

Medicines shortages in Australian hospitals and their impact on pharmacy practice

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BACKGROUND

The International Pharmaceutical Federation defines a medicine shortage as 'a drug supply issue requiring a change. It impacts patient care and requires the use of an alternative agent.'

While vancomycin and metronidazole shortages were reported in the news media in late 2016, SHPA members advise that medicines shortages are far broader and more frequent than reported publicly.

Hospital pharmacists are increasingly spending large amounts of time contacting multiple suppliers in order to pay a higher price for a delayed delivery of key medicines. This directly impacts patient care by diverting precious staff time and reducing pharmacists' capacity to provide clinical services, creating a need to prioritise prescribing of key antimicrobial medicines for patients, and impacting hospital medicine budgets.

In Australia, notification of shortages is voluntary, and anecdotal evidence indicates information provision from manufacturers and wholesalers is poor. To assess supply notifications and measure the impact of shortages, SHPA has undertaken a prevalence study of medicine shortages as experienced in Australian pharmacy departments.

METHOD

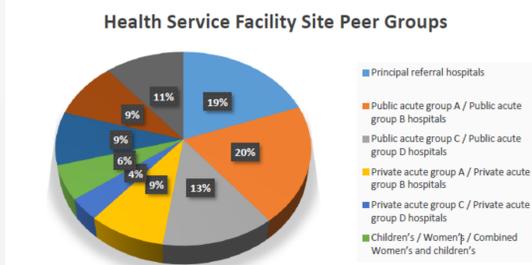
SHPA undertook an online point of prevalence survey of medicine shortages experienced by members in hospitals on Tuesday 4 April 2017. The Directors of Pharmacy at all Australian hospital pharmacy departments were invited to complete a survey and state which medicines were unavailable for ordering on that day, and how it affected the care they provided for patients.

Respondents were asked how they were notified of the shortage, their action in response to the shortage, any cost or patient impact, and any timeframe given for when the product would be available. SHPA downloaded data from the Therapeutic Goods Administration (TGA)'s Medicines Shortages Initiative website on 4 April in order to compare publicly reported shortages to shortages recorded in the survey.

RESULTS

- On 4 April 2017, 1,577 entries of medicine shortages were recorded, comprising 365 different commercial products across 154 different active ingredients across approximately 280 healthcare providers.
- This included public (72.9%), private (17.8%) and not-for-profit (9.3%) health service facilities and generally proportional geographic spread across Australia with one third of respondents in non-metropolitan areas.

Chart 1. Health services by peer group



- 100% of respondents said they had experienced a medicine shortage in the preceding 12 months.
- 95% of respondents recorded at least one medicine shortage on 4 April 2017.
- Across the 1,577 reported shortages, antimicrobials accounted for almost 40% of all shortages, and accounted for half of the top 10 medicines reported as in shortage on 4 April 2017.

Table 1. List of Top 10 Medicines

Top 10 Medicines in shortage on 4 April 2017	
1. Vancomycin	6. Fentanyl
2. Metronidazole	7. Aciclovir
3. Norfloxacin	8. Dantrolene
4. Remifentanyl	9. Tranexamic acid
5. Glycerol trinitrate	10. Azithromycin

Table 2. Most frequently reported medicine groups

Medicine class	Frequency	Medicine class	Frequency
Antimicrobials	39.63%	Vaccine	4.06%
Anaesthesia/Analgesia	13.76%	Blood disorders	3.55%
Neurology	8.18%	Anti-inflammatory	3.04%
Endocrine	7.36%	Psychotropics	2.85%
Cardiology	7.10%	Gastrointestinal	2.09%
Chemotherapy	4.44%	Antiemetics	1.33%

Chart 2. For the medicine shortage you reported, what action did you take as a result?

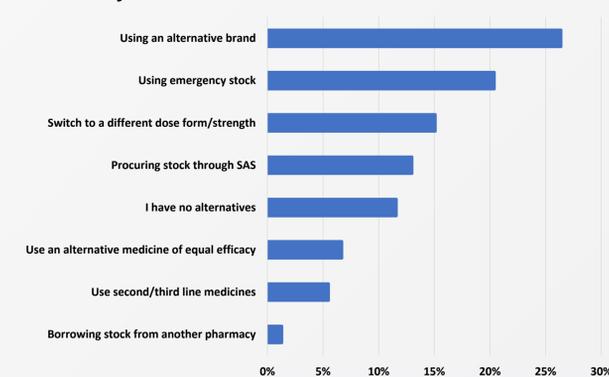


Chart 3. Did your action lead to increased costs?

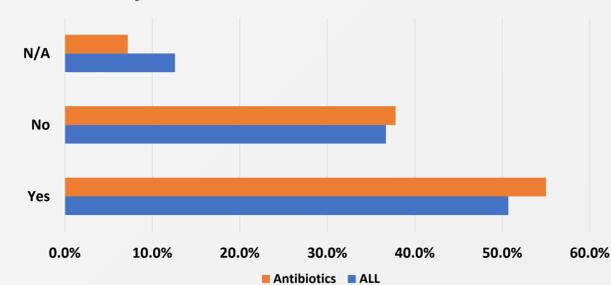


Chart 4. According to information provided, when will the medicine next be available?

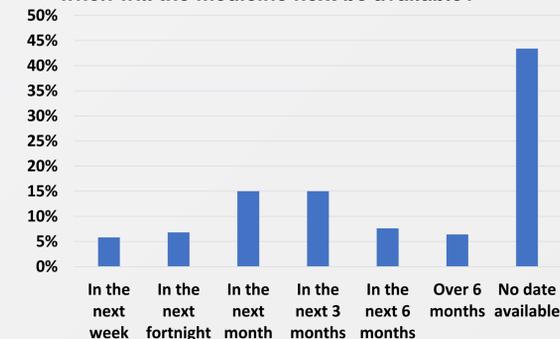
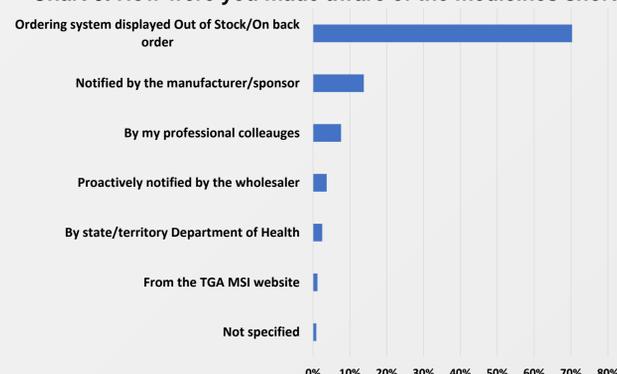


Chart 5. How were you made aware of the medicines shortage?



DISCUSSION

In light of the data collected, it appears medicine shortages remain a substantial problem for public and private hospitals across Australia with significant implications for patient care, staff resourcing and expenditure. The lack of accurate information available regarding medicine shortages exacerbates the problems inherent in the complex supply chain of a vital product. Retrospective notifications does not allow for health service facilities, in particular prescribers and pharmacists, to proactively plan for disruptions and provide optimal patient care.

The results collected highlight a number of specific concerns:

Significant impact on clinical care

More than 32% of the actions taken in response to medicines shortages have a direct impact on patient care. Using a less efficacious medicine means taking more time to treat the same condition, thus potentially increasing the length of a hospital admission and subsequent cost. Using less efficacious medicines may also mean exposing patients to medicines with more adverse effects which will also incur extra costs to monitor and treat. A key principle of medicines safety is to always use the least invasive route of administration, as the invasive nature of injectable medicines carry a further risk of serious infection.

Common use of the Special Access Scheme

Ordering through a specific scheme presents a significant burden of administration for hospital staff including returning to the prescribing doctor for authorisation and completing the TGA form. Medicines that are not registered in Australia often have labelling and packaging that do not comply to Australian standards, do not feature English, or do not have Product Information or Consumer Medicines Information documents. This presents challenges for pharmacists, nursing staff and consumers in pursuit of optimal medication safety and quality use of medicines.

Unreliability of notifications

The survey results show hospital pharmacies were made aware of 70% of medicines shortages only when they attempted to order the medicine using their electronic ordering system. This notification is too late to allow efficient medicine management. Minimal information was also provided by suppliers on hospital ordering systems regarding when medicines would again be available.

The government-supported mechanism for notification is the TGA's Medicine Shortage Initiative (MSI) website which relies on voluntary notification from suppliers, and sometimes pharmacists. Of the 365 different medicine products reported as unavailable in SHPA's survey, **only 54 (14.8%) were listed on the TGA MSI website on the date of the survey.** Not only were many medicines shortages not reported on the website, but the data that was published was not current or accurate in many cases.

CONCLUSION & NEXT STEPS

The data collected in this survey indicates that medicines shortages are a frequent occurrence in Australian hospitals. They can have a detrimental clinical impact to patients, as well as absorbing considerable pharmacy staff time and budgets to deal with shortages to minimise impact on patient care.

It has also demonstrated that the federal government's mechanism of voluntary reporting of medicines shortages is inadequate and unrepresentative of shortages experienced at the coal face.

Since the survey, SHPA has undertaken significant advocacy activities with senior representatives from the Department of Health, the Therapeutic Goods Administration, Medicines Australia, Generic Medicines and Biosimilars Association, medical stakeholders and pharmacy stakeholders, and has resulted in the TGA to establish a working party to reform how medicine shortages are handled and communicated to Australian healthcare practitioners and the Australian patients, which SHPA will be deeply involved in.