



**Health
Information
and Quality
Authority**

An tÚdarás Um Fhaisnéis
agus Cáilíocht Sláinte

Report of the announced inspection of medication safety at Bantry General Hospital.

Date of announced inspection: 21 March 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 five 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 34 public

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

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 Organization² 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

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

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

Information about this inspection

An announced medication safety inspection was carried out at Bantry General Hospital by Authorised Persons from HIQA; Kay Sugrue and Maeve McGarry. The inspection was carried out on 21 March 2019 between 09:30hrs and 16:00hrs.

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

- Theatre department
- Medical ward

A group interview was held in the hospital with the following staff:

- the chairperson of the Medication Management Committee, the senior pharmacist, the risk and safety manager (also acting as deputy hospital manager) 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

Bantry General Hospital is a statutory hospital owned and managed by the Health Service Executive (HSE). The hospital is a member of Cork University Hospital Group[§] and is part of the South/South West Hospital Group^{**} governance structure. The hospital site was managed by the Hospital Manager who reported to the Chief Executive Officer of Cork University Hospital Group.

[§] Cork University Hospital Group comprises Cork University Hospital, Cork University Maternity Hospital, Mallow General Hospital and Bantry General Hospital.

^{**} The South/South West Hospital Group comprises nine hospitals operating across the counties Cork, Kerry, Waterford, Tipperary and Kilkenny. This group is led by a Group Executive Officer with delegated authority to manage statutory hospitals within the group under the Health Act 2004.

2. Findings at Bantry General 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 High-risks identified during this unannounced inspection

During this announced medication safety inspection conducted at Bantry General Hospital, Authorised Persons^{††} identified significant concerns in relation to the overall leadership, governance and management of medication safety at Bantry General Hospital.

Specifically, practices observed did not support safe medication practices and highlighted a lack of risk-reduction strategies in place to ensure safety with the management and the storage of anticoagulant^{**} medications. The risks identified related to:

- The design of the medication prescription record did not reduce the risk of duplication and or interaction with anticoagulant medications or support standardised prescription practices for prescribers rotating between hospitals within the hospital group or from other hospitals.
- There was a lack of supporting medication management guidelines or policy on prescribing and safe administration of anticoagulant medications.
- Standardised and segregated storage of high and low dose low molecular weight premixed heparin was not in place which did not support clear identification of the dose of heparin.
- The storage and availability of higher dose low molecular weight heparins was not rationalised to support safety. For example higher dose low molecular weight heparins of different strengths and brands were routinely issued as ward stock and were not dispensed from pharmacy on a patient specific basis. This led to higher than normally observed anticoagulant stock levels in the clinical area inspected.

^{††} Authorised persons of the Health Information and Quality Authority (HIQA) under Section 70 of the Health Act 2007 (the Act) are authorised for the purpose of monitoring against the *National Standards for Safer Better Healthcare* pursuant to Section 8(1)(c) of the Act.

^{**} 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.

- The ongoing lack of a clinical pharmacy service remained an outstanding issue identified by HIQA during the announced medication safety inspection at the hospital in 2016.¹⁶

HIQA escalated its concerns about this situation to hospital managers during the inspection and wrote to the hospital to seek assurance as to how these specific risk issues would be comprehensively and speedily addressed following the inspection.

Subsequently, the general manager provided written assurance that a number of remedial actions had been instigated to comprehensively address the identified risk within defined timelines including:

- a review on the storage of anticoagulants in clinical areas with the introduction of separate storage facilities and removal of anticoagulants stored on drug trolleys
- the introduction of a medication record approved by the Drugs and Therapeutic Committee for use in the Cork University Hospital Group to support safer medication practice by early quarter 3, 2019
- the development and introduction of a hospital-wide policy to support staff in the management of high-risk medications within the next three months
- the introduction of high-risk labelling system for anticoagulants in all clinical areas
- a full review of drug stock levels in all clinical areas to manage stock levels in all areas.

A copy of the letter issued to the hospital regarding the risks identified during the inspection on 21 March 2019 and a copy of the response received from the hospital are shown in Appendices 3 and 4 respectively.

2.2 Leadership, governance and management

Bantry General Hospital is a member of the Cork University Hospital Group. The hospital is linked in through shared senior management with Cork University Hospital Group. The hospital site is managed by the Hospital Manager who reports to the Chief Executive Officer of Cork University Hospital Group. This management arrangement also includes Cork University Hospital and Mallow General Hospital. All hospital sites within the group fall within the same governance structure.

Bantry General Hospital had a local Medication Management Committee in place which linked in with the Cork University Hospital Group Drugs and Therapeutics Committee. The local Medication Management Committee had responsibility for

overseeing all local processes relating to medication safety in the hospital under its terms of reference. This committee was accountable to the Quality and Safety Committee through a formalised reporting structure. Overall executive accountability and authority for medication safety within Bantry General Hospital rested with the Chief Executive Officer of the Cork University Hospital Group.

The hospital had acted to strengthen medication safety governance arrangements to address deficiencies identified by HIQA during the announced inspection of medication safety at the hospital on 8 November 2016. In the interim, between the 2016 and 2019 inspections, formalised links had been established with the Cork University Hospital Group Drugs and Therapeutics Committee. In addition, a local Medication Management Committee was also formed. However, despite these initiatives, HIQA found that there was significant scope to strengthen current governance arrangements to further support medication safety practices at the hospital. The following deficiencies were identified:

- It was reported to inspectors that there was limited oversight of medication safety practices by the Cork University Hospital Group Drugs and Therapeutics Committee of medication safety management at Bantry General Hospital. However, Drugs and Therapeutics Committee minutes for December 2018 provided to inspectors showed that governance arrangements were evolving with plans to include reports from Bantry General Hospital and other hospitals within this group as an agenda item in the future. In addition, policies developed and approved by Cork University Hospital could be adapted for use at Bantry General Hospital once first approved by the Drugs and Therapeutics Committee.
- Inspectors were informed that new medications were formally approved for use at Bantry General Hospital by the Cork University Hospital Group Drugs and Therapeutics Committee. However, in some instances new medications could also be approved locally in order to expedite use and avoid potential delays through the formal submission process to the Drugs and Therapeutics Committee. Staff who spoke with the inspection team described this dual process as somewhat lacking in clarity.
- Bantry General Hospital, as a member of the Cork University Hospital Drugs and Therapeutics Committee, did not always implement medication safety initiatives or decisions introduced by this committee. Decision-making on whether to implement initiatives was devolved to local governance. This lack of governance may have contributed to delayed introduction of evidence-based initiatives such as a revised medication prescription record.

- Medication safety was not a standardised agenda item on the Quality and Safety Committee minutes viewed by the inspectors. Reporting of medication safety-related issues was inconsistent and could be improved based on minutes viewed by inspectors.

The hospital had increased pharmacy resources since the 2016 inspection and was in the process of further recruitment of a pharmaceutical technician to further enhance the pharmacy service.

A formal medication safety strategy for Bantry General Hospital was not evident at the time of the inspection. Inspectors found that key priorities were identified for medication safety in the 2017 and 2018 annual reports submitted to the Quality and Safety Committee. However, a documented annual plan or programme for medication safety was not evident.

Progress in relation to the key priorities identified by the hospital was varied. For example, two of the four priorities for 2018 remained ongoing at the time of the inspection. The lack of a defined medication safety plan potentially impacted on the advancement of the medication safety agenda within the hospital. Inspectors were informed that the hospital plans to develop a local medication safety plan based on the results of a survey on staff safety attitudes, including medication management, which was in progress at the time of the inspection. In addition, there was no evidence to show that medication safety key priorities identified by the hospital were linked with an overarching medication safety strategy or plan developed, or overseen by the Cork University Hospital Group Drugs and Therapeutics Committee at Bantry General Hospital.

Overall, despite efforts made by the hospital to strengthen and formalise medication safety governance arrangements, inspectors found that the governance arrangements in place at the time of the inspection did not comprehensively support medication safety at Bantry General Hospital.

However, HIQA acknowledges that improving governance arrangements is an evolving process which has proceeded in the right direction following the last inspection but needs to be progressed at a faster pace.

Opportunities for improvement

- The hospital should ensure local and Cork University Hospital Group governance arrangements support safe medication practices at the hospital and promote consistent reporting of medication safety-related issues through defined reporting lines.

- The hospital should look to develop a medication safety strategy to clearly articulate the short and long-term operational goals for medication safety within the hospital.

2.3 Risk management

Medication-related risks requiring additional control measures were documented on the hospital's corporate risk register. One medication safety-related risk consisting of three distinct elements was recorded, risk rated and reviewed on the risk register viewed by the inspection team. However, the most recent review date recorded was February 2017. The recorded risks related to:

- limited pharmacy hours
- no clinical pharmacy service
- no antimicrobial stewardship programme.

To address the limited pharmacy hours available, the hospital had appointed a senior pharmacist in early 2017. Approval to recruit a pharmacy technician had been granted and recruitment for this post was due to commence. However, progress was not evident in relation the clinical pharmacy service or additional resources to undertake antimicrobial stewardship at the hospital.

Incidents^{§§} that occurred in the hospital were reported to the State Claims Agency using the National Incident Management System^{***} (NIMS).¹⁷ A total of 94 medication incidents were reported in 2018, a significant increase in the number of reported incidents since 2016 (see figure 1).

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

^{***} The State Claims Agencies (SCA) National Incident Management System (NIMS) is a risk management system that enables hospitals to report incidents in accordance with their statutory reporting obligation to the SCA (Section 11 of the National Treasury Management Agency (Amendment) Act, 2000).

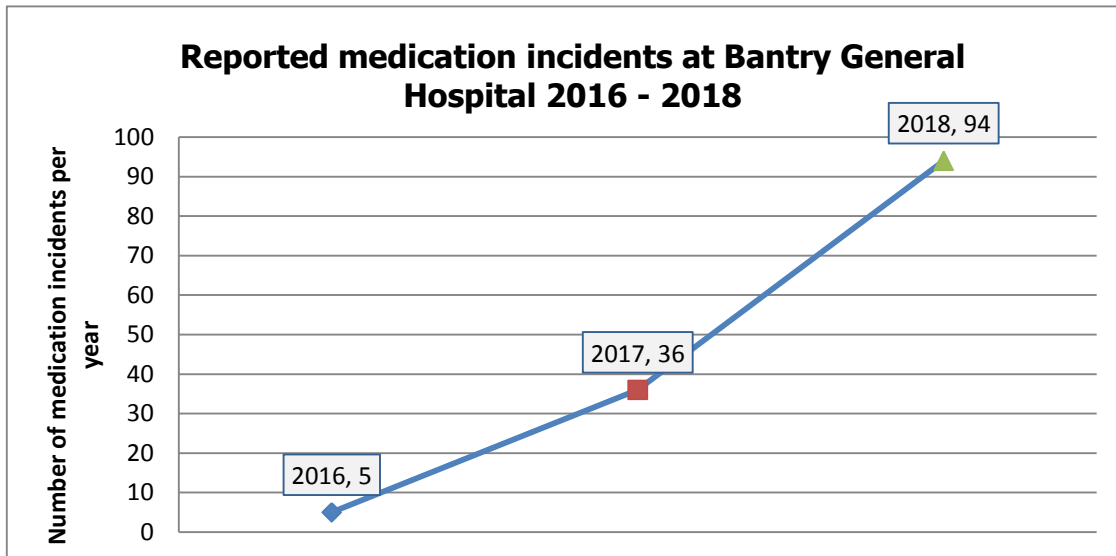


Figure 1. Medication incidents reported at Bantry General Hospital 2016 to 2018

Inspectors were informed that feedback on reported medication incidents was sent to each clinical area on a quarterly basis and discussed at handover. Overall, staff who spoke with inspectors showed a general awareness of learning and improvement measures implemented following analysis of medication incidents.

Analysis of incidents

Inspectors reviewed medication incident reports from 2016 to 2018. The Medication Management Committee had oversight of reported medication incidents. However, inspectors were informed that the Medication Management Committee reviewed numbers of incidents reported and did not review any analysis of incidents and or identified trends. Analysis of medication incidents showed that the majority of incidents were classified as negligible in severity and mainly occurred during the prescribing and administration of medications.

Although some analysis of incidents took place, there was a lack of evidence that this informed quality improvement initiatives. The reporting of incidents is of little value unless the data collected is analysed to identify trends or patterns in relation to risk and the resulting recommendations for improvement are shared with front-line staff.¹⁸

Inspectors were informed that the lack of a clinical pharmacy service acted as a barrier to the identification of near misses and presented a challenge to increasing reporting levels at the hospital. Prescribing errors picked up by pharmacy staff when reviewing medication prescription records during audit were not always reported as incidents. Instead prescribers received immediate feedback at the time of audit and were urged to report the incident if relevant.

The hospital acknowledged that there was still room for improvement in relation to incident reporting and also scope to improve reporting across all staff disciplines.

Alerts and recalls

The senior pharmacist received and acted on alerts and recalls⁺⁺⁺ related to medication if relevant to the hospital. An example of the action taken in response to a recent alert received in January 2019 was outlined to inspectors.

Opportunities for improvement

- The hospital should continue to work towards improving the reporting of medication incidents at the hospital by promoting incident reporting among all clinical staff and across all clinical areas.
- The hospital should ensure that all data collected relating to medication safety is analysed and trended to identify patterns of risk and incidents to inform interventions needed to minimise the risk to patients.

2.4 High-risk medications and situations

High-risk medications require special safeguards to reduce the risk of errors and minimise harm. '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. 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 for more information). High-leverage risk-reduction strategies such as forcing functions and fail safes, standardisation and simplification need to be implemented alongside low-leverage risk-reduction strategies such as staff education, passive information and the use of reminders.

Bantry General Hospital had developed a high-risk medications list which was incorporated into the list of locally approved medications for use in the hospital. Inspectors found the list was accessible in clinical areas but there was an opportunity to further promote the list across the hospital to all staff disciplines.

Many of the associated risk-reduction strategies which were observed by inspectors in practice were low to medium-leverage strategies, with a lack of higher-leverage risk-reduction strategies such as system based forcing functions, for example storage, segregation and labelling of high-risk medications.

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

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

- anticoagulants (high risks discussed in section 2.1)
- concentrated potassium chloride
- insulin
- medication management in the theatre setting.

Anticoagulants

In addition to high risks identified by inspectors discussed in section 2.1, inspectors observed evidence of some good practices relating to anticoagulants such as:

- unfractionated heparin was not routinely stocked in the clinical areas visited
- a cardiology clinical nurse specialist provided counselling and information to patients newly commenced on anticoagulants.

Concentrated potassium chloride

Concentrated electrolyte solutions for injection are especially dangerous with potential deadly consequence when not prepared and administered properly.¹⁹ Bantry General Hospital had a number of risk reduction strategies in place to mitigate the risks associated with concentrated potassium chloride administration, which included:

- concentrated potassium chloride was only stocked in the pharmacy department and the high dependency unit
- premixed infusion bags were available on both areas assessed, and stored segregated securely from other intravenous solutions
- inspectors were informed that a double check system was in place prior to the administration of intravenous solutions containing potassium chloride
- patients requiring higher doses of potassium for intravenous administration or patient monitoring for the administration were transferred to the high dependency unit for monitoring
- a supplementary orange labelling system to indicate potassium chloride addition to infusion was available
- intravenous pumps were used for the administration of concentrated electrolyte solutions
- an up-to-date policy supporting administration of intravenous potassium chloride was in place

Insulin

The following evidence-based practices were observed by inspectors relating to the management of insulins:

- a system for labeling insulin pens and multidose vials as patient specific once opened was in place
- insulins not in use were observed stored securely in a temperature controlled fridge
- brand names were reported to be used for prescribing insulin
- a specific insulin prescription record was in use. Inspectors were informed that insulin was prescribed on the main medication prescription record to alert staff to the use of the insulin prescription record for variable insulin regimes, glucose monitoring and to prevent omission of insulin therapy in error.

However, inspectors observed one higher strength insulin pen stored alongside other insulin pens in the medication fridge in one area assessed. Additional alerts or controls relating to high strength insulin were not apparent to inspectors.

Medication management during the perioperative period

A hospital's operating theatre presents a unique situation with the use of multiple high-risk medications, high patient throughput and complex procedures.²⁰ A diverse range of medications are used which have the potential for a serious adverse event if administered incorrectly.²¹ Therefore, the perioperative period is a high-risk situation in relation to medication safety.

Similar to issues relating to the storage of anticoagulants seen in other areas visited by inspectors, there was no defined system in place for the standardised storage of high-risk medications or anaesthetic medications in the perioperative setting. For example, inspectors observed the following:

- anaesthetic medications and opioids were stored unsegregated in the same cupboard
- sound-alike look-alike⁺⁺⁺ medications were stored side by side in the same cupboard.

The systems of storage observed were not aligned with standardised and segregated storage systems commonly seen in other theatre settings and should be reviewed to ensure that the storage of these high-risk medications are designed to maximise safety.

Other high-risk medications

⁺⁺⁺ SALADS are 'sound-alike look-alike drugs'. The existence of similar drug or 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.

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

The hospital stocked one strength of intravenous paracetamol for adults. Administration guidelines for intravenous paracetamol were in place incorporating guidance on dose adjustments required for patients weighing less than 50 kilograms. However, the guidance viewed by inspectors did not reference other considerations contributing to toxicity for patients presenting with comorbidities or complex needs. In addition, a medication record viewed showed that regular prescriptions of paracetamol allowed intravenous and oral administration routes in the same prescription.

The hospital did not identify a list of sound-alike look-alike medications (SALADs) and staff awareness on SALADs which are in use in the hospital was limited. There was also a lack of evidence that screening for SALADs was conducted at procurement of new medications to ensure the packaging or labelling was not similar to current stock.

Overall, Bantry General Hospital had implemented some risk-reduction strategies for high-risk medications. However, there was further scope to implement evidence-based higher-leverage strategies to protect patients against the harm associated with high-risk medications.

Opportunities for improvement

- The hospital should review the current systems in place for high-risk medications, in particular in relation to anticoagulants and SALADs, to ensure alignment with best practice.
- The hospital should conduct a review of systems in place for storage and labelling of high-risk medications to promote standardisation of practice across the hospital.

2.5 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.^{22, 23}

National patient experience survey

The National Patient Experience Survey ^{§§§} was completed by 154 patients discharged from Bantry General Hospital in May 2018. Two questions related directly to medication in the National Patient Experience Survey. The scores for Bantry General Hospital and the national scores for both 2017 and 2018 are illustrated in table 1 below.

Questions	Year	Bantry General Hospital score	National score
Q44. Did a member of staff explain the purpose of the medicines you were to take at home in a way you could understand?	2018	7.8	8.0
	2017	8.7	7.8
Questions	Year	Bantry General Hospital score	National score
Q45. Did a member of staff tell you about medicines side effects to watch for when you went home?	2018	5.3	5.2
	2017	6.5	5.1

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

In 2018 the response for Question 44 received an overall score ^{****} of 7.8 which was slightly below the national average score.²⁴ Question 45 received an overall score of 5.3 which was higher than the national score of 5.2. Overall, there was a fractional dis-improvement in results compared to the 2017 scores, and there remains opportunity for improvement.

Patient information

Inspectors were informed that patient information on medications was provided primarily by nurses and doctors. Clinical nurse specialists also provided patient information in areas such as diabetes, stroke and cardiac rehabilitation. There was also a system in place whereby patients were given the opportunity to confirm on

^{§§§} The National Patient Experience Survey is a nationwide survey that 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 were asked to complete the survey.

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

discharge that they were satisfied that they have received the necessary discharge information.

It was reported that the nursing discharge record had been updated to include a checklist relating to the patient's understanding of treatment and medication education received. A medication information sheet was under development in the Medical Assessment Unit.

Overall, there was a lack of written information for patients regarding medications. Inspectors were informed that the development of a generic patient information leaflet regarding medications was being progressed at the time of inspection.

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.^{25, 26, 27}

Similar to the last inspection, inspectors were informed that the hospital did not have a formal medication reconciliation process in place. However, it was explained that care provided to patients was consultant led and informal medication reconciliation was carried out by the admitting doctor.

Inspectors were informed that an electronic discharge letter was available enabling the provision of printed prescriptions on discharge. Discharge prescriptions for planned discharges to nursing homes could be sent in advance of the discharge date to help ensure medications required were available on the day of discharge and enable time to address any queries relating to the prescription.

Systems to support medication safety and optimisation

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

- prescribing and administration of crushed medications
- introduction of a bedside medication locker system
- red apron for medication rounds.

Opportunities for improvement

- The hospital should look to have formal structured systems in place for patient education on medication, and also review the availability of medication information leaflets for patients.
- The hospital should continue to work towards introducing formal medication reconciliation to all inpatients.

2.6 Model of service and systems in place for medication safety

Clinical pharmacy service

There are currently no agreed national standards outlining requirements for the provision of clinical pharmacy services. However, international studies support the role of clinical pharmacists⁺⁺⁺ in hospital wards in preventing adverse drug events.^{28,29,30,31,32,33}

There were 1.5 whole time equivalent pharmacist positions employed by the hospital providing cover Monday to Friday, which was an increase in pharmacy resources since the previous HIQA medication inspection in 2016. However, similar to the findings in 2016, a clinical pharmacy service was not provided in any clinical areas. The pharmacy service within the hospital was almost entirely restricted to dispensing and resources were also deployed to dispensing to healthcare providers external to the hospital. Access to clinical pharmacy was only provided on request and subject to the demands on the pharmacy service at any given time.

In the absence of an antimicrobial pharmacist, the senior pharmacist also had responsibility for performing some antimicrobial monitoring.

Inspectors were informed that the hospital was approved for an additional full-time pharmaceutical technician, which had yet to be advertised. It was explained to the inspection team that this post would be allocated to a new information technology initiative in pharmacy and would therefore be unlikely to impact on the clinical pharmacy provision at the hospital.

List of medications approved medications formulary

Since the last medication safety inspection in 2016, the hospital made progress in the development of a list of preferred medications approved for use in the hospital, also referred to as a formulary.⁺⁺⁺⁺ However, as discussed in Section 2.2, there was scope to improve the approval process for new medications to provide stronger oversight from a governance perspective and better clarity for staff.

Opportunities for improvement

- The hospital should continue to progress the recruitment of pharmacy staff and to examine how best to allocate the resources available.
- The hospital should clearly define the system in place for approval of new medications and updating the preferred medications list.

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

⁺⁺⁺⁺ A formulary is a managed list of preferred medications that have been approved by the hospital's Drugs and Therapeutics Committee for use at the hospital.

2.7 Use of information

Hospitals should support clinical staff in achieving safe and effective medication use through the availability of up-to-date evidence-based information and decision support tools for medications.³⁴

Since the previous medication safety programme inspection in 2016 inspectors found significant improvements in the development and adaptation of medication-related information. The hospital medication management committee had listed five updated and approved documents or guidelines to support medication safety in its 2018 annual report. These included locally adapted intravenous administration guidelines and a preferred medication list. These were found to be available electronically and in hard copy throughout the hospital, with the exception of inside the theatre suite. Inspectors were informed that a hospital-wide medication management policy was in draft format and due to be formally approved in the near future.

Medication information available included:

- *'Medicines Complete'* providing electronic up-to-date access to multiple recognised medication information sources
- British National Formulary
- Locally adapted intravenous administration guidelines
- Locally developed preferred medications list
- Locally adopted antimicrobial administration guidelines.

Some up-to-date versions of medication management policies, procedures and guidelines were available to staff in clinical areas in folders and in electronic format. However, inspectors found that there was scope to improve awareness around some of the content of available information for example, intravenous paracetamol and high-risk medications. In addition, some of the related policies viewed by inspectors at the time of inspection were out of date or pending approval.

Although there was no clinical pharmacy service available, both nursing and medical staff articulated that they frequently contact pharmacy with queries regarding medications.

Opportunities for improvement

- Policies, procedures and guidelines need to be progressed to further support medication safety practices at the hospital and should be made available at the point of care in all areas.

2.8 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.³⁴ Inspectors found that monitoring and evaluation of medication safety was mostly carried out through audit.

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

- audit of out-of-hours pharmacy requests
- 2018 nursing quality care metrics ^{§§§§35} for each clinical area
- stock lists for wards
- pharmacy audit of medication records and prescribing practices
- nurse practice development audit
- medication management measuring compliance with medication management standards
- audits of nurse prescriber practices
- response plan in place as a result of the national patient experience survey
- monitoring of sedation in endoscopy (mandatory through national key performance indicator [KPI])
- audits of the use of restricted antimicrobials and overall antibiotic usage
- ongoing audit of staff attitudes to medication safety.

In general, inspectors found that there was a proactive approach to audit, which was encouraged and carried out by nursing, pharmacy and by non-consultant hospital doctors. However, audits were conducted outside the context of a clinical audit plan and in isolation by professional groups.

The hospital did not have an audit plan aligned to the medication safety strategy. This should be progressed to ensure that audit activity is planned and coordinated based on local priorities, driven by and with oversight from hospital management to ensure recommendations are implemented and required improvements achieved.

Nursing and midwifery quality care metrics,^{§§§§} monitored on a monthly basis, included a number of elements focused on medication management. Results reviewed by inspectors for the past year outlined good compliance with medication storage and custody, schedule controlled drugs and medication administration.

Compliance with medication prescription metrics was considerably poorer than other metrics. In 2018, for example, compliance of legibility of prescription signatures was

^{§§§§} Metrics are parameters or measures of quantitative assessment used for measurement and comparison or to track performance

between 9% and 56%. There were similar findings in relation to prescribing from nursing practice development medication management and pharmacy audits. However, there was a lack of evidence that audits demonstrating less than optimal compliance in 2018 were targeted as areas of improvement within the medication safety programme.

Dissemination of audit results is essential so that the clinical workforce is informed of the areas that need improvement, and also to motivate them to change practice and participate in improvement activities.^{34, 15} Audit results were discussed at various forums including the medication management committee, and nurse practice development committee meetings. However, there was a lack of evidence on the dissemination of results across all staff disciplines at the time of the inspection.

Opportunities for improvement

- The hospital should ensure that audits are centrally coordinated and conducted in a strategic multidisciplinary manner, driven by the Medication Management Committee.
- Time bound recommendations and action plans should be identified and implemented from audit findings, with oversight from hospital management to ensure required improvements are achieved.

2.9 Education and training

Staff education can effectively augment error prevention when combined with other strategies that strengthen the medication-use system.^{2,36}

At Bantry General Hospital medication safety education and training included the following;

- nursing staff completed the HSElanD^{*****} medication management programme³⁷ at induction and subsequently every two years
- non-consultant hospital doctors received education via;
 - induction education by consultant
 - induction education by pharmacist
 - attendance at local grand rounds
 - attendance at grand rounds at Cork University Hospital via video link
 - weekly educational meetings.

For nursing staff, inspectors observed that rates of completion of the HSElanD programme were good at both induction and on an ongoing basis as a result of a

***** The HSE's elearning and development service.

quality improvement initiative for 2019. However, similar training records for the medical staff were not available to view.

Non-consultant hospital doctors were provided education at induction on medication safety, with a focus on orientation to the medication record, the insulin record, and insulin-related policies and procedures. Inspectors were informed that it was necessary to allocate time to familiarise the non-consultant hospital doctors to the hospital medication record as the record in use was different to what was in use in other hospitals in the Cork University Hospital group.

Overall inspectors found ongoing education in relation to medication management and safety was relatively limited when compared to similar hospitals inspected thus far by HIQA under this programme of monitoring, for both nurses and medical staff.

Opportunities for improvement

The hospital should ensure that professionals have the necessary competencies to deliver high-quality medication safety through induction and ongoing training. This should be in the form of a structured, targeted programme of education for medication safety aligned with the hospitals medications safety programme.¹¹

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.

Since the last HIQA inspection in 2016 the hospital had strengthened governance arrangements for medication safety with the Cork University Hospital Group Drugs and Therapeutic Committee. An effective drugs and therapeutics committee should have ongoing oversight of the medication management and safety system within a hospital.^{38, 39} HIQA found that some devolved governance arrangements lacked clarity, and the responsibilities around medication safety need to be further defined. Similar to the last inspection, HIQA found that there was further potential to increase integration, collaboration and shared learning between Bantry General Hospital and Cork University Hospital Group from a medication safety governance perspective.

Bantry General Hospital did not have a medication safety strategy or an annual medication safety programme that consolidated a broad approach to medication safety. This was also found by HIQA during the last inspection in 2016. The lack of clearly defined objectives, operationally led by a named responsible person, was a potential barrier to advancing a medication safety agenda within the hospital. However, a quality improvement plan was initiated based on the gaps identified in the last medication safety report. Progress was made on the development of locally adapted intravenous guidelines, a preferred medications list (formulary) and auditing of aspects of medication safety. Despite progress seen relating to audit, the inspection team found that time bound quality improvement plans were not always developed based on audit findings or recommendations. There was also a lack of evidence to show that audit findings or recommendations were linked to or informed continuous quality improvement of medication safety initiatives.

Significant progress had also been made by the hospital to improve the overall rates of medication incident reporting since the last inspection and the hospital should continue to build upon this. The analysis and trending of medication incidents should be extended to ensure results are communicated to frontline staff and are used to identify areas for targeted improvement.

Despite the progress made to date, there was a failure to implement recognised medication safety systems in the clinical setting such as the provision of a clinical pharmacy service and a formalised process for medication reconciliation.

Bantry General Hospital did not have comprehensive established systems in place for all high-risk medications which were relevant to the services provided. The hospital had identified high-risk medications in use and had implemented risk-reduction strategies for some medications such as potassium chloride and insulin. However, the management of anticoagulant medications at the time of the inspection did not support safe medication practices. A systematic approach to the storage, segregation and identification of anticoagulant medications was not in place which was further compounded by higher than normal ward stock levels. There was also potential to enhance staff awareness on risk-reduction strategies through the provision of supporting guidance, information and education. The hospital has provided assurance in its response that the risks identified during this inspection will be addressed. The hospital should also progress the implementation and awareness of evidence-based safety measures to protect patients from the risk of harm associated with these and other high-risk medications appropriate to the patient population and medications in use in the hospital.

Overall, it was evident that the hospital had acted to strengthen medication safety through medication safety governance arrangements and implementing of some safety initiatives. Medication safety at the hospital was an evolving process and progress to date demonstrated the commitment of staff to advancing the medication safety agenda in the hospital for the benefit of patients. However, there is scope for further improvement. The hospital should continue to work towards improving medication safety practices by addressing the findings of this report and advancing the implementation of initiatives identified through its own monitoring of practices in place.

This report should be shared with relevant staff at Bantry General Hospital and the South/South West Hospital Group to highlight the findings from this inspection including what has been achieved to date and to foster collaboration in relation to opportunities for improvement.

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

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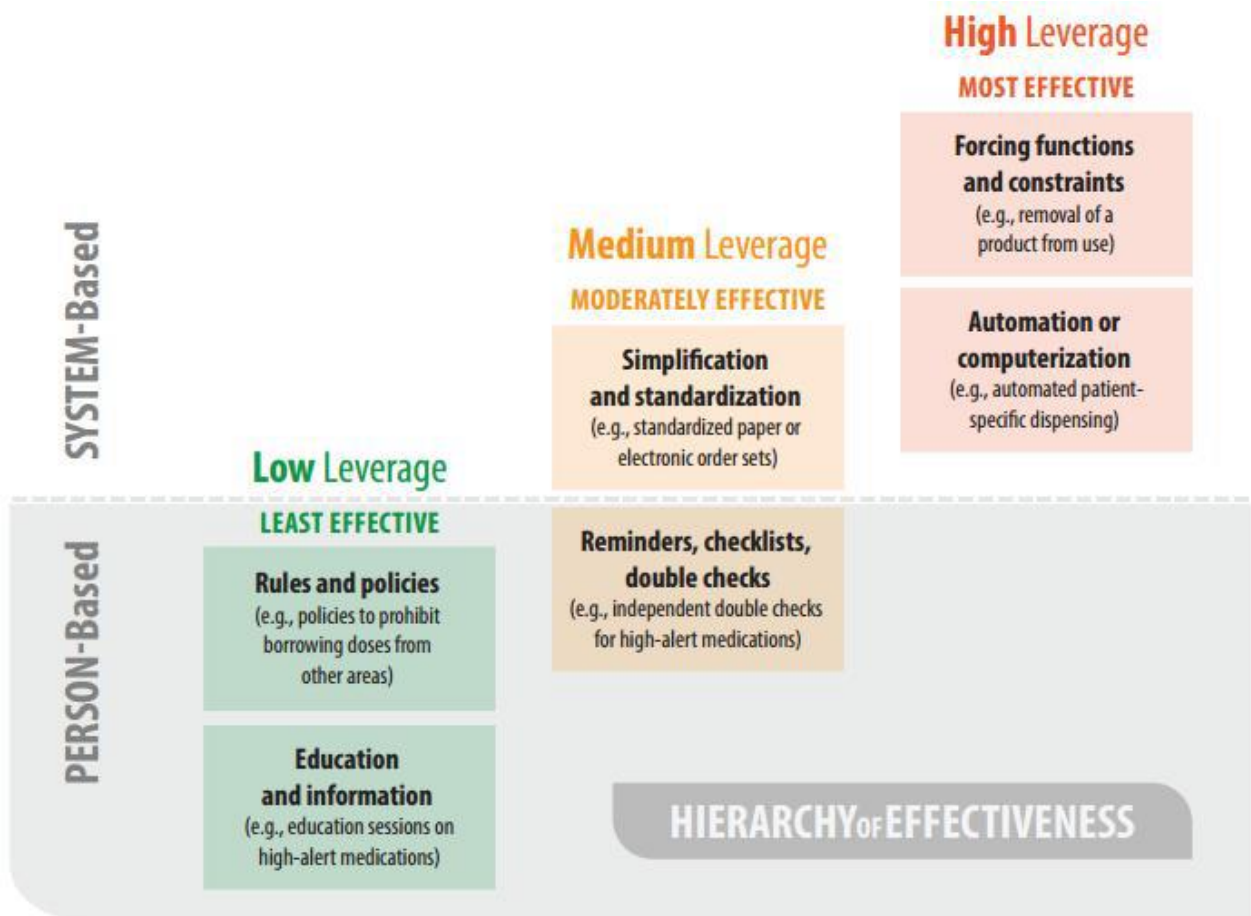
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5. Appendices

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

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

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



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Appendix 3: Copy of letter sent from HIQA to Bantry General Hospital



Carole Croke
Hospital Manager
Bantry General Hospital
Bantry
Co. Cork
carole.croke@hse.ie

26 March 2019

Ref: MS/242

Medication Safety Monitoring Programme of Bantry General Hospital

Dear Carole

During the course of the announced medication safety inspection conducted at Bantry General Hospital Bantry, Co Cork on 21 March 2019, Authorised Persons¹ identified weaknesses in the approach to medication safety, specifically in relation to anticoagulant medications. Anticoagulants have been consistently identified as the most common causes of medication error across health care settings.

Although identified as a high risk medication by the hospital inspectors found a lack of risk reduction strategies in place to ensure safety with the use of these medications, for example inspectors found:

¹ Authorised persons of the Health Information and Quality Authority (HIQA) under Section 70 of the Health Act 2007 (the Act) are authorised for the purpose of monitoring against the *National Standards for Safer Better Healthcare* pursuant to Section 8(1)(c) of the Act.

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- There was limited processes to minimise the risk of duplication/interaction with anticoagulant medications, such as a separate section in the medication prescription and administration record incorporating all forms and routes relating to anticoagulant therapy.
- There was a lack of supporting policy or guidance for staff in relation to prescribing and safe administration of anticoagulant medications.
- Inspectors observed the storage of anticoagulants such as low molecular weight heparins did not support safe medication practices. For example, high doses were stored alongside lower doses on medication trolleys without any segregation.
- There was no limits/controls on dispensing high dose anticoagulants medications to reduce the risk of misadministration and inspectors observed higher than required stock levels of anticoagulants on medication trolleys.

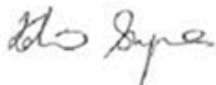
This situation could be compounded by the ongoing lack of clinical pharmacy services which was highlighted by HIQA during the previous medication safety inspection and will be further outlined in the inspection report.

Consequently, I am writing to you to seek assurance as to how these specific issues will be comprehensively addressed. Please note that details of this correspondence will be included in the report of the announced medication safety inspection. This will include copies of HIQA's correspondence and the service provider's response.

Please confirm receipt of this letter by email and formally report back to HIQA by **02 April 2019** to qualityandsafety@hiqa.ie outlining measures to address the identified risks.

Should you have any queries, please do not hesitate to contact me.

Yours sincerely



Kay Sugrue
Authorised Person

CC: Tony McNamara, Chief Executive Officer, Cork University Hospital Group
Gerry O' Dwyer, CEO, South/South West Hospitals Group
Mary Dunnion, Chief Inspector and Director of Regulation, Health Information and Quality Authority

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Appendix 4: Copy of the response received by HIQA from Bantry General Hospital



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

OSPIDEAL GINEARALTA BHEANNTRAI,
South/South West Ospideal Grupa
Beanntraí - Co. Chorcaí, P75 DX93

BANTRY GENERAL HOSPITAL
South/South West Hospital Group
Bantry - Co. Cork, P75 DX93
Tel No: 027/50133

01st April 2019

Ms. Kay Sugrue
Authorised Person,
Health Information and Quality Authority,
Unit 1301,
City Gate,
Mahon,
Cork.

Re: Medication Safety Monitoring Programme of Bantry General Hospital

Dear Kay,

I wish to refer to the announced HIQA Medication Safety Inspection conducted in Bantry General Hospital on the 21st March 2019 and subsequent correspondence from you dated 26th March 2019 in which you refer to a lack of risk reduction strategies in place to ensure safety with the use of high risk medications, specifically in relation to anticoagulant medications.

I wish to confirm that a review of the high risk medications which you raised has since been undertaken and the following measures being implemented in order to address these issues as follows:

- In response to the lack of processes in place to minimise the risk of duplication/interaction with anticoagulant medications, we are progressing with the introduction of the updated medication record in line with the national guidelines and in line with the Cork University Hospital medication record chart. The timeframe for the introduction of this record is early Q3.
- In order to address the 'lack of supporting policy or guidance for staff in relation to prescribing and safe administration of anticoagulant medications' the hospital's Senior Pharmacist is developing a policy for the Management of High Risk Medications. We plan to have this completed within three months. Once this document has been finalised a copy will be forward to you.
- All anticoagulants have been removed from medication trolleys across the hospital. In order to minimise the risk associated with these medications we now store anticoagulants in separate medication presses on each ward and label as high risk medications.
- A full review of the stock levels on all wards is planned. Ward specific medication stock lists and stock controls have been introduced on two wards in the hospital and we plan to roll this out to all areas. The stock lists have contributed to successfully managing stock levels in these areas.

As you outlined in your correspondence the hospital has an ongoing lack of clinical pharmacy, this is an issue we plan address in some part early Q3. A Pharmacy Technician is due to commence in post and this additional resource will allow the department to carry out a review of the clinical pharmacy profile within Bantry General Hospital.

If you have any queries, please do not hesitate to contact me.

Yours sincerely

Carole Croke
Hospital Manager

BANTRY GENERAL HOSPITAL
HEALTH SERVICES EXECUTIVE – SOUTH/SOUTH WESTERN HOSPITAL GROUP

CC: **Mr. Gerry O'Dwyer, CEO, South/South Western Hospital Group.**
Mr. Tony McNamara, CEO, Cork University Hospital
Dr. Mike O'Connor, Clinical Director, Cork University Hospital

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