Does a hospital formulary system impact timely medication administration and quality of patient care ?

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INTRODUCTION

The prevalence of **drug omission** is often underestimated but its impact can be clinically relevant

➡ **Hypothesis**: Delays in administering non-formulary/non-stored drugs could impair **the quality of care**

➡ **Aims**:   1° Determine **the time between the first prescribed dose and its actual first administration** and calculate the number of omitted doses

2° Analyze the **clinical relevance** of the identified delays

METHOD

☆ Retrospective descriptive 3 months survey of patients hospitalized on the internal medicine wards

☆ Network of 4 hospitals supplied by a centralized pharmacy located in one of the sites

☆ Identification of prescriptions through query in electronic records

➡ **Main outcome measures**:

1° **Median time** between the first prescribed dose and its first administration

2° Categorization of **patient's harm** caused by the delays of **time-critical drugs**[1,2,3] (NCC-MERP taxonomy of medication errors)

CONCLUSION

☆ Non-stored/non-formulary drugs take **more time** to be delivered than formulary drugs, but **>95%** of formulary drugs and **90%** of non-stored/non-formulary drugs are administered **within 24h** following their prescription

☆ **None** of the 17 patients who experienced delays underwent **severe harm**

☆ No systematic cause of omission was identified

➡ Further studies should focus on **all dose omissions** during hospitalization

RESULTS

1° Analysis of 16'954 prescriptions :

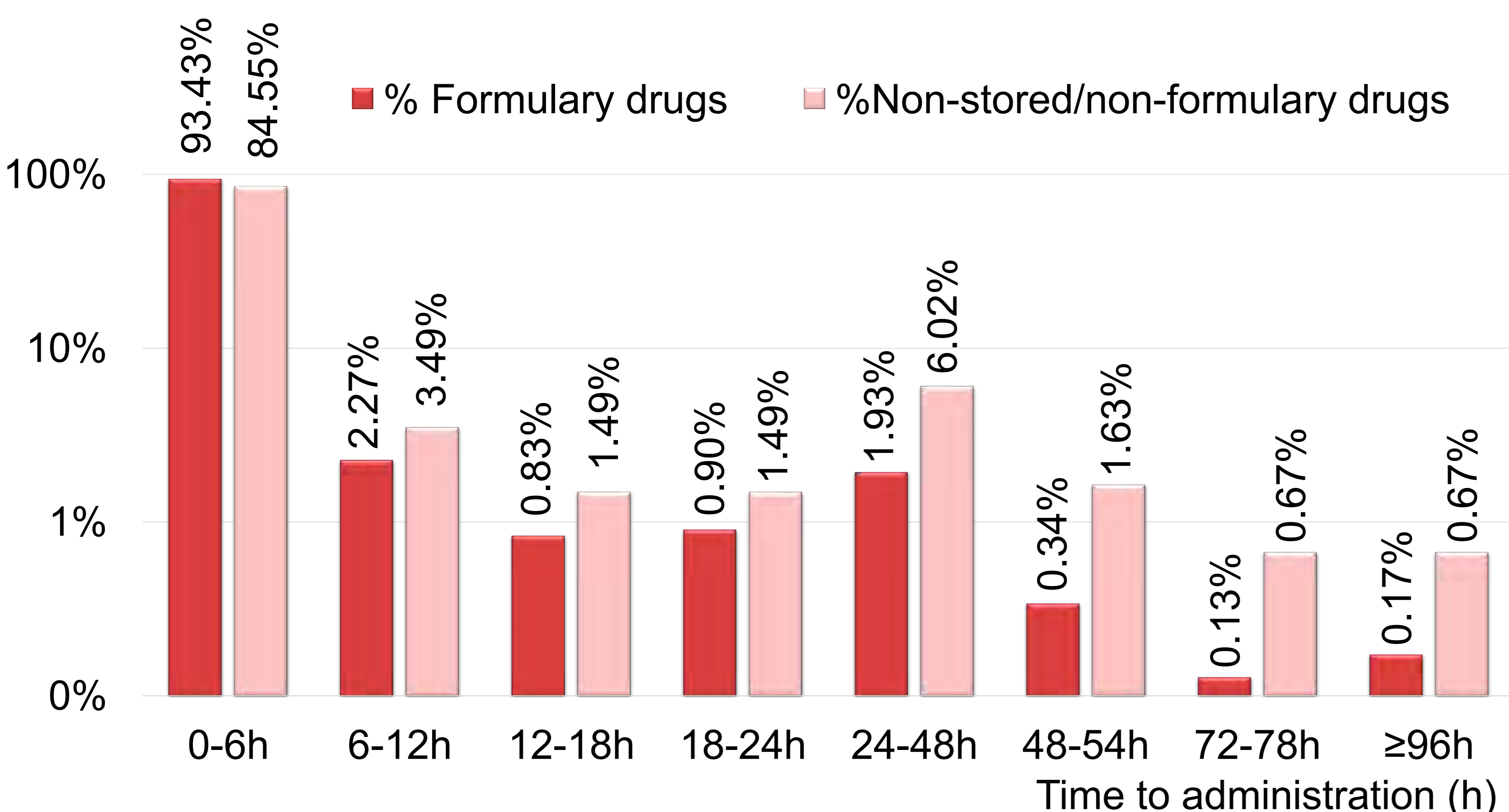☆ Median time to administration **< 1h** for **both non-stored/ non formulary and formulary drugs**

Figure 1: Proportion of drugs and their time to administration for formulary (n=15'608) and non-stored/non-formulary (n=1346) drugs for the 4 hospital sites

2° A delay of **≥ 1,5 omitted dose** was found for 332 prescriptions (**1.96%**)

Of them, only **17** cases were time-critical drugs and considered for potential **clinical relevance** (NCC-MERP categories C-I)

Central site	Enoxaparin*, Acetylsalicylic acid (2x), Ranolazine, Ceftriaxone, Ciprofloxacine, Aciclovir, Levidopa/Carbidopa#
Site 1	Enoxaparine, Clarithromycine, Levodopa/Benserazide
Site 2	Gabapentine, Levodopa/Benserazide*
Site 3	Ticagrelor, Levodopa/Benserazide (2x)

Table1: Distribution of identified potentially clinically relevant cases of omission. 2 patients* required monitoring to confirm that it resulted in no harm and for 1 patient#, the error may have contributed to temporary harm and required intervention

REFERENCES
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