MEDICINE SHORTAGES IN PHARMACY

A snapshot of shortages in Australia

August 2022

The Pharmacy Guild of Australia

shpa

Pharmaceutical Society of Australia

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Executive Summary

A profession-wide survey to investigate the impact of medicine shortages on patients and pharmacists' views on medicine shortages, was conducted by the Pharmaceutical Society of Australia (PSA), the Pharmacy Guild of Australia (the 'Guild') and the Society of Hospital Pharmacists of Australia (SHPA).

A high response rate and consensus among respondents to the *2021 Medicine shortages in Pharmacy* survey indicated significant problems continue to exist with medicine shortages, impacting on pharmacists across both the hospital and community sectors, and importantly, their patients.

It is accepted that causes of medicine shortages are multifactorial and often stem from global supply chain issues. However, despite regulatory reform activities in recent years to address or alleviate significant medicine shortage issues in Australia, the pharmacy profession has reported many areas of concern and ongoing negative impact on patient care and unnecessary burden on the professional practice of pharmacists.

Pharmacists and non-pharmacist staff in hospital pharmacy departments and community pharmacies are spending significant additional hours in managing shortages, often having to consider numerous options, in order to minimise the impact on patients' access to medicines and their health. The use of human resources in this manner on a regular basis is unacceptable and unsustainable, especially alongside ongoing public health crises.

Medicines that pharmacists reported had been most frequently in shortage in hospital pharmacy departments included propofol, suxamethonium and ranitidine. Propofol and suxamethonium are critical medicines required to maintain patients on ventilation and were subject to increased global demand due to the COVID-19 pandemic. For community pharmacies, sertraline, angiotensin II receptor blockers (candesartan, olmesartan and irbesartan) and hormone replacement therapies were the most prevalent shortages; these are important medicines to treat chronic conditions such as hypertension, heart failure, menopause, osteoporosis and depression.

Pharmacists felt that better management through policy makers and the therapeutic goods regulator was possible and that communication between all parties including wholesalers could further assist in managing medicine shortages. Timely, regular and consistent information about particular medicine shortages is critical to enable pharmacists to consider alternatives and to inform patients and prescribers with greater certainty. Pharmacists also suggested that some of the ongoing shortage issues could potentially be improved through further review and consideration of sponsor reporting requirements on medicine shortages.

The Medicine Shortages Information Initiative (MSII) website developed by the Therapeutic Goods Administration (TGA) provides a central database of medicine shortage information and supportive management actions. While the use of this resource has increased over the past two years, pharmacist reports indicate there is still suboptimal awareness. Importantly, pharmacists found that often, there was lack of alignment of shortage information between the website and wholesaler ordering portal information. This contributed to increased workload for pharmacists as well as lack of confidence in, and relevance of, the medicine shortage reports database.

This report presents the outcomes of the *2021 Medicine shortages in Pharmacy* survey and recommendations around management and coordination of medicine shortages and availability of information for pharmacists. Improvements in these areas are needed to help minimise the negative impacts of medicine shortages on patients' health and professional practice of pharmacists.

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Recommendations

1. **The Therapeutic Goods Administration's medicine shortage reports database should accurately reflect the availability of medicines that can be purchased through wholesaler ordering portals.**

2. **The Australian Government should engage and partner with key pharmacy organisations in a proactive and timely fashion to improve the management and coordination of medicine shortages.**

3. **Manufacturers/sponsors of medicines should improve the accuracy, timeliness and consistency of information being communicated to pharmacists, prescribers and patients on issues relating to medicine shortages.**

MEDICINE SHORTAGES IN PHARMACY

Discussion of the results of the medicine shortages in pharmacy survey 2021

Background

Major shortages of frequently used and/or essential medicines in Australia continue to be a source of significant concern and uncertainty for many patients, community pharmacists, hospital pharmacy departments and prescribers.

While SHPA's report – *Medicine shortages in Australia: A snapshot of shortages in Australian hospitals*[1] – released in April 2017 brought the issue of medicine shortages to national attention and prompted regulatory reform in 2019, pharmacists have reported no improvement in the prevalence of medicine shortages, management and coordination by government, timely communication of shortages, and negative impacts on patient care.

In response to the release of SHPA's report, the TGA revived the Medicine Shortages Working Party, expanding it to include additional stakeholders, and conducted a consultation on the management and communication of medicine shortages. Mandatory reporting of medicine shortages by pharmaceutical companies came into effect from 1 January 2019.

In 2021, the three pharmacy organisations – PSA, the Guild and SHPA – formed a consortium and launched the *Medicine shortages in Pharmacy* survey to investigate the prevalence of medicine shortages, their impacts on pharmacy practice and patient care, and to evaluate awareness of the new medicine shortages reforms. The survey results formulate the basis of this report and highlight gaps in Australia's response to medicine shortages across both primary and acute care to date.

Methodology

The online *2021 Medicine shortages in Pharmacy* survey was developed using a commercial survey tool (*SurveyMonkey*) with input from all three organisations and launched on Sunday 18 April 2021.

To maximise reach and efficiency, all three organisations disseminated the survey through their respective channels. The survey was disseminated to all SHPA members via the weekly member e-newsletter inviting them to complete the survey (Appendix A). PSA members were invited to complete the survey through several communication pieces during the first week after the survey was launched and reminder messages during the last week of the survey. These included the National President's fortnightly update, a member e-newsletter (Appendix A), messages through PSA state and territory branches, as well as social media such as PSA's Early Career Pharmacists Facebook page. The Guild circulated the survey to its membership directly through an email alert (Appendix A), as well as communication through social media and state and territory branch bulletins.

One response per hospital site/campus or community pharmacy was requested. All participation was voluntary and anonymous.

Participants had until midnight Sunday 2 May 2021 to complete the online survey which comprised of a total of 22 questions (Appendix B and Appendix C). Respondents were asked a range of cross-sector questions as well as hospital- or community-specific questions. Free text comments on the impact of medicine shortages were also recorded.

Responses were compiled and analysed using Microsoft Excel. Data were considered in the context of impact on patient care, health professionals and the broader health system.

Key results

Two hundred and thirty (230) responses were gathered from pharmacists across both sectors – hospital (58 pharmacies or 25% of respondents) and community (172 pharmacies or 75% of respondents) (Appendix B Chart 1). Sixty-two per cent of respondents practised in metropolitan locations (Appendix B Chart 2).

Key findings

- Over 98% of respondents said they had experienced a medicine shortage in the preceding seven days (Appendix B: Chart 3).

- Pharmacists reported an average of 30 medicine shortages of prescription medicine items over the preceding seven days, with some reporting up to 600 (Appendix B Chart 3).

- Pharmacists reported that an average of five hours of pharmacist time and four and a half hours of non-pharmacist staff time per week were spent in investigating and addressing medicine shortage issues (Appendix B Chart 4).

- Across all respondents, sertraline, hormone replacement therapies, angiotensin II receptor blockers, carbimazole and metformin were identified as the medicine shortages that caused the most negative impact and disruption to quality and timely patient care over the preceding 12 months (Appendix C).

- Of the 136 medicines identified to be in shortage in the preceding 12 months, 71% were reported on the TGA's Medicine Shortages Information Initiative (MSII) website[2] (now referred to as the medicine shortage reports database) at the relevant time (Appendix C).

A total of 86% of respondents indicated a lack of improvement in the prevalence of medicine shortages over the past 12 months, 89% reported a lack of improvement in the management and coordination by government, 89% reported a lack of improvement in the negative impacts on patient care, and 83% reported a lack of improvement in the information about medicine shortages being communicated to pharmacy in a timely manner (Appendix B Chart 5).

Discussion

Medicines are the most common intervention in health care. Medicine use is increasing due to an ageing population, technological advances in pharmaceuticals and therapeutics, and evolving clinical practice. With access to a universal healthcare system, Australians also expect they can access essential medicines in a timely manner, particularly through the efficient and cost-effective framework of the Pharmaceutical Benefits Scheme.

As custodians of medicines and other therapeutic goods, pharmacists have a responsibility to respond to issues in continuity of care. This includes managing procurement of alternative medicines where stock shortages or other supply issues exist. Patients and prescribers rely on pharmacists to be able to provide accurate firsthand information on the status of availability and, if necessary, alternative supplies and options.

Medicine shortages are a regular event that pharmacists encounter and generally are able to be resolved in a timely manner, although they may cause inconvenience and result in delayed supply. However, pharmacists are increasingly seeing shortages have a negative impact on the patient's health due to extended periods of shortage or irregular patterns of supply availability. These situations are further compounded when an equivalent alternative medicine is not readily available, or its supplies have also been exhausted; these scenarios have been experienced frequently by pharmacists.

In light of the data collected, it is clear that medicine shortages remain a substantial problem for pharmacists across Australia with significant implications for patient care, staff resourcing and expenditure.

The SHPA 2017 report on medicines shortages in Australia identified only 15% of reported shortages appeared on the MSII website. Since the regulatory reforms from 1 January 2019 to make reporting of shortages mandatory, an analysis of shortages reported by respondents in this survey demonstrated 71% were reported on the MSII website which represents a significant improvement in the accuracy of the MSII.

Whilst the pharmacy sector appreciates the improved awareness and reporting of shortages, this does not mitigate the burden experienced by pharmacists and more importantly, the impact on patient care. This experience was reported consistently by pharmacists across the hospital and community sectors.

As outlined in more detail below, the degree or level of impact that ongoing medicine shortages have on patients, pharmacists and prescribers can be significant. They warrant several approaches to minimise the negative health impacts and additional burden on professional practice. Some are relatively straightforward actions that can be implemented, for example, facilitating better communication between manufacturers/sponsors, the TGA and pharmacists, and improving the quality and consistency of medicine shortage information that is disseminated.
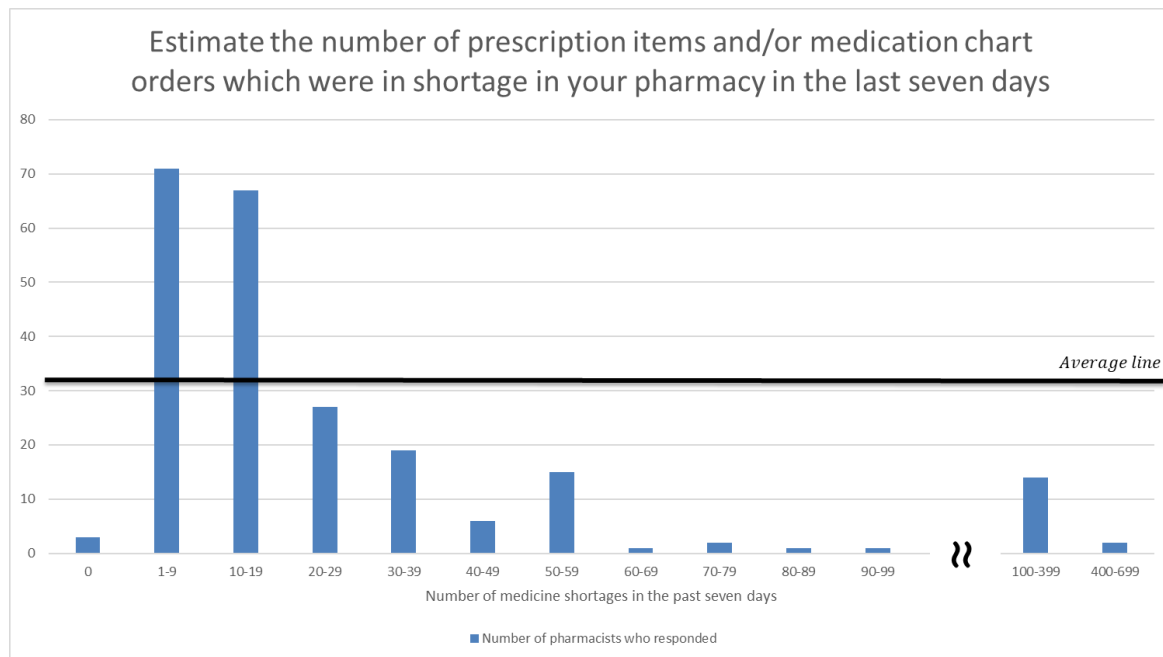
Dealing with a medicine shortage means there is already additional impost on the pharmacist. It is extremely frustrating and time-consuming, therefore, if the pharmacist then encounters inconsistent information regarding stock availability between the medicine shortage reports database[3] and their regular wholesaler ordering portal. Pharmacists experience these anomalies frequently, which are unacceptable.

It is accepted that medicine shortages cannot be eliminated completely. However, in the interests of timely supply of medicines, continuity of patient care and seamless delivery of health care, pharmacists believe efficient and innovative ways to minimise or address shortages must be developed. Early identification and notification of medicine shortages are fundamental to ensuring a resilient and responsive healthcare system, particularly as more medicines are expected to become available over the next decades. The pharmacy organisations are aware of overseas examples of proactive potential shortage reporting mechanisms that could initially be considered.

Impact on patient care

Medications are a significant treatment modality and the most common healthcare intervention, with more than 9 million Australians taking a prescribed medicine every day.[4] Figure 1 shows an average of 30 medicine shortages of prescription medicine items reported by pharmacists in a given week, across both hospital and community settings, which has significant ramifications for patient care. It is further concerning that 86% of respondents indicated a lack of improvement in the prevalence of medicine shortages over the past 12 months (Appendix B Chart 5).
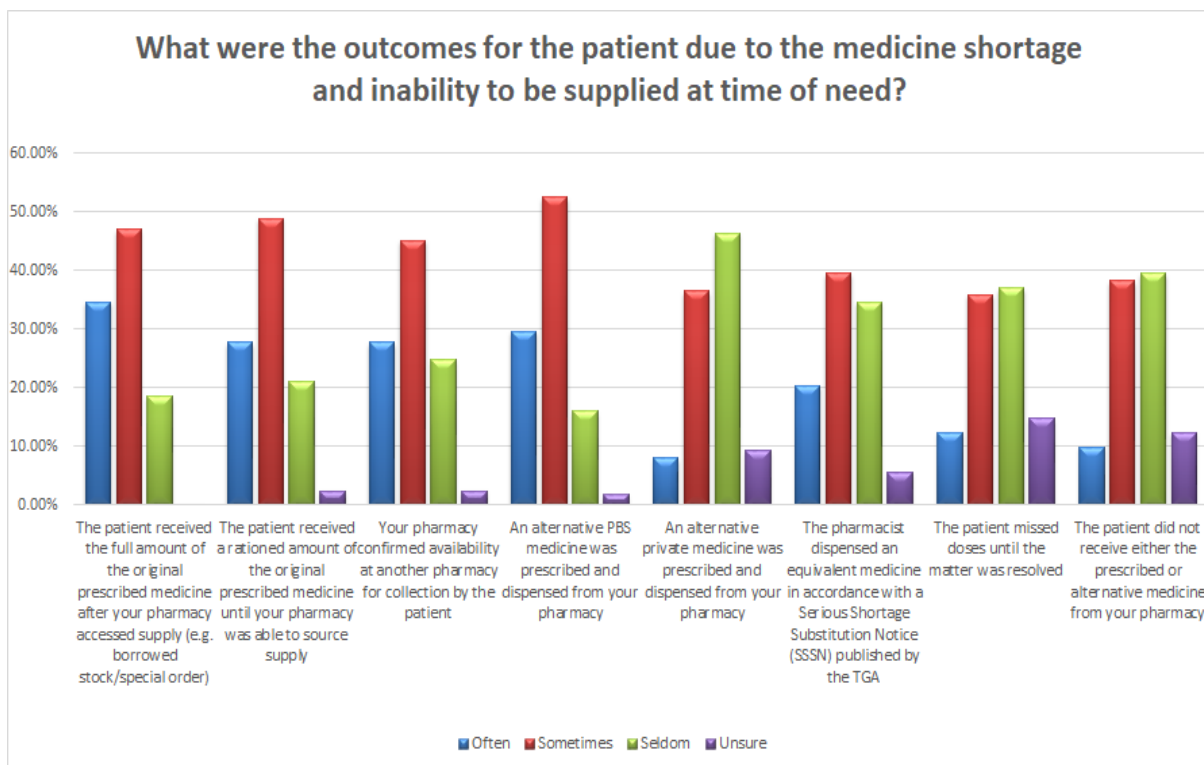
Figure 1 (Appendix B Chart 3)

Estimate the number of prescription items and/or medication chart orders which were in shortage in your pharmacy in the last seven days

In the community

Medicine shortages can have a significant impact on patient health outcomes since patients prescribed medicines that are in shortage may be forced to miss doses until the issue can be resolved. Respondents indicated that medicine shortages often (40%) take more than 48 hours to resolve (Appendix B Chart 6), and as shown in Figure 2, 48% of community pharmacy respondents claimed that patients often/sometimes missed doses until then. In many cases, that is a considerable period of time that can lead to negative patient health outcomes, including hospitalisation.

Figure 2 (Appendix B Chart 13)

What were the outcomes for the patient due to the medicine shortage and inability to be supplied at time of need?
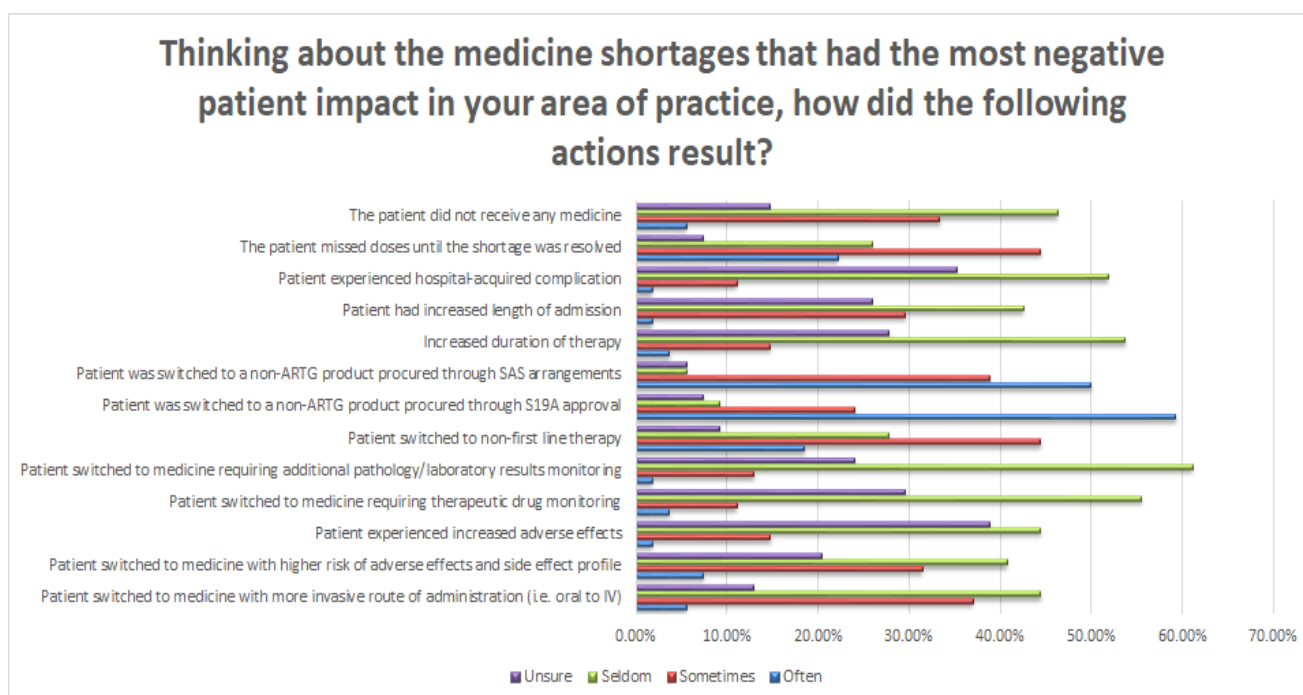
In the hospital

Figure 3 below shows that 63% of hospital pharmacists who responded to the survey noted that patients prescribed medicines that were unavailable due to shortages were often or sometimes switched to non-first line therapies. Medicine shortages are therefore resulting in patients being treated with suboptimal therapies that may impact on their recovery time and health outcomes.

Figure 3 also shows that 43% of hospital pharmacy respondents indicated patients were often/sometimes switched to medicines requiring more invasive routes of administration, for example an intravenous injection instead of an oral tablet. Additionally, 39% of hospital pharmacy respondents claimed patients were often/sometimes switched to medicines with higher risk of adverse effects and side effect profiles, once again increasing the risk of negatively impacting patient health outcomes, potentially increasing their length of stay in hospital, requiring further medical care upon discharge, or even resulting in a hospital readmission (Figure 3).

Figure 3 (Appendix B Chart 19)

Thinking about the medicine shortages that had the most negative patient impact in your area of practice, how did the following actions result?
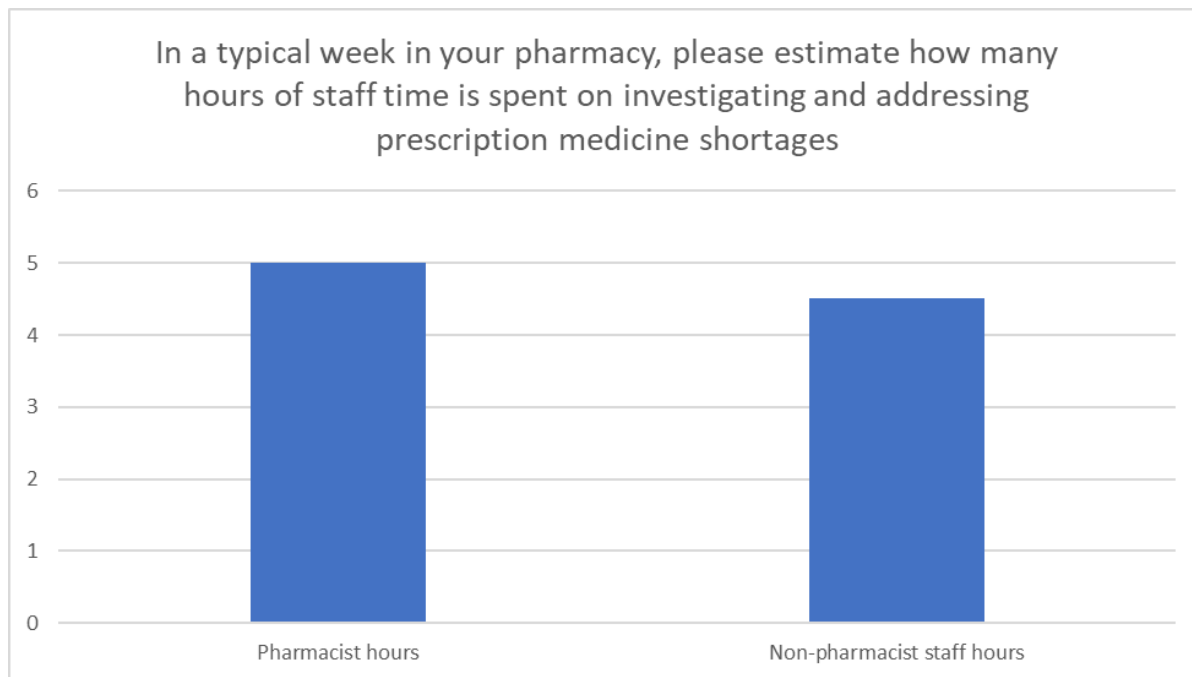
Impact on health professionals

Pharmacists are medication experts and are integral in leading and facilitating the safe and high-quality use of medicines wherever and whenever they are used, to prevent inappropriate medicines use resulting in medication-related harm. The supply of medicines is only one of the multiple clinical and non-clinical tasks pharmacists undertake on a daily basis to ensure safe use of all medicines.

Staff resourcing

Figure 4 shows that the significant volume of medicine shortages experienced by both hospital and community pharmacists exhausts an average of five hours of pharmacist time and four and a half hours of non-pharmacist staff time per week in investigating and addressing these issues, often requiring significant workarounds. This is time taken from delivering clinical and professional pharmacy services and providing direct patient care. Pharmacists indicated that medicine shortages are rarely resolved in a timely fashion (i.e. only 13% of the time) and often take more than 48 hours to solve (Appendix B Chart 6).

Figure 4 (Appendix B Chart 4)

In a typical week in your pharmacy, please estimate how many hours of staff time is spent on investigating and addressing prescription medicine shortages

Usability of TGA's MSII

Eighty-six percent of respondents indicated a lack of improvement in the management and coordination of medicine shortages by government over the past 12 months (Appendix B Chart 5). Whilst the majority of respondents (75%) were aware of the TGA's MSII website (Appendix B Chart 9), Figure 5 shows that only 24% indicated that they refer to it for information on medicine shortages. Instead, 76% of respondents indicated that information displayed in their wholesaler online ordering portal was the most common source of locating information on prescription medicine shortages (Figure 5).

Figure 5 (Appendix B Chart 8)
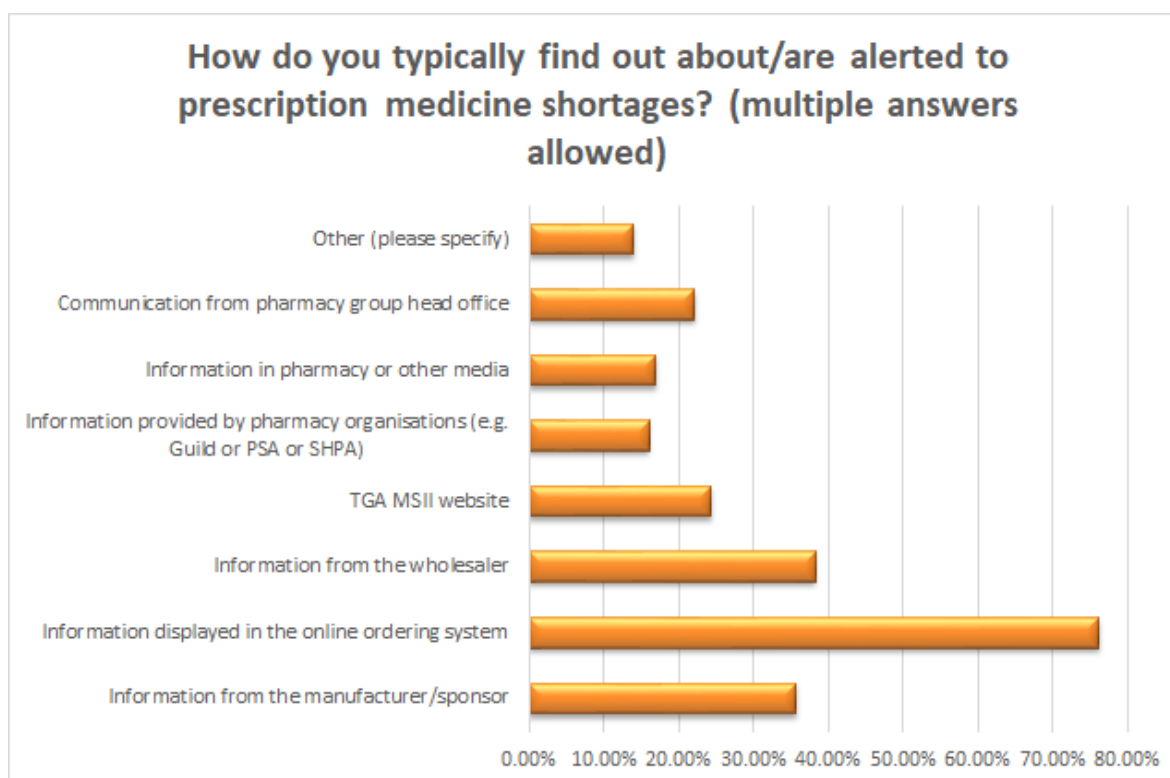
Discrepancies and misalignment of information presented on the TGA's MSII website compared with wholesaler ordering portals have led to the tool not being a useful source of information. Medicines appear to no longer be in shortage on the MSII website when the manufacturers/sponsors indicate that the shortage has been resolved however, this does not often correlate with wholesaler stock levels and a pharmacy or pharmacy department's ability to purchase stock. Pharmacists therefore find it more useful to use their wholesaler online ordering portals as an accurate source of information on medicine shortages.

Use of SAS and S19A medicines

Figure 3 above shows a large percentage of hospital pharmacy respondents (50% and 59%) claimed that medicine shortages that had the most negative impact on patients in hospital were often managed by switching the patient to a non-Australian Register of Therapeutic Goods (ARTG) product procured through Special Access Scheme (SAS) arrangements or Section 19A (S19A) approval processes, respectively. Procuring medicines through SAS or S19A approvals is a timely but complex exercise that is becoming increasingly common as medicine shortages in hospitals increase. Hospital pharmacists have expressed a concern that extended medicine shortages often result in the discontinuation of particular medicines in Australia, however, clinical guidelines are not altered to reflect current therapeutic options and therefore, procurement through SAS continues to be employed.

The profession has experienced frustration and uncertainty as medicine shortages do not follow a regular pattern; some shortages may have a long duration while other medicines may 'go in and out' of shortage with no clear resolution timeframe. Improved management and coordination by government, and better alignment of information displayed on the TGA's MSII website with availability of stock through wholesalers, would support pharmacists in dealing with medicine shortages, reducing time wastage and improving patient care.

Impact on the health system

Medicine shortages often lead to negative patient health outcomes which inevitably place a strain on the health system.

Hospitalisation

A survey question posed to community pharmacists revealed that 36% of respondents reported that when a patient presents and it is necessary to contact the prescriber to discuss options for managing a medicine shortage, the prescriber is often unavailable i.e. the clinic is closed, or the prescriber's shift has ended (Appendix B Chart 14). Figure 6 shows that 12% of community pharmacist respondents referred their patients to hospital emergency departments for management of the medicine shortage. In addition, patients in the community who are forced to miss doses until a medicine shortage matter is resolved as highlighted in Figure 2, may experience negative health outcomes resulting in hospitalisation.

**Figure 6 (Appendix B Chart 12)**
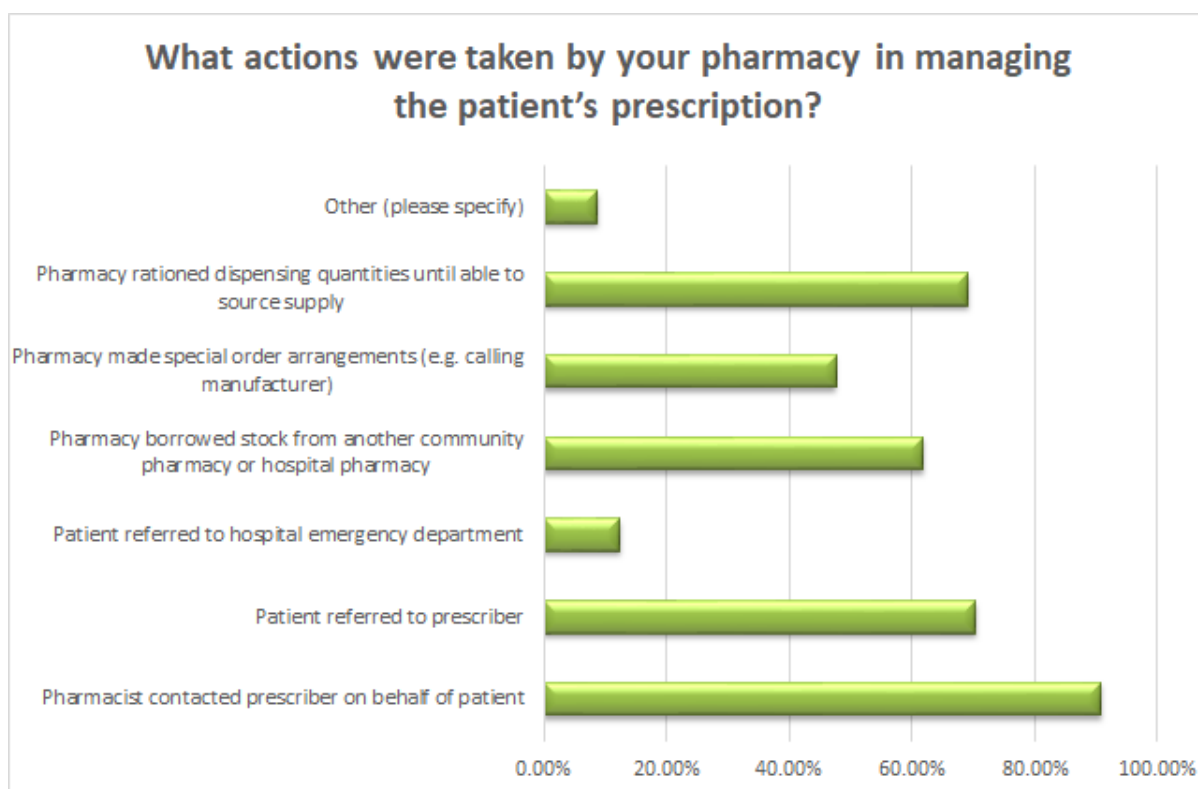
Increased length of hospital admission

Figure 3 shows results from one of the questions posed to hospital pharmacists that explores the management of medicine shortages that had the most negative impact on patients in hospital. Thirty-one percent of hospital pharmacy respondents indicated that medicine shortages had often/sometimes led to increased length of admission for patients. However, 88% of hospital pharmacy respondents claimed that some of the medicine shortages often/sometimes resulted in patients missing doses until the shortage was resolved, 39% noted patients often/sometimes did not receive any medicine due to the shortage, 39% indicated that patients were switched to a medicine with a higher risk of adverse effects and side effects profile, and 17% experienced increased adverse effects (Figure 3). These impacts of medicine shortages on patients who are acutely unwell in hospital, certainly have the potential to further increase length of stay or result in readmission post hospital discharge.

Figure 7 shows 52% of hospital pharmacy respondents reported that medicine shortages often/sometimes disrupt bed flow management, discharge processes and transitions of care. Whilst negatively impacting on patient care during these high-risk discharges and transitions of care, disruptions to bed flow also result in additional pressure on the resources of an already overstretched hspital system.

Figure 7 (Appendix B Chart 16)
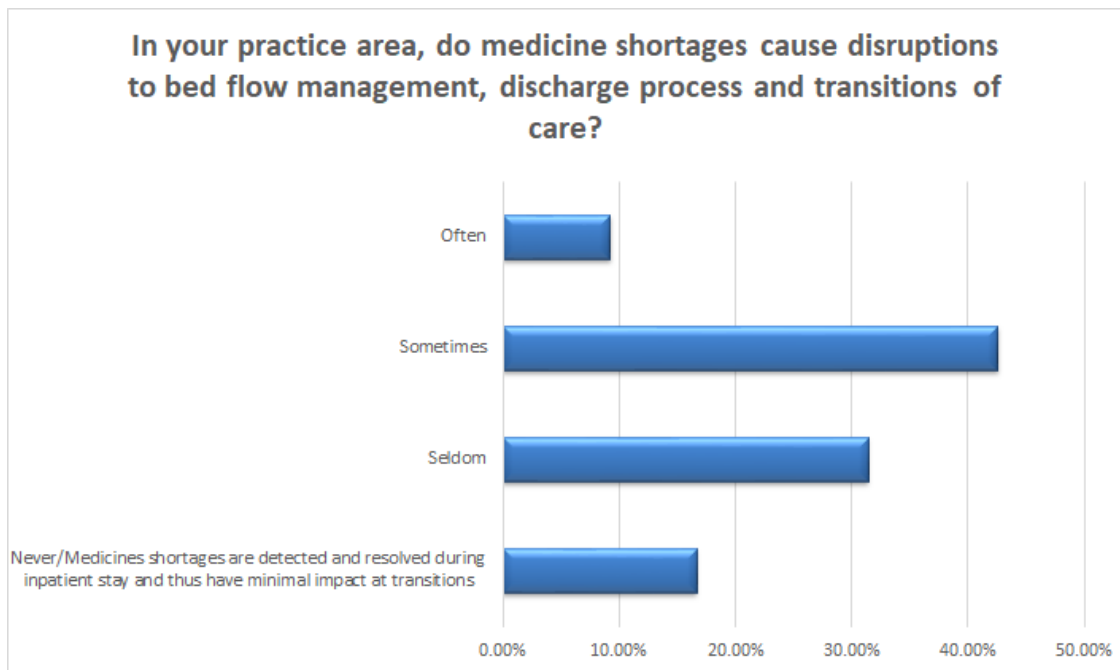
Conclusion

It is clear that medicine shortages continue to be problematic for pharmacists and carry a great deal of potential for adverse patient outcomes. Pharmacists responding to the survey indicated that a considerable amount of time is being spent by staff to manage supply issues and ensure continuity of therapy to minimise the impact on their patients. The current strategies employed by the government to support the industry in dealing with medicine shortages are not having adequate impact and there remains a need for further review.

Pharmacists rated improved communications by manufacturers/sponsors to pharmacists, prescribers and patients as the highest priority to improve issues relating to medicine shortages (Appendix B Chart 7). They also rated more stringent medicine shortage reporting requirements for medicine manufacturers/sponsors as a high priority to improve medicine shortage issues (Appendix B Chart 7). It is apparent that recent reforms have not had the desired effect and that more accurate and timely communication and updates on supply availability to prescribers, pharmacists and patients are required. There appears to be a level of frustration amongst pharmacists with the discrepancies in the information available, particularly when it is not reflective of what they are actually able to order through wholesaler portals. Having accurate and up-to-date information on medicine availability, expected stock return dates and supply arrangements is critical to inform how a patient's therapy is to be managed.

It is the opinion of the PSA, SHPA and the Guild that the recommendations made, based on information gathered from respondents to the survey, would address a number of concerns around medicine shortages and would assist in minimising the impact supply issues have on patients. While medicine shortages are often unavoidable and have a range of causes, it is important that effective strategies are in place to reduce the risk of an adverse event for patients and ensure therapy is uninterrupted. The information gathered through the survey has made it apparent that there continues to be problems with how medicine shortages are managed and that further reforms are required to alleviate the stress placed on pharmacists, prescribers and patients.

References

1. The Society of Hospital Pharmacists of Australia 2017. Medicine shortages in Australia: A snapshot of shortages in Australian hospitals. At: www.shpa.org.au/sites/default/files/uploaded-content/website-content/Submissions/medicines_shortages_in_australia.pdf

2. Therapeutic Goods Administration 2019. Medicine Shortage Information Initiative. At: https://www.tga.gov.au/hubs/medicine-shortages

3. Therapeutic Goods Administration 2021. Medicine shortage reports database. At: https://apps.tga.gov.au/prod/MSI/search/

4. NPS MedicineWise 2019. Be Medicinewise Week 2019: Why every Australian should record the medicines they are taking. At: www.nps.org.au/media/be-medicinewise-week-new-survey-findings

Appendix A: Member e-newsletter (survey invitation)

Example of an email member update issued to PSA members

Medicine shortages survey: share your experience

Dear Kay,

A profession-wide survey has been developed jointly by PSA, SHPA and the Pharmacy Guild with the aim of capturing the experience of community and hospital pharmacists on medicine shortages.

We are seeking to gain an up-to-date picture of pharmacists' experience around the prevalence of medicine shortages, the impact on pharmacy practice and patient care, and the level of awareness of TGA reforms in this space.

The responses collected will help inform our policy and advocacy work with other stakeholders to improve timely identification and robust management of medicine shortages.

Please complete the survey which is now open and can be accessed below.

Please note, we are seeking one response per community pharmacy or hospital site/campus.

The survey will remain open until **2 May 2021**. All responses will be treated confidentially and no identifying information will be collected.

Take the survey

Pharmaceutical Society of Australia
Level 1, 17 Denison Street Deakin ACT, 2600

Example of an email member update issued to Guild members

2021 Medicine Shortages in Pharmacy – Survey

The Guild has been working with other industry stakeholders as part of the TGA Medicines Shortage Working Party to address the issues caused by medicine shortages.

As part of this work, the SHPA, PSA and Guild are aiming to undertake a landscape survey on medicine shortages in Australia. The survey data will be used to inform a publicly available report on medicine shortages in Australia that will be jointly by SHPA, PSA and the Guild.

The survey will be open for the next two weeks and takes roughly ten minutes to complete. The Guild encourages members to take the opportunity to provide feedback on how medicine shortages impact their patients and their pharmacy operations.

Complete Survey

Example of an email member update issued to SHPA members

SURVEY ALERT
New medicines shortages survey opens on Monday

Building on SHPA's leading research and advocacy from 2017, the broader pharmacy profession has united behind a **new survey to capture how medicines shortages are affecting hospital and community pharmacies in Australia**, measures to mitigate their impact and the resulting negative effects on patient care.

A joint project of SHPA, the Pharmaceutical Society of Australia (PSA) and the Pharmacy Guild of Australia (the Guild), the **2021 Medicines Shortages Survey** will **open on Monday 19 April** and **close on Sunday 2 May**, with the findings informing a publicly available joint report.

One response per site/campus hospital is sought, with Clinical Team Leaders / Formulary Managers / Dispensary Managers best placed to respond to this survey.
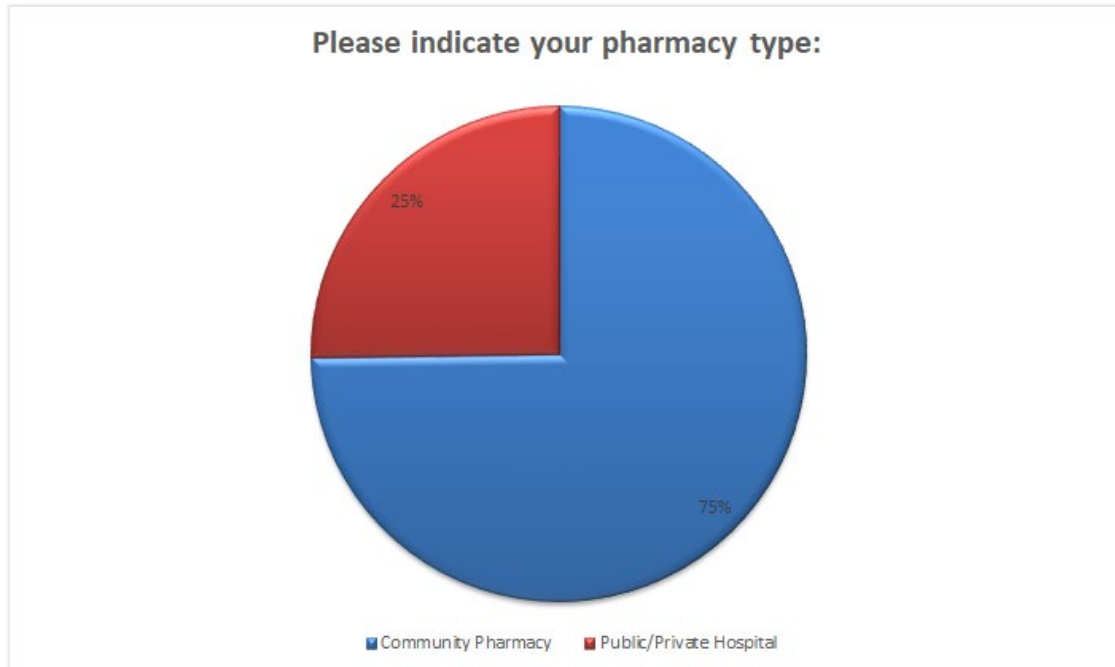
Keep an eye on SHPA's Twitter, Facebook and Linked In channels for the invitation link from Monday, with the link repeated in eNews over the survey's duration.

Appendix B: Survey results

Note: these results do *not* include the free text comments provided by survey respondents.
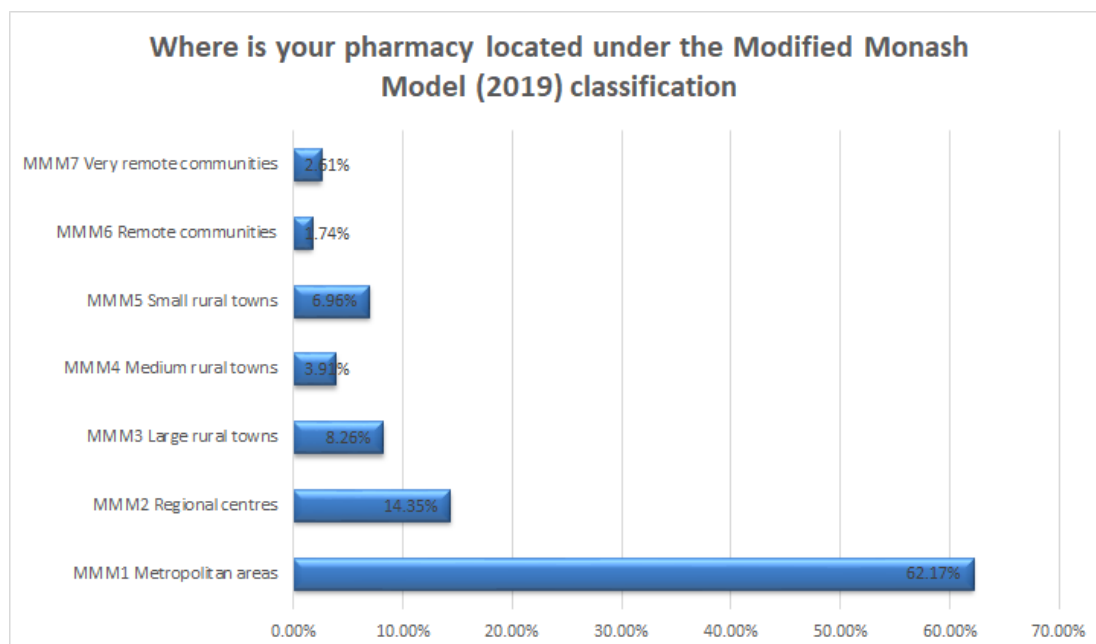
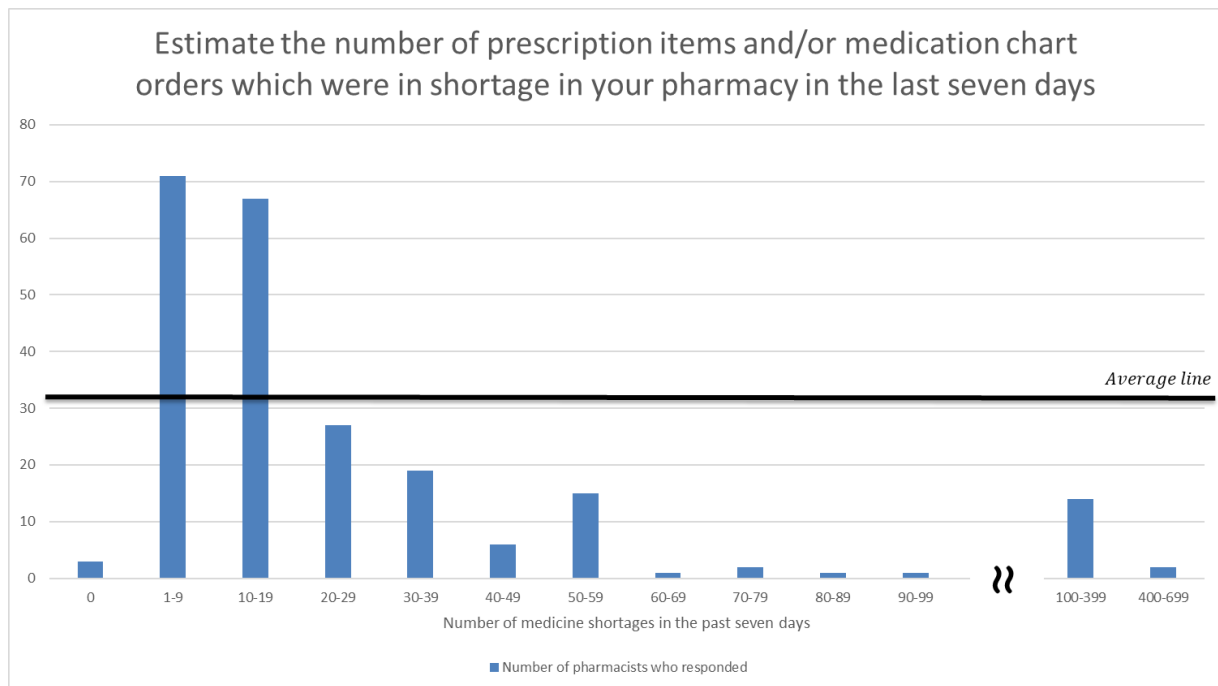*Questions for whole of profession*

Chart 1

Explanation: There were 230 respondents to the survey. 172 (75%) of the respondents to the survey work in community pharmacy settings across Australia. 58 (25%) of the respondents to the survey work in Australian hospitals, in a range of public and private metropolitan and regional/remote health services.
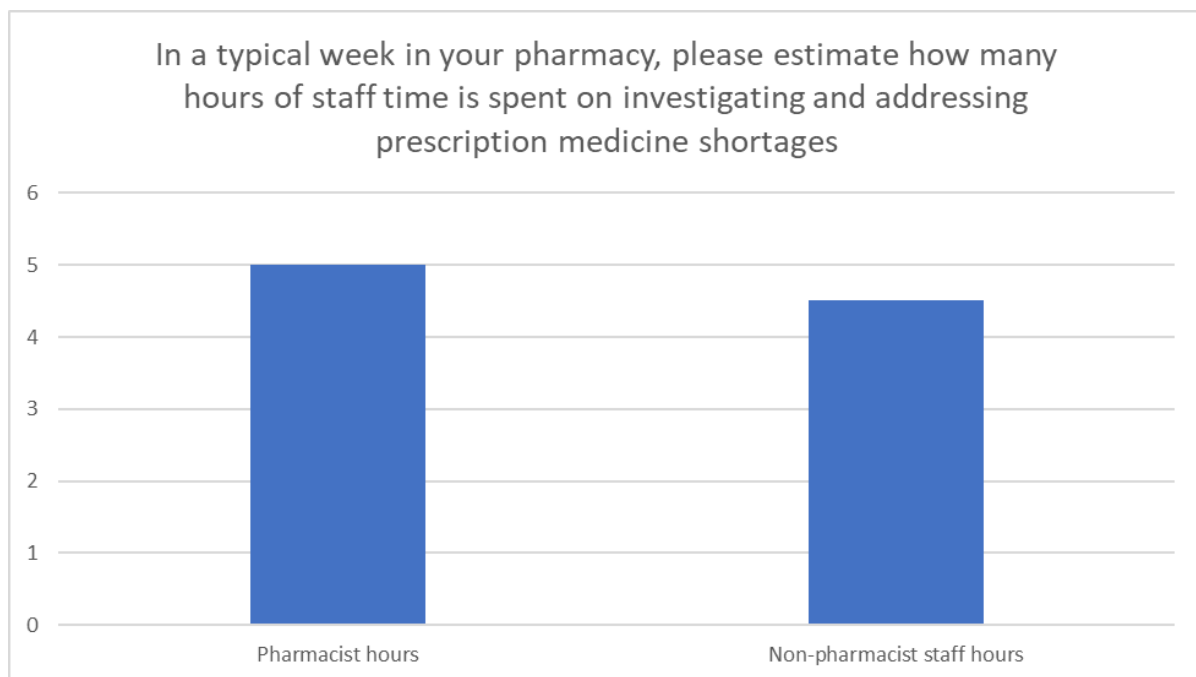
Chart 2

Explanation: According to the Modified Monash Model (MMM) 2019 classification, 62% of respondents practise in MMM1 metropolitan areas, and the remaining 38% practice in MMM 2-7 regional, rural and remote areas.

Chart 3

Estimate the number of prescription items and/or medication chart orders which were in shortage in your pharmacy in the last seven days

Number of medicine shortages in the past seven days
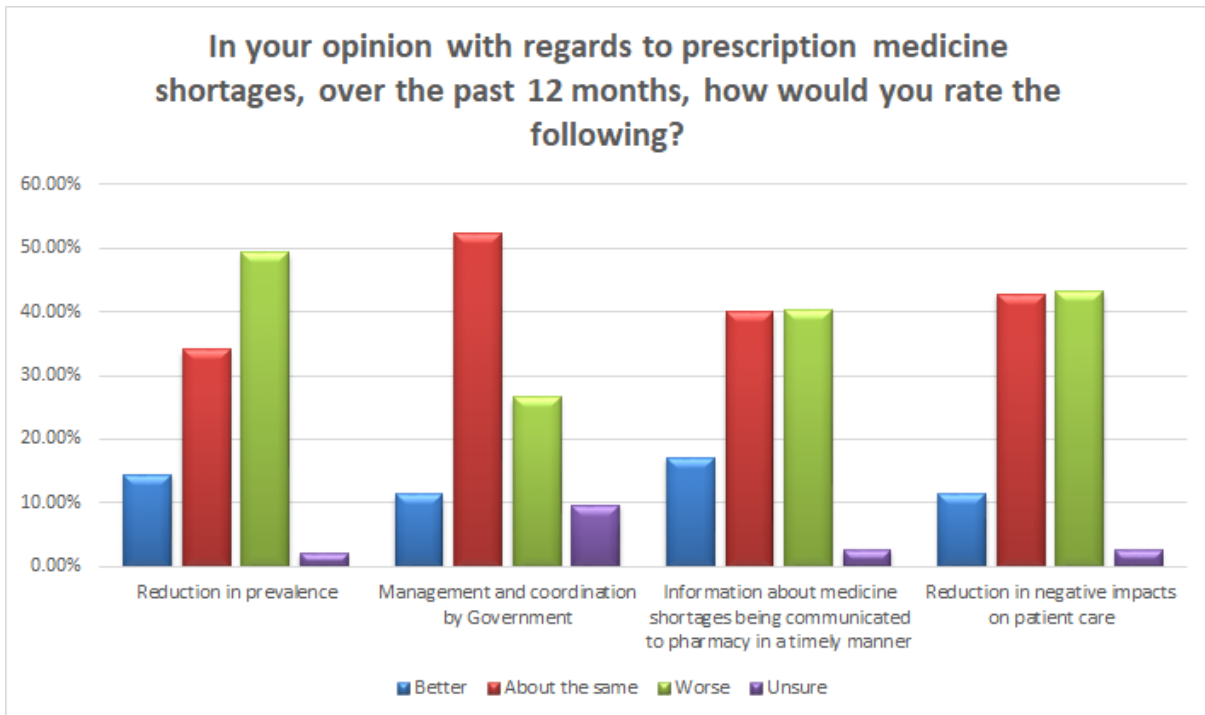
■ Number of pharmacists who responded

Explanation: An average of 30 prescription items and/or medication chart orders were reported to be in shortage in a given week. Some respondents reported up to 600 prescription items and/or medication chart orders that were in shortage.

Chart 4

In a typical week in your pharmacy, please estimate how many hours of staff time is spent on investigating and addressing prescription medicine shortages
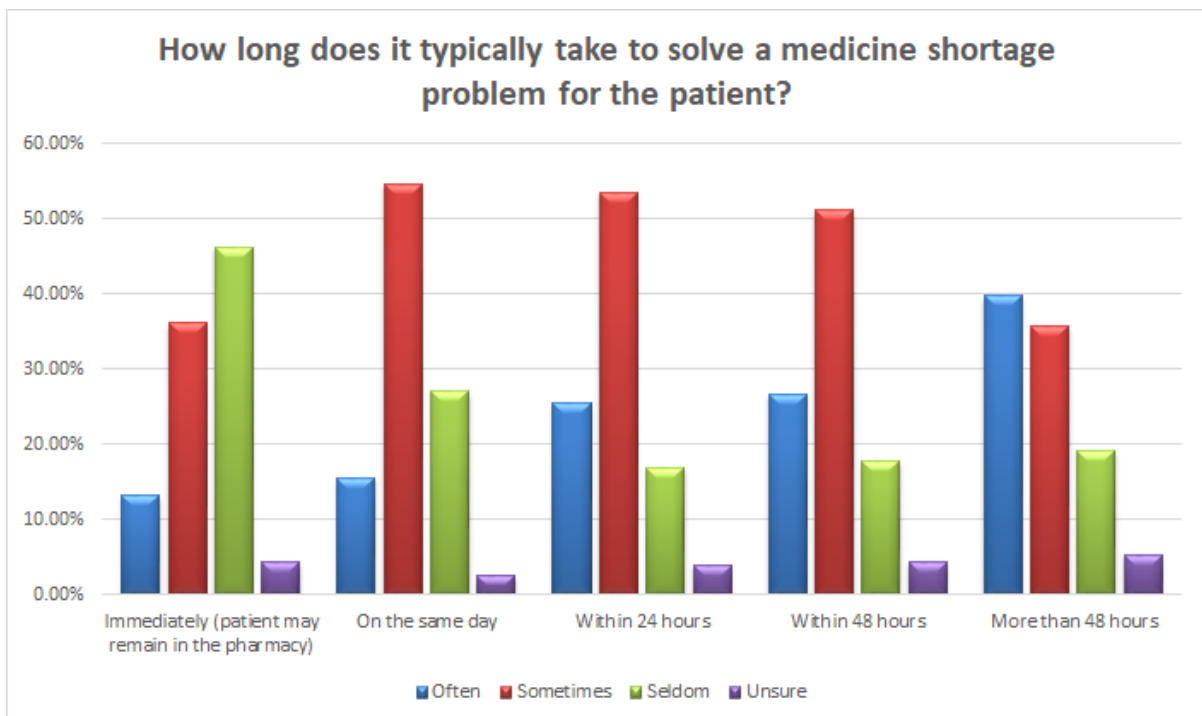
Pharmacist hours | Non-pharmacist staff hours

Explanation: The average number of pharmacist hours spent investigating and addressing prescription medicine shortages was 5 hours per week, and the average number of non-pharmacist staff hours spent addressing medicine shortages was 4.5 hours per week.
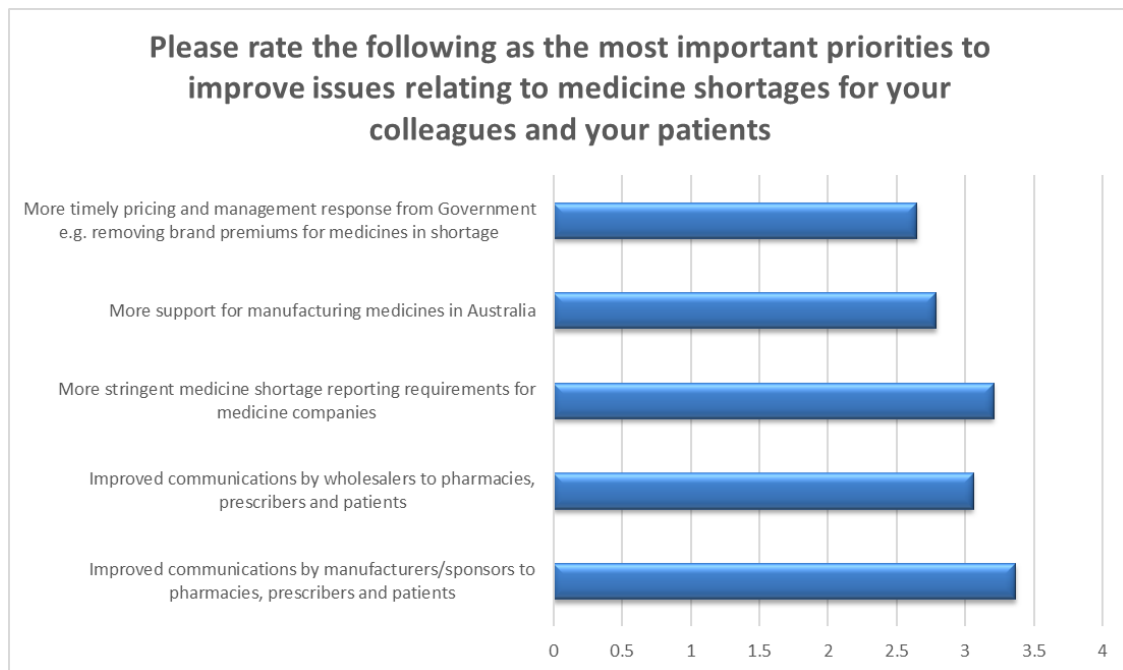
Chart 5

In your opinion with regards to prescription medicine shortages, over the past 12 months, how would you rate the following?

Legend: Better · About the same · Worse · Unsure

Explanation: The majority of respondents felt that the prevalence of medicine shortages over the past 12 months had either remained the same (34%) or worsened (49%). Over half of respondents (52%) believed that the management and coordination of medicine shortages by government had remained the same over the last 12 months. A significant number of respondents (40%) also indicated that the information about medicine shortages communicated to pharmacy had worsened over the last 12 months.

Chart 6

How long does it typically take to solve a medicine shortage problem for the patient?

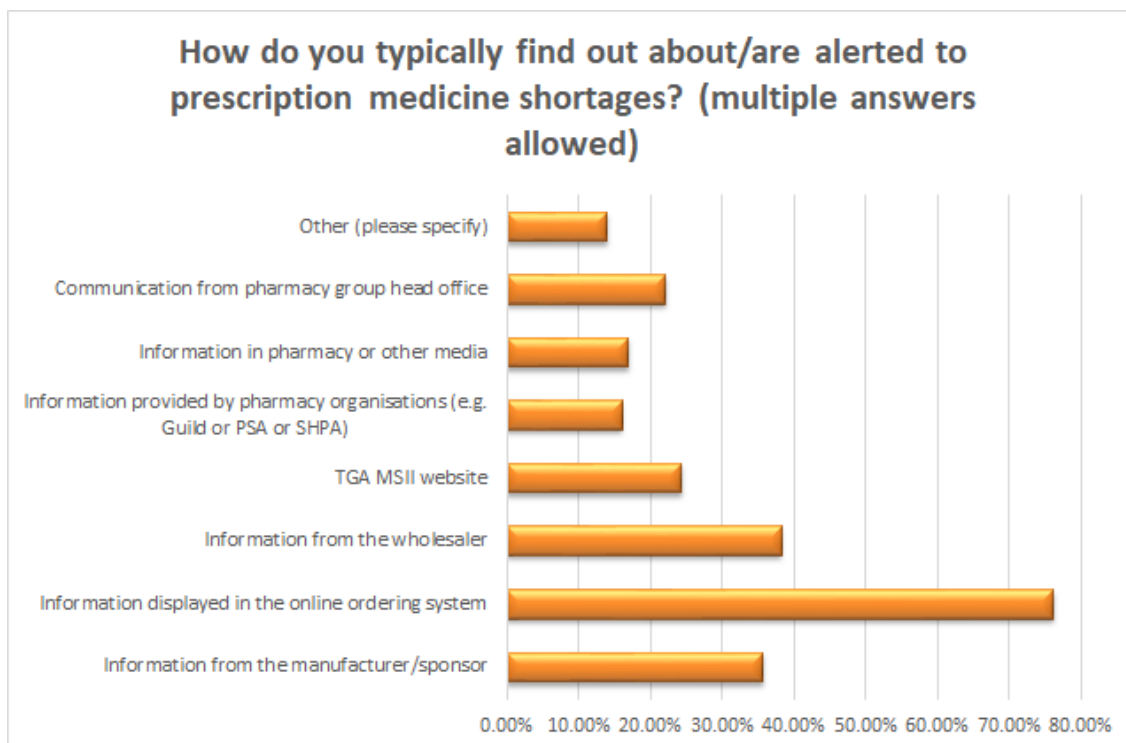Legend: Often · Sometimes · Seldom · Unsure

Explanation: The survey outcomes indicate that pharmacists often (40%) take more than 48 hours to solve a medicine shortage problem for a patient.

Chart 7

Please rate the following as the most important priorities to improve issues relating to medicine shortages for your colleagues and your patients

Explanation: Respondents rated improved communications by manufacturers/sponsors to pharmacists, prescribers and patients as the highest priority to improve issues relating to medicine shortages. They also rated more stringent medicine shortage reporting requirements for medicine manufacturers/sponsors as a high priority to improve medicine shortage issues.
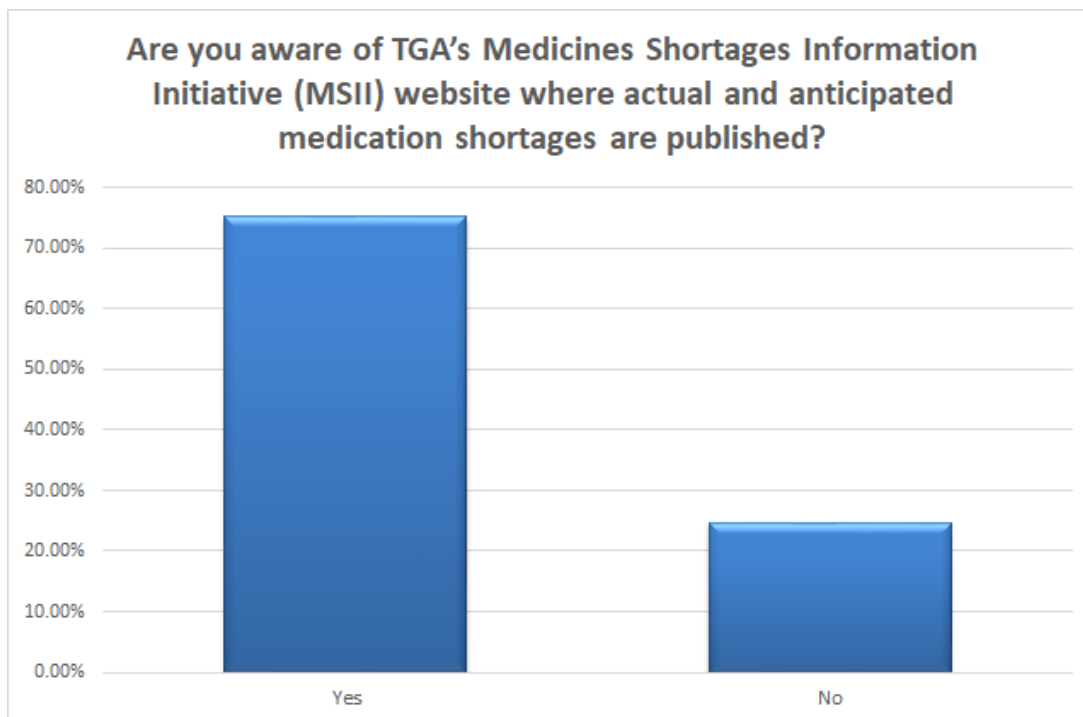
Chart 8

How do you typically find out about/are alerted to prescription medicine shortages? (multiple answers allowed)

Explanation: The majority of respondents (76%) use the information displayed in their wholesaler ordering portal to find information on prescription medicine shortages. Only 24% of respondents indicated they use the TGA's MSII website.

Chart 9

Are you aware of TGA's Medicines Shortages Information Initiative (MSII) website where actual and anticipated medication shortages are published?

Explanation: Three-quarters of respondents indicated they were aware of the TGA's MSII website where medicine shortage information is published. A quarter of respondents indicated they were unaware of the MSII resource.
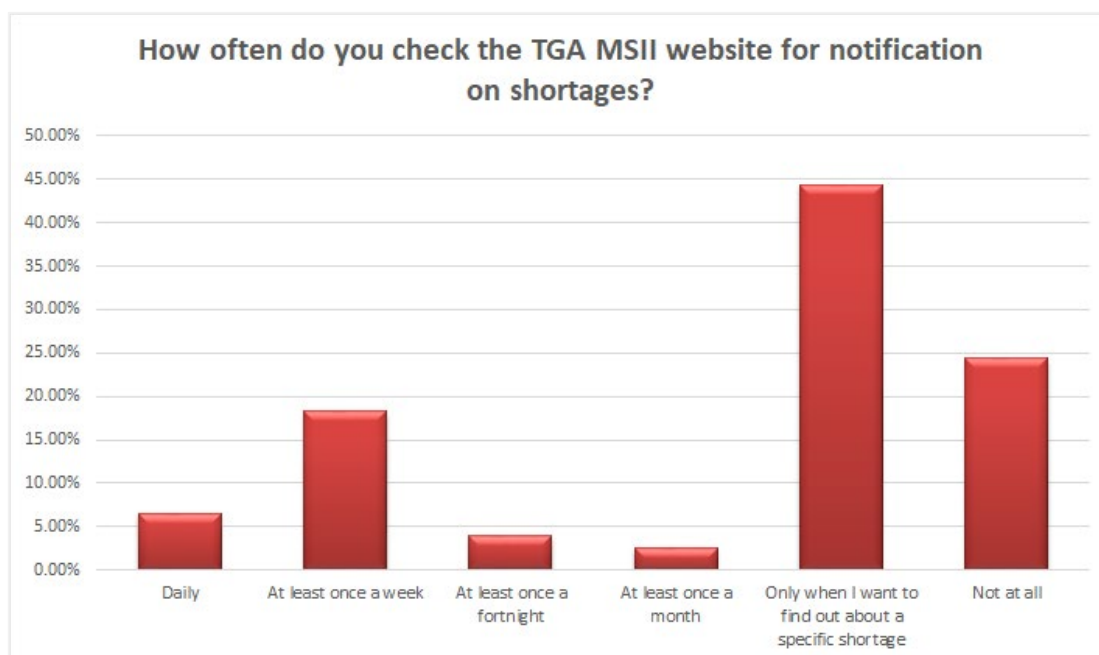
Chart 10

Have you subscribed to the TGA's weekly Medicine Shortages Update e-newsletter?

38%
62%

Yes No
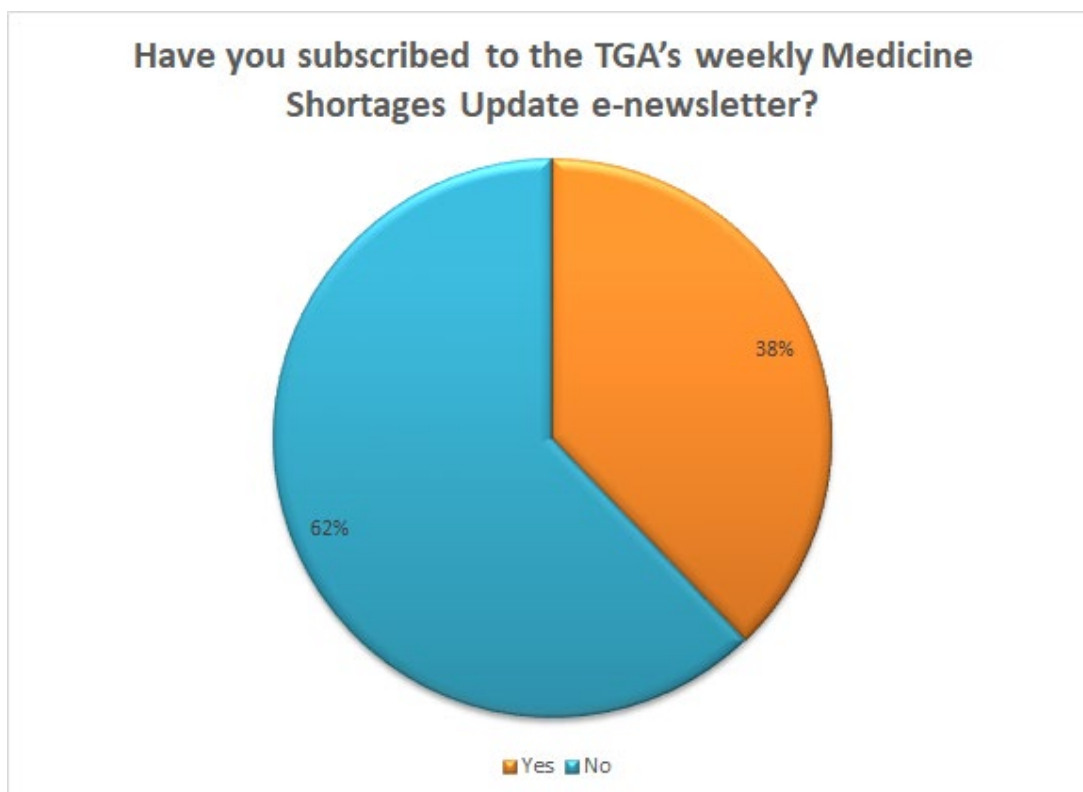
Explanation: Only 38% of respondents indicated that they are subscribed to the TGA's weekly Medicine Shortages Update e-newsletter.

Chart 11

How often do you check the TGA MSII website for notification on shortages?

Explanation: Respondents to the survey indicated that use of the TGA MSII website is limited. Only 44% of respondents indicated they would use the MSII website if they needed to find out about a specific shortage and 24% indicated they would not use the resource at all.

Questions for community pharmacists only

Chart 12

What actions were taken by your pharmacy in managing the patient's prescription?
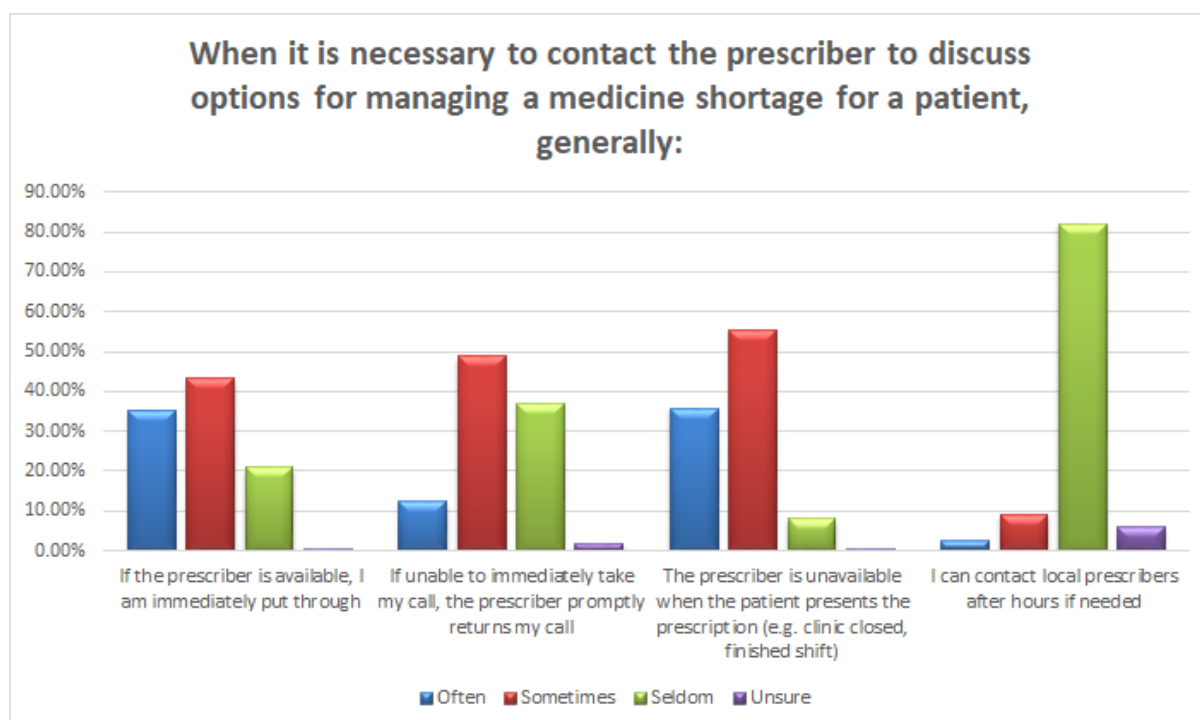
Explanation: Respondents indicated that the most common actions taken to manage a patient's prescription in the event of a medicine shortage were to contact the prescriber (91%), refer the patient back to the prescriber (70%) and ration dispensing quantities until able to source stock (69%). Concerningly respondents advised that in 12% of cases the patient had to be referred to a hospital emergency department.

Chart 13
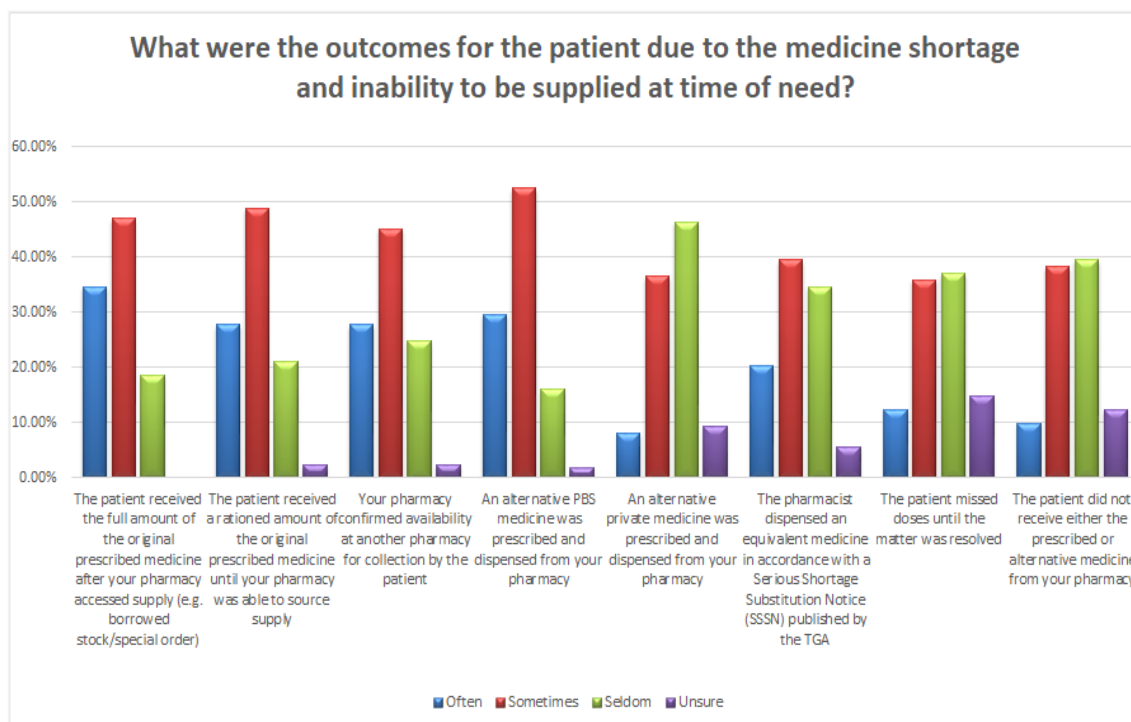
Explanation: Community pharmacists reported that patients were often (35%) or sometimes (47%) able to receive the full amount of original prescribed medicine due to the pharmacy accessing the supply through other means (e.g. borrowed stock or special order). Pharmacists also facilitated supply of the medicine by confirming availability at another pharmacy (for collection by the patient) often (28%) or sometimes (45%). However, patients received a rationed amount often (28%) or sometimes (49%) until the pharmacy was able to source supply when other arrangements could not be made or options were not available.

Chart 14

When it is necessary to contact the prescriber to discuss options for managing a medicine shortage for a patient, generally:

(Bar chart with categories — Often, Sometimes, Seldom, Unsure — across four statements:)

- If the prescriber is available, I am immediately put through
- If unable to immediately take my call, the prescriber promptly returns my call
- The prescriber is unavailable when the patient presents the prescription (e.g. clinic closed, finished shift)
- I can contact local prescribers after hours if needed

Explanation: When it was necessary for contact to be made with the prescriber to discuss options for managing a medicine shortage for a patient, only one in five community pharmacists reported they were seldom put through immediately when the prescriber was available. However, in the majority of cases (36% often and 56% sometimes) the prescriber was unavailable (e.g. clinic closed, finished shift) when the patient presented their prescription. In addition, 12% of community pharmacists indicated they could often or sometimes contact the prescriber after hours, but 82% said they could seldom contact the prescriber after hours.
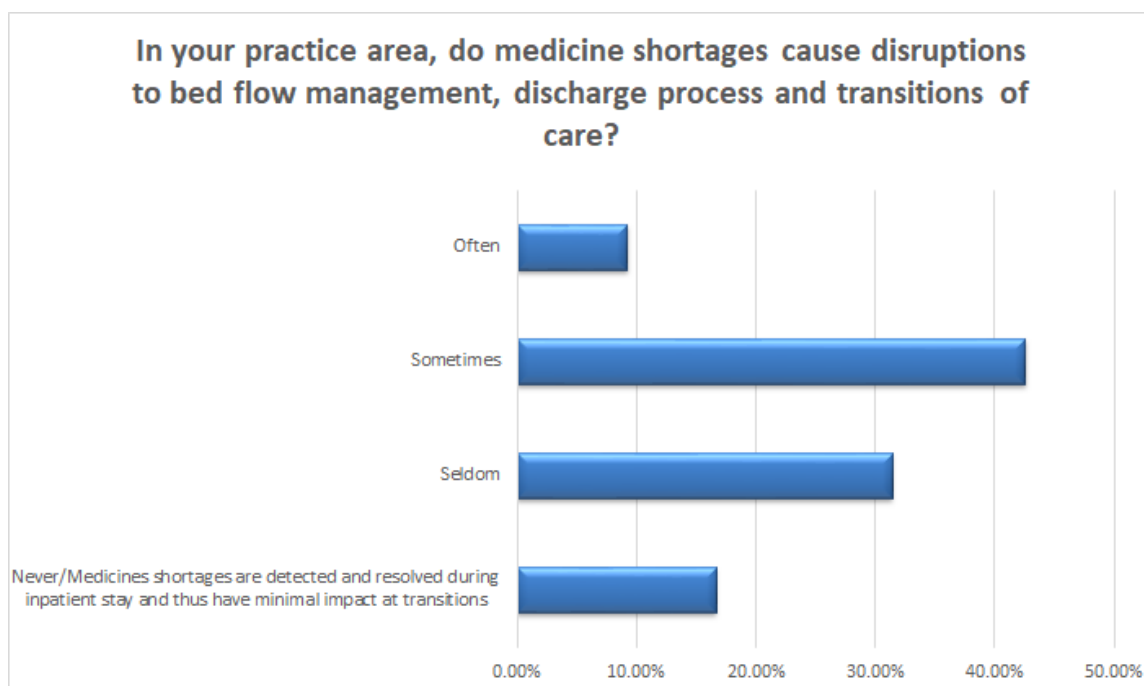
Chart 15

What was the impact of supply disruptions on patient groups within your pharmacy?
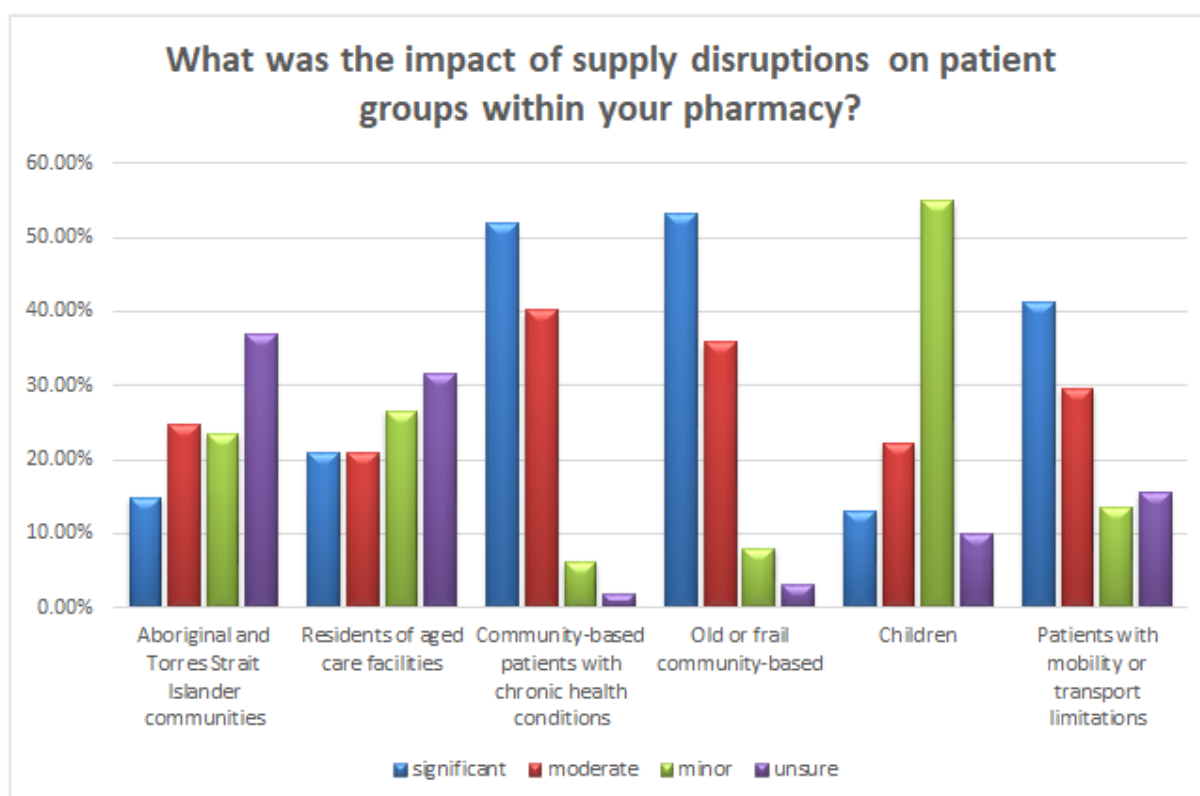
Explanation: The impact of medicine shortages on community-based patients with chronic health conditions were reported to be significant (52%) to moderate (40%). Similarly for old or frail community-based patients, the impact was reported to be significant (53%) to moderate (36%). In addition, of patients in the community with mobility or transport limitations, 41% experienced significant impact and 30% moderate impact. The impact on children was reported to be mostly minor (55%).
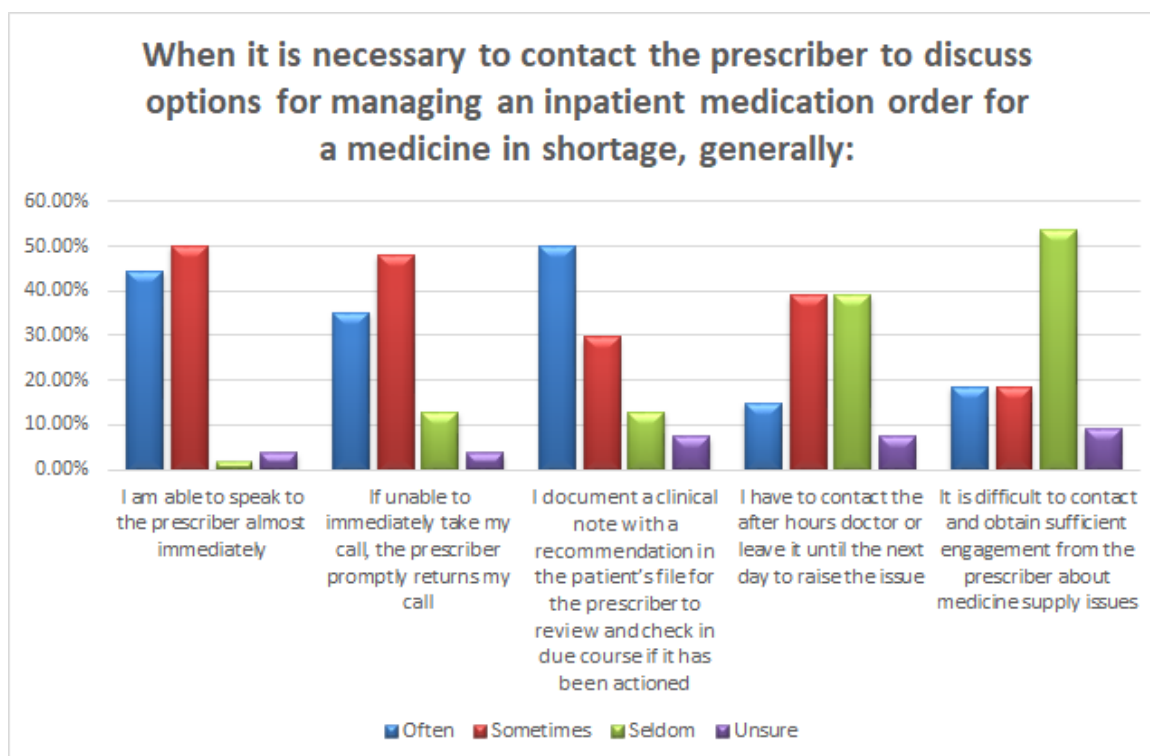
Questions for hospital pharmacists only

Chart 16

Explanation: Hospital pharmacists reported that medicine shortages often (9%) or sometimes (43%) caused disruptions to bed flow management, the discharge process and transitions of care.
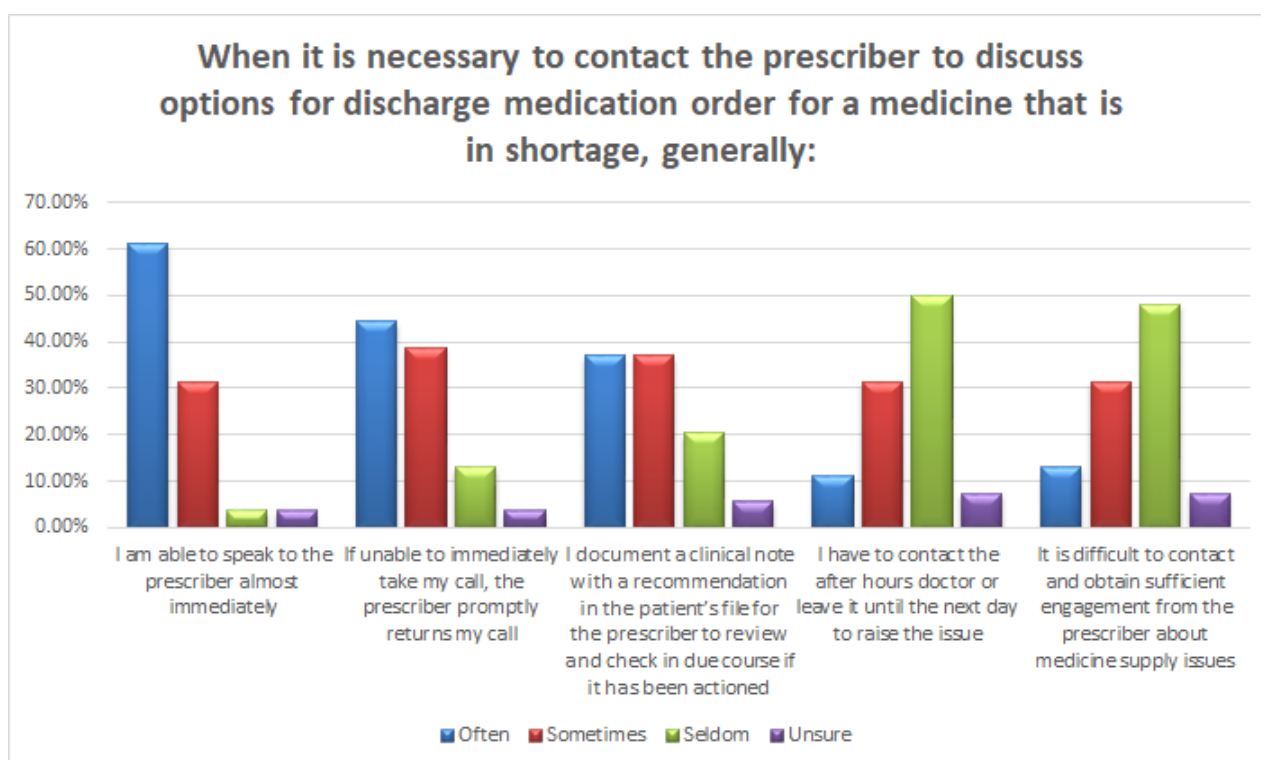
Chart 17

Explanation: Hospital pharmacists indicated that they are able to speak to a prescriber about a medicine shortage immediately often (44%) or sometimes (50%) for an inpatient. Respondents indicated they often document a
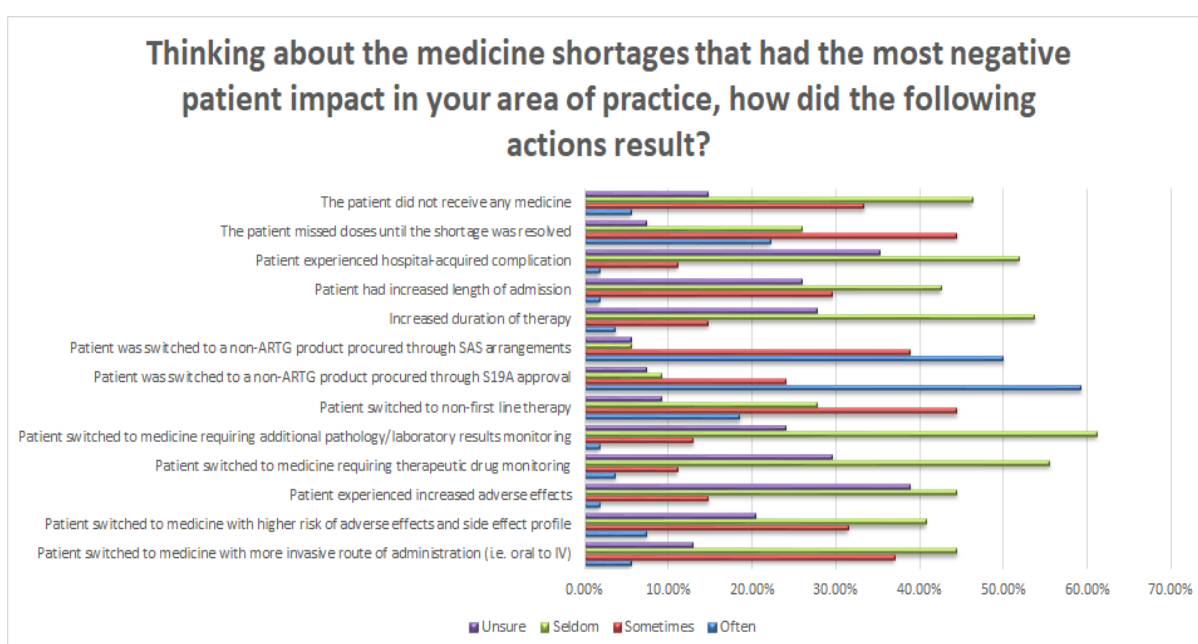
clinical note for the prescriber to review the patient's file (50%). It was reported that it is seldom difficult to contact the prescriber and discuss options for managing a medicine supply issue (53%).

Chart 18

When it is necessary to contact the prescriber to discuss options for discharge medication order for a medicine that is in shortage, generally:

Explanation: Hospital pharmacists indicated that they were often (61%) or sometimes (31%) able to speak with a prescriber almost immediately to discuss options to manage a medication shortage for a patient on discharge. Half of hospital pharmacy respondents indicated they would seldom have to contact the afterhours doctor or leave it to the next day to raise the issue.

Chart 19

Thinking about the medicine shortages that had the most negative patient impact in your area of practice, how did the following actions result?

Explanation: Hospital pharmacists reported that patients who were negatively impacted by being prescribed a medicine in shortage were often switched to a non-ARTG product procured through S19A approval (59%) or through SAS arrangements (50%). Two thirds of respondents (67%) indicated that patients sometimes/often missed doses until the matter was resolved.

Chart 20

Since SHPA's 2017 survey on medicines shortages, has there been more awareness from doctors and nurses about prevalence of medicines shortages in your hospital?

37.04%

16.67%

46.30%

■Yes ■No ■About the same
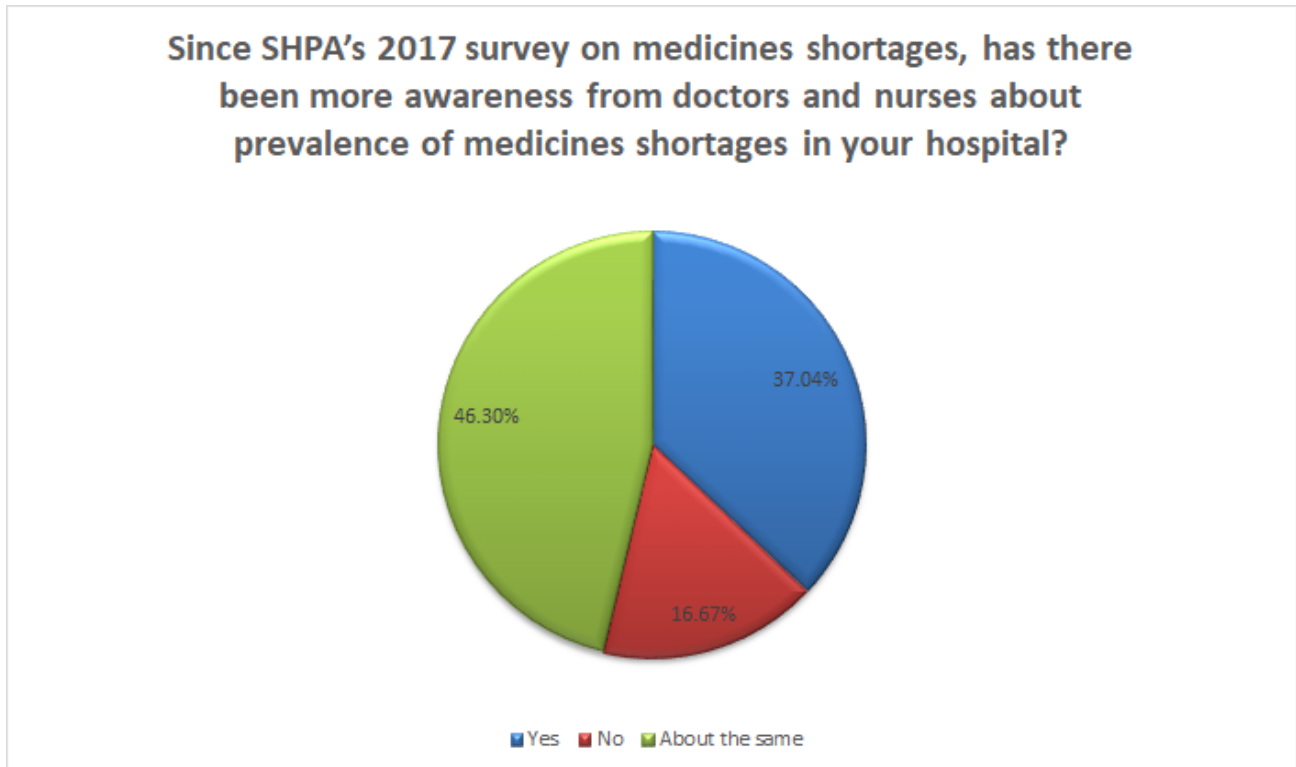
Explanation: Since SHPA's 2017 survey on medicine shortages, awareness from doctors and nurses about prevalence of medicines shortages in hospitals has been reported by 63% of respondents to have not improved or remained the same.

Appendix C: List of medicine shortages identified by pharmacists in descending order of prevalence

Note: solid oral dose forms of medicines are listed unless otherwise stated

Bolded denotes those not listed in the medicine shortage reports database

sertraline

estradiol patch

candesartan

carbimazole

olmesartan

estradiol/norethisterone patch

irbesartan

metformin

nizatidine

salbutamol inhaler

fluoxetine

tranexamic acid

ranitidine

amlodipine/olmesartan

propofol

indometacin

dutasteride/tamsulosin

potassium chloride

prazosin

adrenaline (epinephrine)

ethinylestradiol/norethisterone

paracetamol

phenylephrine/prednisolone eye drops

ergometrine

esomeprazole

famotidine

fosinopril

nifedipine

suxamethonium

clonidine

gentamicin

olmesartan/hydrochlorothiazide

levothyroxine

aspirin/dipyridamole

clopidogrel

dexamphetamine

fentanyl injection

irbesartan/hydrochlorothiazide

telmisartan

bupivacaine

ropivacaine

tranylcypromine

Bacillus calmette-guerin, TICE strain

candesartan/hydrochlorothiazide

prochlorperazine

estradiol

sulfamethoxazole/trimethoprim injection

benzylpenicillin

carbidopa/levodopa

dexamethasone

disulfiram

influenza vaccine

furosemide (frusemide)

ropivacaine/fentanyl

allopurinol

buprenorphine patch

colestyramine

desmopressin nasal

emtricitabine/tenofovir

enoxaparin

fluticasone/salmeterol

glyceryl trinitrate

hydromorphone

lidocaine (lignocaine)

methylprednisolone

midazolam

omeprazole

pantoprazole

paroxetine

perindopril

pindolol

pregabalin

sodium cromoglycate

sulfamethoxazole/trimethoprim liquid

sulfasalazine

tetracosactide (tetracosactrin)

triamcinolone

acamprosate

aciclovir ointment

alendronate

alendronate/ colecalciferol

alteplase

amoxicillin injection

atracurium

atropine injection

brexpiprazole

brimonidine eye drops

budesonide/ formoterol (eformoterol)

bupivacaine/adrenaline (epinephrine)

chloramphenicol eye drops

ciprofloxacin

cisatracurium

clindamycin

cyclopentolate eye drops

dexamethasone eye drops

duloxetine

ergotamine

escitalopram

etoricoxib

famciclovir

flucloxacillin

folinic acid

fosinopril/hydrochlorothiazide

glyceryl trinitrate spray

heparin

hydroxychloroquine

ibuprofen liquid

imipramine

imiquimod

leuprorelin

levetiracetam

magnesium sulfate

methylphenidate

methylprednisolone injection

metoprolol

nicorandil

nitrofurantoin

oxybutynin

oxycodone

oxytocin

pethidine

phenoxybenzamine

phenoxymethylpenicillin

piperacillin/tazobactam

procaine benzylpenicillin

propylthiouracil

quetiapine

rocuronium

rosuvastatin

telmisartan/hydrochlorothiazide

temozolomide

topiramate

valaciclovir

vancomycin

verapamil

zoledronic acid