

Evaluating prescribing practice of medical and non-medical prescribers during transport of the critically ill child.



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Introduction

The South Thames Retrieval Service transports approximately 1000 critically ill infants and children per year, all of whom receive medicines prescribed by either medical prescribers or non-medical prescribers (NMPs). These NMPs are employed as Retrieval Nurse Practitioners (RNPs), who undergo intensive training to work at an advanced practice level.

Medicines are currently prescribed on a paper retrieval record. Previous documentation audits have revealed concern around the prescription of medications.

The Nursing Midwifery Council require NMPs to audit their prescribing practice¹. The intention of the project was to evaluate the quality of prescribing on retrieval documents. NMP prescribing on retrieval was first audited in 2017 when 7 RNPs were non-medical NMPs. In this project, we audited all prescriptions to ask if prescribing practice met standards required.

Methods

An audit tool based on the Prescribing Competency Framework² (Figure 1) was designed and trailed. The tool was designed to retrospectively evaluate documentation of patient assessment, prescribing within relevant frameworks, prescribing for practical dosing and legal components of a prescription. Other competencies within the competency framework were not possible to assess, such as 'Considering the Options' and 'Monitoring & Review', due to the retrospective nature of the audit.



- THE CONSULTATION**
1. Assess the patient
 2. Consider the options
 3. Reach a shared decision
 4. Prescribe
 5. Provide information
 6. Monitor and review

- PRESCRIBING GOVERNANCE**
7. Prescribe safely
 8. Prescribe professionally
 9. Improve prescribing practice
 10. Prescribe as part of a team

Figure 1: The prescribing competency framework.

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110 retrieval patient records from November 2019 were retrospectively analyzed. Retrievals where no medicines were administered were excluded, as were retrievals led by RNPs who did not hold a NMP qualification, leaving 98 documents to be examined.

Following analysis, feedback and implementation of some changes to the retrieval prescribing document, an abridged audit was conducted in August 2021 to assess the effect of the changes, specifically focusing on the legal requirements for prescribing² (Figure 2).

Legal Requirements for Prescription
Was the prescription signed?
Was the prescribers name written clearly?
Was the child's NAME, DOB and WEIGHT written on the prescription sheet?
Was the child's allergy status recorded?

Figure 2: Legal requirements for a prescription

Results

Of 98 retrieval documents audited in November 2019, medical prescribers led 59 retrievals, and non-medical prescribers led 39. Data revealed compliance with documentation of patient assessment, and prescribing within relevant frameworks, however there were 37 occasions (38%) where prescriptions which did not meet legal requirements². There was a higher incidence of poor prescribing amongst the medical prescriber group. Of note in both groups, poor compliance with the "prescribing for practical dosing" (dose rounding) was revealed.

On the occasions when the requirements for a legal prescription were not met (Figure 2), there were 11 episodes where the prescription was not signed, and 23 when the prescribers name was not printed on the prescription. Other issues identified included the used of abbreviations, doses prescribed as micrograms/kilogram, but not calculated, and medicines documented in the nursing notes as having been given, without a prescription, for example "paralyzed for transfer".

Following the initial audit, alterations to the documentation were made to prompt the prescriber, and findings from the audit were fed back to team members via team days and Chief Fellow's updates. The Retrieval monthly newsletter highlighted prescribing as a "hot topic".

During the subsequent post intervention study period in August 2021, a total of 88 retrievals were performed. The same exclusions were applied, and 62 documents were therefore audited.

There was a statistically significant difference in episodes of legal requirements not being met between the medical (47%) and non-medical prescribers (23%) group in 2019 ($p < 0.001$). In 2021, this difference had resolved, with 28% of medical and 24% of non-medical prescribers not meeting legal requirements for prescriptions ($p = 0.961$).

	Nov 2019	Aug 2021
Medic Led	28/59 47%	6/21 29%
RNP Led	9/39 23%	10/41 24%
Total	37/98 – 38%	16/62 – 26%

Table 1: Legal requirements NOT met

In 2021, there was an overall improvement in the number of prescriptions when the legal requirements were NOT met, from 38% in 2019, to 26% in 2021 ($p=0.164$). An improvement in prescribing was demonstrated in the medical prescriber's group, and no change was seen in the RNP group (Table 1).



Discussion

A concerning finding from this audit was the number of prescriptions which did not meet the legal requirements for prescribing³ (Table 1), most commonly due to prescription not being signed, or the prescribers name not clearly written. It was acknowledged that the layout of retrieval documentation lends itself to error. The prescribing page forms part of the nurse's portion of the document, and therefore it is often the nurses who document the drugs that have been given, with the prescriber signing the document retrospectively. Consequently, the prescriber, does not enter the patient's name, age/DOB, weight and allergy status themselves.

RNPs are an established part of the workforce at STRS and perform a substantial proportion of retrievals, in comparison to the medical leads who rotate through the service at 6-to-12-month intervals. Not all RNPs have a NMP qualification (Figure 3). In August 2021, RNPs led 66% of retrievals audited which was a significantly increased proportion from 40% in 2019 (Pearson's chi squared test for all tests, $p=0.002$). This reversal of the RNP led v medic led proportion is likely related to an increased number of RNPs in post, and the timing of the second study period in relation to the doctors' rotations and their achieving retrieval competence.

	Study Period 1 Nov 2019	Study Period 2 Aug 2021
Retrievals Audited	98	62
RNP/Medic	39/59	41/21
RNPs in Post	10	12
RNP with NMP Qual	9	10

Figure 3: Retrieval Leads and RNPs

The smaller number of retrievals audited in Study Period 2 is likely related to the summer timing of the audit, and the exclusion of retrievals performed by RNPs without a NMP qualification ($n=18$). The increased number of non-invasively ventilated children transferred in this period may be a contributing factor, as they were excluded from the audit if no medicines were prescribed. Noteworthy is that the medical prescribers in the audit are a different group of doctors, whereas the RNPs audited are the same nurses, with an increased number having completed their NMP qualification. It is unclear why their prescribing has remained static.

Conclusions

Prescribing practice on retrieval has areas which need to be developed. It is acknowledged that a retrieval can be an extremely busy time with the focus on patient stabilization, often in difficult environments, and a time pressure to transfer the critically ill child to a more suitable area. Paperwork or electronic systems need to be further developed to ensure safe, accurate legal prescriptions can be written, and team members need further input to improve standards of prescribing practice. Safe and effective prescribing is an essential part of patient care, and the responsibility of the prescriber, whether medical or non-medical.

References

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2. Royal Pharmaceutical Society, 2016, A competency framework for all prescribers. RPS, London
3. Joint Formulary Committee. BNF for Children [online] London: BMJ Group, Pharmaceutical Press, and RCPCH Publications