

Impact of Timely Medication Review in the Emergency Department

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Background

There are approximately 60 admissions per day from the Emergency Department (ED) to an inpatient ward. The Princess Alexandra Hospital (PAH) ED has 2 pharmacists rostered during the week between the hours 8-6pm and 1 pharmacist on the weekend between the hours of 9.30-6pm. Therefore, not all of these patients will be reviewed by a pharmacist in ED. A complete and accurate medication history, taken as soon as possible at the point of presentation, assists in identifying medication related problems that may have contributed to the presentation. The clinical pharmacist review that accompanies this medication history may identify potential medication related problems that may arise during the patient's admission. Medication histories, taken at the first point of hospital presentation within the Emergency Department (ED) are important in establishing appropriate and informed therapeutic treatment. Early identification of medication-related problems also facilitates early discharge planning and patient counselling particularly when patient noncompliance seems the likely cause of their presentation.¹ This audit was undertaken to compare how a patient's journey differed in terms of clinical pharmacist medication reconciliation and review between those patients reviewed by a pharmacist in ED and those reviewed on the ward.

Aims

To compare the time to medication reconciliation and review and resolution of pharmacist interventions between patients reviewed in the Emergency Department (ED) and those reviewed on the ward.

Princess Alexandra Hospital Emergency Department Analytics	Princess Alexandra Hospital Emergency Department Pharmacy Staff
55 patients per day admitted from ED to main wards	Weekdays 2 pharmacists from 8am-5pm and 9am-6pm
	Weekends 1 pharmacist from 9.30am – 6pm

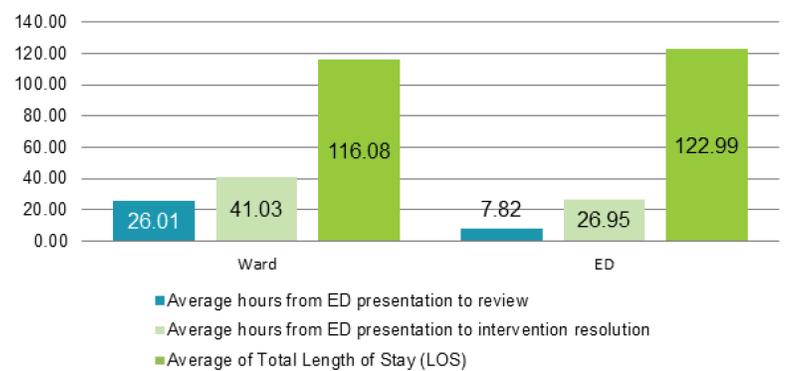
Methods

A sample of non-same day ED to inpatient admissions were selected during two three month periods between June to August and October to December 2017. A further sample of patients admitted from ED to ED short stay (EDSS) to an inpatient bed were selected from this period. Information was gathered retrospectively from the integrated electronic medical record (ieMR). Data was collected on the length of stay, time to review, number and type of clinical interventions, and intervention resolution.

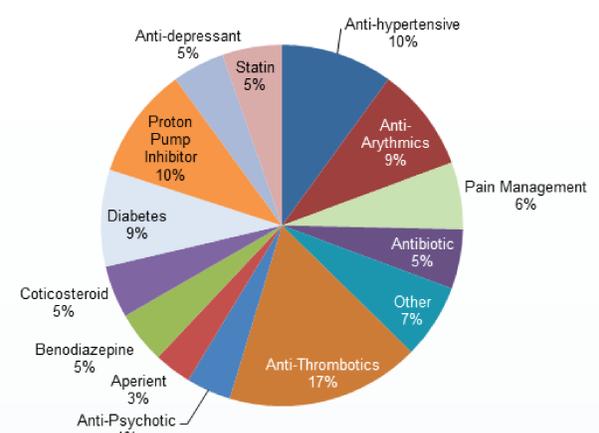
Results

179 patients were reviewed by a pharmacist after admission to the ward. 21 were reviewed by a pharmacist in ED. 1 out of 58 patients that went from EDSS and were admitted to a ward were reviewed in ED. Average time to pharmacist review was 8 hours for patients seen by an ED pharmacist, compared to 26 hours for patients reviewed by a ward pharmacist. Patients admitted from the EDSS to an inpatient bed were reviewed after an average of 30 hours. The average time to intervention resolution was 27 hours for patients seen in ED compared to 41 hours for patients reviewed on the ward. The average length of stay for patients reviewed by a pharmacist in ED was 123 hours compared to 116 hours for patients seen by a pharmacist on the ward. 151 interventions were recorded across the sample. The most common types were incorrect doses and omitted regular medications. The most common class was anti-thrombotic medications followed by anti-hypertensives and proton pump inhibitors. Of the 58 patients that were discharged to the short stay ward, 17% of patients were discharged from the hospital without a medication review by a pharmacist and 12% of patients were not reviewed by pharmacist until discharge. Emergency department admissions on average peaked at 2pm with an average of 2.6 admissions in this hour.

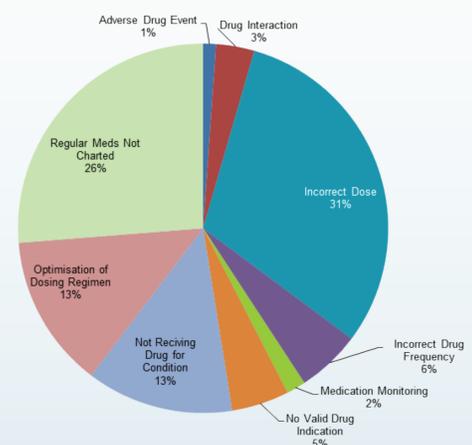
Figure 1: Average Hours From ED Presentation to Review by a Pharmacist



Medications involved with Interventions



Class of Interventions Examined



Limitations

- Small sample size for patient seen by ED pharmacist compared to sample size for patients seen by ward pharmacist
- Patient cohort between January and May missed in data collection
- Unable to capture interventions verbally resolved between a doctor and pharmacist

Conclusion and Recommendation

Time to pharmacist medication history and review was shorter for the patients reviewed in ED compared to the ward. Resolution of clinical interventions also occurred in a more timely manner in the ED pharmacist seen group. There are a large number of patients presenting to the PAH ED who are not reviewed by a pharmacist. Increasing the number of clinical pharmacists in the Emergency Department would reduce the average time to pharmacy review and time to resolution of medication related problems for all patients presenting to the Emergency Department.

References

1. Ajdukovic M, Crook M, Angley C, Stupans I et al. Pharmacist elicited medication histories in the Emergency Department: Identifying patient groups at risk of medication misadventure. *Pharmacy Practice* 2007;5(4):162-168.