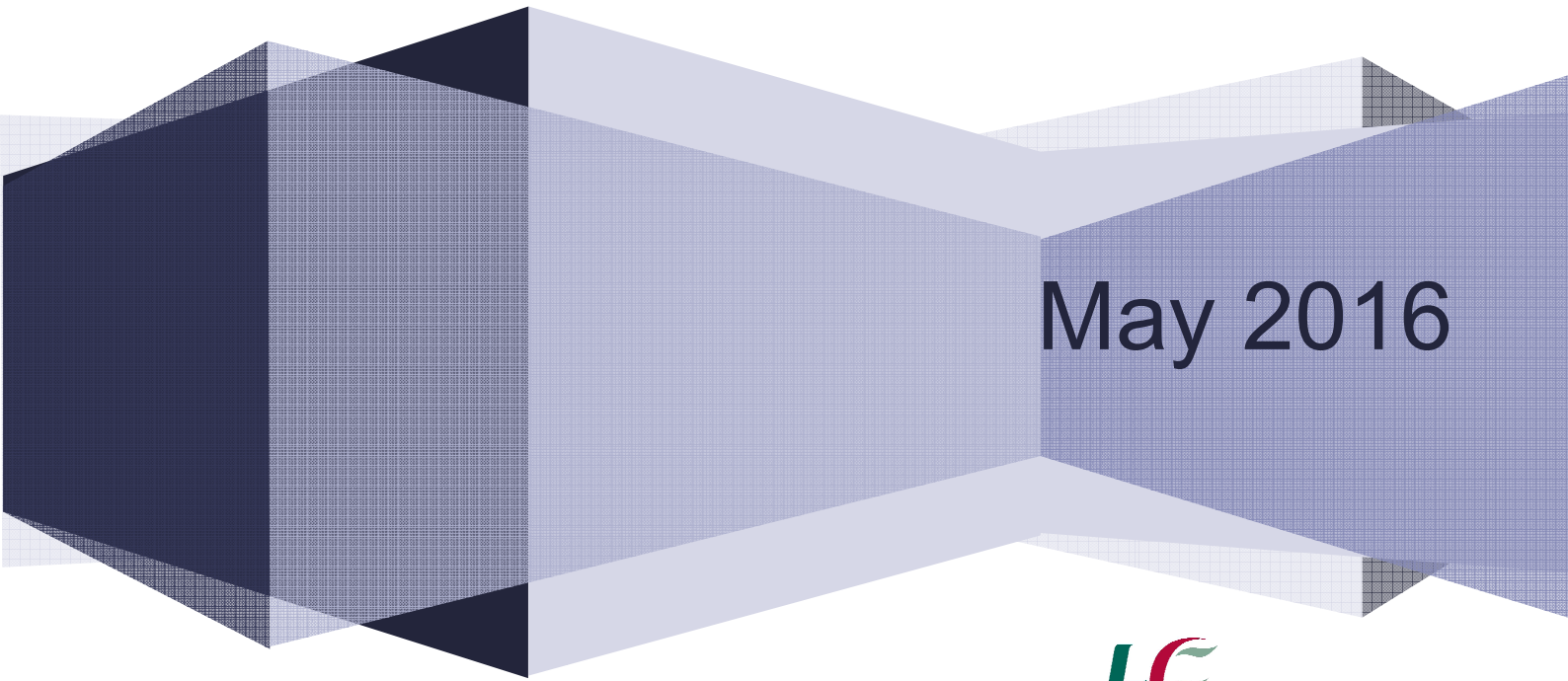
We will work with patients, healthcare professionals and organisations to reduce patient harm associated with medicines or their omission

Safermeds Survey Report

National Medication Safety Programme



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Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Quality Improvement Division

1 Safermeds

The national medication safety programme "**safermeds**" will work with patients, healthcare professionals and healthcare organisations to **reduce patient harm associated with medicines or their omission**.

In October 2015, the Irish Medication Safety Network (IMSN), Rotunda Hospital and HSE Quality Improvement Division hosted over 100 participants in the 'Institute for Safe Medication Practices (ISMP) Medication Safety Intensive' course in Dublin.

Following the course and summit, we wished to engage with participants and stakeholders to understand their priorities for medication safety. We are very pleased to share the results of this survey with you.

2 Survey methodology

The survey (Appendix 2) was issued to course participants and senior managers, who were invited to forward it to colleagues, in December 2015. Thirty four people responded to the survey; 24 pharmacists, 8 nurses and 2 risk managers.

Respondents were asked to rate medication safety improvement priorities in terms of effectiveness, feasibility and which they would most like to work on in a collaborative improvement project with the HSE Quality Improvement Division. Respondents were asked for their suggestions, examples of their initiatives and measures they use.

3 Summary results

Respondents rated antimicrobials, anticoagulants, insulin and medicines reconciliation post-admission highest in terms of potential for improvement.

While medicines reconciliation post-admission and discharge were rated highest in terms of effectiveness, they were judged less feasible, with discharge medicines reconciliation getting the lowest feasibility rating. Improvements in antimicrobials, anticoagulation and insulin were judged most feasible (figure 1). Respondents indicated a preference for working on medicines reconciliation, medicines review/optimisation, antimicrobials, anticoagulants and insulin (figure 2).

Suggestions for other areas to focus on included:

- standardising and improving management of solutions/infusions,
- improving prescribing,
- improvements relating to specific patient populations,
- patient-centred support and
- having dedicated medication safety personnel in each hospital (figure 3).

Measures of medication safety or drug related harm were largely related to incident/near-miss reporting. A variety of measures and audits were listed (figure 4).

Initiatives hospitals have been working on include:

- improving insulin, antimicrobials, anticoagulants or high-risk medicines safety
- intravenous drug improvements
- medicines reconciliation (figure 5)

The results in their entirety are available in Appendix 1.

4 Conclusion

The survey has provided a valuable insight into the opinions of healthcare professionals and managers working in Irish hospitals.

The first Safermeds improvement collaborative will commence in September 2016 and will work with hospitals to support them in improving thromboprophylaxis in hospital in-patients to reduce venous thromboembolism. This was selected as the topic for the collaborative, as:

- VTE is associated with a large burden of harm for hospitalised patients,
- Multi-site Irish research has identified that thromboprophylaxis for medical in-patients is not optimal,
- There is a strong evidence-base for reduce VTE risk in hospital in-patients,
- Successes achieved by some Irish hospitals to date could be shared (including examples in Appendix 1, figure 5),
- Interest in this area was expressed in this survey (Appendix 1, Figures 1, 2 and 5) and
- The project is feasible within a 12 month timeframe and as a collaborative.

Information from this survey will continue to be used to prioritise areas for future improvement initiatives.

We look forward to working with you.

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Appendix 1: Results

Figure 1: Perceived effectiveness, feasibility and overall potential for improvement score (effectiveness x feasibility) for each suggested area

Area for Improvement	Mean effectiveness	Mean feasibility	Potential for improvement score
Antimicrobials	4.4	3.6	15.8
Anticoagulants	4.5	3.4	15.3
Insulin	4.3	3.3	14.6
Medicines reconciliation post-admission	4.7	3.1	14
Renal impairment	4.2	3.2	13.4
Anti-inflammatories	4	3.2	13.2
Medicines review/optimisation	4.2	3.1	12.9
Opioids	4.1	3.2	12.8
Medicines reconciliation at discharge	4.5	2.7	12

Figure 2: Preferred areas to work on within a collaborative

Area for improvement	Sum rating of preferred areas to work on
Medicines reconciliation post-admission	45
Medicines reconciliation at discharge	45
Medicines review / optimisation	34
Antimicrobials	24
Anticoagulants	20
Insulin	18
Anti-inflammatories	13
Renal impairment	11
Opioids	11
Mean	25

Figure 3: Suggestions for areas to work on within a collaborative

Solutions / infusions (6)
- Intravenous solutions
- Standard concentration infusions
- Analgesia but specifically patient controlled analgesia, epidurals, wound infusions, paravertebral infusions
- Epidural safety
- Concentrated electrolytes: potassium, magnesium in obs, calcium chloride
- Removal of concentrated potassium from all hospitals including paediatrics

Improve prescribing (5)
- Better prescribing
- Dose changes, changes in medication documented by prescriber
- Printed prescriptions
- Legibility of prescriptions
- National Insulin Medicines Prescription Administration Record (MPAR)

Specific patient populations (4)
- Vulnerable populations
- Palliative care patients - syringe drivers and patients who cannot swallow
- .g. elderly, paediatrics
- 10-fold overdoses in paediatrics/neonatology

Patient- centered (3)
- Patient counselling – provide patients with verbal and written information about their medication. Engage patients in the process of medication selection. Identify high risk patients and refer for medication review to a consultant pharmacist in the pharmacy or a new primary care role.
- Patient engagement, understanding 'real world' experiences of patients
- Patient education & health literacy

Introduction of Dedicated Medication Safety Personnel (3)
- Introduction of medication safety officers as standard post in hospitals
- Medication safety pharmacist in each hospital with a clear mandate and adequate resources.
- Medication safety programme and pharmacist in each hospital

Medication administration (3)
- Bar coding for medication safety: right drug, right patient
- 'Discontinue use of Drug Trolley'
- Implementing a programme to improve the recording of medication

Focus on Packaging & Medicines (2)
- Medication packaging, e.g. SALADS (sound alike, look alike drugs)
- High Alert Medications (HAMs) and SALADs in paediatrics and neonatology

ePrescribing (2)
- Electronic prescribing
- Electronic data share between community and hospital

Medication Safety in Theatre (2)
- Medicines use in theatre setting
- Safety of medicines in operating theatre

Medicines at interfaces (2)
- Medicines reconciliation PRE-admission
- Omitted or delayed medicines during admission

Other (7)
- All wards to have pharmacy presence
- Unlicensed meds
- Use of rescue drugs

Figure 4: Current measures of medication safety and drug-related harm

Fifty percent (n=17) of the respondents listed measures related to incident and/or near-miss reporting.

Other comments and measures mentioned include (number in brackets if mentioned by more than one respondent):

- The number of admissions of babies to the NICU with hypoglycaemia (monthly)
- Hypoglycaemic episodes in diabetic out-patients measured by nurse specialists
- Review of blood sugars

- Amount of concentrated potassium(2), heparin dispensed
- Electrolyte safes
- Flumazenil usage

- Antimicrobial safety audit by Microbiologist, Infection control Asst. Director and Pharmacist

- Allergy box completion on drug chart

- International Normalized Ratio (INR) greater than 5 (over-anticoagulation with warfarin)

- Collection of metrics once a month by clinical pharmacists, e.g. incorrect doses prescribed. Plan to feed into hospital dashboard by directorate.
- Weekly audits of the quality of prescription writing - legibility, use of unapproved abbreviations, prescriber identification etc
- Point prevalence studies
- Various audits on prescribing and safety initiatives

- The number of alert notices dealt with
- The number and type of education/training sessions delivered
- The number of medication safety issues relating to complaints/claims dealt with

- The % of patients we do med rec on over 70 and the number of patients who receive pharmacist facilitated discharge prescriptions

- Auditing of Medication Storage in clinical areas (2)
- Nursing audit of medicines administration (3) and/or medicines management (2)
- Reviewing Misuse of Drugs Act (MDA) Register

- New products or formulations risk assessed as SALADs (sound alike, look alike)
- Labelling of products as high alert or SALADs, product segregation
- Avoid holding multiple and concentrated strengths of similar products e.g. concentrated oxycodone
- Tall man lettering on labels

Figure 5: Local medication safety initiatives

Brief Description	Outcome Measure Used	Effect on Drug-Related Harm
Intravenous (IV) Drugs (9)		
Safer use of IV magnesium sulphate to avoid confusion between similar bags	Introduction of ready mixed bolus bag	No repeat of the incident
Concentrated electrolytes: potassium	Amount of potassium dispensed to wards	Avoiding concentrated administration
Pre-mixed potassium available Ampoules labelled individually	No of ampoules dispensed	?
Potassium amps treated as Controlled Drug	Dispensing & admin doc in CD register	Prevent harm from lookalike error
Measures to prevent confusion between look-alike fluid packaging.	Switched suppliers so products looked different.	No known repeat of incident since introduction of new product.
User errors with Graseby syringe driver	Volume of errors reported	User errors eliminated with McKinley pump
Standard solutions of bupivacaine for paravetebral, epidural and wound infusion	Rate of non-standard solutions prescribed and prepared	Better, standard, improved care for patients, less risk of inadvertent IV route being used
Ideal body weight dosing of IVIg for all patients	Not measured	Reduction in excessive administration
Preparation of IVs on ward areas	Management of IV fluids on wards	
Anticoagulants and VTE (8)		
Pre-printed prescription for VTE thromboprophylaxis	Appropriate VTE thromboprophylaxis for medical patients	Improvement in appropriate VTE thromboprophylaxis
VTE prophylaxis risk assessment	% patients who were appropriately risk assessed	Increase in appropriate prophylaxis and a reduction in hospital-acquired VTE
Concentrated heparin	Removal of 25,000 unit/ml heparin from all areas in hospital	Reduction in bleeding risk due to mis-selection of heparin strength
Pre-printed heparin form	Presence of clear patient records	Not measured - aid to prescribing and administration doses
NOAC/ warfarin/ LMWH prescribing sections		Reduction in medication incidents
NOAC review and counselling	Number of patients counselled	Improvement in quality of NOAC prescribing
NOAC counselling and dosing		
NOAC patient education in Warfarin Clinic	No patient prescribed NOAC is uneducated	NOAC treated as High Alert Drug

Brief Description	Outcome Measure Used	Effect on Drug-Related Harm
Medicines Reconciliation on Admission & Discharge (7)		
Med rec on admission	Number of med recs on patients over 70	Improvement in accuracy of medications charted
Med rec on admission	Non-reconciled at 48 hours	Reduction from 65% to 27% patients with non-rec
Med rec in psych at admission	Number of admissions reconciled	Appropriate full list of meds in timely manner, especially no missed doses
Attendance at post take medical ward rounds	Non-reconciled at 48 hours	Reduced non-rec from 65% to 27% of patients
Medicines reconcilliation carried out on patients where clinical pharmacy services are available.	Baseline: 68% of patients had unintentional non-rec on admission; 13% had the potential to cause patient harm	Accurate prescription and communication of medication at the interface between primary and secondary care
Pharmacist facilitated discharge prescriptions	Number of prescriptions prepared by pharmacists	Improvement in quality of info transfer on discharge
Provision of a pharmacy service to one medical ward.	Med rec on discharge (prioritised)	Medication errors on discharge reduced
High risk medicines improvements (5)		
Pharmacist review before all supplies of methotrexate	Not measured	Reduction in drug related harm
Screening patients prior to first dose of monoclonal antibodies		
High-risk medication safety programme	Unsure	Unsure
Co-prescribing of tylex and paracetamol	Audit	Reduced
Therapeutic drugs monitoring (TDM) of various meds	TDM levels within range %	Most levels quickly in range
Antimicrobials (4)		
Antimicrobial monitoring	% of appropriate antibiotics	Increase in appropriateness and improvements in TDM
Vancomycin & gentamicin dosing guidelines and calculators	Dose correct for weight, height and renal function, first trough timing right etc	% compliance with quality improvement process measures increased which resulted in decreased harm
Gentamicin dose for pregnant patients and gynae patients	Audit post education session	Reduced
Antimicrobial stewardship round	Adherence to guidelines	Improvement in appropriate use of antimicrobials

Brief Description	Outcome Measure Used	Effect on Drug-Related Harm
Insulin/diabetes (4)		
Peri-operative diabetes drug chart	Number of patients on ideal peri-op fluid	Should reduce peri-op hyponatraemia
Insulin pen dispensed to named patient - multi packs broken down in Pharmacy	One patient one pen	Culture of one patient one pen promoted; sharing of pens discouraged
New insulin chart	Adverse events	Unsure
Diabetic Ketoacidosis drug chart	Time to discharge	Reduction of delays in insulin commencing
Pharmacist roles (4)		
Clinical Pharmacy activity	Interventions/Incident reporting	Reduction
Pharmacist on ortho-geriatric ward round reviewing falls related meds	Drug Burden Index	Reduced risk
Pharmacist med review post-fall, requesting calcium/ vit d or DEXA scan	% patients prescribed ca and VIt D and / or bisphosphonate etc	Bone health protected
Pharmacist as team member	Many	Reduced harm
Drug charts (3)		
New drug chart	Not measured	Cut down on factors contributing to a number of reported incidents
Moved allergy section from page 1 of MPAR to inside chart	Allergies visible when prescribing , reviewing & administering medicines	From 0% to approx 50% (re-audit in Jan 2016 after settling in period)
New MPAR in development		
Patient-centred (2)		
Speech and language therapist sends referral to pharmacist who ensures appropriate med formulations		All patients receive medication in form suitable for their swallow difficulty/ability
"Know Your Medicines": raising awareness of medication safety for patients, doctors and nurses	Feedback from staff and patients	

Brief Description	Outcome Measure Used	Effect on Drug-Related Harm
Medication management (2)		
The meds for patients in each half of the ward are ordered for each trolley	Staff time spent on drug rounds	Less clutter, less stress, less time spent searching for meds. Safer practice
Dispensing in original boxes		
Education (2)		
Nursing/Medical Education on medicines	Anecdotal	Reduction
Presentation to NCHDs regarding "High alert drugs" and prescribing errors	Prescribing errors reported - % involving high alert drugs	Number of near misses increased
Renal dose adjustment (2)		
Renal function confirmed for all requests for zoledronic acid	Not measured	Dose reduction necessary for some patients
Renal dose adjustment	Number adjusted doses	Reduced nephrotoxicity
Patient own drugs (2)		
Patient own drug bags		Reduced omissions on admission
Planning to introduce 'Patient Own Drugs' for a ward in 2016		Safer practice
Prescribing (2)		
Alcohol detox preprinted prescription	Accurate prescribing	Reduction in prescribing errors
Introduction of typed discharge prescription	Prescription more legible	Reduction in medication errors
Reporting (1)		
No blame reporting System	Increase in reports	Faster interventions