

Multidisciplinary approach to managing hospital medication shortages - continuity of care, patient safety and financial implications.

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Background

Medication shortages are an increasing issue, with broad public health implications for patients, healthcare professionals and institutions. Despite national notification mechanisms involving sponsors and the Therapeutic Goods Administration, shortages continue to be a significant workload burden for pharmacy and hospital staff.

Between 2019 and 2020 Australia experienced an increase of 300% in the number of medicine shortages.¹ Medicine shortages have wide ranging implications, affecting most facets of healthcare service delivery.

Risk mitigation strategies often increase the workload for hospital staff and carry additional organisational costs due to labour and purchase of alternatives, particularly when international products are sourced.¹⁻⁷

Whilst there has been extensive reporting on the impacts of medicine shortages on a broader scale, there is a paucity of literature available describing how local institutions are contending with the challenges presented by medicine shortages.

Aims

To describe how a metropolitan public hospital pharmacy department manages medication shortages and discontinuations using a multidisciplinary team approach.

Method

Medicine shortages are managed by our Pharmacy Purchasing Officer, a team of senior pharmacists and a technician from our Quality Use of Medicines team.

Over 10-weeks between Nov 2022 - Jan 2023, the following data was collected prospectively for each medication shortage identified:

- Source of first notification of the medicine shortage
- Therapeutic classes affected
- Nature of the management interventions undertaken by the multidisciplinary team
- Implications on clinical practice
- Cost implications

A team approach can reduce the burdens of medicine shortages



Results

Over 10-weeks, 34 medicine shortages/discontinuations, comprising 49 usually stocked products were managed (Fig 1).

- For 79% of products, the Pharmacy Purchasing officer identified the shortage initially, followed by manufacturer communication (15%), clinical pharmacists (9%) and the TGA (3%).

Table 1 highlights management strategies employed to minimise patient risk and organisational impact.

- A change in therapy was required for 18% of the medicine shortages.
- For one-third of the shortages, expert engagement was required to update guidelines and Electronic Medical Record.
- For 63% of medicine shortages where an alternative product was sourced, the costs to the organisation increased (between \$196.76 - \$28,539 per product).

Figure 1: Medication medicine shortages/ discontinuation by therapeutic class (n=34)

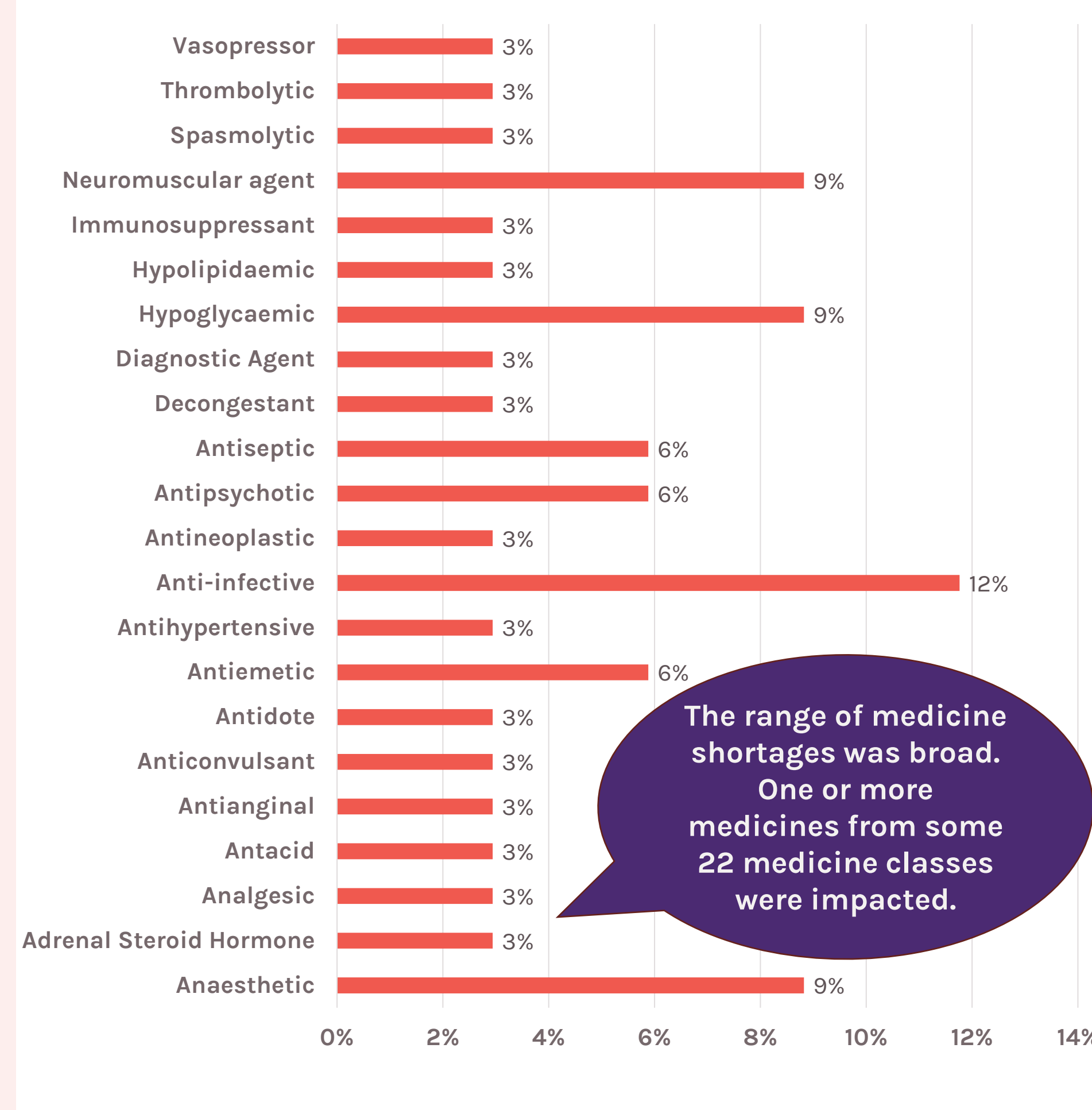


Table 1: Medicine shortage/discontinuation interventions (n=34 medicines)

Management intervention	Number (%)
Alternative product purchased (e.g. brand, strength, medicine)	15 (44.1)
Switched to or investigated Section 19a medicine	8 (23.5)
Restricted medicine to selected patients	5 (14.7)
Limited quantity dispensed for each patient	5 (14.7)
Referred patient back to their prescriber for review	4 (11.7)
Switched to Special Access Scheme (SAS) medicine	3 (8.8)
Increased the quantity purchased while medicine still available	3 (8.8)
Quarantined stock managed by Quality Use of Medicines team	2 (5.9)
Removed stock from low usage areas of the hospital	2 (5.9)
No alternative identified for some or all indications	2 (5.9)

Discussion

This study highlights strategies that can be implemented at the level of the local healthcare organisation to safely manage complex and often rapidly evolving medicine shortages and discontinuations.

Having a multidisciplinary team systematically managing these shortages enables expertise in supply chains, finances, therapeutics and medicine safety to be shared, to ensure safe and effective patient care. A team-based approach may also help to reduce time and financial burdens associated with these shortages and discontinuations.

Identification of shortages is often more accurately determined locally using established relationships with external stakeholders, rather than relying on sponsor or government channels and publications.

Considerable work is still required to bring consistency amongst reporting systems to provide timely and accurate advice to healthcare organisations.

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