Journal of Pharmacy Practice and Research
Official Journal of the Society of Hospital Pharmacists of Australia
shpa
BRIEF REPORT
Time and motion study quantifying the activities of the cardiology, respiratory, and geriatric clinical pharmacist
Journal of Pharmacy Practice and Research (2022) 52, 382–389

Time and motion study quantifying the activities of the cardiology, respiratory and geriatric clinical pharmacist

Simon Huynh,[1] Lily Rush,[1] Demi Dadalias,[1] Danson Githinji,[2] Melissa Ta,[2] Susan G Poole,[1,2] Mia Percival,[1] Chloe Bell,[1] Victoria Warner,[1] David Nguyen[1]

1. Pharmacy Department, Alfred Health, Melbourne, Victoria; 2. Faculty of Pharmacy and Pharmaceutical Sciences, Monash University, Melbourne, Victoria

Background

The benefits of clinical pharmacy services have been demonstrated extensively in published studies. There is currently limited literature evaluating the daily workflow and time allocation of pharmacists in Australian hospitals.[1,2] Tasks performed and services provided by pharmacists working in different clinical specialities will differ, as reflected in the Society of Hospital Pharmacists Australia (SHPA) Standards of Practice.[3-5]

Understanding the range of tasks undertaken, and time spent on clinical and non-clinical activities can inform resource allocation and education strategies. 'Real world' data of clinical activities may assist in the development of key performance indicators and benchmarking of specialty practice.

Aim

This study was undertaken to quantify the time clinical pharmacists spend across acute (cardiology and respiratory) and sub-acute (geriatric) clinical specialty services at a tertiary-referral metropolitan health service with comprehensive unit-based clinical pharmacy services.

Methods

The observations occurred over different days and times for comprehensive data collection across the working week (Monday to Friday). Trained observers shadowed the pharmacist and captured data on a handheld tablet via a dedicated data collection application '**W**ork **O**bservation **M**ethod **B**y **A**ctivity **T**iming' (WOMBAT).[6,7]

The WOMBAT data collection tool was designed for time and motion research of health professionals, to collect real time observational data (Figure 1).

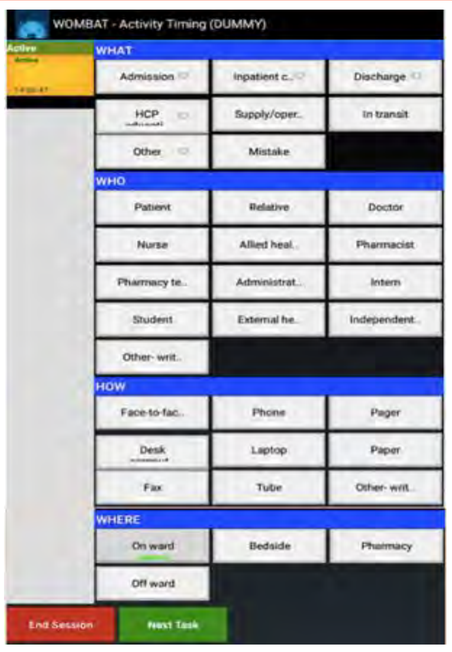

Figure 1. WOMBAT tool interface

Data collected included:

- **WHAT:** The task being conducted
- **WHO:** The person/people with whom the task is being conducted
- **HOW:** The means by which the task is being completed
- **WHERE:** The location where the task is being conducted
- **Interruptions:** External factors resulting in the pharmacist stopping one or more tasks and starting another
- **Multitasking:** When two or more tasks occurring concurrently

The outcomes of interest were the time allocated to daily tasks by pharmacists in each clinical unit. Tasks were classified according to domains related to *direct patient care* (defined as admission, inpatient and discharge-related tasks), *healthcare professional liaison* and *supply-related tasks*. Task domains were further categorised into sub-tasks.

Results

Eighteen clinical pharmacists from the cardiology (n=5), respiratory (n=8), and geriatric (n=5) units were observed over 171.2 hours: geriatrics (4613 tasks, 93.7 hours), respiratory (1088 tasks, 39.9 hours) and cardiology (2138 tasks, 37.6 hours).

Pharmacists were primarily involved in *direct patient care activities* (ave 76.1% of total time) across all three units. *Inpatient tasks* contributed the greatest proportion of time (cardiology 62.2%, geriatrics 50.6%, respiratory 47.8%), with *daily medicines reviews* and *attending interdisciplinary clinical ward rounds* the greatest contributors (*Figure 2*). Compared to geriatric and respiratory units, pharmacists in the cardiology unit spent more time on *admission-related tasks* and the greatest proportion of time *attend ward round* with the medical unit.

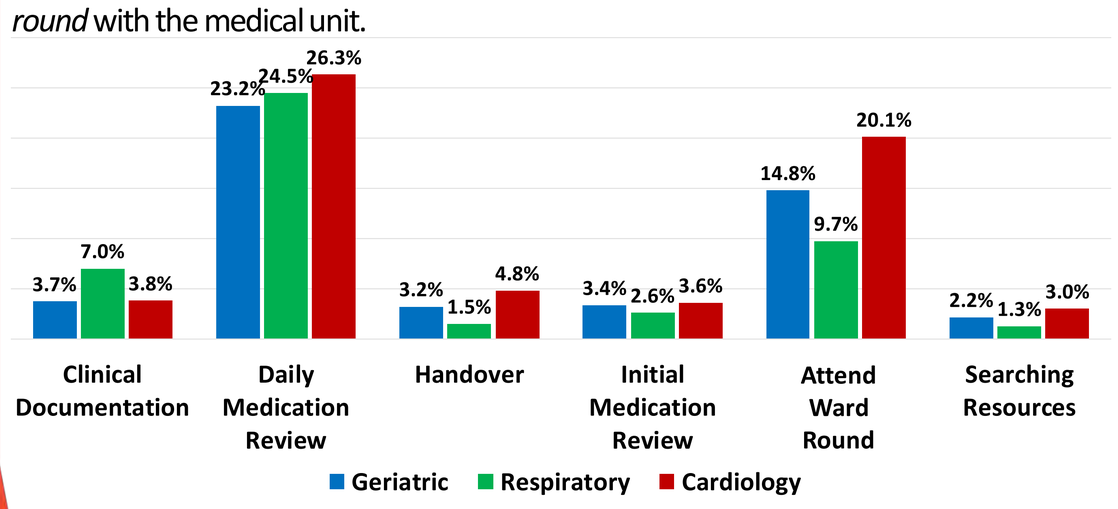

Figure 2. Inpatient clinical tasks, by unit (% total task time)

Results

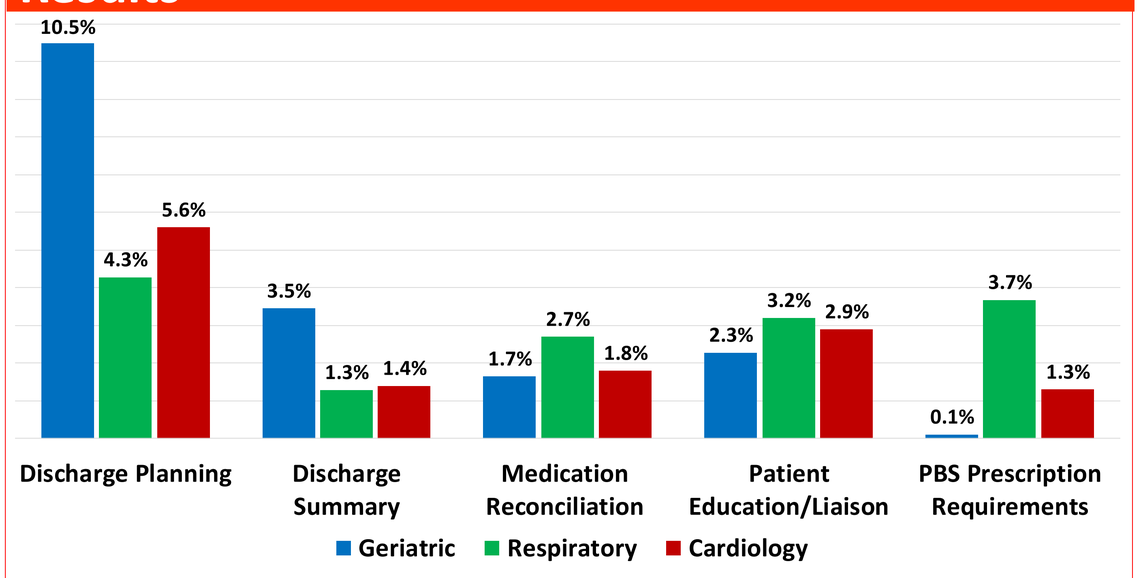

Figure 3. Discharge related tasks, by unit (% total task time)

Respiratory pharmacists provided the most *patient education* on discharge, as well as managing *PBS requirements* of discharge medication (Figure 3). Pharmacists in the geriatric unit spent more time undertaking *discharge planning* and *preparing discharge summaries* (Figure 3).

Pharmacists spent most time working on the ward and at the bedside (Figure 4) and working independently (Figure 5).

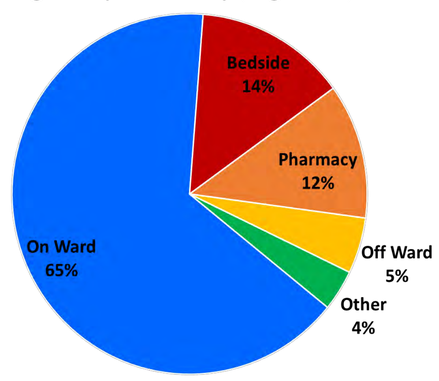

Figure 4. WHERE Pharmacist performed task

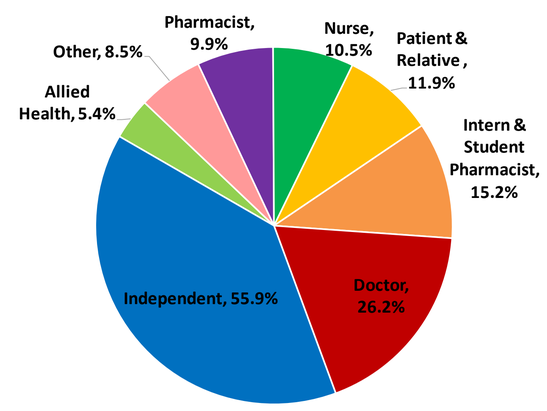

Figure 5. WHO Pharmacist interacted with

Pharmacists performed one or more tasks simultaneously (multitasking) 19.1% of the time. The most common tasks involved in multitasking *were daily medicines review* and *interdisciplinary ward rounds*, both sub-tasks of *inpatient clinical activities*.

There were 511 interruptions, averaging 3.0 interruptions per hour. The tasks most often interrupted, for all clinical pharmacy specialties, were *inpatient clinical activities*.

Discussion

This study is the first to quantify the time allocation of clinical pharmacists working in the specialty areas of cardiology, respiratory and geriatrics. The observations in this study occurred across different time points in the patient journey, from admission to discharge.

The majority of clinical pharmacists' time was spent in direct patient care. While it was observed that all pharmacists predominantly undertook inpatient clinical activities, the time allocation to task domains by pharmacists differed significantly across the specialty practices.

Pharmacists working in acute specialties, respiratory and cardiology, were observed to spend more time by the bedside and in the provision of patient education than sub-acute geriatric pharmacists. This may be attributed to the higher acuity, shorter length of stay and more frequent patient admissions in the acute specialities. The sub-acute geriatric pharmacists spent significantly more time than acute specialty pharmacists on preparing discharge summaries and discharge planning, reflecting their contribution to supporting the safe transition of older patients back into the community.

In combination with the SHPA Standards of Practice,[3-5] these results have the potential to inform workflow and establish optimal staffing allocation through adapting the methodology of this study to other areas of practice. Through the understanding of metrics, such as the time spent on task and range of tasks performed within clinical specialties, departments can prioritise rostering of staff according to demanding tasks, meet key performance indicators, and thereby optimise workflow.

References

1. de Clifford J-M, et al. *J Pharm Prac Res* 2012; 42(2): 134-9.
2. Lehnbom EC, et al. *Stud Health Technol Inform* 2016;227:80-6.
3. Elliott RA, et al. Standard of practice in geriatric medicine for pharmacy services. *J Pharm Prac Res* 2020; 50(1): 82-97.
4. Pizzi J, et al. Standard of practice in cardiology for pharmacy services. *J Pharm Prac Res* 2022; 52(1): 59-71.
5. SHPA. CoSP in Clinical Pharmacy. SHPA Standards of Practice for Clinical Pharmacy Services. *J Pharm Prac Res* 2013; 43(S2): S2-S69.
6. Westbrook JI, Ampt A. *Int J Med Inform* 2009; 78 Suppl 1: S25-33.
7. Westbrook JI, et al. *Med J Aust* 2008; 188(9): 506-9.