colour-coded section for anticoagulants, ‡‡ to support reducing the risk of duplicate anticoagulant prescriptions.

Medication safety incident reports were also submitted and reviewed at the Quality and Patient Safety Executive Committee, where medication safety was a standing agenda item. This committee was chaired by the hospital’s chief executive officer and had representatives from the Medical Executive Committee, which further supported the governance and support for medication safety.

Annual medication incidents reports also provided detailed trending of medication incidents by number, hospital activity, §§ actual occurrence versus near miss, and incidents categorised E and above were highlighted as preventable or non-preventable incidents.

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. ¹⁹, ²⁰ However, on the day of the inspection some staff who spoke with inspectors reported that although they received feedback on incidents they reported, they did not receive feedback on all incidents which occurred in their clinical area or hospital wide.

The hospital should enhance 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. This process may be supported through the patient safety software system, which was soon to be implemented in the hospital.

**Alerts and recalls**

The process in place for the management of alerts and recalls *** related to medication was outlined to inspectors.

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‡‡ 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.

§§ Incidents per 1,000 bed days.

*** 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 an authorised authority.
Opportunities for improvement

- The hospital should continue to promote incident reporting among all clinical staff and across all clinical areas within a just culture,†††21 to strengthen reporting of medication incidents so that safety surveillance is enhanced.

- The hospital should formalise the feedback mechanism in place to provide staff with information regarding incidents which have occurred across the hospital in order to facilitate shared learning and promote medication safety.

2.3 High-risk medications and situations

High-risk medications require special safeguards to reduce the risk of errors and minimise harm. Strategies for reducing risk with high-risk medications and in high-risk situations‡‡‡ may include high leverage, medium leverage or low leverage risk-reduction strategies§§§ (see Appendix 2).

High leverage risk-reduction strategies such as forcing functions, standardisation and simplification, need to be implemented alongside low leverage risk-reduction strategies such as staff education, passive information and the use of reminders.

Overall, St Vincent’s University Hospital had implemented evidence-based safety measures for high-risk medications, and staff were aware of the risk-reduction strategies employed to protect patients from the risk of harm.

St Vincent’s University Hospital had developed a high-risk medications list based on both evidence-based literature and local incidents, supported by a high-risk policy which outlined the associated risk-reduction strategies in place. The following sample of high-risk medications and high-risk situations were reviewed in detail during this inspection to review the risk-reduction strategies in place:

- Anticoagulants
- insulins
- concentrated potassium chloride
- procedural sedation in the non-theatre environment.

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

‡‡‡ High-risk situation is a term used by the World Health Organization² to describe situations where there is an increased risk of error with medication use.

§§§ 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

The hospital had a combination of risk-reduction strategies in place for anticoagulants including a number of high leverage forcing functions to mitigate identified risks as outlined below:

- high-strength heparins were not stocked on general wards
- the medication record had a specific colour-coded section for the prescribing of all anticoagulants
- the hospital had selected one low molecular weight heparin**** for administration for venous thromboembolism prophylaxis, with the chosen medication pre-printed on the medication record
- direct oral anticoagulants (DOACs) ††††.medication boxes were labelled with a red anticoagulant stamp when dispensed from pharmacy.
- a clinical pharmacy service was available for all inpatients, and pharmacists were available to guide and support staff
- staff had access to up-to-date guidance to support safe anticoagulant therapy management, and updates were distributed to staff through the quarterly pharmacy newsletter.

The hospital had implemented a safer heparin initiative to facilitated a standardised approach for storage of high-strength heparins and prescribing, preparation and administration of heparin infusions.

St Joseph’s ward was designated as the ‘heparin hub’ for the hospital. When patients required a heparin infusion, staff from other clinical areas obtained the high-strength heparin from a dedicated, secure storage cupboard on St Josephs and a pre-printed heparin infusion prescription label with instructions. Staff working on St Joseph’s ward provided advice to colleagues from other clinical areas in the preparation, administration and patient monitoring required for heparin infusions.

The heparin administration guide available in the A to Z of injectable medicines guide on each computer also provided clear guidance on the standardised procedure for the management of patients on an unfractionated heparin infusion.

†††† Direct oral anticoagulants: are medications used to treat or prevent blood clots. However, there is a potential for bleeding with their use or clotting leading to stroke with missed doses. Options for anticoagulation have been expanded recently with the introduction of new anticoagulants called direct oral anticoagulants.
Insulin

The hospital had risk-reduction strategies in place to mitigate against the risks associated with insulin. Examples of these are outlined below:

- unopened insulin pens for single patient use were dispensed with tamper proof seals and blank flag labels and stored in a fridge with central temperate control. (The hospital had also recently installed centrally controlled room temperature and humidity monitors on areas where medications were stored)
- inspectors were informed that once insulin pens were opened, individual patient details and the date of opening was recorded on the flag label
- clinical pharmacists reviewed inpatient medication records and provided information and advice to nurses and doctors
- clinical nurse specialists in diabetes reviewed patients and provided education
- insulin was prescribed on the hospital’s insulin medication record, and the front of the regular medication record was ticked to indicate that a separate insulin medication record was in use
- guidance was also available to support staff in the management of diabetic patients, and complication associated with the care of diabetic patients.

Concentrated potassium chloride

Concentrated electrolyte solutions for injection are especially dangerous with potentially fatal consequences when not prepared and administered properly. National and international evidence recommends the complete removal of concentrated potassium from patient care areas as the goal, with the use of pre-mixed potassium infusions stored segregated from other solutions.

The hospital had a combination of risk-reduction strategies in place to support safe management of potassium chloride.

Stocking of concentrated potassium ampoules was restricted to critical care areas with specific storage and labelling controls in place.

Intravenous potassium was supplied in pre-mixed potassium chloride solutions with additional labelling, outlining that the product contains potassium. These fluids were stored securely, segregated from other intravenous fluids and administered via an electronic pump.

If patients on the general clinical areas required potassium concentration outside those available in the pre-mixed preparations, controls were in place for the
dispensing, storage and preparation of fluids using concentrated potassium solutions with procedures to return unused ampoules to pharmacy.

The systems in place for potassium chloride were outlined in guidance documents accessible to staff, and updates on safe use were distributed to staff through the pharmacy newsletter.

**Procedural sedation in the non-theatre environment**

When sedation is provided in the non-theatre environment the same standard of care is required for each patient. Sedation should be administered by a trained sedation team with oversight by a governing committee.28

St Vincent’s University Hospital had a hospital Procedural Sedation Committee which had governance and oversight for procedural sedation. Procedural sedation was standardised throughout the hospital supported by a guideline for the management of patients receiving procedural sedation.

During this inspection inspectors visited interventional radiology which was one of the areas within St Vincent’s University Hospital where procedural sedation was provided for patients

Patients undergoing procedural sedation in interventional radiology were pre-assessed prior to the procedure and medication doses were titrated for individual patients. Procedural sedation was administered by a trained individual with patient monitoring provided by a dedicated nurse. The process was supported by a clear Radiology Department Sedation Patient Record.

Following the procedure, patients were monitored in a separate recovery area until fully recovered as per the formal discharge criteria. Patient handover to wards included an explanation of the procedure undertaken, the medications administered during the procedure and the follow-on care.

In line with best practice, only one strength of midazolam and fentanyl were stocked in the unit and reversal agents were readily available. Inspectors were informed that the use of reversal agents would be reported as a medication incident and this was monitored by the pharmacy department.29

Nurses working in the interventional radiology department were required to complete a comprehensive training programme which included a competency assessment.

A patient information leaflet on procedural sedation was developed by the hospital but this was not available in the department on the day of inspection. Inspectors
were informed that patient information and advice was provided by medical and nursing staff both prior to and after the procedure.

The radiology department also held weekly multidisciplinary radiology management meetings where departmental issues and incidents were discussed.

Overall, the process for procedural sedation in interventional radiology and the governance arrangements within the hospital for procedural sedation, including a Procedural Sedation Committee, was found to be in line with national and international best practice.28,30, 31

**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.

St Vincent’s University Hospital had a number of high leverage risk-reduction strategies in place for oral methotrexate. Inspectors were informed that oral methotrexate was not stocked in clinical areas. Only one strength methotrexate tablets were stocked in the hospital and dispensed as a patient specific single dose.32

The medication record had an antimicrobial prescription colour-coded section to supported safe prescribing, monitoring and administration of antimicrobials requiring therapeutic drug monitoring. There was also guidance available within the hospital’s medication guide. The clinical pharmacist reviewed antibiotics prescribed, and provided support and advice to staff as required. The hospital’s antimicrobial pharmacist and microbiology team were also available to support safe and appropriate antimicrobial use.

Availability of neuromuscular blocking agents‡‡‡‡ was limited to designed critical care areas, and warning ‘paralyzing agent’ stickers were applied to the packaging of these medications. Neuromuscular blocking agents were stored securely and segregated from other medications.

The hospital had developed a list of sound-alike look-alike medications (SALADS)§§§§ which was seen displayed in clinical rooms visited by inspectors. Pharmacy-based controls were in place during the procurement of new medications to try to minimise the risks associated with sound alike look alike medications. This was supported by a policy. Identified SALADS were labelled with red sound-alike look-alike stickers.

‡‡‡‡ Neuromuscular blocking agents provide skeletal muscle relaxation during surgery.

§§§§ ‘Sound-alike look-alike drugs’ (SALADs) or Look-alike sound-alike (LASA). The existence of similar drug and medication 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.
Audit reports related to some high-risk medications such as direct oral anticoagulants, insulin storage, gentamicin and weight-based dosing undertaken in 2017 were viewed by inspectors. Some of the audit recommendations were seen implemented in practice, but not all were re-audited to ensure they had been effective in reducing the risks identified.

Opportunities for improvement

- The hospital should ensure that audit recommendations for risk-high medications are implemented and monitored, to ensure they are effective in reducing the risks identified.

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. 33, 34

National Inpatient Experience Survey*****

The National Inpatient Experience Survey is a nationwide survey that offers patients the opportunity to describe their experiences of public acute healthcare in Ireland. Of the 1392 people discharged from St Vincent’s University Hospital during the month of May 2019, 623 people completed the survey, achieving a response rate of 45%.

Two questions related directly to medication in the National Inpatient Experience Survey. The scores for St Vincent’s University Hospital and the national scores for 2017††††*, 2018‡‡‡‡ and 2019 are illustrated in table 1 on the next page.

***** The National Inpatient Experience Survey is a nationwide survey which asks people for feedback about their stay in hospital. The survey is a partnership between HIQA, the Health Service Executive (HSE) and the Department of Health. All patients over the age of 16 discharged during May who spent 24 hours or more in a public acute hospital, and have a postal address in the Republic of Ireland are asked to complete the survey.

†††† Please note that the numbering of questions changed after the 2017 survey was completed. Question 44 ‘…..’ was originally question 45 in the 2018 survey and question 45 ‘….’ was originally question 46.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Year</th>
<th>St Vincent’s University Hospital score</th>
<th>National score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q44. Did a member of staff explain the purpose of the medicines you were to take at home in a way you could understand?</td>
<td>2019</td>
<td>7.6</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>7.6</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>7.6</td>
<td>7.8</td>
</tr>
<tr>
<td>Q45. Did a member of staff tell you about medication side effects to watch for when you went home?</td>
<td>2019</td>
<td>4.9</td>
<td>5.3</td>
</tr>
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<td></td>
<td>2018</td>
<td>4.5</td>
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</tr>
<tr>
<td></td>
<td>2017</td>
<td>5.0</td>
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**Table 1: Comparison between St Vincent’s University Hospital and national scores for Questions 44 and 45 of the National Inpatient Experience Survey 2017, 2018 and 2019.**

St Vincent’s University Hospital scores over the three years were below the national average score. The hospital had not to date developed related quality improvement plans in response to these survey results, but outlined to inspectors that the hospital had adopted the World Health Organizations and Health Service Executive ‘Know, Check, Ask campaign’.

**Patient information**

Inspectors were informed that nurses and doctors provided medication related education to patients. Pharmacists provided counselling to patients commenced on anticoagulants and education to patients during cardiac rehabilitation and to patients on pain medications. Patient education was also provided by clinical nurse specialists and advanced nurse practitioners in many specialties.

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The campaign encourages people who take regular medicines, and those assisting them to: *know* their medicines and keep a list, to bringing the list to appointments and if admitted to hospital. To *check* that they are using the right medicine in the right way and to *ask* their healthcare professional if they are unsure.
**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.\(^{38, 39, 40}\)

In St Vincent’s University Hospital medications reconciliation was completed for patients on admission by the clinical pharmacist, using two sources of information as required.\(^{39}\) Medication reconciliation was not undertaken for patients on discharge however, the hospital did plan to examine the feasibility of providing resources for formalised medication reconciliation on discharge, as part of the hospital’s medium-term medications plans for 2019-2021.

The hospital had incorporated the clinical pharmacist’s review of medications into the updated medication record on which they completed a best possible record of medications on admission.\(^{****}\) The clinical pharmacist also indicated the sources from which the medication information was obtained. Medication discrepancies found during this process were discussed with the patient’s team.

**Systems to support medication safety**

Some systems were in place to support medication safety and optimisation in relation to the prescribing and administration of crushed medications, and the prescribing and administration of medications intended for nasogastric administration, supported by clinical pharmacists.

The hospital had completed medication safety Nursing and Midwifery Quality Care Metrics\(^{††††††}\) which included a measurement of patient’s weight and allergy status recorded on the medication record. Patient weight measurements are important for medications that require an individual weight-based dose\(^{41}\) and patient known allergies should be available throughout the episode of care.\(^{15}\)

Metric results reviewed for two of the areas visited by inspector’s demonstrated full compliance with the recording of the patient’s allergy status, but there was room for improvement with the recording of patient’s weight on the medication records. These findings concurred with inspector’s findings from reviews of medication records on the day.

\(^{****}\) ‘A Best Possible Medication History’ (BPMH) is a medication history obtained by a clinician which includes a thorough history of all regular medication use (prescribed and non-prescribed), using a number of different sources of information.

\(^{††††††}\) Metrics are parameters or measures of quantitative assessment used for measurement and comparison or to track performance.
Opportunities for improvement

- The hospital should continue to work towards the expansion of the medication reconciliation service to all patients on transitions of care.
- The hospital should review its practice in relation to recording of weights on all hospital medication records to ensure that this information is available to staff to support safe prescribing, administration, and monitoring of medications.
- The hospital should develop quality improvement initiatives in response to the National Inpatient Experience Survey results, in the areas related to medication.

2.5 Model of service and systems in place for medication safety

Clinical pharmacy service

International studies support the role of clinical pharmacists in hospital wards in preventing adverse drug events.\(^{42,43,44,45,46,47}\)

In line with best practice, St Vincent’s University Hospital had a comprehensive clinical pharmacy service\(^{4****}\) in all inpatient clinical areas. The hospital informed inspectors that although temporary wards did not have a formal clinical pharmacy service, once these wards were in place the hospital deployed clinical pharmacy services to these areas.

Clinical pharmacists completed a Clinical Pharmacy Worksheet to standardise the service delivered to all patients. Clinical pharmacists also double checked all transcribed inpatient prescriptions for accuracy, and provided weekly antimicrobial prescribing information to the antimicrobial pharmacist.

List of approved medications (Formulary)

The hospital had an evidence-based system in place for the approval of new medicines which was under the governance of the Drugs and Therapeutic Committee\(^{48}\) supported by a formulary pharmacist, to ensure appropriate oversight of medications approved for use within the hospital.\(^{49}\)

Consultants requesting new medications for addition to the formulary were invited to attend the Drugs and Therapeutics Committee meeting to discuss their application.

\(^{4****}\) Clinical pharmacy service describes the activity of pharmacy teams in ward and clinic settings. The following core activities are involved in providing clinical pharmacy services: prescription monitoring, prescribing advice, optimising therapeutic use of medicines, adverse drug reaction detection and prevention, patient counselling, inter-professional education about medicines. It may also involve some or all of the following: medication history taking, medication reconciliation, specialist clinics, clinical audit, protocol/guideline development.
The hospital formulary was reviewed annually in line with best practice to support safe, effective and efficient use of medications.

2.6 Use of information

Access to relevant up-to-date and accurate medication reference information is essential at all stages of the medication management pathway.\textsuperscript{11, 15}

St Vincent’s University Hospital had a comprehensive ‘medicines guide’ which was easily accessible to staff via the desktop of the hospital’s computers and on a mobile phone applications. This medicines guide also incorporated the hospital’s antimicrobials guide, the A-Z of injectable medications and the hospital’s formulary. Inspectors were informed that the medicines guide was locally managed and any changes or updates could be implemented in real time, with significant change circulated to staff through memos or the pharmacy newsletter.

Ward based clinical pharmacy staff provided key information about medication to medical, nursing and other clinical staff, and the hospital’s pharmacy also provided a medicines information service.\textsuperscript{****** This service answered over 1000 enquiries from staff on medications annually.}

The Health Service Executive\textsuperscript{50} and the National Clinical Effectiveness Committee\textsuperscript{51} recommend that policies, procedures and guidelines are reviewed and updated every three years. St Vincent’s University Hospital had a wide range of up-to-date medication-related policies, procedures and guidelines which were reviewed and approved by the Drugs and Therapeutics Committee. These documents were easily accessible to staff on the hospital’s electronic quality management software\textsuperscript{††††† available on each computer desk top.}

However, not all clinical areas visited had access to medication guidance in areas where medications were prepared. The hospital acknowledged this and had a plan to provide portable information technology solutions for medication information on all clinical areas as a short-term plan 2019-2021.

\textsuperscript{55555 Formulary: a managed list of preferred medications that have been approved by the hospital’s Drugs and Therapeutics Committee for use at the hospital.}

\textsuperscript{****** A service open to all staff which provided expert advice in the management of medication-related queries}

\textsuperscript{††††††† The electronic quality management software which includes modules such as document control.}
Opportunities for improvement

- Staff should have access to the hospital medication information at all stages of the medication management pathway

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.  

The hospital had a Clinical Audit Committee who had oversight of all clinical audits. Audits were centrally coordinated. The chief pharmacist was a member of the Clinical Audit Committee and this supported multidisciplinary inclusion in medication related audits. Medications related audit were also discussed at the hospital’s Drugs and Therapeutics Committee.

Monitoring and evaluation of medication safety was undertaken in St Vincent’s University Hospital through audit, routine Nursing and Midwifery Quality Care Metrics, ward storage audits and key performance indicators.

The hospital did not have a formal audit plan but inspectors were informed that audits were chosen based on:

- high-risk medications
- Joint Commission International requirements
- topic’s highlighted by frontline staff.

Inspectors reviewed medication safety audits undertaken by the hospital, which had clear recommendations. However, some audits reviewed, did not have an associated time-bound action plan or re-audit plan to complete the audit cycle, in line with the hospital’s audit guidance.

The hospital did inform inspectors that the quality and patient safety department were now maintaining and managing a log of all audit recommendations to ensure they were implemented. An example of a medication audit, which had completed this process was seen by inspectors.

The current key performance indicators measured by the hospital related to the number of medication incident reports rated category E and higher and concentrated potassium usage. Considering the stage of development of the medication safety programme at St Vincent’s University Hospital there is scope for further improvement in relation to use of metrics and indicators to monitor the effectiveness of the medication safety programme.
Opportunities for improvement

- The hospital should look to expand systematic monitoring arrangements through the use of metrics and indicators to monitor the effectiveness of the medication safety programme and further support continually improve safety with medication use.

- Medication safety audits should have time-bound action plans for recommendations with plans for re-audit to ensure the required improvements are achieved.

2.8 Education and training

Staff education can effectively augment error prevention when combined with other strategies that strengthen the medication-use system.52

In St Vincent’s University Hospital medication management was included in a structured induction programme for doctors and nurses. Nurse’s induction included classroom, on line and practical assessment of medication learning units which had to be completed. For example:

- intravenous medication administration
- intravenous medication calculations
- medication assessment booklet
- safe medication administration for nurses
- medication safety online course
- safe use of controlled medications.

The hospital did not have a structured, ongoing medication safety education programme but inspectors were informed that medication safety was a regular feature in weekly multidisciplinary sessions such as grand rounds and journal clubs, and doctor’s weekly education meetings. Ongoing education was provided by pharmacist in areas such as intensive care medicine and liver transplant medications.

Information was also circulated to staff through emails, memos and quarterly pharmacy newsletters. The pharmacy newsletters contained a comprehensive update on medication management and safety. However, not all staff who spoke with inspectors were familiar with the newsletters, nor were they available on all clinical areas visited. The hospital should ensure that staff have access to relevant updates to support medication safety.
The hospital had also developed laminated wallet sized information cards for nurses and prescribers of ‘FAQS‡‡‡‡‡‡ on safe use of medications’ which included information on a number of topics including high-risk medications and SALADS.

The hospital is currently planning a medication safety seminar, which is held biennially§§§§§§ and attended by multidisciplinary staff from both internal and external to the hospital. The hospital outlined that some topics for the seminar were chosen based on risks identified, and high-risk medication such as anticoagulants will be included in the next seminar.

**Opportunities for improvement**

- The hospital should ensure that professionals have the necessary competencies to deliver high-quality medication safety. This could be further supported by the hospital through the developing a structured targeted ongoing programme of education for medication safety aligned with the hospital’s medications safety plan.53

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‡‡‡‡‡‡‡ FAQS: Frequently Asked Questions

§§§§§§§ Biennial: every two year
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.

St Vincent’s University Hospital had strong oversight arrangements in place for medication safety with formalised governance arrangements and clear lines of accountability in place for medication safety.\(^5\)

The hospital had set clear objectives for medication safety outlined in a medication safety plan with short, medium and long term plans identified for 2019-2023. Progress with these medication safety plans was evident to inspectors during this inspection.

The hospital had identified high-risk medications with a combination of risk-reduction strategies in place appropriate to the services provided by the hospital, including some high leverage forcing functions.

The hospital provided a full clinical pharmacy service for all inpatients, and completed medication reconciliation for all patients on admission, which was to be commended.

Reported medication incidents were effectively analysed and trended under the governance of the Drugs and Therapeutics Committee with actions identified and implemented to mitigate the risk of reoccurrence. However, the hospital should progress with its plan to target areas with low reporting rates to strengthen reporting of medication incidents so that safety surveillance is enhanced.

Monitoring of medication safety was undertaken by the hospital with oversight from the Clinical Audit Committee and the Drugs and Therapeutics Committee. There was opportunity for improvement in relation to the monitoring of key performance indicators and the development and implementation of time-bound action plans for recommendations with re-audit, to ensure the required improvements were achieved.

The hospital had comprehensive medication information sources available to guide staff. Clinical pharmacists were also on hand to guide and support staff. Clinical nurse specialists and advance nurse practitioners provided education to patients in a variety of specialist areas. However, the results of the National Patient Experience
Survey showed room for improvement in medication information provided to patients on discharge.

Overall, similar to findings from the previous medication safety inspection in 2017, St Vincent’s University Hospital continued to promote and implement effective strategies for medication safety to protect patients. This was driven over a long period of time by strong local leadership, executive management support and effective governance through the Drugs and Therapeutics Committee.

The hospital should continue to work towards improving medication safety practices by addressing the findings of this report, and progressing the implementation of initiatives identified through its own monitoring of practices in place.

This report should be shared with relevant staff at St Vincent’s University Hospital and the Ireland East Hospital Group to highlight the findings from the inspection, including what has been achieved to date and to foster collaboration in relation to opportunities for improvement.
4. References


5. Appendices

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

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