

An Assessment of Discharge Medication Management on Cardiac Inpatient Units

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Background

Cardiac patients often have complex medication regimens, and significant medication changes occur during their stay in hospital. Consequently, thorough medication reconciliation and extensive medication counselling on discharge is essential to ensure patient safety.

The current cardiac pharmacist oversees all medication management needs for 63 inpatient cardiac beds at Epworth Richmond, including a coronary care unit. As per the Society of Hospital Pharmacists of Australia, the recommendation for clinical pharmacist services to medical inpatients is a ratio of 1 pharmacist to 20 patients.

At the Epworth Richmond hospital, 0930 is the expected discharge time. This is generally poorly met on the cardiac inpatient units.

Aims

To assess:

- Daily discharge load of clinical pharmacist on cardiac inpatient units
- Time taken for discharge medication reconciliation and counselling
- Compliance with the discharge timing goal
- Role of pharmacist in medication supply and patient counselling

Methods

A prospective audit of discharges from the cardiac inpatient units was conducted over 11 days. The following data was collated for each discharge:

- Number of medications on discharge [ALL]
- Number of changes to medications [CHANGE]
- Number of new medications [NEW]
- Time taken to complete discharge medication reconciliation, including completion of clinical interventions where relevant
- Time taken to complete discharge medication counselling
- Number of clinical interventions completed at point of discharge
- Whether clinically reviewed by a pharmacist during inpatient stay prior to day of discharge

Results

101 cardiac inpatient discharges were audited.

Parameters	Number of discharges (n=101)
Gender, n [%]	
Male	68 [67.3]
Female	33 [32.7]
Age, years	
Median [range]	74 [19-72]
Cardiac discharges, n [%]	93 [92.1]
Non-cardiac discharges, n [%]	8 [7.9]
Cardiac discharge breakdown,	
Surgical#, n [%]	52 [55.9]
Medical, n [%]	41 [44.1]

Table 1: Patient demographics

note: surgical refers to cardiac and cardiothoracic surgery

Parameters	Number of discharges (n=101)
Number of daily discharges,	
Average, n [range]	9 [5-13]
Discharge completed by 0930,	
n [%]	29 [28.7]
Clinically reviewed by a	
pharmacist during stay, n [%]	33 [32.67]
ALL, average, n [range]	7.8 [1-20]
CHANGE, average, n [range]	0.8 [0-3]
NEW, average, n [range]	2.2 [0-9]
Number of clinical	
interventions on discharge, n	69

Table 2: Discharge load parameters

Time range (minutes)	Discharge medication reconciliation, n [%]	Discharge medication counselling, n [%]
≤5	75 [74.25]	62 [61.39]
6-15	25 [24.75]	34 [33.66]
16-30	1 [0.99]	4 [4.95]

Table 3: Time range for completion of discharge medication reconciliation and discharge medication counselling

Parameters	Number of discharges (n=5)
Clinically reviewed by a	
pharmacist during stay, n [%]	3 [60]
ALL, average, n [range]	16.75 [9-22]
CHANGE, average, n [range]	1.5 [0-3]
NEW, average, n [range]	4.5 [0-9]

Table 4: Discharge load parameters for complex patients requiring counselling time 16-30 minutes

Parameters	Clinical pharmacist review during stay (n=33)	No clinical pharmacist review during stay (n=68)
ALL, n [range]		
Average	9.55 [2-21]	6.98 [1.22]
CHANGE, n [range]		
Average	1.27 [0-3]	0.57 [0-2]
NEW, n [range]		
Average	2.72 [0-9]	1.94 [0-9]

Table 5: Discharge medication parameters comparing patients reviewed by pharmacist during stay versus no clinical pharmacist review during stay

Discussion

Data collected confirms the complexity of discharge medication requirements for cardiac inpatient units. Cardiac patients were taking an average of 7.8 medications on discharge, 2.2 of which were new, with 0.8 changes made to the current regimen. A total of 69 pharmacist-led clinical interventions were completed during discharge medication reconciliation.

74.25% of discharge medication reconciliation and 61.4% of medication counselling were completed in ≤5 minutes. However 38.61% of patients required longer counselling sessions, consistent with the expectation that high risk cardiac medications require thorough counselling. A further detailed analysis of patients requiring 16-30 minutes of counselling found this cohort had an average of 16.75 medications on discharge, 4.5 of which are new. One patient new to warfarin required counselling on this medication which required 20 minutes of the pharmacist's time.

The discharge load and complexity of these patients resulted in cumulative time pressure. Consequently, discharge timing goals were not met, with only 28.7% of patients discharged by 0930.

Current resources dictate prioritisation of clinical pharmacist review for high risk patients with multiple co-morbidities and complex medication regimens. This audit confirms patients who were clinically reviewed by the pharmacist during their hospital stay were more complex than those not reviewed [table 5]. While this shows that pharmacists are prioritising appropriately, 67% of patients are not seen by a pharmacist until the day of discharge.

Limitations

The daily discharge numbers in this audit are lower than usual as the audit was conducted during the COVID-19 pandemic when restrictions were in place for non-urgent surgeries. Current discharge numbers range between 15-25 per day. An audit conducted now would likely show even lower compliance with the discharge timing goal and a higher proportion of high risk patients not seen until the day of discharge.

There can be inter-pharmacist variability in pace of discharge medication reconciliation and medication counselling.

This audit also does not include time taken for preparation of discharge medications and medication profile.

Conclusion

Cardiac patients have complex discharge medication requirements, and pharmacists play a pivotal role in ensuring patient medication safety.

Increased pharmacist resourcing would improve patient discharge times and ensure safe and effective medication provision and counselling on discharge.

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