

# Working Nine to Five: What was Learned Through Time and Motion



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## Introduction

The introduction of an Electronic Medical Record (EMR) offers many opportunities to improve patient safety and efficiency but can also result in significant disruptions to clinical workflows including those of pharmacists.

A reduction in time spent on administrative activities following the introduction of an EMR would be anticipated, allowing more time for direct patient care activities. However, less is known about the time impact of an EMR on specific clinical tasks undertaken by pharmacists.

## Aim

To describe clinical pharmacist workflows pre and post-implementation of an EMR.

Outcomes of interest:

- Time spent on direct clinical activities
- Time spent involving direct interaction with patients or carers

## Methods

### Study design

- Direct observational prospective time and motion study
- Four months pre-EMR implementation
- Eight months post-EMR implementation

### Data collection

- Trained intern pharmacists observed and documented unit-based clinical pharmacist activities
- Entire clinical pharmacist shift observed
- Maximum observation time = 2 hour block (intern relieved by second observer)
- Observations documented using custom-designed RedCAP® tool, with time-stamp functionality
- Data points:
  - Activity category (refer to figure 1 for examples)
  - Where activity was performed
  - How activity was performed
  - Who was present when activity performed

### Setting

- Major metropolitan tertiary/quaternary referral hospital (acute and subacute campuses)
- Range of medical, surgical and subacute units

### Inclusion criteria

- Clinical pharmacists working during standard pharmacy business hours (8.30am to 5:15pm)

### Exclusion criteria

- Unpaid breaks
- Team cover situations (pharmacist performing >1 EFT workload)

## Results

A total of clinical pharmacist 441 hours of activity were observed:

- 223 hours pre-EMR
- 218 hours post-EMR

Figure 2 shows the proportion of time spent by activity category, pre and post-EMR for the Medicine and Surgery clinical pharmacists.

Overall, an increase in the proportion of time spent taking admission medication histories, ongoing medication review and clinical documentation was observed. A decrease in the proportion of time spent on discharge planning and clinical discussion was observed (refer to figure 3).

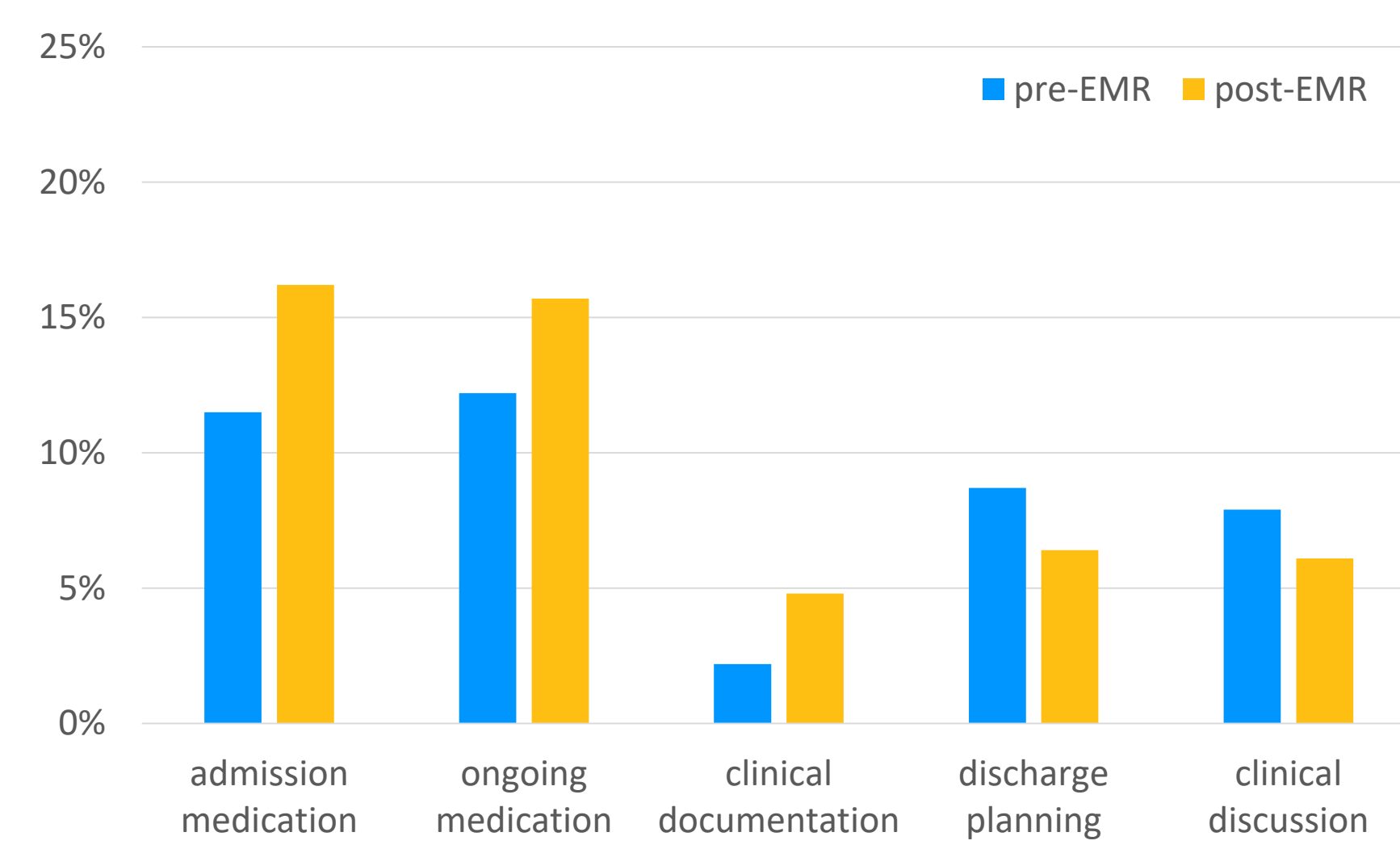


Figure 3: Overall proportions for specific activities of interest

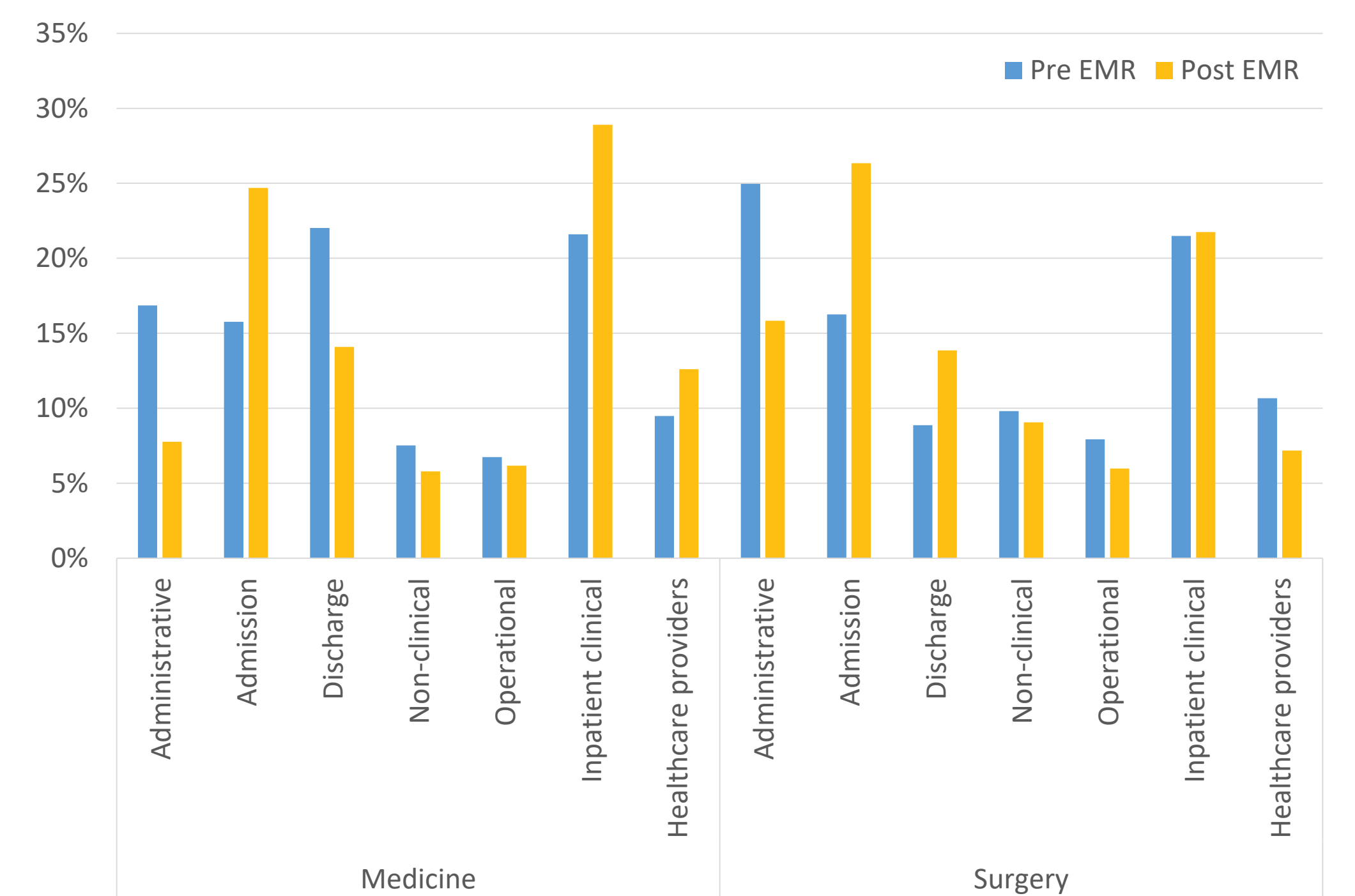


Figure 2: Proportion of time spent by activity category for Medicine and Surgery pharmacists

A reduction in the proportion of time spent on administrative activities (including time in transit and locating records) was observed (refer to figure 4.)

No significant change in the proportion of time spent with patients was observed (refer to figure 5).

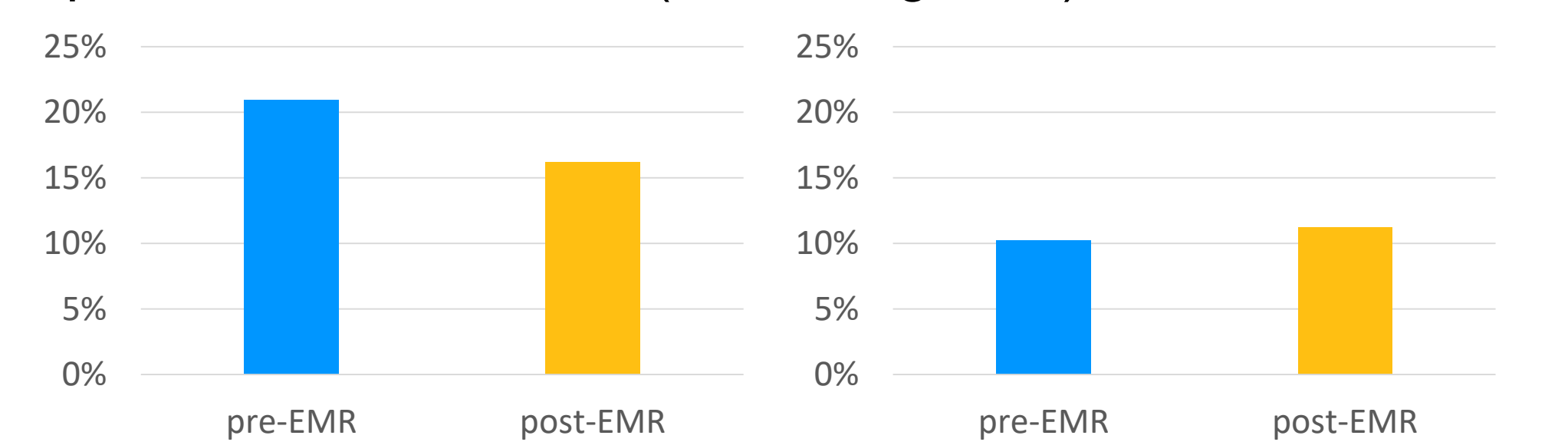


Figure 4: Proportion of time spent on administrative activities

Figure 5: Proportion of time spent with patients/carers

## Discussion

The study highlights changes in clinical pharmacy workflows following implementation of an EMR, notably a reduction in time spent on administrative tasks allowing more time for clinical activities. Some activities were observed to occupy a larger proportion of clinical pharmacist time, such as admission medication history. This reflects the complex nature of documenting an accurate medication history in the EMR.

A notable increase in proportion of time spent on clinical documentation was also observed. This may reflect increased levels of documentation in the medical record by clinical pharmacists, which has been facilitated by standardised smart texts and smart phrases which enable consistent and clear documentation of medication related problems in a progress note.

The reduction in proportion of time spent on clinical discussion is thought to be related to ease of locating information in EMR (especially via the use of a free-text search function) which may reduce the need for some conversations.

Reassuringly, time spent with patients remained similar pre and post-EMR.

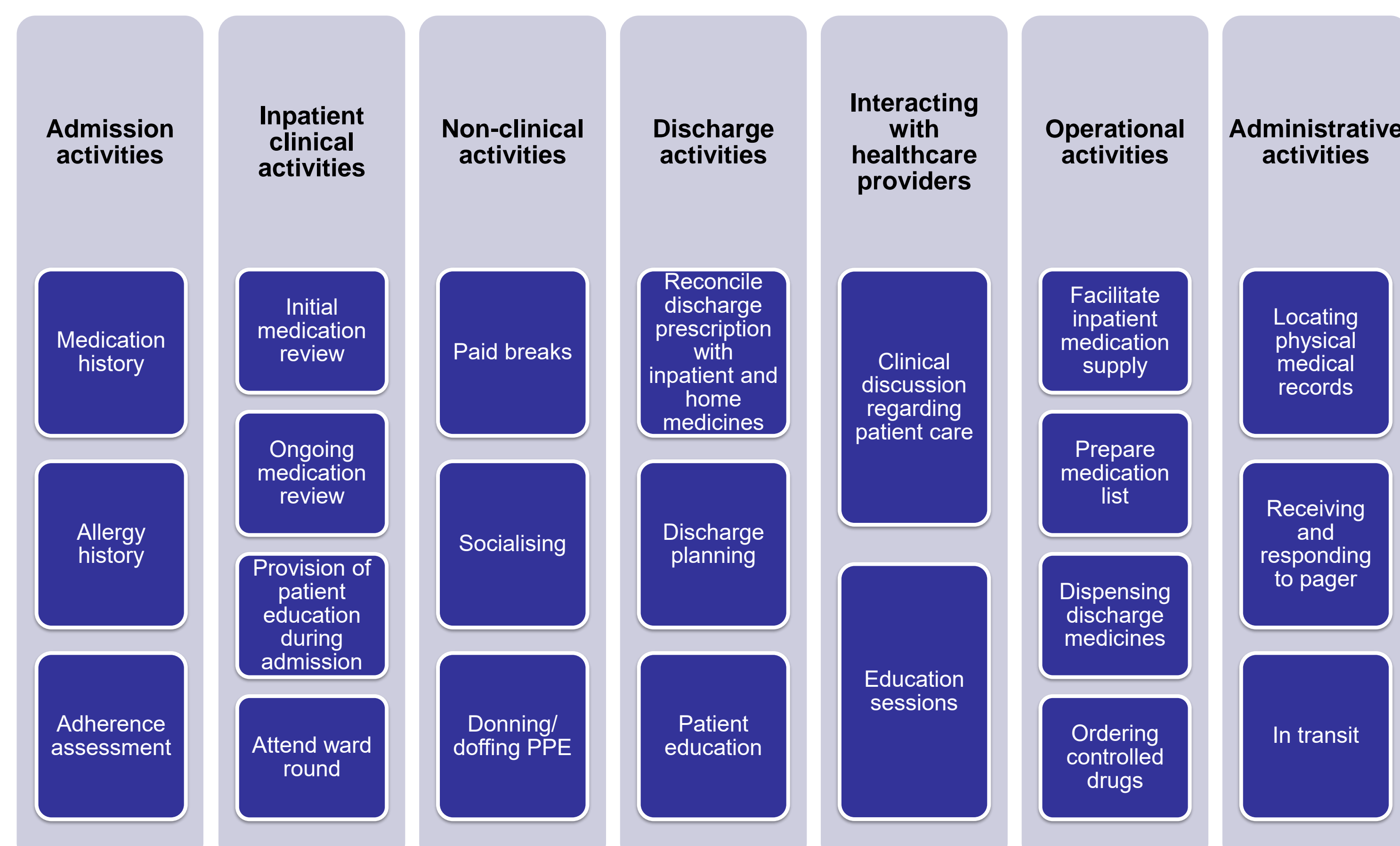


Figure 1. Activity categories and examples of included tasks

## Acknowledgments

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- Clinical pharmacists who consented to observation
- Study data were collected and managed using REDCap electronic data capture tools hosted by the Royal Melbourne Hospital Business Intelligence Unit

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