

Does Expanding the Role of the Critical Care Pharmacy Technician Impact on Patient Care?

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Introduction

Critically ill patients are vulnerable, unstable and complex in terms of medication management.

An estimated 1.7 prescribing errors per day occur with nearly all patients suffering a potentially life-threatening error at some point during their stay. This highlights the need for a specialised pharmacy team to deliver clinically effective and safe care^{1,2}.

Ervin *et al.* (2001) describes the role of the technician to include haemodynamic, respiratory, fluid and nutritional data retrieval.³ The incorporation of pharmacy technicians into pharmacists' direct patient care processes has been reported to add value to service delivery through increased work efficiencies.

This project examined how the pharmacy service was delivered locally to a 10-bedded mixed medical/surgical critical care unit.

Aim & Objectives

- To re-model the role of the pharmacy technician to focus more on the delivery of direct patient care.
- Measure the impact of Technician Review Requests (TRR) for key prescribing areas.
- Determine the significance of TRR in relation to outcomes for patient care post critical care pharmacist follow up.
- Increase the sense of achievement with a more defined role for the technician.
- Develop greater collaborative working between the pharmacist and technician.

Method

- A process map was developed with the critical care pharmacist to identify points in the patient journey where pharmacy technician input was required (Figure 1).
- Brain storming identified key prescribing areas where a TRR could have potential impact on patient care.
- A technician proforma with triggers for a TRR was developed (Figure 2).
- Training was provided by the pharmacist on the use of the in-house electronic patient record and prescribing system.
- Data was collected prospectively over a three-month period from October – December 2017 inclusive.
- TRR with outcomes post pharmacist follow up were logged and graded using the Eadon Scale⁴.
- To collaborate significance a random sample of 20 interventions were peer reviewed by the WHST lead pharmacist for surgery, two critical care pharmacists and a pharmacy technician working in other trusts.

Figure 1: Process map identifying potential Technician Review Requests (TRR)

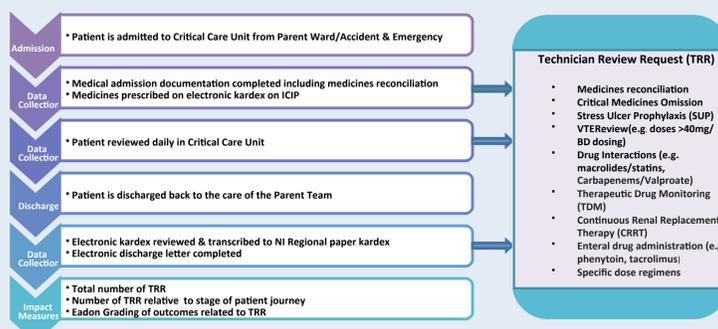


Figure 2: Critical Care Medicines Management Proforma

The form is a detailed proforma for daily pharmacy management in critical care. It includes sections for patient information, medication administration, technician review requests (TRR), and pharmacist review. The TRR section lists various categories such as Medicines Reconciliation, Critical Medicines Omission, Stress Ulcer Prophylaxis (SUP), VTE Review, Drug Interactions, Therapeutic Drug Monitoring (TDM), and Continuous Renal Replacement Therapy (CRRT). The pharmacist review section includes a table for monitoring drug levels and other clinical parameters.

Results

- 458 TRR were actioned by the critical care pharmacist (Table 1 & Chart 1).
- Grading of TRR in relation to outcomes and impact on patient care indicated that 71% were Eadon Grade 4 or above (Table 2 & Chart 2).
- Reliability analysis of interventions yielded a Cronbach's alpha of 0.87 (n=20) indicating a good consistency of interpretation of the scenarios presented. An intra-class correlation (two-way fixed effects model where people effects are random and measure effects are fixed) of 0.866 (95% confidence interval 0.743, 0.940, p<0.001) represented a very good level of agreement between all pharmacists and technicians.
- This confirmed validity of self-grading to be within acceptable parameters.

Table 1: Number of TRR relative to Patient Journey

Number of TRR relative to Patient Critical Care Journey		
Admission	Inpatient Stay	Discharge
164	190	104

Chart 1: Most Common TRR to Pharmacist

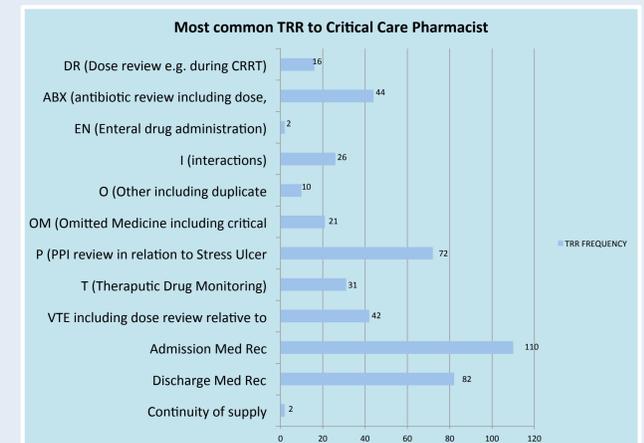
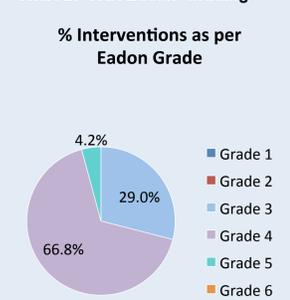


Table 2: Eadon Criteria

Intervention	Score
Intervention which is detrimental to patient's well-being	1
Intervention is of no significance to patient care	2
Intervention is significant but does not lead to an improvement in patient care	3
Intervention is significant and results in an improvement in the standard of care	4
Intervention is very significant and prevents major organ failure or adverse reaction of similar importance	5
Intervention is potentially life saving	6

Chart 2: TRR Eadon Grading



Conclusion

- The number of TRR per patient with pharmacist follow up indicates that developing the role of the pharmacy technician impacts and optimises pharmaceutical care of critically ill patients.
- TRR with respect to medicines reconciliation at transfers of care has potential to impact on patient safety by highlighting the need for follow up of pertinent drug related issues.
- Re-modelling of the pharmacy technician role has been shown to have many benefits with respect to job satisfaction and workload management.
- Greater integration of technician and pharmacist work streams enables the delivery of a more efficient clinical pharmacy service, with time efficiencies allowing focus on other patient care-related activities.
- Given the demonstrated potential for positive impact on patient care as defined by Eadon, consideration should be given to increasing pharmacy technician cover which would enable further role development and training of colleagues to ensure consistency of service.

References
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4. Eadon H. Assessing the quality of ward pharmacists' interventions. *International Journal of Pharmacy Practice* 1992; 1:145-147.