

A Clinical and Cost Analysis of Medication Reconciliation by Pharmacists at the Point of Hospital Discharge



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Background:

The transition between primary and secondary care is one of the most common points of medication errors (1). Medication errors which occur at discharge can be divided into 'prescription errors' and 'communication errors' (1,2). There is currently a lack of comprehensive data on the prevalence and severity of medication errors occurring at the point of discharge and the impact of these errors on both patient safety and healthcare expenditure.

Aims/Objectives:

The aim of this study is to assess the impact of a pharmacist discharge service within the Acute Medical Admission Unit (AMAU). This will be achieved by:

- Quantifying the unintentional medication variances at the point of discharge from the AMAU
- Assessing the potential patient safety benefits which the implementation of a pharmacist discharge service could make using a validated assessment tool
- Estimating the cost of providing a pharmacist discharge service relative to the potential cost avoidance of prevented medication errors.

Method:

- Once a patient's discharge documentation was completed by the team, a pharmacist then conducted a medication reconciliation over a twelve week period in 2016
- A seven member peer review panel comprised of prescribers and pharmacists from primary and secondary care, reviewed the interventions made at discharge
- Using the validated Visual Analogue Scale (VAS) severity tool (3), the panel assigned a ranking of potential patient harm (VAS 0 = no harm, 10 = death) to each intervention made.
- A cost avoidance was calculated per intervention and a total cost benefit assigned
- Using the same tool, a potential of readmission were assigned to each intervention made.

Results and Discussion:

Prevalence of errors: The clinical pharmacist conducted a review of 71 patient discharges. This study found 83.1% of these discharges required an accepted pharmacist intervention. Of the interventions made 72.6% related to 'prescription errors' (figure 1), most commonly the omission of an active medication. The remaining 27.4% of interventions related to 'communication errors' to primary care at discharge, the most common (42.5%) involving omission of information necessary for further supply of the medication, potentially delaying patient care.

Prescription Errors

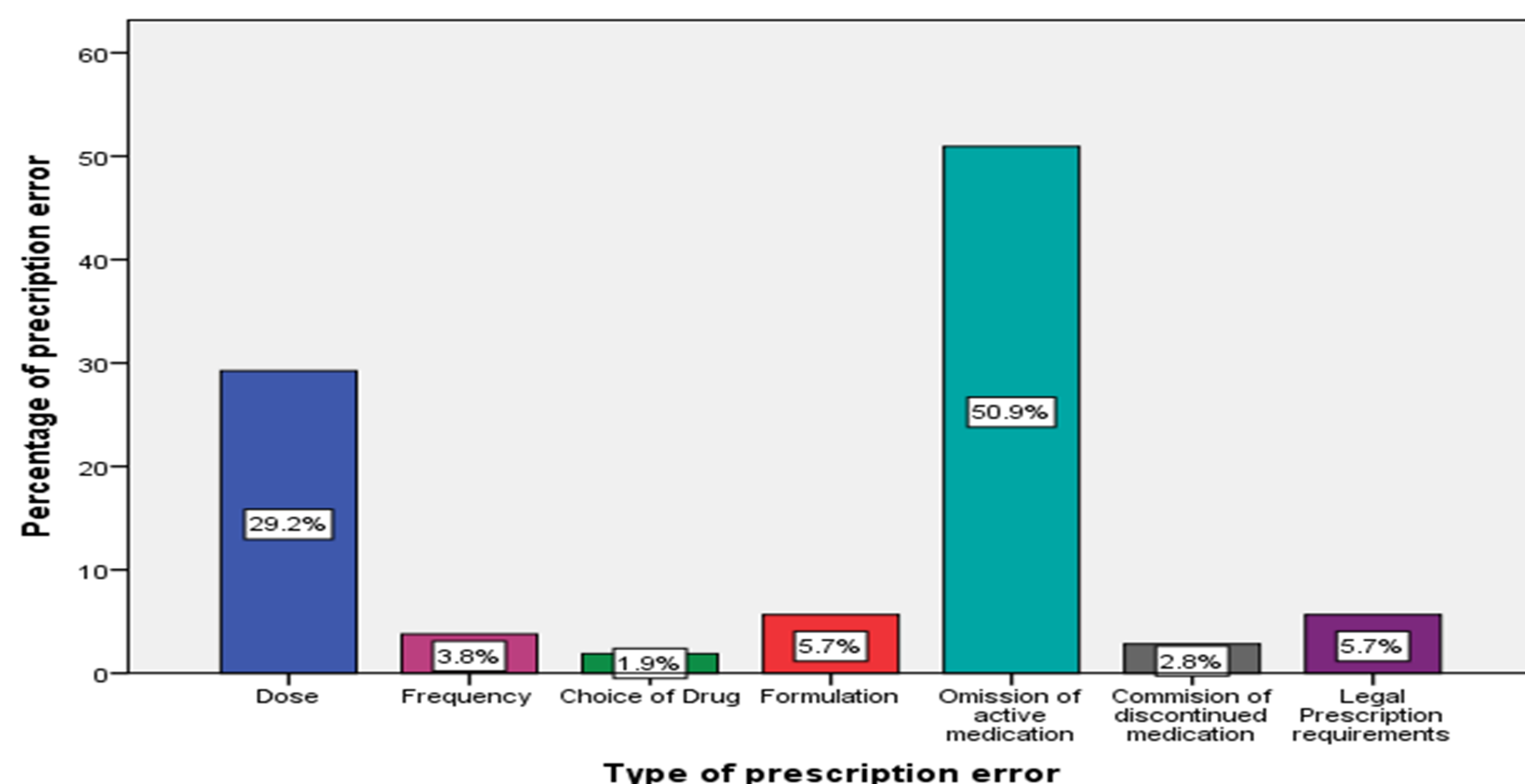


Figure 1: Frequency and type of prescribing errors

Patient safety benefits achieved by the implementation of a discharge pharmacist were reported in terms of the validated VAS potential severity of harm per intervention. The median VAS scores were categorised as minor (<3), moderate (3-7) and severe (>7) for potential patient harm (figure 2).

Potential for patient harm

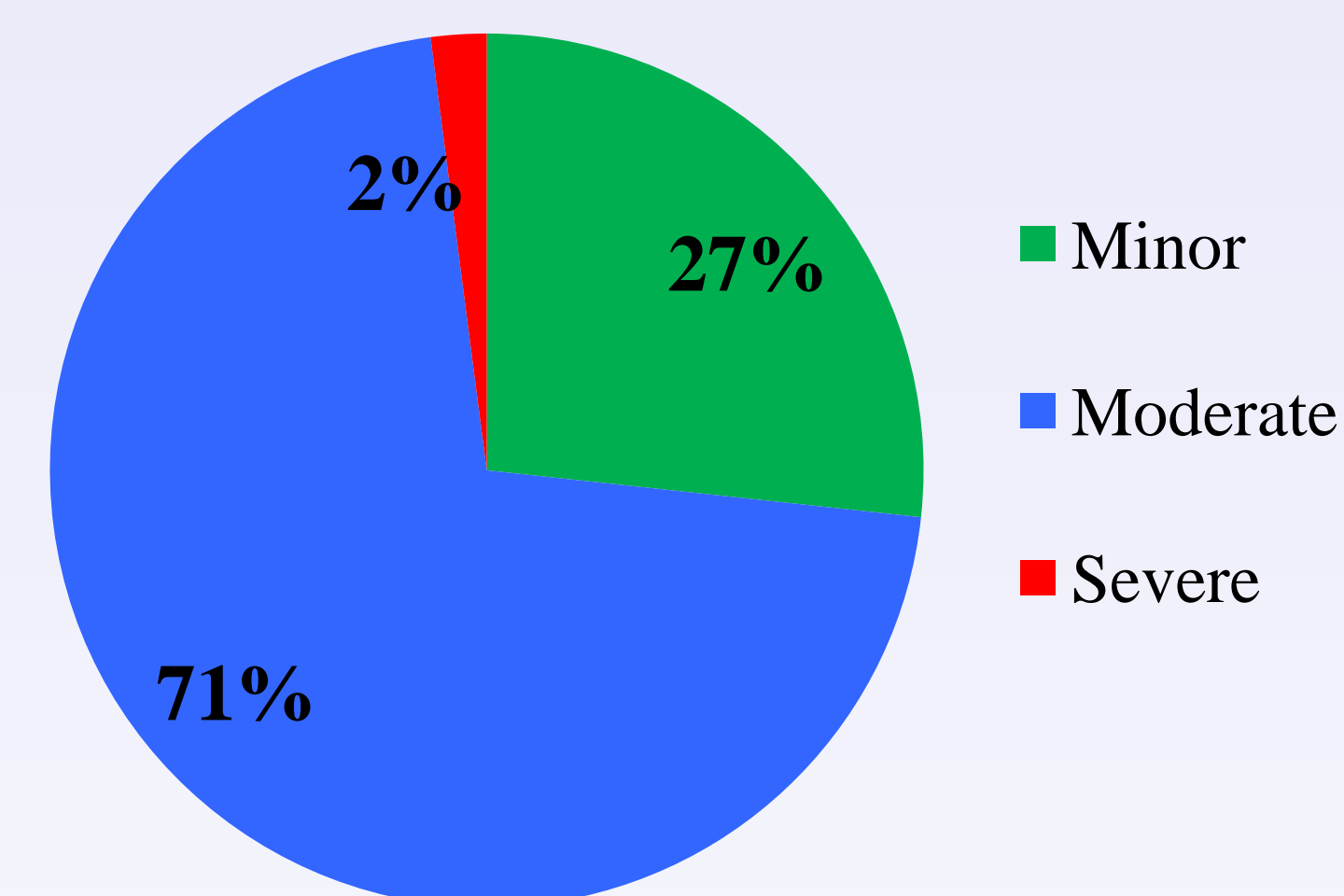


Figure 2: The percentage of interventions per classification of potential harm.

Readmission rates are commonly used as performance indicators and quality outcome measures for hospitals (4). The pharmacist's interventions were considered moderately likely to prevent readmission in 48% of cases.

Costing of the medication errors was completed based on a UK model (5). Of the 146 interventions made:

- The estimated total cost avoidance was €15,687.67.
- The estimated cost avoidance per intervention was €107.45
- The total time spent by the clinical pharmacist reviewing the patient's discharge was 514 minutes, equating to a pharmacist cost per patient discharge of €3.71.
- The cost benefit of the service is outlined in table 1.

	Title	Cost (range) €
1	Cost avoidance	15,687.87 (3,134.54 – 75,410.56)
2	Cost of Service (pharmacist wage per minutes worked)	263.68
3 (1 minus 2)	Cost Benefit	15,424.19 (2,870.86 – 75,146.88)
4 (1 divided by 2)	Cost Benefit Ratio	59.50

Table 1 : Identification of the cost benefit provided

Conclusions:

A pharmacist discharge service was shown to have a very positive effect in terms of patient safety and cost avoidance to the hospital. When this potential cost avoidance is extrapolated for a yearly projection in the AMAU, the resulting cost avoidance would be €418,700 per annum when reviewing 100% of discharges. These results highlight that pharmacist reconciliation at discharge can directly improve patient safety, decrease patients likelihood of readmission and provide a service that is a cost benefit in a hospital setting.

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Further references available on request. Please email cgavin@stjames.ie

