The effect of a customized medication verification tool on the reduction of unintended clinically relevant medication discrepancies on admission of psychiatric patients, an interim analysis

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Background

Unintended medication discrepancies (UMD's) on admission are a common occurrence and often lead to medication related problems in hospitalized patients. Studies have shown that medication verification on admission resulted in fewer UMD's[1]. Most medication reconciliation studies have been with a general hospital patient population. Medication reconciliation studies in psychiatric patients are scarce. One study showed that medication verification, using a structured medication history in elder psychiatric patients, resulted in a more accurate overview of medication on admission[2].

At the Elisabeth-Tweesteden Hospital, on the majority of the clinical wards, medication verification is done by a pharmacy technician using a standardized verification tool. At the time of this study, medication verification in the medical psychiatric unit (MPU) of the Elisabeth-Tweesteden Hospital was done by the attending physician. After evaluating this process a customized verification tool was developed.

Objective: To determine the effect of using a customized medication verification tool by a pharmacy technician on the prevention of clinically relevant UMD's in psychiatric patients admitted to the MPU of the Elisabeth-Tweesteden Hospital.

Method

Patients admitted to the MPU of the Elisabeth-Tweesteden Hospital, who met inclusion criteria, were randomized in either group A, B or C.

- Group A: Medication was verified by the attending physician.
- Group B: Medication was verified by a pharmacy technician using the standard medication verification tool.
- Group C: Medication was verified by a pharmacy technician using the customized medication verification tool.

After admission UMD's, defined as any difference between clinically prescribed medication on admission and the outpatient medication history, were assessed. All UMD's were reviewed by a panel consisting of two clinical pharmacists and a psychiatrist. This panel determined the clinical relevance of the medication discrepancies using the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) index. Categories E to I were considered clinically relevant.

Primary outcome: The number of clinically relevant UMD's per patient in group A, B and C

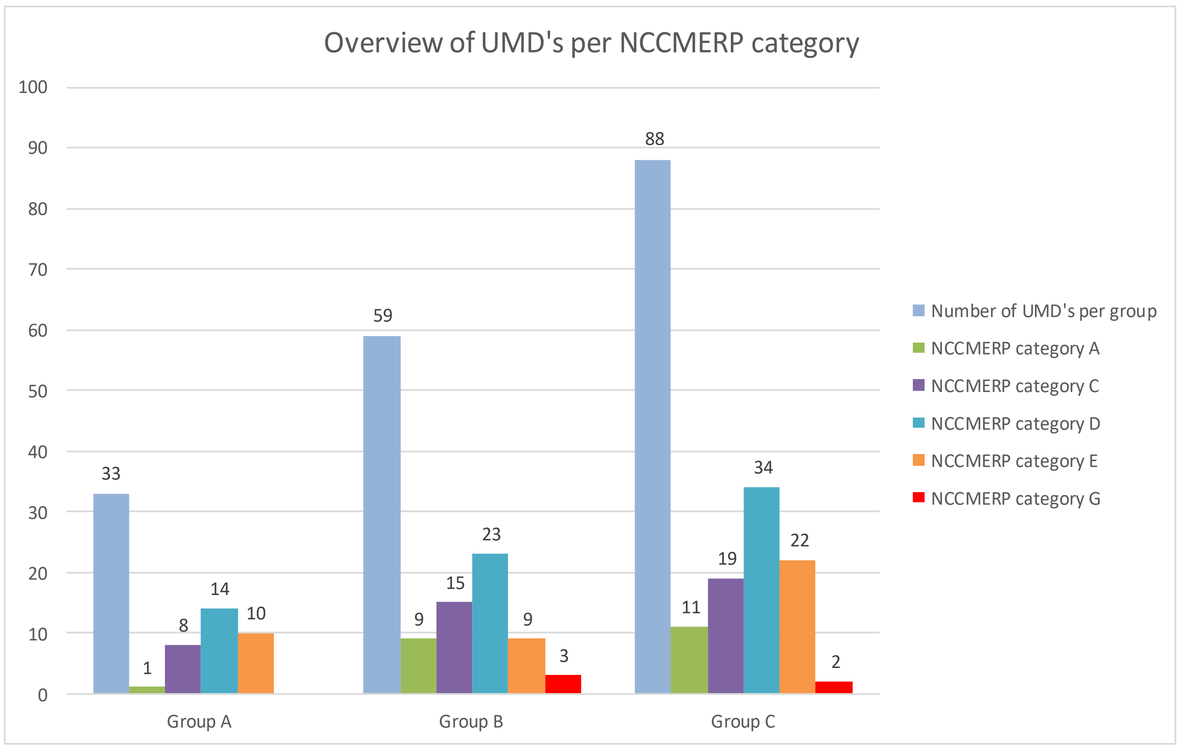
Secondary outcome: The duration of the medication verification interview and the type of UMD (doses, frequency, omission, addition).

Results

Primary outcome

	Group A (n = 31)		Group B (n = 44)		Group C (n = 42)	
Number of UMD's per patiënt[1]	1	(0-1)	1	(0-2)	1	(1-3)
Number of clinically relevant UMD's per patiënt[2]	0,32		0,27		0,57	
Number of medication per patiënt[1]	3	(2-6)	7	(3-10)	5	(2-9)
Number of patients with a discrepancy	17	(52%)	26	(59%)	33	(79%)
Number of patients with a clinically relevant discrepancy[3]	6	(18%)	11	(25%)	13	(31%)

1:Median (IQR: Q1-Q3)
2:Number of clinically relevant discrepancies/number of patients per group
3:Clinically relevant discrepancies: Discrepancies from NCCMERP category E-I



Secondary outcome

	Group A (n = 31)	Group B (n = 44)	Group C (n = 42)
Mean duration medication verification interview	17 min	10 min	16 min
Type of discrepancy:	n=33 discrepancies	n=59 discrepancies	n= 88 discrepancies
Doses	5 (15%)	14 (24%)	20 (23%)
Frequency	9 (27%)	6 (10%)	14 (16%)
Doses and Frequency	11 (33%)	2 (3%)	9 (10%)
Omission	8 (24%)	36 (61%)	45 (51%)
Addition	0	1 (2%)	0
Number of discrepancies with psychiatric medication	17 (52%)	21 (36%)	34 (39%)
Number of discrepancies with non-psychiatric medication	16 (48%)	38 (64%)	54 (61%)

1:The LSP-database contains records from the Dutch nationwide outpatient medication database.

At the time of analysis, 117 of 128 patients were included (36% male; 64% female). The mean age was 55 yrs. and the median number of medication per patient was 5 (2-8).

The interim analysis showed 180 UMD's. Of these 46 (26%) were determined clinically relevant. The number of clinically relevant discrepancies per patient in group A, B and C were 0.32, 0.27 and 0.57 resp.

The mean duration of a medication verification in group A, B and C was 17 min, 10 min and 16 min. In group A the majority of discrepancies were doses and frequency (33%). In group B and C the majority of discrepancies were omissions (61% resp. 51%).

Conclusion

The interim analysis shows relatively more clinically relevant UMD's per patient when medication was verified by a pharmacy technician using a customized verification tool. This data suggests that medication verification with a customized verification tool by a pharmacy technician results in the prevention of clinically relevant unintended medication discrepancies in patients admitted to the psychiatric ward.

1. Cornish et al. Arch Intern Med. 2005;165(4):424-429.
2. Prins et al. CNS Drugs. 2013;27(11):963-969

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