# CLINICAL PHARMACY PRIORITISATION ALGORITHM FOR PATIENTS IN PSYCHIATRIC LONG-TERM CARE: A PILOT STUDY.

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## Background and importance:

A prioritisation algorithm for long-term patients with a psychiatric, geriatric and neurologic background contributes to patient safety by identifying the individual's risk of experiencing drug-related problems (DRPs). To date no such algorithm is applicable to long-term psychiatric care.

## Aim and objective:

This pilot study aimed to develop a clinical pharmacist prioritisation algorithm for psychiatric patients in a long-term care facility.

## Materials and methods:

This retrospective, mixed methods study was conducted in three phases.

A narrative literature review to identify a validated methodological approach that guides algorithm development

Medication reviews for 66 long-term psychiatric inpatients were conducted by a clinical pharmacist (ASH) in a specialist care facility

An expert panel of three clinical pharmacists (MM/MC/AEW) independently rated a statistically relevant sample size of all identified DRPs and their intervention on their contribution to patient safety [Overhage, J.M., 1999].

Basic descriptive analysis and crosstabs were used to determine frequencies and distribution (%/n). Kolmogorov-Smirnov and Shapiro-Wilk tests were used to determine the distribution of the data. Non-parametric tests used comprised the Mann-Whitney U test for two-, and the Kruskal-Wallis test for at least three independent samples. Statistical significance was identified for both tests by p-values lower 0.05. Inter-rater reliability was determined using Cohen's Kappa. Based on these findings a pilot algorithm for clinical pharmacists' interventions in this patient population was developed. The study received ethical approval from the Medical University Innsbruck [no. 1064/2023].

## Results:

A total of 382 DRPs were identified across 66 patients. DRP types "drug-interaction" and "adverse drug reaction" accounted for 90,4% (n=345) of all DRPs (Fig 1).

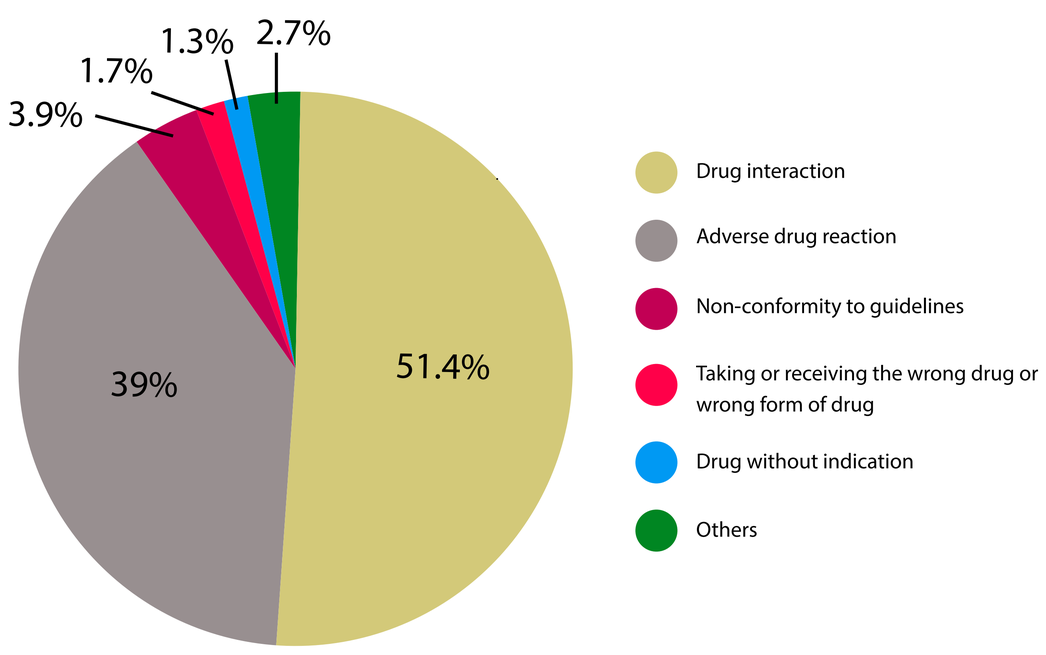



Fig. 1: Distribution of identified types of drug-related problems (DRPs).

The five drug classes most often associated with DRPs were N05A ANTIPSYCHOTICS (36%/n=272), N06A ANTIDEPRESSANTS (14,7%/n=110), N05B ANXIOLYTICS (13,1%/n=98), N03A ANTIEPILEPTICS (5,9%/n=44) and N02A OPIOIDS (3,5%/n=26).

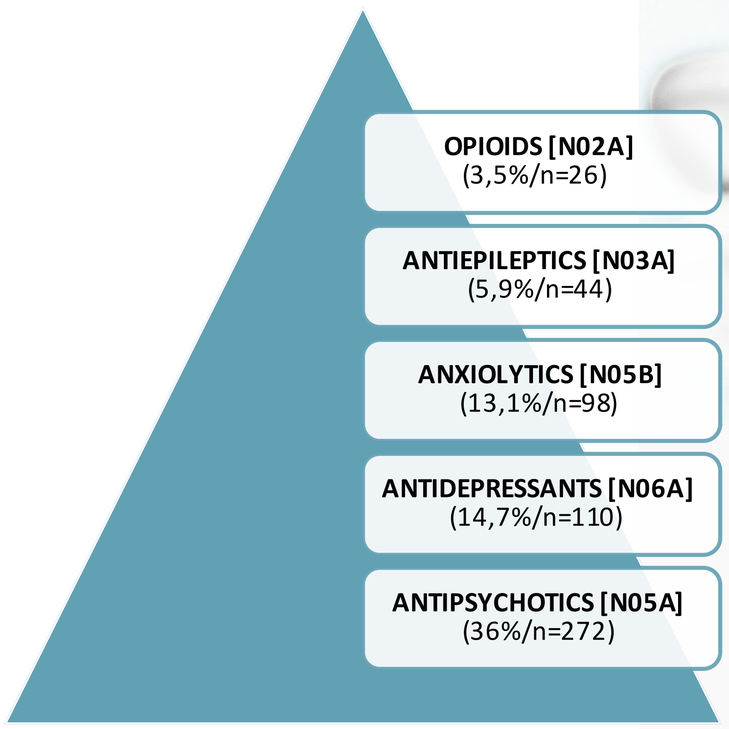



Fig. 2: Drug classes most commonly associated with DRPs in a long-term psychiatric care patient population (by ATC Code).

Intervention rating was categorized as avoiding "significant" or "major" complications in 33,9% (n=126) and 12,4% (n=46) of cases, respectively (Fig 2).

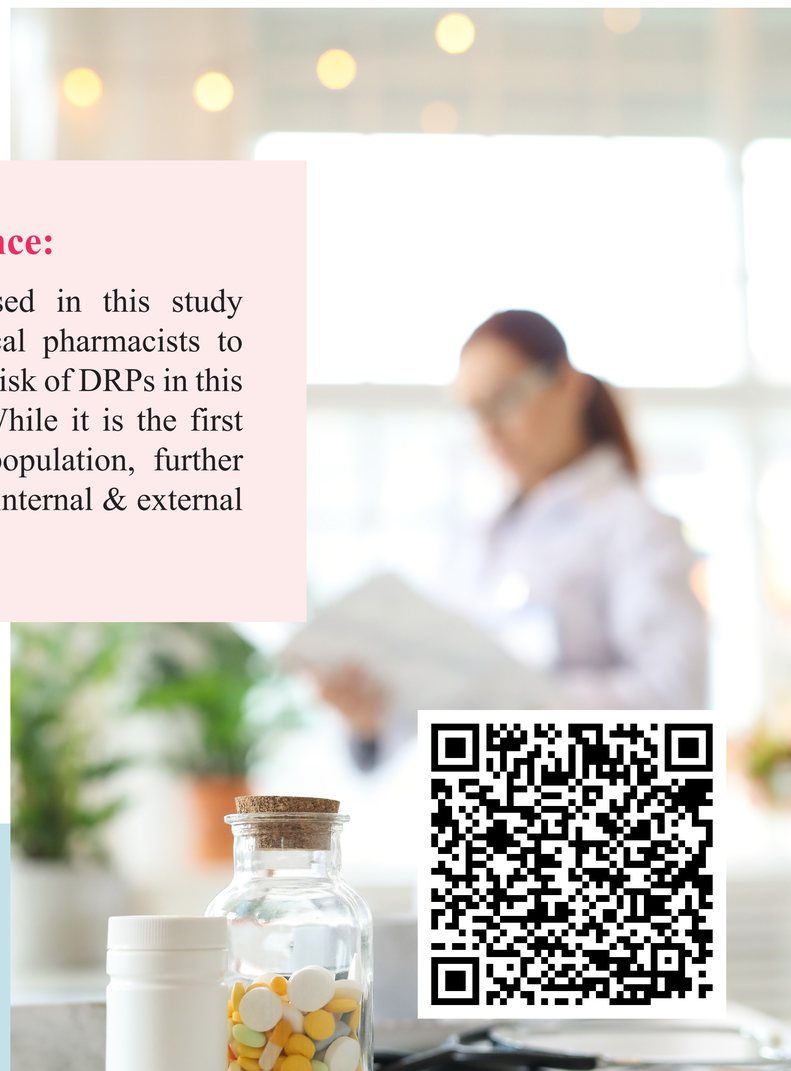
**Suggested DRPs included in clinical pharmacist prioritization algorithm**

- **combination of sedative agents**
- **concomitant use of QT interval prolonging drugs**
- **cumulative anticholinergic burden**
- **combination of Acetylsalicylic acid and Valproic acid**
- **missing Lorazepam dose reduction in patients taking Valproic acid**
- **missing drug monitoring for Valproic acid, Olanzapine, Quetiapine & Phenytoin**

Table 1: Suggested drug related problems to be included in a proposed clinical pharmacy prioritization algorithm for the care of psychiatric patients in a long-term care facility.

## Conclusion and relevance:

The pilot algorithm proposed in this study provides a means for clinical pharmacists to prioritise patients at greatest risk of DRPs in this unique patient population. While it is the first algorithm for this patient population, further research is needed to ensure internal & external validation.



## References:

1. *Overhage, J.M., Lukes, A., (1999). Practical, reliable, comprehensive method for characterizing pharmacists' clinical activities. AM J Heath Syst Pharm. 45(23):2444-50. https://pubmed.ncbi.nlm.nih.gov/10595804/.*