



# ED MEDICINE WISE: Fostering a Medicine Wise Culture in the Emergency Department

David Hughes<sup>1,2</sup>, Elizabeth Doran<sup>1,2</sup>, Anthony Bell<sup>1</sup>, Ian Coombes<sup>2,3</sup>, Caitlin Lock<sup>1</sup> and Neil Cottrell<sup>3</sup>

<sup>1</sup>Emergency & Trauma Centre and <sup>2</sup>Pharmacy Dept, Royal Brisbane & Women's Hospital, Queensland, Australia

<sup>3</sup>University of Queensland, Australia

## Background

Prior to 2017 less than 5% of patients were reviewed by a pharmacist in the Emergency Department (ED) of RBWH. Lack of clinical pharmacist review increases rate of adverse drug events (ADEs) and impacts patient outcomes, increasing length of stay (LOS) and healthcare costs<sup>1</sup>.

Since March 2017, an extended-hours (7am-11pm, 365days/yr) pharmacy service has been funded through own-source revenue. Pharmacists provide medication management services within the ED and Short Stay Unit.

## Objectives

The key aim of the new service was to foster a 'medicine wise' culture in a large tertiary Australian hospital (>75,000 presentations/yr). Clinical pharmacists review patients to identify drug-related problems (DRPs) and establish quality processes at a patient, practitioner and service level.

## Key Outcome Measures

- ◆ Increased detection/mitigation of ADEs and DRPs on presentation to ED
- ◆ Optimised medication usage to benefit patient outcomes
- ◆ Improved/supported clinical decision making
- ◆ Reduced LOS by preventing and/or mitigating drug related problems
- ◆ Reduction in medication errors
- ◆ Improved clinical governance to support safe, quality medication management
- ◆ Reduced medication costs

## The Service



### Clinical review of high risk patients

- ◆ Including, but not limited to, >65 years of age
- ◆ More than 5 medications
- ◆ Experiencing/risk of ADE or DRP



### Continuous quality improvement

- ◆ Opioids
- ◆ Antimicrobials
- ◆ Anticoagulants and thrombolytics
- ◆ Antipsychotics



### Clinical governance

- ◆ Medication safety at all stages of patient journey
- ◆ Guideline and protocol development
- ◆ Non-medical prescribing support
- ◆ Implementation of automated medication dispensing



### "Medicine Wise" culture

- ◆ Structured all-staff education
- ◆ Research and grant success
- ◆ Hybrid implementation evaluation
- ◆ Advanced scope of practice credentialing for ED pharmacists
- ◆ Aligned with Choosing Wisely

## Results

- ◆ 180% increase in patient reviews to 14% of all presentations. 50% of these are admitted.
- ◆ 800% increase in electronic medication reconciliation activities
- ◆ 17% of reviewed patients identified with pre-hospital ADEs/DRPs
- ◆ 9.2% reduction in opiate use in ED despite 1.2% increase in presentations. Discharge opioid use under evaluation.
- ◆ Admitted hospital LOS impact under evaluation. Initial results positive.
- ◆ Protocols and clinical pathways developed inc decision support for Antimicrobials in Trauma
- ◆ Positive feedback from inpatient teams and staff



Figure 1: ED pharmacist electronic medication reconciliation activities (Feb-Mar)

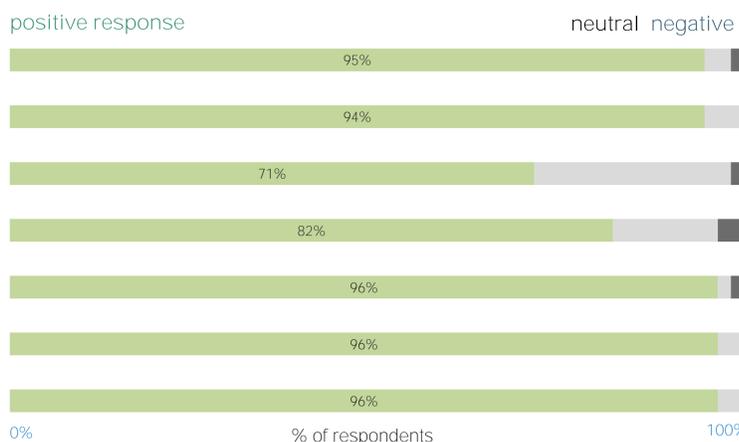


Figure 2: ED staff perceptions of the ED pharmacy service

- The ED pharmacist is a valuable patient educator.
- The ED pharmacist is a valuable teacher to the ED staff.
- The availability of a pharmacist during resuscitations, procedural sedations, code stroke and other critically unwell patients enhances my ability to deliver safe, quality care to my patients.
- It is helpful when the ED pharmacist checks medication orders before they are carried out.
- I make more use of pharmacy services when the pharmacist is located in the ED.
- The emergency pharmacist is an integral part of the ED team.
- The presence of an emergency pharmacist improves quality of care in the ED.

## Conclusion

Implementing an extended-hours pharmacy service in a large Emergency & Trauma Centre creates a patient-centric "Medicine Wise" culture by improving medication review and usage. Formal evaluation is underway and additional operational, quality and clinical outcomes will be reported in 2018. Clear objectives, rigorous governance, reporting and feedback is guiding the maturation and development of the service with an aim to develop advanced scope roles and credential as an Emergency Medicine Pharmacy training site in due course.

### Reference

1. Roughhead EE, Semple SJ, Rosefeld E. The Extent of medication errors and adverse drug reactions throughout the patient journey in acute care in Australia. International Journal of Evidence Based Healthcare (2016)

Email: elizabeth.doran@health.qld.gov.au  
 Mail: Emergency & Trauma Centre, RBWH, Herston, Queensland, 4029 AUSTRALIA  
 Phone: +61 7 3646 73135

