

# Medication-related readmissions: documentation and communication to the next healthcare providers and patients

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4CPS-195

## Background and Importance

Medication is a major cause of potentially preventable readmissions. A recent Dutch study with 1111 readmissions showed that 16% of readmissions were medication-related, of which 40% were potentially preventable [1]. Furthermore, studies reported that harm from medication could significantly increase the length of stay (LOS) [1-4]. However, it is unknown whether medication-related readmissions (MRRs) are recognized at the time of readmission and are communicated in the care continuum.

## Aim and Objectives

- (1) To identify the prevalence of MRRs that contained a documentation on the medication involved (and therefore are regarded as recognized at the time of readmission).
- (2) To assess the proportion of MRRs that were communicated to patients or caregivers, and/or to the next healthcare providers.

## Materials and Methods

In a previous study, a multidisciplinary team of physicians and pharmacists assessed the medication-relatedness, the medication involved and preventability of unplanned readmissions from seven departments. In this current cross-sectional study, two pharmacy team members evaluated the patient records of MRRs. An MRR was regarded as recognized when the medication involved was documented in patient records. An MRR was regarded as communicated when the medication involved or a description was mentioned in notes (for the patient), in discharge letters (for the general practitioner) or discharge prescriptions (for the community pharmacy).

## Outcomes and data analysis

- Primary outcome: the prevalence of MRRs that were documented and communicated to patients, the general practitioner and/or the community pharmacy (using descriptive analysis).
- Secondary outcomes: (1) the association between documented MRRs and whether the MRR was preventable (Pearson Chi-square test), (2) the association between documented MRRs and the LOS (Mann-Whitney U test).
- A p-value < 0.05 was considered statistically significant.
- All analyses were performed using SPSS version 22.0.

## References

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## Results

In total, 181 MRRs were included in this study, of which 72 (40%) were potentially preventable and 109 (60%) were non-preventable. For 159 of 181 MRRs (88%), a documentation on the medication involved was present. Of 159 documented MRRs, 93 (58%) were communicated to patients and/or caregivers, 137 (86%) to the general practitioner, and 4 (3%) to the community pharmacy (**Table 1**).

Table 1. Communication of documented preventable and non-preventable MRRs.

Communication of documented MRRs	Total documented (n = 159)	Documented preventable MRRs (n = 56)	Documented non-preventable MRRs (n = 103)
General practitioner, n (%)	137 (86.2)	47 (83.9)	90 (87.4)
Community pharmacy, n (%)	4 (2.5)	1 (1.8)	3 (2.9)
Patients and/or caregivers, n (%)	93 (58.5)	35 (62.5)	58 (56.3)

The medication involved was documented less often for potentially preventable MRRs than for non-preventable MRRs (78% vs. 95%;  $p = 0.002$ ).

The LOS was longer for MRRs where the medication involved was undocumented (median 8 days vs. 5 days;  $p = 0.062$ ).

MRRs caused by transition errors had a significantly longer LOS when the medication involved was undocumented ( $p = 0.010$ ) (**Table 2**).

Table 2. Differences in the LOS between documented and undocumented MRRs.

Medication-related readmissions (n = total number; number documented)	LOS documented, median in days (IQR)	LOS undocumented, median in days (IQR)	p-value
All (n = 181;159)	5 (2-8)	8 (4-12)	$p = 0.062$
Non-preventable (n = 109;103)	5 (2-7)	8 (2-9)	$p = 0.51$
Potentially preventable (n = 72;56)	5 (2-11)	8 (4-13)	$p = 0.12$
• Prescribing errors (n = 25;18)	4 (1-9)	7 (3-13)	$p = 0.42$
• Non-adherence (n = 25;20)	5 (2-15)	5 (4-11)	$p = 0.82$
• Transition errors (n = 22;18)	6 (3-9)	13 (11-40)	$p = 0.010^*$

## Conclusion

The results of this study imply that MRRs are not always recognized, which could impact patients' well-being. An increased LOS was observed with unrecognized MRRs, and a lack of communication in the care continuum was identified. Recognition of MRRs and communication of these to patients and the next healthcare providers should be improved.

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