Identifying and improving delays in processing 'to take out' (TTO) medications

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Introduction

Good patient flow is crucial in influencing patient and healthcare worker experience, healthcare costs, and clinical outcomes[1].

An essential aspect of maintaining good patient flow is ensuring that discharges are efficient and that 'to take out' (TTO) medications are processed as quickly as possible.

Aims

Our quality improvement project sought to identify key delays in TTO processing, and to design and evaluate interventions targeting these delays.
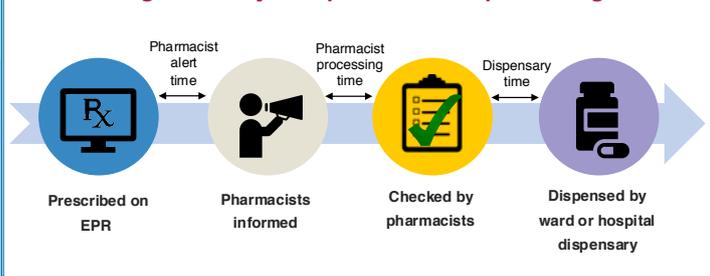
Methods

Over an 8-month period, in-house pharmacists on the Emergency Assessment Unit collected data on the times TTOs were prescribed on the electronic patient record, received by pharmacists, checked by pharmacists and dispensed (**figure 1**).

After key delays were identified, PDSA cycles developed interventions targeted to reducing the principle delay: **the time taken for a pharmacist to be alerted to a TTO prescription**. We initiated multiple interventions to target this 'pharmacist alert time' including:

- Posters around the unit
- Teaching presentations to medical team
- Teaching included in induction to unit
- Whatsapp message prompts
- Prompts at morning handover
- Consultant engagement
- Word of mouth.

Full month data from July 2018, November 2018 and February 2019 were evaluated in order to assess the effectiveness of our interventions. The analysis we present is restricted to working hours (9am – 5pm) and TTOs prescribed on the day of discharge.

Figure 1: Key timepoints in TTO processing

Prescribed on EPR → Pharmacists informed → Checked by pharmacists → Dispensed by ward or hospital dispensary

Pharmacist alert time — Pharmacist processing time — Dispensary time

Results

The pharmacist alert time represents a significant proportion of the time taken to process a TTO.

During the index month, the greatest delay identified was that of the medical team alerting the pharmacists that a TTO had been prescribed. The mean pharmacist alert time was 63mins which was almost double the mean time taken for the pharmacist to process the TTO (35mins).

The pharmacist alert time was significantly reduced following interventions.

Following repeated intervention cycles, the mean pharmacist alert time was reduced from 63mins in July, to 59mins in November, and then significantly to 32mins in February (p=0.001) (**figure 2**). Similarly, the percentage of TTOs with a pharmacist alert time of less than 30 minutes improved from 43% to 53% to 66% (**figure 3**).

Figure 2: Improvement in mean TTO processing time

Mean pharmacist alert time (blue) — Mean pharmacy processing time (red)

* p = 0.001

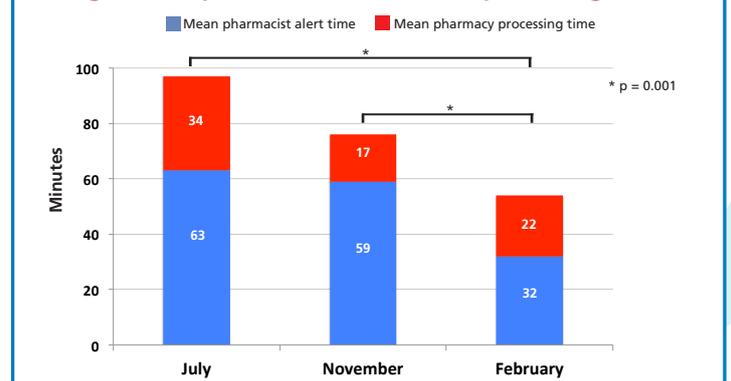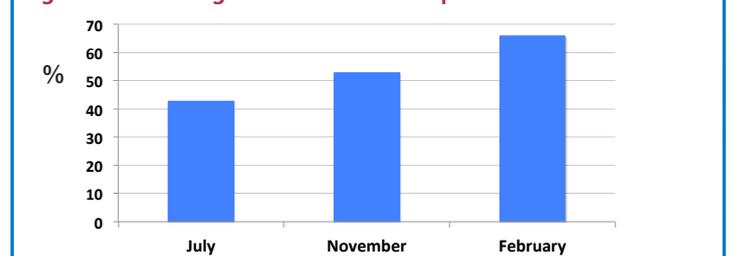|	July	November	February
Mean pharmacy processing time	34	17	22
Mean pharmacist alert time	63	59	32

Figure 3: Percentage of TTOs alerted to pharmacist within 30mins

Conclusions

We identified that the delay in informing the pharmacists constituted a large and targetable proportion of the time taken to process a TTO.

This delay is likely present and as yet unrecognised on other wards in our hospital and units throughout the country.

We show that simple, translatable, and effective interventions targeted at the medical team can be utilised to reduce the time taken to process a TTO and thereby improve patient flow.

Reference

1. National priorities for acute hospitals 2017. Good practice guide: Focus on improving patient flow (July 2017)