

Prescribing Errors on PICU: Does experience matter?

A prospective observational study

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INTRODUCTION

Prescription errors pose a significant patient risk in critical care with multiple prescriptions of high risk drugs.

Prescribers on PICU are a heterogenous group with vastly different clinical backgrounds.

In our PICU some prescribers have no previous paediatric prescribing experience whilst others have paediatric experience but limited experience with many of the commonly prescribed PICU infusions that are associated with a high risk of error.

OBJECTIVE

The objective of this study was to identify whether prescribers with different clinical experience and background have different rates of prescribing errors.

METHODOLOGY

An observational study was performed of all prescription errors on our PICU between August 2020 and May 2022.

Individual prescriptions were checked on a prospective, daily, basis by a critical care pharmacist and every error recorded according to the prescriber background.

Prescribers were identified into three separate groups based on experience:

1. Subspecialty paediatric trainees with experience in paediatrics but no prior PICU experience
2. Paediatric intensive care medicine (PICM) trainees, PICU clinical fellows and PICU advanced nurse practitioners (ANP)
3. Adult intensive care medicine (ICM) trainees and core anaesthetic trainees

RESULTS

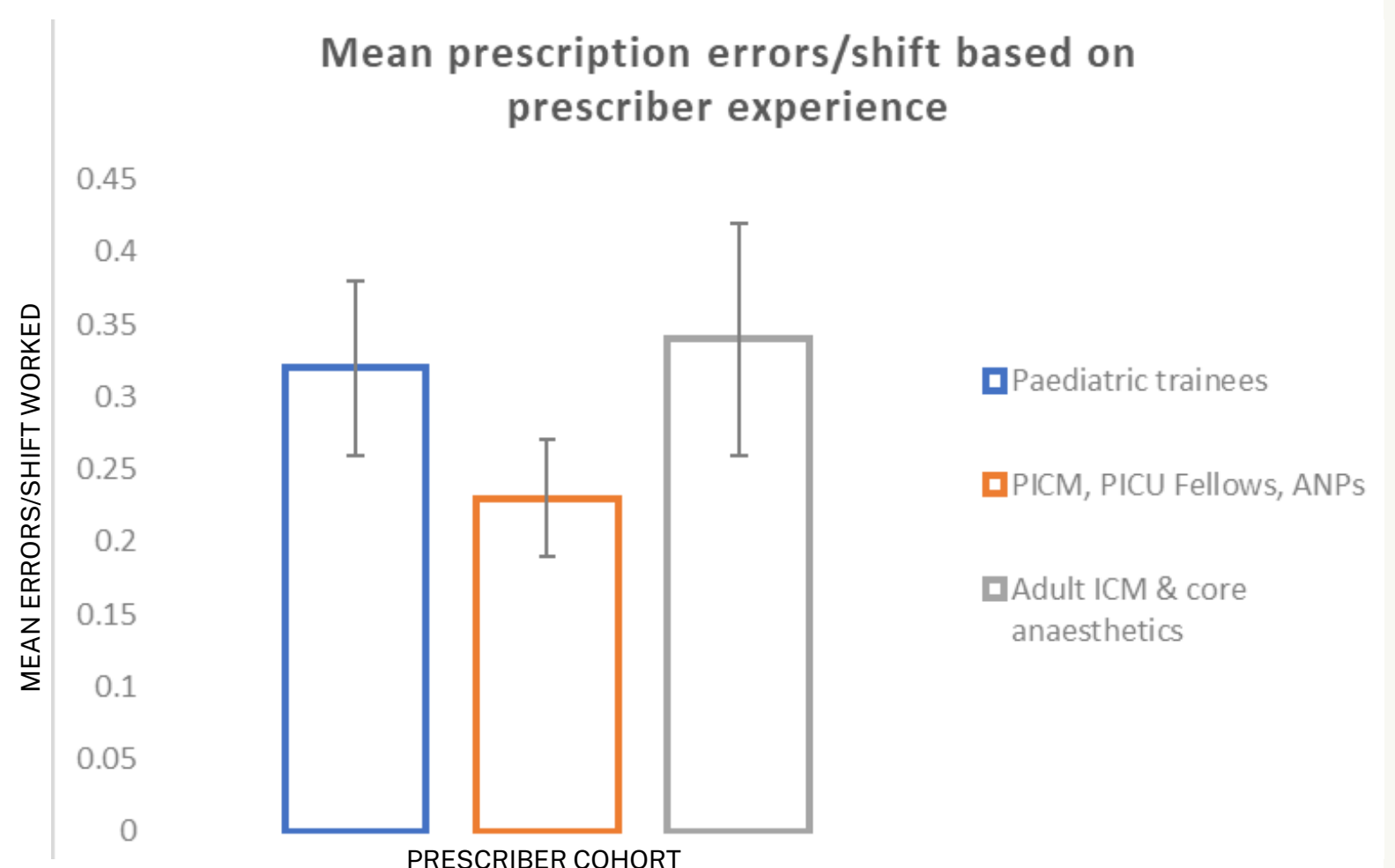
A total of 1110 prescription errors were identified across a total of 4245 prescriber shifts worked.

Overall error rate was 0.26 errors per shift worked.

Mean error rates amongst the groups are shown in the table below:

| | Mean errors per shift | Confidence intervals |
|--------------------------------------|-----------------------|----------------------|
| Paediatric trainees | 0.32 | 0.26 – 0.39 |
| PICM trainees, PICU fellows, ANPs | 0.23 | 0.19 – 0.27 |
| Adult ICM, core anaesthetic trainees | 0.34 | 0.26 – 0.42 |

The groups showed a statistically significant difference with one way analysis of variance (ANOVA) ($p = 0.009$)

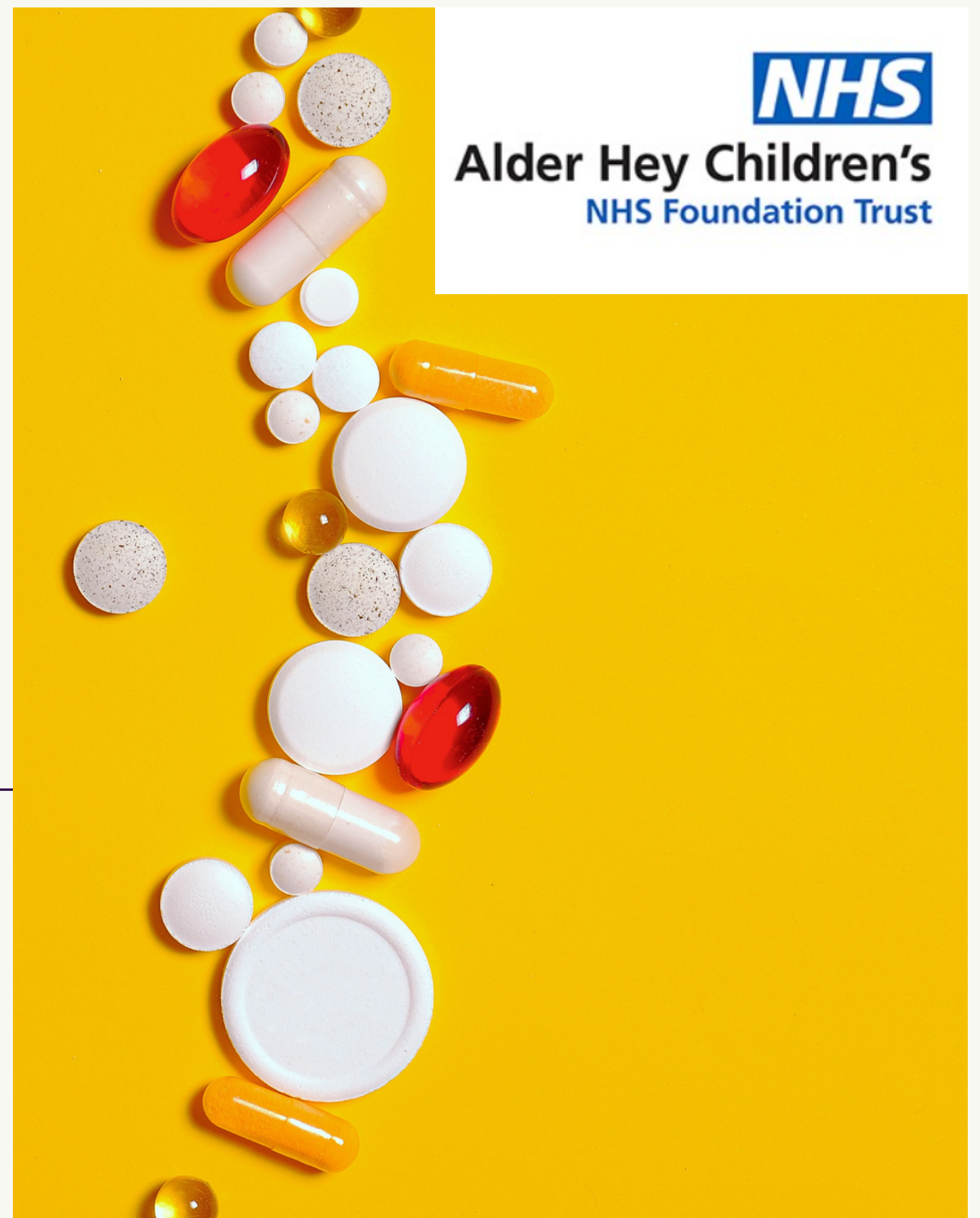


CONCLUSION

This study showed that prescribing error rates differ based on prescriber experience and background.

Alder Hey PICU has a strong pharmacy prescription intervention reporting system and education programme with daily prescription surveillance providing real-time feedback to prescribers. There are monthly reviews and a monthly pharmacy newsletter highlighting common errors to all staff.

The study results have shown that certain prescriber groups are statistically more likely to make a prescribing error. It has highlighted the need for a targeted approach to education and training of different cohorts of prescribers with the aim of reducing the prevalence of prescribing errors and improving patient safety outcomes.



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