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# Medication Reconciliation in Oncology & Haematology Inpatients.

## INTRODUCTION

Medication reconciliation may be defined as: a process of obtaining an up to date and accurate medication list, which has been compared to the most recently available information and has documented any discrepancies, changes, deletions, additions, resulting in a complete list of medications which have been accurately communicated.<sup>1</sup>

Medication error is defined as inappropriate medication use regardless of outcome when patient is under the care of medical professionals.<sup>2</sup>

Medication errors can lead to patient morbidity and mortality in addition to placing an economic burden on health resources.

In Midlands Regional Hospital Tullamore (MRHT), medication history taking on admission is conducted by junior doctors. It is recognised that junior doctors may have many conflicting priorities during this process<sup>3</sup>

Errors at the admission interface often result in the transcription and thus propagation of the error throughout the patients stay in hospital and upon discharge back into community.

Research shows that pharmacist conducted medicines reconciliation results in a reduction in errors. There is a dearth of research assessing if the known benefits of MR, applies to oncology & haematology inpatients. Oncology and Haematology patients are on highly regimented drug therapy, routinely seen by medical professionals and may require frequent admission into hospital. Therefore it is of interest to determine the outcome of pharmacist conducted MR during the admission phase, in these patients.

## AIM

Assess whether the established advantages of pharmacist conducted medication reconciliation, applies to oncology and haematology inpatients.

## METHODS

1. Conduct a literature search on the efficacy and implementation of pharmacist conducted medication reconciliation during the admission period was reviewed.
2. Medication histories were taken, by a pre-registration pharmacist, for all patients admitted to the Oncology/ Haematology Inpatient Unit (OHIU), over a one month period.
3. Histories were taken daily, in accordance with the details outlined in the current standard operating procedure (SOP): 'Medication History Taking', developed in MRHT.<sup>4</sup> The sources of information as outlined in the SOP include: patient and/or carer, medical notes, drug Kardex, G.P, community pharmacist and where applicable; qualified staff in nursing homes and other primary care institutions and patients own medications. To complete a medication history all regular, occasional, over the counter (OTC) and herbal medications must be accounted for, in addition to the dose, route, frequency of administration of these preparations. Allergy status and nature of allergy should be examined.

## RESULTS

### 1. Literature Search

- Investigations of MR in oncology and haematology inpatients are lacking.
- An analysis of existing literature and best practice guidelines has shown evidence for the benefits of medication reconciliation in reducing medication errors in distinct inpatient groups.
- One study found that pharmacist conducted MR resulted in a significant change in the recognition of drugs omitted, OTC medications and discontinuation of drugs<sup>5</sup> in elderly patients admitted to hospital.
- A further study in an emergency department showed pharmacist conducted MR to cause a 60% reduction in errors.<sup>6</sup>
- NICE guidelines recommend the implementation of a policy for pharmacist conducted medication reconciliation in all healthcare institutions, with inpatients<sup>7</sup>.
- Studies also acknowledge the use of a 'structured approach' for achieving greatest accuracy.<sup>8</sup>

### 2. Study Results

Table 1: Study Data

Number of patients	24
Number of males	7
Number of females	17
Age Range of patients (years)	20-78
Number of GP's contacted	21
Number of Community Pharmacies contacted	23
Time taken for complete medication review (avg. minutes)	25
Timeframe for MR (hours)	24 ( Range 15-35)

- 250 medications were listed for these patients in their drug charts.
- Patients were receiving an average of 10 medications.
- 24 definite, unintentional drug absences were noted.
- 23 ambiguous drug omissions.
- Detection of omitted medications was primarily discovered through consultation with general practitioner and community pharmacist records.

- In all cases the required changes of dose or commencement of medications were accepted by the medical teams.
- Incorrect drug inclusions into patients' notes and A&E admission forms occurred in 2 cases. Error was detected through communication with G.P. and CP.
- A further patient was prescribed a medication in hospital to which he had, a previous reaction. This reaction had been discovered by the G.P at an earlier date and the medicine had been withdrawn by him.

Table 2: Outcomes following Medication Reconciliation

	Total	Mean	Range
Total number of Kardex medications	250	10.4	4-21
Drugs taken by patient prior to admission (admission doctor)	123	5.1	0-14
Drugs taken prior to admission (pharmacist *)	211	8.8	0-19
Drugs added after admission	134	5.6	1-16
Unintentional drug omissions	24	1.0	0-5
Ambiguous drug omissions**	23	1.15	0-3
Unintentional dose differences	5	0.25	0-2
Ambiguous dose differences ***	8	0.4	0-2
Drugs stopped following medicines review	0	0	0
Drugs started/restarted following medicines review	23	1.0	0-5
Dose changes following medicines review	3	0.15	0-2
Incorrect drug inclusions	3	0.1	0-1
Allergy Status documentation	11	0.5	n/a
Herbal Medications / Vitamins	1	0.04	0-1

\*Pharmacist conducted medication history using all sources as outlined in the SOP.

\*\*An ambiguous drug omission is considered as one that may be clinically appropriate, however cannot be assumed to be a doctor's preference due to lack of documentation in the medical notes.

\*\*\*An ambiguous dose difference is one that may be clinically appropriate, however cannot be assumed to be a doctor's preference due to lack of documentation in the medical notes.

## DISCUSSION

- The SOP for 'Medication History Taking' was found to be a very useful guide for reconciling patients' medications. It outlines a stepwise approach for achieving a complete history. No individual information source was found to be complete, thus highlighting the need to use multiple sources of information.
- No conclusive evidence exists as to the optimum time, post-admission that MR should take place.
- WHO recommend a 24 hour timeframe to take a medication history<sup>9</sup>. Other studies recommend 18 hours in order for MR to be completed before physician ward round<sup>8</sup>.
- The lack of clarity of written and spoken communication can be seen by the number of unambiguous drug omissions and dose changes (n=24, n=8). Documentation in the medical notes was poor.
- Allergy status was not documented for 56% of the patients. The lack of allergy documentation in the notes, A&E form and patient Kardex highlights the problem if of incomplete written documentation. The effects of such an omission may be noted by the patient who received a medication despite a previous allergic reaction to the agent.
- There was no acknowledgement in any of the medical notes of herbal medication, despite the fact that herbal medications are becoming more popular with the general public and may have significant drug interactions. I would recommend that allergy status, herbal medication OTC medication should all be documented.
- The inclusion of two inaccurate medications in a patient's medical records leads to possible propagation of the error in future admissions and on discharge into primary care.

## CONCLUSION

Our research has shown that pharmacist conducted MR in oncology and haematology patient's results in fewer medication errors. The decision to implement a routine pharmacist conducted MR service for OHIU is being further considered.

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