PHARMACY FORECAST AUSTRALIA 2022

JULY 2022

PHARMACY FORECAST AUSTRALIA PARTNER

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SHPA thanks **Omnicell**, Pharmacy Forecast Australia support partner.

2. FOREWORD

The Society of Hospital Pharmacists of Australia (SHPA) is pleased to present the 2nd edition of *Pharmacy Forecast Australia* for 2022.

Pharmacy Forecast Australia grew from the relationship between SHPA and the American Society of Health-System Pharmacists' (ASHP), whose *Pharmacy Forecast* has grown over the past decade to become a key feature of the society's educational landscape. It has become a much-anticipated annual publication used by multiple pharmacy practice sectors as a tool to anticipate and plan for future demand, service provision and leadership.

Pharmacy Forecast Australia 2022 is a strategic thought leadership piece on emerging trends and phenomena forecasted to impact pharmacy practice and the health of Australian patients to 2027 developed by SHPA utilising 'wisdom of crowds' methodology. After another disruptive year in healthcare, it is unsurprising to see new themes arise in mental health and workplace wellbeing, hospital and health funding models and environmental sustainability, capturing the zeitgeist amid Australia's move toward 'living with COVID-19'.

It is intended that *Pharmacy Forecast Australia 2022* helps equip Hospital Pharmacy departments to proactively position themselves and their teams for potential future events and trends with contextualised recommendations by the report's authors. It is shared as a stimulant to prompt discussion that assists health system leaders in their strategic planning efforts, in their mission to provide optimal care for patients and advancing the profession of pharmacy.

Importantly, SHPA has again adhered to unique methodology with the themes' questions, analysis and recommendations distilled directly from leading Hospital Pharmacists and their colleagues (Forecast Panellists, or FPs) based on their experiences in a range of roles, covering all Australian jurisdictions and unrestrained by organisational limitations.

The 2022 report is divided into six themes: Environmental Sustainability, Future Workforce, Patient-Centred Care, Technology, Funding Models and Workforce Wellbeing. Through the analysis and recommendations the Theme Leads provide advice and guidance on how to approach issues pertinent to our times such as: sustainably reducing carbon footprint; fostering an effective, diverse, engaged and expert pharmacy workforce into the future; reorienting strategy to fortify research, embed pharmacogenetics and put the patient at the centre; harnessing secure technology to improve access to medicines; ensuring funding reforms prioritise safe and timely patient care; and supporting workforce wellbeing through structured training and appreciation of individual and team needs.

On behalf of the Pharmacy Forecast Advisory Committee I sincerely thank the *Pharmacy Forecast Australia 2022* Theme Leads for their time and contributions, particularly in such a challenging year. I hope your opinions and recommendations are discussed and debated in the spirit of our new Forecast tradition, in the interests of sharing information and ideas to improve medicines safety and patient care for all Australians.

Russell Levy
Chair, Pharmacy Forecast Advisory Committee

3. INTRODUCTION AND METHODS

Pharmacy leaders are faced with wide ranging challenges; forecasting future events is an important exercise that can help leaders create well-informed strategic plans. *Pharmacy Forecast Australia 2022* is intended to assist pharmacy and health system leaders in this effort.

AN ITERATIVE PROCESS

In its second year in Australia, the method used to develop *Pharmacy Forecast Australia 2022* continued to draw on concepts described in James Surowiecki's book, The Wisdom of Crowds. According to Surowiecki, the collective opinions of 'wise crowds' – groups of diverse individuals in which each participant's input is provided independently, drawing from his or her own locally informed points of view – can be more informative than the opinion of any individual participant.

The Pharmacy Forecast Advisory Committee (see Acknowledgements) began developing the survey by engaging in a series of workshops to identify and interrogate key issues and concerns they believed would influence health-system pharmacy in the coming five years, further informed by insight from SHPA's policy and advocacy activities. That list was then expanded and refined through an iterative process, resulting in a final set of six themes, each with seven focused topics on which the survey was built. Each of the 42 survey items was written to explore the selected themes in greater detail.

Survey Respondents – Forecast Panellists (FPs) – were nominated and selected by the Advisory Committee. Nominations were limited to individuals known to have expertise in health-system pharmacy, knowledge of trends and new developments in the field, and the ability to think analytically about the future. The Forecast survey instructed FPs to read each of the 42 scenarios presented in survey items and consider the likelihood of those scenarios occurring in the next five years. They were asked to base their responses on their first-hand knowledge of current conditions in their region, not based on their understanding of national circumstances, providing a top-of-mind response regarding the likelihood of those conditions being very likely, somewhat likely, somewhat unlikely, or very unlikely to occur.

2022 FORECAST PANELLISTS

Responses were received from 96 FPs (an 77% response rate). Representation was captured from across all Australian states and territories, with smaller jurisdictions slightly overrepresented proportionate to population share: Vic (24%) and NSW (21%), followed by Qld (19%), SA and WA (9%), Tas (7%), NT (6%) and the ACT sitting at 4% response rate. Most of the FPs (95%) had been in practice for greater than ten years, and 49% had been in practice for greater than 20 years.

Most FPs held the title of Chief or Director of Pharmacy, all senior titled positions. Most FPs indicated their primary practice setting / organisation was in the public sector (90%) and (6%) indicated private.

Just over half of FPs described their primary practice setting / organisation as a metropolitan hospital (`60%), while 21% indicated they were from a regional/rural hospital. Government/NFP departments or agency representation saw 16% and 8% were from academia.

Forecast Panellists reported their primary practice setting / organisations offered a diverse range of services, including home health or infusion care (61%), specialty pharmacy (78%), in-patient care (88%), ambulatory care (74%), paediatric care (57%), and hospice care (40%).

USER GUIDE TO THE *PHARMACY FORECAST 2022*

Within each section of this report, the results of each survey question are summarised in detail. The results are discussed, and key strategic recommendations are provided to stimulate strategic planning by pharmacy leaders.

The purpose of the report is to encourage and support active and deliberate strategic planning in hospitals and health systems. It is intended to stimulate thinking and discussion, providing a starting point for individuals and teams who wish to proactively position themselves for potential future events and trends rather than be reactive when they occur.

4. PHARMACY FORECAST AUSTRALIA 2022

THEME 1 – ENVIRONMENTAL SUSTAINABILITY

Advisory Committee Leads: Hao Vo-Tran, Jeanie Misko
Theme Leads: Grace Wong, Debbie Rigby

INTRODUCTION

'Climate change is the greatest global threat in the 21st century, but it is also the greatest opportunity to redefine the social and environmental determinants of health.'[1]

In 2015, this call to action from the Lancet Commission coincided with the landmark Paris Agreement to reduce global warming to 'well below 2°C' to limit harm caused by accelerated climate change.[2] In the same year, the International Pharmaceutical Federation (FIP) called on pharmacists worldwide to take responsibility to minimise the environmental impact of medicines.[3]

Environmental stewardship of medicines extends from synthesis from raw materials, production of products, transportation, storage, deliveries and usage through to safe and responsible disposal.[3,4] Pharmaceuticals account for almost one fifth of the overall carbon footprint caused by healthcare in Australia.[5]

There is an urgent need for the Australian pharmacy profession to take practical and strategic actions to reduce the industry's carbon footprint. Environmental sustainability should be a value proposition for recruitment of talented and passionate pharmacists. There is no bigger challenge at the moment than climate change. Now is the time for the profession to take action for the benefit of patients, the industry and the wider community.

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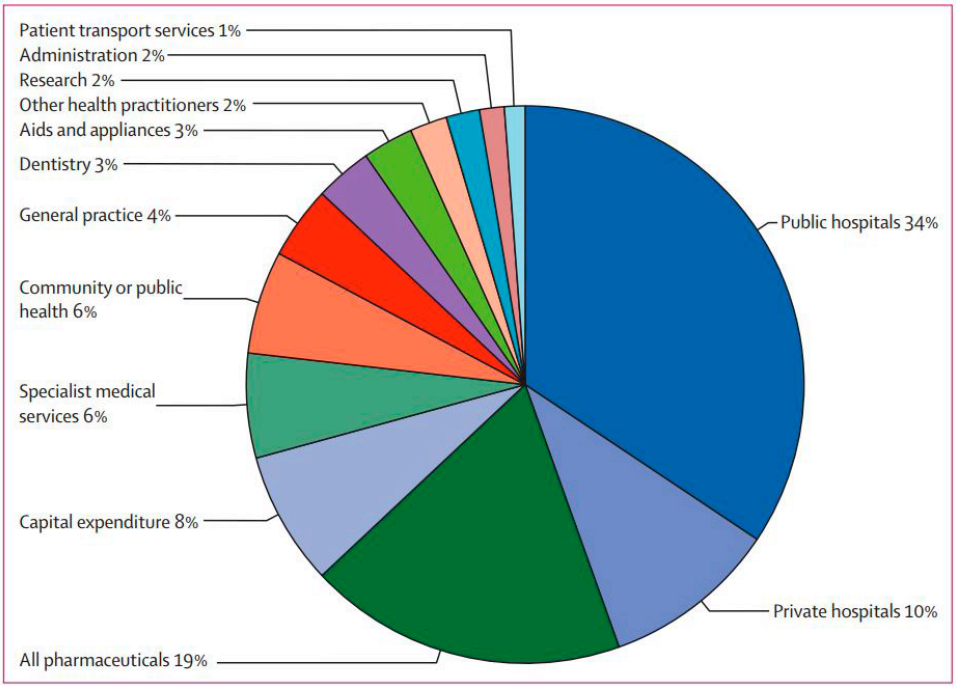
PHARMACOLOGICAL THERAPY GUIDED BY ENVIRONMENTAL IMPACT

The majority (82%) of Forecast Panelists (FPs) thought it unlikely that hospital medical record systems would incorporate information on environmental impact to guide choices in pharmacological therapy by the year 2027 (Figure 1, Item 1).

The carbon footprint of Australia's healthcare sector is estimated at over 7% of Australia's total carbon emissions, with hospitals and pharmaceuticals the major contributors. Hospitals are responsible for 44% of these carbon emissions, followed by 19% from pharmaceuticals, 6% from community and public health and only 4% from general practice.[6]



Source: Malik A, et al. Lancet Planet Health 2018;2:e27-35.

Doctors for the Environment Australia (DEA) have set an achievable target for the Australian healthcare sector of 80% reduction in emissions by 2030. The DEA's *Net zero carbon emissions: responsibilities, pathways and opportunities for Australia's healthcare sector* report suggests that pharmaceuticals are a significant contributor to the carbon footprint of the healthcare sector.[7]

When guiding choices in pharmacological therapy, environmental impact should be considered in the same light as any other clinical decision support tool. While possibly time-consuming to implement at first, the benefits of incorporating this information into daily activities would be invaluable and potentially planet-saving.

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ENVIRONMENTAL SUSTAINABILITY IN PHARMACY CURRICULUM

Half of FPs thought it likely that all pharmacy university degrees will incorporate carbon literacy and environmental sustainability in their curriculums by 2027 (Figure 1, Item 2).

There is an urgent need for all pharmacy university degrees to embed environmental sustainability principles into the curriculum, now. This will enable future pharmacists to foster an environmentally educated and informed workforce, capable of taking a leadership role in ensuring the manufacture, supply and prescribing of medicines is as sustainable as possible.[8,9] In 2022, only the University of Queensland's Business School, part of the Carbon Literacy Program, is able to help individuals and organisations tackle the climate crisis via a training program.[10]

In addition, in February 2021, the Association for Medical Education in Europe laid out a consensus statement to 'provide a global, collaborative, representative and inclusive vision for educating an interprofessional healthcare workforce that can deliver sustainable healthcare and promote planetary health.'[11] This is the exact ethos everyone should be working toward.

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PAPER-FREE PHARMACY DEPARTMENTS

Of the FPs surveyed, only 24% thought it was likely that 100% of pharmacy departments would be paper-free by 2027 (Figure 1, Item 3). Given the large amount of paper still utilised in hospital pharmacy (prescriptions, labels, patient information, references), this response is unsurprising. While steps have been made toward reducing paper in hospital systems with electronic medical records and prescribing, a large proportion of day-to-day pharmacy duties remain paper-based.

The 2021 Proposal for a National Sustainable Healthcare Unit notes that the Australian healthcare sector is responsible for approximately 7% of the national carbon footprint with hospitals responsible for 44% and pharmaceuticals responsible for 19%.[12] Pharmaceuticals often arrive at the pharmacy with extraneous packaging, such as wrapping and package inserts, adding to waste. While some advances have been made in using QR codes to provide further information about pharmaceuticals electronically, there is a long way to go in this field.

In the dispensary, many outpatient and discharge prescriptions are still paper-based. Electronic prescribing systems for inpatients have reduced the need for paper, and ePrescriptions in community pharmacy have done the same.[13] There is further scope for reducing paper prescriptions in hospital pharmacy, particularly through the development of e-prescription technology.

Integrated electronic management in the form of automated dispensing cabinets and electronic safes have also removed much of the paper used in recording controlled drug transactions.[14] Thus, the introduction of closed loop medication management could potentially reduce the current piecemeal approaches to medication management that still necessitates a hybrid electronic/paper model. Electronic devices like smartphones, tablets and desktop computers can also be used as evidence of receipts of medication across the hospital system, further reducing paper usage.

Pharmacists are also keen users of reference texts. The majority of recommended and useful pharmacy texts are available online, providing information that is more frequently updated than paper texts, but often at a lower cost, without the need for paper.

Through the use of technology, pharmacy departments can reduce their paper volume, so that the future may see paper-free departments as potentially achievable.

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WEIGHTED ENVIRONMENTAL IMPACT CRITERIA

FPs were divided on the question of whether all pharmaceutical contract tenders would include meaningful and accountable environmental impact criteria by 2027; just over half (54%) responded in the positive (Figure 1, Item 4). This low result is surprising given that sustainable procurement has been standard practice in many private industries and public entities for over a decade.

More than 70% of healthcare greenhouse gas emissions are from the supply chain, which encompasses production, transport, use and disposal of goods and services used in healthcare.[15]

High-volume pharmaceuticals are generally procured in Australia at a state or territory level to leverage collective purchasing power and ease administrative burden on individual hospitals. State-based pharmaceutical contracts are an opportunity to not only assess cost, safety and effectiveness of the pharmaceutical, but also environmental impact. Some state-based procurement providers now have sustainability officers and are starting to develop sustainable procurement strategies. Preference for locally made medicines to reduce the supply chain carbon footprint should be considered.[16] At an international level, the Global Green and Healthy Hospitals (GGHH) Network have a Sustainability Procurement Guide and resources that can assist and may be helpful for the Australian sector to understand more on this subject.[17]

By using collective purchasing power appropriately, pharmacy can increase demand for reduced environmental impact products and supply chain logistics.

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ENVIRONMENTAL SUSTAINABILITY CHAMPION

The majority of FPs acknowledge the importance of environmental sustainability champions, with over half (66%) believing it is likely or somewhat likely all pharmacy departments will have one or more by 2027 (Figure 1, Item 5).

Anecdotal information suggests there are very few official 'green champion' individuals providing dedicated time to conduct sustainability work in Australian hospital pharmacy departments. There is a knowledge gap among Australian pharmacists and pharmacy technicians in connecting negative environmental impacts of providing a pharmacy service leading to negative impacts on human health.[18] As a consequence, environmental sustainability as a department risk may not be prioritised, potentially swaying some of the 33% of FPs to respond negatively to this prediction (Figure 1, Item 5).

The main purpose of an environmental sustainability champion is to drive change. Whether as a volunteer or officially appointed, these change champions are essential to initiating and maintaining an environmental sustainability program. Without an inspiring and knowledgeable individual, the many human and physical barriers to creating and sustaining positive change are likely unsurmountable.

In January 2022, SHPA formally acknowledged the unfolding climate emergency and the role of hospital pharmacists and technicians in mitigating and reducing known environmental impacts.[19]

The pharmacy profession must step up to deal with the environmental impact of providing pharmacy services. Appointing a sustainability champion to lead and support strategic change is a critical step. There is also a danger that such appointments become mere perfunctory actions to serve a bureaucratic expediency. Therefore, this call to action comes with the proviso that adequate time, finance and other required resources are provided to the champion to be able to succeed in their role. The FPs' responses are a red flag that further change in attitude is needed in the profession for this to come to fruition. To not change however, is to fall behind what other health professional colleagues are doing, and to be behind the times.

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COMPREHENSIVE PHARMACEUTICAL WASTE PROGRAMS IN HOSPITALS

More than three-quarters of FPs (76%) believe it is somewhat likely or likely that hospitals will have comprehensive pharmaceutical waste programs in place by 2027 (Figure 1, Item 6). This is a very promising result, though also surprising the percentage is not higher given waste disposal and the climate crises are so prevalent in today's popular discourse. This perhaps reflects a knowledge gap and lack of adequate environmental sustainability champions to drive the cause (discussed in section 5).

Pharmaceutical waste is a complex stream. The COVID-19 pandemic response has also increased the amount of waste sent to landfill from healthcare, such as personal protective equipment, rapid antigen tests and vaccine paraphernalia.[20] Pharmaceutical waste may include the drug substance, the container in which it was packaged, and accessories used for administration, such as administration tubing. In some jurisdictions pharmaceutical waste is legally defined as including the packaging that contained schedule 8 or schedule 4 drugs of dependence.[21,22]

Pressurised metered-dose inhalers (pMDIs) are a significant contributor to greenhouse gas emissions. Reducing pMDI prescriptions when appropriate could have a meaningful environmental impact, especially as alternate inhalers with lower carbon impact are available. Proper disposal of inhalers can reduce carbon dioxide emissions.[26]

A comprehensive pharmaceutical waste program must include environmental, legal, ethical, local policy and practical requirement considerations in the methods of drug substance and paraphernalia disposal. TerraCycle is one option for recycling empty medication blister packs (for a fee) with a small number of community pharmacies participating in selected Australian states.[23] In Australia, regulation of pharmaceutical waste handling and disposal is state and territory specific. For specific regulatory requirements, pharmacists will need to refer to their local bodies.

There are significant environmental and financial costs of having no or a deficient pharmaceutical waste program. Leaching of medicines into the environment has consequences for wildlife, even at low levels. Further, medicines and their metabolites have been detected in vegetables.[24,25] The risks to human health from continuous exposure through contaminated water and food is unknown. Diversion of medicines for illegal purposes at disposal and waste collection and handling are also risks. The containers and accessories used for administration fill a burgeoning landfill, despite often being made of materials readily recyclable through standard hospital recycling streams. For example, empty plastic or glass containers, cardboard packaging and PVC tubing can go into their respective recycling stream programs. Education on using existing recycling streams as well as establishing new ones may be a simple and effective way to reduce the pharmaceutical waste impact on landfill and the environment.

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INVENTORY AND DISTRIBUTION TECHNOLOGY SOLUTIONS TO REDUCE WASTAGE

Pharmacy automation and electronic medicines management is an ongoing topic of interest within Australian hospitals. However, the majority of focus has been on electronic medical records and prescribing platforms. This is reflected in the responses of the FPs, with 61% expressing that it is unlikely budget allocations will be increased for new medication-related inventory and distribution technology solutions to reduce wastage (Figure

1, Item 7). This may be due to a lack of knowledge on how best to manage the large amounts of data provided by this technology.

In some Australian hospitals, technology solutions such as automated dispensing cabinets (ADCs) and dispensing robots are already in place. The data generated from these systems can be used to reduce medication wastage at a ward or hospital-wide level. Specialised or bespoke software programs may be utilised to present the data in a form that is understandable to pharmacy staff and hospital stakeholders. Reports from this data can be used proactively to reduce waste. For example, reporting on medications expiring within a particular future timeframe can be used to redistribute medications from low to high use areas. Data can also be used to note trends of medication use hospital-wide, and increase or reduce stock levels accordingly.[27,28] Programs can be designed to convert inventory levels from robots and ADCs into imprest orders, saving time and paper in comparison to manual ordering.[29]

At a federal level, a proposed National Medicines Traceabililty Framework for PBS-listed medicines has undergone consultation. This framework will track medicines more closely to improve efficiency of the supply chain and reduce wastage.

It is possible that the 39% of FPs who positively responded that budgets will be increased for solutions to reduce wastage are already utilising the data from their current pharmacy automation (Figure 1, Item 7). Increasing knowledge and accessibility of the data that can be leveraged from technology solutions is paramount in reducing medication wastage.

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CONCLUSION

The World Health Organisation estimates an additional 250,000 deaths per year globally from malnutrition, malaria, diarrhoea and heat stress due to climate change between 2030 and 2050.[30] The evidence linking accelerated climate change and harm to human health is strong.

Health professionals have taken on responsibility to promote and uphold the human right to health. Health professionals have a professional and ethical responsibility to take action to reduce carbon footprints to reduce harm to patients, families and the wider community. From education and everyday decision-making to tangible initiatives supported by dedicated champions, stronger leadership and practical actions are needed now to green the pharmacy.

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RECOMMENDATIONS

1. Environmental impact should guide pharmaceutical choice

All hospital medical record systems should incorporate information on environmental impact to allow clinicians to make an informed decision and guide pharmaceutical choices.

2. Environmental sustainability in pharmacy curriculum

There is an urgent need for all pharmacy university degrees to embed environmental sustainability principles into the curriculum.

3. Paper-free pharmacy departments

Through the use of current technology, and future developments, pharmacy departments, in collaboration with healthcare partners, must aim to be completely paper-free.

4. Consider environmental impact in pharmaceutical contracts

Procurement of pharmaceuticals should include accountable and meaningful environmental impact criteria that competing suppliers are assessed against. These significant contracts are a powerful way the industry can influence positive sustainability changes in the manufacturing and supplier processes.

5. Support environmental sustainability champions

Appoint an individual/individuals to lead change and champion the cause towards more environmentally sustainable practices in the pharmacy department. Provide the individual/s appropriate time and support to do this in a meaningful way.

6. Comprehensive Pharmaceutical Waste programs

There are legal obligations to have a pharmaceutical waste program in place. Extend to include managing the paraphernalia used to administer and deliver the medicine that is environmentally conscious as well as legal, ethical and practical.

7. Harness wastage data

Pharmacy leaders should review the data they have available to determine how it can be best utilised to reduce inventory wastage. Gap analyses should also be undertaken on where data is missing and how it may be captured in a way that will reduce waste, using new or existing technology. Savings from reduced wastage could be input into improving inventory related technology.

PARTNER PERSPECTIVE

Climate & Health Alliance

Environmental sustainability is a key issue associated with pharmaceutical use in Australia. Pharmaceutical pollution is well established as a threat to ecosystems, with harmful effects on animal and plant life, and human health. Pharmaceuticals can enter the environment at all stages of their life cycle, through manufacturing, patient excretion, and from the incorrect disposal of unwanted pharmaceuticals.

The safe management and disposal of pharmaceuticals is one of the 10 goals of the Global Green and Healthy Hospitals (GGHH) framework. This framework aims to reduce the healthcare sector's environmental impacts and promote greater sustainability and environmental health. The Climate and Health Alliance promotes this framework and agenda, and coordinates the GGHH network in Australia and New Zealand.

Australian practices in this area are still evolving. Limited experience to date has focused on auditing and reducing pharmaceutical waste, as well as safely disposing of it. All hospitals need to embed regular pharmaceutical waste auditing into ongoing practice, consider current procurement and disposal practices and develop policies to support quality use and prevent overuse. Health professionals can play a key role in minimising the effects of pharmaceuticals on the environment by optimising prescription practices, educating patients (eg around best use of medicines and effective antibiotic use), as well as advising patients on the disposal of medicines.

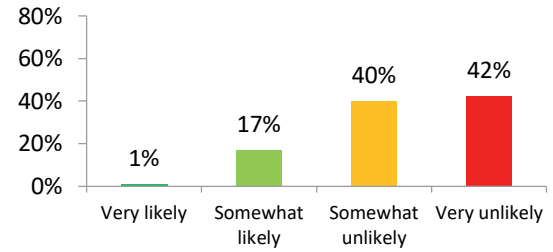
Within the healthcare sector, there is a need for greater recognition of the negative effects of pharmaceuticals on the environment and on human health. The level of pharmaceutical contamination in the environment will increase with the growing demand for pharmaceuticals. Disease prevention, as well as lifestyle changes and non-medical treatments can all reduce excessive reliance on pharmaceuticals and so limit their adverse effects on the environment.

Roland Sapsford, CEO

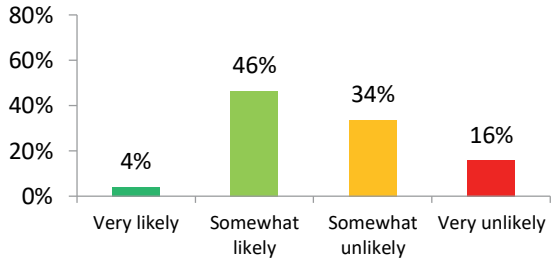
FIGURE 1. ENVIRONMENTAL SUSTAINABILITY

Forecast Panelists' responses to the question, *"How likely is it that the following will occur by the year 2027 in the geographic region where you work?"*

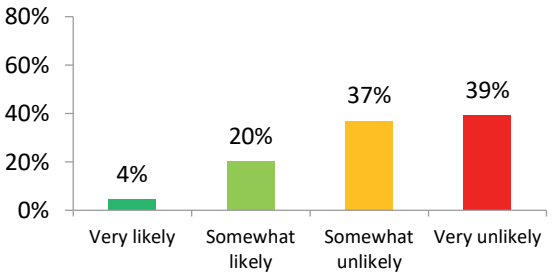
1. At least 80% of hospital medical record systems should have information available about environmental impact to guide choices in pharmacological therapy



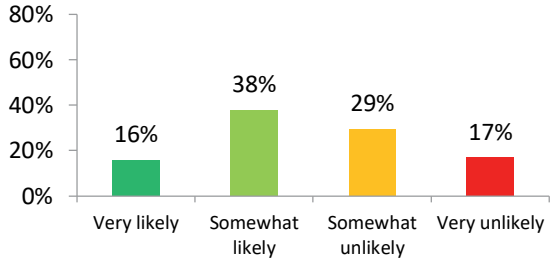
2. 100% of pharmacy university degrees have carbon literacy and environmental sustainability included in the curriculum



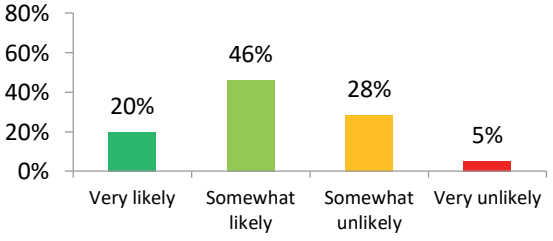
3. 100% of pharmacy departments will be paper free



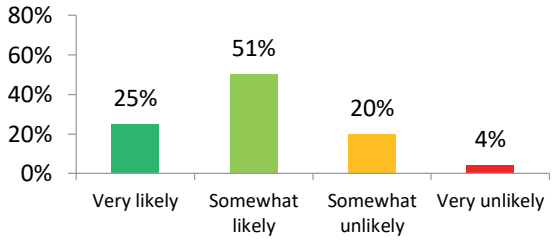
4. 100% of state-based pharmaceutical contract tenders will have meaningful and accountable weighted environmental impact criteria



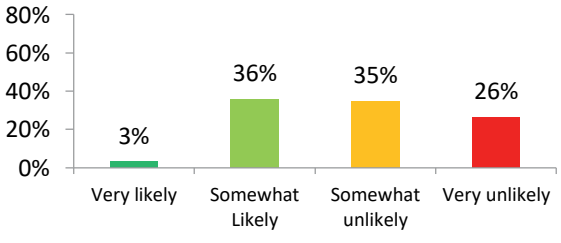
5. 100% of pharmacy departments will have a dedicated environmental sustainability champion (pharmacist or technician)



6. 100% of hospitals will have implemented a pharmaceutical waste program encompassing the medicine, packaging, devices and consumables



7. Facilities will increase budget allocation for new medication related inventory and distribution technology solutions by 20% of current levels in order to reduce wastage



THEME 2 – FUTURE WORKFORCE

Advisory Committee Leads: Russell Levy, Jeanie Misko
Theme Leads: Sven Marxen, Tim Garrett

INTRODUCTION

The demands of the global COVID-19 pandemic and national conversations on gender, diversity and inclusion are prompting renewed discussion on health priorities, including the sufficiency, sustainability and resilience of the health sector workforce. Workforce issues are potentially exacerbated in a time of record high participation and low unemployment rates. For hospital pharmacy, these pressures add to the traditional challenges of upskilling the workforce, the increasing demand for pharmacy services and the escalating cost and complexity of healthcare.

For pharmacy to take advantage of current opportunities, workforce planning is necessary, requiring strong leadership; a clearly articulated and agreed vision, with strategic objectives; and collaborative support with professional, industrial and healthcare partners.

SPECIALTY PRACTICE RECOGNISED

Forecast Panellists (FPs) remain sceptical of the likelihood that specialist pharmacy positions in the future will require practice certification, with a combined percentage of responses indicating that 66% thought this either somewhat or very unlikely (Figure 2, Item 1).

Considering the rapidly evolving healthcare landscape and focus on evidence and value-based care, SHPA implemented a revised model of Specialty Practice in 2017.[1] This multifaceted approach was in keeping with broad acceptance that patient and economic outcomes are best achieved with a knowledgeable and skilled workforce, fostered through initiatives such as participation in specialty practice forums, the completion of residency programs and recognition through advanced practice programs. This approach to upskilling and diversifying the pharmacy workforce is consistent with international pharmacy objectives[2] and similar strategies in the United States[3] and United Kingdom.[4]

This lack of confidence that future specialist pharmacists will hold speciality practice certification is consistent with the Pharmacy Forecast Australia 2021 report under the themes of ‘expanding the adoption of pharmacy residencies’ and ‘availability of a skilled pharmacy workforce’.[5] The likely drivers are an absence of activities to link advanced practice programs with industrial awards, employment opportunities or remuneration. Any pathway to mandate advanced practice certification in speciality roles is likely to be long and complex – with, at least initially, a transition period until sufficient practitioners have the necessary qualifications – and will likely represent an obstacle to future recruitment.

Concurrently, it is important to recognise growing opportunities/competition for health practitioners to upskill in an increasing range of ‘non-traditional’ post-graduate public health courses, including health management, clinical informatics, risk management, public policy and clinical governance.

Given the patient care objectives and strategic professional importance of a mature and diversified profile of the pharmacy profession, formal investigation of incentives and disincentives to the attainment of specialty practice certification remains an important undertaking.

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A MANDATED WORKFORCE STRATEGY DESIGNED TO PRACTICE STANDARDS

The majority of FPs (63%) indicated they did not think increased visibility of pharmacy benefits would result in legislated clinical pharmacy staffing ratios being implemented. FPs may have expressed some guarded optimism, as 37% thought this is 'somewhat likely' to 'very likely' (Figure 2, Item 2).

Hospital pharmacy is the fastest growing pharmacy sector of the profession in Australia increasing from ~4,000 hospital pharmacists in 2013 to more than 6,100 in 2021, now representing 23% of all pharmacy jobs.[6] Increasing demand for Pharmacy services, growing complexity and acuity within health facilities, and increased expectations to reduce service costs have placed significant pressure on pharmacy departments. Without consistent and robust service level agreements these factors risk compromising the range, quality, consistency and safety of services.

Unlike other health professions,[7,8,9] pharmacy professional practice staffing recommendations[10] do not determine local resourcing, permitting potentially significant variation in the range and quality of care as well as working conditions for pharmacy staff between justifications. A recent survey (2021) completed by 38% of NSW public hospital pharmacy departments reported clinical pharmacists working at 2.0–2.8 times the recommended bed ratios.[11] Furthermore, the absence of regular workforce census data to describe the nature (and changes) of the hospital pharmacy workforce risks undermining future workforce planning and the development of appropriate actions to meet emerging demands.

Given the growing public recognition of the role public health plays in pandemic responses, as well as an ageing population, it is more important than ever to understand the supply, turnover and sufficiency of health workers. Advocacy by groups including SHPA[12,13] has highlighted current activities and further potential for hospital pharmacists to reduce medication-related harm, optimise medication use, decrease hospital length of stay and reduce readmissions and their associated Medicare costs. This has included calling for a strong and sustainable workforce of pharmacists and technicians.

However, without coordinated action at a professional and industrial level it remains unlikely that minimum pharmacy staff to activity ratios will be implemented in a consistent manner in the short to medium term. This underlines the need for a national pharmacy workforce strategy, perhaps aligned to a nursing approach with pharmacist-to-patient ratios and informed by regular census data. In the interim, greater support and collaboration on service-level/enterprise agreements may mitigate cross-jurisdictional workforce variation.

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WORKFORCE READY GRADUATES

A significant majority of FPs (69%) indicated optimism that there will be a shift in direction of universities to develop curricula that deliver graduates ready for immediate appointment at the completion of undergraduate courses (Figure 2, Item 3).

SHPA identified the development of a 'more sustainable and resilient hospital pharmacy workforce' as a 2022-23 Federal Budget priority, which is likely in response to current perceptions of high vacancy rates and staff turnover. There is also increased recognition of a lack of sufficient information on the hospital pharmacy workforce and future workforce needs.

A key aspect in any future workforce strategy is the sufficiency and 'practice readiness' of new career entrants. According to recent information from SHPA there is a high level of interest in hospital pharmacy careers among current undergraduates (82%). However, the same reports identified there are only ~250 hospital interns nationally.[14] This would result in most pharmacists entering the hospital sector having completed a community internship and with limited hospital practice experience beyond undergraduate clinical practice placements. While hospital internships are likely to have a high retention rate within the sector (and deliver very capable practitioners) this is a resource intensive approach for a minority of the required workforce and it could be questioned if this is the 'right' use of resources.

Similar to established 'sandwich' courses overseas,[15,16] we now see the emergence of new Australian degrees incorporating an intern training program and supervised practice requirements to deliver registered pharmacists without a separate, traditional intern year. This provides an opportunity and impetus for the hospital sector to reconsider its teaching, research and investment in undergraduate programs.

Market forces are likely to determine the success of these new degree types which may offer pedological and practice-based advantages. However, it should prompt debate and action within the hospital pharmacy sector on new approaches to adequately equip future intakes of early career hospital pharmacists, at the undergraduate level, and with the increasing range of skills and experiences to perform clinical practice.

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A TECHNICIAN WORKFORCE CREDENTIALED WITH ENHANCED ROLES

FPs clearly acknowledge the pharmacy technician workforce needs to be credentialed in a nationally consistent way in order to facilitate expanded roles such as 'Tech-check-Tech' and clinical services. A total of 71% indicated the belief that these reforms will be either 'very likely' or 'somewhat likely' by 2027 (Figure 2, Item 4).

A similar question focused on formal qualifications was asked in the Pharmacy Forecast Australia 2021 report, to which the majority of FPs also responded positively, demonstrating that ongoing optimism exists toward the development and formalisation of learning pathways for pharmacy technicians.[17]

It is now more than 10 years since the publication of SHPA's white paper around exploring the role of hospital pharmacy Technicians.[18] The paper identified that qualifications to become a pharmacy technician are set by states and territories with no consistency, and that existing training programs provide only basic skills introduction. Additionally, the majority of training for this workforce is conducted locally in-house. This is supported by recently published research by Cheong et al, which found ongoing perceptions of inadequacy regarding current certifications resulting in the need for more in-house training, while highlighting cost of further education and lack of remuneration as major barriers to address.[19] It is interesting that this year's FPs were optimistic this challenge would be addressed. Remuneration incentives will likely need to come from award or agreement negotiations, which are largely sector and industrial process based.

The SHPA white paper highlighted a key point around education and training and the role that professional bodies like SHPA could play in the credentialing of individuals. In the United States pharmacy technician credentials have been supported by the American Society of Health System Pharmacists (ASHP) who provide an accreditation service for pharmacy technician training programs offering credentialed training packages.[20] Hence, it raises the question if similar programs like pharmacist residency may be seen in the coming years for technicians.

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PHARMACISTS EMPLOYED BEYOND CONVENTIONAL ROLES

FPs expressed ambivalence as to whether hospital pharmacists will increasingly participate in non-traditional roles, consequent to experience and expertise gained during the COVID-19 pandemic, with responses distributed roughly equally across ‘somewhat likely’ and ‘somewhat unlikely’ (Figure 2, Item 5).

It was within recent memory that Australian pharmacists started vaccinating patients. The COVID-19 pandemic and subsequent vaccine roll out saw this advancement in pharmacist practice become an explosion of activity. Pharmacists rapidly upskilled to support the needs of the nation, with the unique expertise of hospital pharmacists and their peers crucial to the set-up and operation of mass vaccination hubs and the preparation and administration of Australia’s multiple vaccine candidates. What was once a non-traditional service in Australia for pharmacists, became a requirement.

Likewise, pharmacists were pivotal in developing COVID-19 vaccination and therapeutics guidance at federal and state levels with SHPA represented on the COVID-19 evidence taskforce.[21] Furthermore, the PSA has also included non-traditional roles in their pharmacy careers guide.[22]

Pharmacists working in hospitals frequently must consider items beyond medicines, as multidisciplinary approaches require champions for non-pharmaceutical treatment options in areas such as in acute behavioural disturbance management. Given this broad perspective and prior engagement, it is possible that FPs understood that pharmacists were already engaged in clinical governance and risk management, and that COVID-19 may not have been a driver for this to advance.

The explosion of digital health and technologies around medicines has seen growing need for medicines experts in this arena. Pharmacists have been intricately involved in this space and are listed as key players in both project and user groups in the Australian Commission on Safety and Quality in Health Care’s guide to Electronic Medication Management implementation.[23] It is noteworthy that the 2019 Allied Health Professionals position statement by the Health Informatics Society of Australia commented on ‘the untapped potential in digital health... the role of a Chief Pharmacy Information Officer was an emerging role[24], and lists the position as an executive role.

With the mixed response among the FPs, perhaps it is likely that movement into non-traditional roles was already occurring without COVID-19 being viewed as an accelerator. A key enabler for continued progress into these areas will be ongoing effort and advocacy.

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LEADERSHIP DIVERSITY SUPPORTED BY QUOTAS

There was an even split in FPs overall responses to the proposition that pharmacy leadership in 2027 would be reflective of community diversity (Figure 2, Item 6).

Diversity and inclusion have garnered increasing attention in the public discourse over the past several years and this is likely to remain a necessary focus if pharmacy leadership is to achieve adequate representation of our diverse communities in the workforce. The value of achieving this is well attested through enhanced productivity and resourcefulness in organisations where gender and cultural diversity at leadership levels is achieved.[25]

Diversity and inclusion in health are embedded organisational goals in many sectors with plans existing on many government health agency webpages such as the Department of Health.[26] Gender and multicultural diversity are key items for inclusion. Driven by broader aspects in the NSW public service, NSW Health cites goals on its diversity page to 'increase the proportion of women in senior leadership roles to 50% in the government sector by 2025'[27]. SA Health has seen real shifts in leadership numbers with the proportion of female hospital executives growing from 38% to 53% between 2006 and 2018.[28] These are significant examples of plans and outcomes for gender diversity in leadership. The Department of Health's Reconciliation Action Plan identifies the opportunity for inclusion of Aboriginal and Torres Strait Islander employees through actions to improve recruitment, retention and professional development, with a desire to create pathways to senior leadership roles specifically in the secretary's introductory message.[29]

Within the pharmacy profession both the Pharmacy Guild and the Pharmaceutical Society of Australia (PSA) have released press briefings on changes to their Boards that are focused on greater diversity of membership.[30,31] This demonstrates that gender and cultural diversity within the profession is gaining recognition. Internationally, research into this issue continues with a recent Canadian study of 3,056 healthcare leaders finding that gender-based parity was present but that representation based on race was not.[32]

It is clear that ongoing work to accept, encourage and achieve diversity will be positive for healthcare, the profession, organisations and, most of all, for patients. Females comprise 51% of the population[33] and represent 61.7% of the pharmacy workforce.[34] Aboriginal and Torres Strait Islander people comprise 3.3% of the population[35], but only 0.3% of the profession.[34] With these facts in mind a positive step forward may be to embed gender and cultural diversity in recruitment practices, committee terms of reference and training of existing and future leadership positions, articulating clear targets of what success would look like.

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TECHNOLOGY ENABLING A FLEXIBLE WORKFORCE

Of all the questions under the Future Workforce theme, the strongest level of FPs' agreement was that data derived from newly deployed technology would likely enable a more directed and flexible approach to work (Figure 2, Item 7).

'Big Data' is a phrase that often follows 'digital transformation' and as Australia increases usage of electronic medical records, medication data will also increase. When combined with other medication-related adopted technologies such as smart infusion pumps, robotics, automated dispensing cabinets, electronic prescriptions and real time prescription monitoring, the amount of information available is growing exponentially. Increasing volumes of data are now transferred between organisations electronically via platforms such as My Health Record and the Australian Immunisation Register which also mandates data entry for many vaccines.[36] Pharmacy has a history of interactions with technology via dispensing and stock management systems and should therefore adapt to the introduction of new systems and their applications.[37]

Australia's digital health landscape continues to develop with strategy documents and plans in abundance. The Australian Digital Health Agency Strategy[38] has clear priorities directly related to the deployment of technology to enable more efficient and reliable clinical decision making, and significant inroads have been made towards many of the objectives. Widespread adoption of real time prescription monitoring is planned for national implementation with state-based systems interacting in real time to improve visibility of information and reduce the misuse of controlled medications.[39]

Queensland Health's 'Digital Health Strategic Vision for Queensland 2026'[40] also identifies benefits of ready patient data availability as key transformations that will be obtained via digital health. Private hospitals are also going through transitions with St Stephen's Hervey Bay being the first hospital in Australia to reach HIMSS EMRAM^{SM} level 7.[41]

Increasing availability and volume of data pose a challenge for clinicians to incorporate information during relatively short clinical interactions. Clinical decision support systems (CDSS)[42], and eventually more complex tools including artificial intelligence and machine learning, are being tested for utilisation to process data and assist in care. The potential benefits are endless and range from seasonal stock holding adjustments of anti-infectives to dosing of complex medications. Leaders, researchers and clinicians in the profession will need to decide how to maximise the benefits of this revolution, which is likely to affect all areas of the profession.

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CONCLUSION

The goal of a healthy and vibrant hospital pharmacy workforce remains perhaps the biggest and most difficult challenge facing the profession. Renewed public and political recognition of the importance of effective healthcare provides a timely opportunity to begin to reduce the deficits and inconsistencies in workforce composition, resourcing, career pathways and use of technology.

FPs express reservation that there will be increased uptake of specialist pharmacist certification, improved staffing ratios, increased role diversity and improved gender and cultural diversity, but with some optimism for increased technician upskilling and better utilisation of clinical data.

Taken together these findings may indicate a national pharmacy workforce strategy (supported by data) is necessary to engage and align hospital pharmacists to meet current and future demands.

RECOMMENDATIONS

1. Overcome barriers to pharmacist specialisation and unify Pharmacy Technician credentialing

Pharmacy leaders should undertake formal investigation of incentives and disincentives to the attainment of specialty practice certification to determine if these programs result in the anticipated personal/professional/career advantages and inform future strategies and actions. Likewise, pharmacy technician training models need to be reviewed to consider the role of accredited credentialing programs and strategies to create engagement.

2. Describe the Pharmacy Workforce to inform a national strategy

Regular workforce census to quantify and describe the nature of the hospital pharmacy profession should be conducted to inform workforce planning activities and respond to emerging risks/opportunities. Information obtained could be used in the development of a national strategy for a sustainable and resilient hospital pharmacy workforce aligned to public health goals and professional practice expectations.

3. Build momentum for new graduate practice readiness

Pharmacy leaders should reassess the future workforce strategy to more effectively equip a greater number of hospital career ready pharmacists beyond the traditional model of hospital internship.

4. Advance technician roles in the profession

Pharmacy leaders should push for further reviews on training for technicians to advance roles and, in turn, the pharmacy profession.

5. Set an example for versatility across the profession

The career paths and achievements of pharmacists working in non-traditional roles should be highlighted to the national workforce via professional media releases and publications to demonstrate the profession's capability and versatility.

6. Diversify pharmacy leadership demographics

Existing pharmacy leaders should mandate diversity and cultural awareness training for all management positions with a particular emphasis on addressing unconscious bias in recruitment processes. Peak committee terms of references should provide for gender diversity across the spectrum of workplaces and position statements on diversity be developed and adopted by pharmacy organisations.

7. Capture the benefits of big data for frontline clinicians

Pharmacy leaders should develop and invest in training programs for staff specifically designed to enable enhanced use of electronic data, to realise improvements to frontline clinical services and positively augment research activities.

PARTNER PERSPECTIVE

National Australian Pharmacy Students' Association (NAPSA)

The National Australian Pharmacy Students' Association (NAPSA) represents all of the students across the eighteen Pharmacy schools of Australia, some of whom are the future leaders, innovators and experts of our Hospital Pharmacy profession. Therefore, we agree that a national strategy should be developed to ensure a sustainable and resilient Hospital Pharmacy workforce that will be aligned with both public health goals and professional practice expectations.

NAPSA concur that a census within the workforce to quantify and describe the nature of the profession will aid in identifying and responding to emerging risks and opportunities while also informing planning activities within the profession.

In line with SHPA, NAPSA acknowledges that leaders within the industry should move toward a workforce strategy that more effectively prepares pharmacists to be hospital-career ready, beyond the conventional hospital internship model.

There is more diversity among pharmacy student cohorts than ever, and it is crucial this representation is reflected in the workforce, particularly in leadership roles. In order to successfully achieve this, NAPSA agrees a review of representation and diversity within Hospital Pharmacy leadership roles must be undertaken, and diversity and inclusion should feature in these role descriptions and duties.

NAPSA recognises this review should include an evaluation of the current state and challenges associated with diversity training and awareness, and agree that publication of a statement around diversity and inclusion will be beneficial in highlighting how we can successfully overcome these challenges.

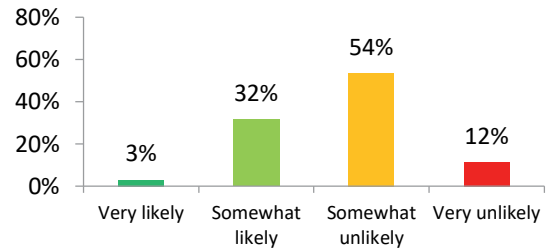
The scope of practice for Hospital Pharmacists is expanding exponentially and, with today's students being the pharmacists of the future, NAPSA agrees it is important to highlight and share the journeys of pharmacists working in non-traditional roles and advocate for pharmacists to work in these roles. Additionally, gaining information regarding advanced practice certification within Hospital Pharmacy and its associated benefits through a formal investigation would help to inform future actions and with strategic planning.

Verity Boustead, President

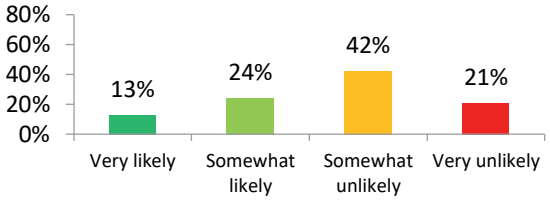
FIGURE 2. FUTURE WORKFORCE

Forecast Panelists' responses to the question, 'How likely is it that the following will occur by the year 2027 in the geographic region where you work?'

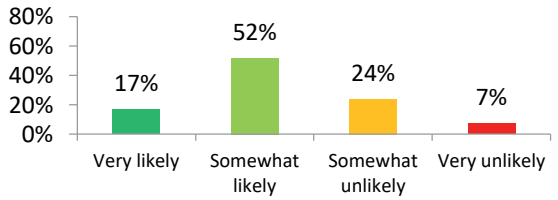
1. At least 50% of key specialised hospital pharmacy positions will require speciality practice certification recognised by a peak authority



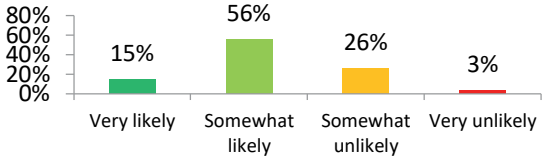
2. Visibility of the roles in the pharmacy workforce and clinical benefits provided will result in a jurisdiction-wide pharmacy workforce strategy with legislated clinical pharmacist staffing ratios in accordance with the SHPA Standards of Practice Series



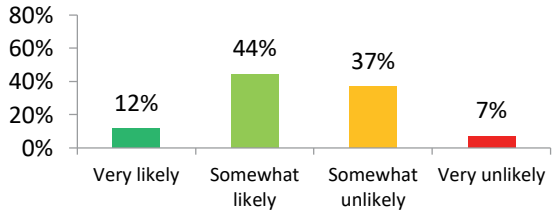
3. At least 10% of university undergraduate pharmacy courses will be developing programs to deliver intern registration requirements through practice-based placements to deliver registered pharmacists ready for immediate appointment at completion of their course



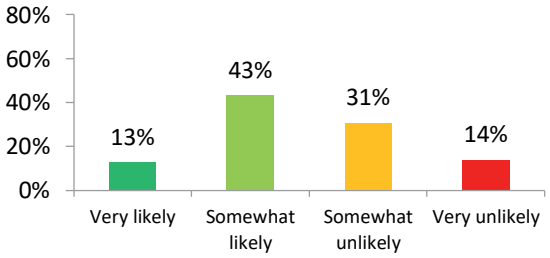
4. At least 50% of Hospital Pharmacy Technician workforce will be able to access credentialed training programs supported by their hospital or subsidised by federal and/or state governments, to gain certification and perform expanded and contemporary practice roles identified in SHPA's White Paper on 'Exploring the role of hospital pharmacy technicians and assistants to enhance the delivery of patient centered care'



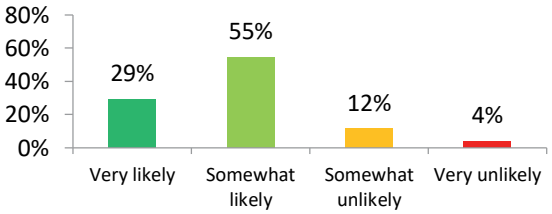
5. The experiences of the COVID-19 pandemic will have led to a 50% increase in hospital pharmacists employed in 'non-traditional' roles such as clinical governance, risk management, informatics and senior and/or executive operational roles



6. Pharmacy professional leadership will be representative of the gender and cultural diversity of Australia and be supported by quotas



7. Technology deployment generating clinically relevant data will allow greater workplace flexibility by enabling improved clinical decision making and informing medicine use and selection, especially in critical care environments



THEME 3 – PATIENT CENTRED CARE

Advisory Committee Leads: Ange Young, James Grant
Theme Leads: Deirdre Criddle, Brett Chambers

INTRODUCTION

The 'Patient Centred Care' theme provided a platform on which to explore the 'typical' patient and consider who, as pharmacists, our sector is here to serve. Whether it be the person living in an aged care facility, transitioning in or out of an acute care service, isolating at home or unable or unwilling to travel, or the culturally or linguistically diverse patient, all Australians deserve to have access to relevant and timely information, as well as healthcare professionals who aim to optimise their medication management and maximise their wellbeing.

Recent disruptive events have challenged the way clinical pharmacy services are delivered to patients; COVID-19 catapulted telehealth and virtual pharmacy services to the forefront, enabling more patients access to a clinical pharmacist and more services to access medication safety expertise; My Health Record has helped refocus pharmacist's time from data gathering to data processing and actioning; and the recommendations from the Royal Commission into Aged Care Quality and Safety have provided a unique and overdue opportunity for pharmacists to broaden their impact within the community.

The questions under this theme are based on innovations in Clinical Pharmacy trialled or implemented internationally or within pockets throughout Australia, all with the intention of reducing harm and maximising outcomes for all patients.

IMPROVING PATIENT INFORMATION AND CARE

Inaccurate medicines information impacts almost every patient as they move across transitions of care. Medication reconciliation has long been recognised as a key medication safety strategy to address the burden of unintended medication discrepancies and prevent patient harm. Historically, medication reconciliation has been resource intensive as health information has been stored in multiple systems across public and private, community and hospital sectors. Internationally, improving the quality and availability of information at transitions of care has been highlighted by the World Health Organization (WHO) as a key enabler for effective medication reconciliation.[1] In Australia, better availability and access to prescriptions and medicines information is listed as a strategic priority in Australia's National Digital Health Strategy.[2]

Engaging enabling technology

In the Pharmacy Forecast Australia 2021 report, the majority (83%) of Forecast Panellists (FPs) believed operational efficiencies will be realised from the routine use of electronic platforms. This year, FPs remain optimistic (64%) that better availability of accurate patient information will lead to efficiencies in medication reconciliation (Figure 3, Item 1). These will allow more time for pharmacists to perform additional clinical roles that focus on patient care, enhancing quality use of medicines and medication safety, recognised as a National Health Priority Area. A small percentage of FPs (6%) believe this is very unlikely, suggesting medication reconciliation will remain a time-consuming and core role of clinical pharmacists, and some technicians with advanced roles, into the future (Figure 3, Item 1). Significant improvements have been made through My Health Record with increasing use of electronic health records and the promise of interoperability likely to yield further improvements. Despite rapid uptake of technologies and utilisation of My Health Record over the COVID-19 pandemic, the survey results indicate further refinement in these areas is required to recognise efficiencies that will enable pharmacists to focus on additional activities that further enhance patient care and safety.

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INNOVATIVE MODELS OF CLINICAL PHARMACY ACROSS THE CARE CONTINUUM

A large majority of FPs (76%) indicated new models of care are likely to be adopted to provide clinical pharmacy services in the next five years (Figure 3, Item 2). This is in addition to high levels of optimism toward having dedicated pharmacy liaison positions devoted to transitions of care. Since last year there has been a noteworthy positive change in FP views around the expansion of specialist pharmacist roles, multidisciplinary roles and discharge liaison roles.[3] This increased optimism may reflect the unprecedented levels of innovation and adoption of technologies, the success of home-based and virtual care programs during the pandemic and the broadening of pharmacist roles to respond to COVID-19.[4] State governments are building on this success to expand patient care in the home, with the Victorian government to invest $698 million over four years in its 'Better at Home' program. Hospital Outreach Medication Review (HOMR) has been used effectively in exemplar programs such as the Hospital Admission Risk Program (HARP) in Victoria and the Complex Needs Coordination Team (CoNeCT) in Western Australia, engaging clinical pharmacists embedded in interdisciplinary teams to assist people with complex care needs who are high users of the hospital system.[5]

In an Australian general practice context, the 'REMAIN HOME' study demonstrates that comprehensive medication review by a pharmacist post-discharge can reduce hospital readmissions.[6] hospital pharmacists are well placed to assist, either through discharge liaison facilitating early post-discharge medication review by GP pharmacists or community providers, or HOMR services for high-risk patients who are unable to access timely medication review through usual community channels. In a direct effort to encourage access to community-based services, rule changes broadening the referral base for Australian community funded Home Medicines Review (HMR) and Residential Medication Management Review (RMMR) programs were announced in March 2020. SHPA launched a framework for HMR, RMMR and HOMR pathways to support identification and referral of high-risk patients by hospital-based clinicians to these programs.[7]

The Royal Commission into Aged Care Quality and Safety identified medication management as an essential area for improvement and the Federal Government has pledged $345.7 million for on-site pharmacists in government-funded residential aged care facilities. This creates opportunities for specialty pharmacists to lead the development of new models of clinical pharmacy in residential aged care.[8]

Australia is making progress with a number of other innovative hospital pharmacy based models including virtual pharmacy to inpatients in rural and remote NSW hospitals,[9] centralised telehealth antimicrobial stewardship services in Queensland, telehealth services for cardiology patients in rural Victoria,[10] and telechemotherapy for patients in rural Western Australia.[11] Pharmacists need to build on the success of these programs and advocate for opportunities to integrate clinical pharmacy into these and other multidisciplinary models of care – such as hospital in the home – which meet government objectives to reduce the demand for acute services and unnecessary admissions to hospitals. While stand-alone pharmacy models are being documented, many are pilots and feasibility studies and lack comprehensive evaluations which are required to attract ongoing funding and systemic uptake.

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PERSONALISING MEDICINE

In what was perceived to be a very low target for the incorporation of precision medicine (10%), just over half of FPs believe hospital pharmacy will look to have this low-level expertise in hospitals within the next five years (Figure 3, Item 3). This is in contrast to Europe and the United States where pharmacogenomics has been described as an underused strategy to optimise medication effectiveness, improve medication-use safety, and reduce overall costs of care.[12] The American Society of Health-System Pharmacists (ASHP) recently released a Position Statement on the Clinical Role of Pharmacogenomics, advocating for pharmacists to take a lead role in the ordering and interpreting of pharmacogenomic tests to improve clinical outcomes and patient safety.[13] Where early applications were founded in oncology and cardiology, there has been increasing interest in psychiatry, neurology, and infectious diseases. This position statement provides clear guidance on priorities for program implementation and pharmacists' roles and responsibilities.

ASHP argue pharmacists possess distinct knowledge, skills, and abilities that uniquely position them to lead interprofessional efforts to develop processes for ordering pharmacogenomic tests and for reporting and interpreting test results.[12] Several Australian Schools of Pharmacy are embedding this area into their curricula, recognising the need to arm students with foundational skills to enable growth in clinical pharmacogenetics. Pharmacogenomics is also seen as an important investment in Australian pharmacy's future. There are two streams dedicated to pharmacogenomics interventions in the 2022 Medical Research Future Fund Medicine Intervention by Pharmacists grants,[14] as well as the recent Australian Precision Medicine Enterprise (APME) project that has opened in Melbourne with an intent to rapidly grow precision medicine's footprint in Australia.[15]

The 'unlikely' sentiment reported by 42% of FPs regarding the uptake of precision medicine could be due to multiple factors (Figure 3, Item 3). These include a lack of awareness of ongoing developments in pharmacogenomics, barriers to implementation locally due to a larger geography and lower population density, and the need for pharmacy departments to map out the personnel, information technology and infrastructure requirements to ensure financially sustainable practice models in the years to come.

The key concern is: if pharmacists remain ambivalent, and slow to respond, there will undoubtedly be others keen to take the lead in precision medicine and this may be an opportunity lost to pharmacy.

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MINIMISING POLYPHARMACY, MAXIMISING CARE

The majority of FPs (56%) do not believe hospitals will have dedicated resourcing for a deprescribing stewardship pharmacist (Figure 3, Item 4). Deprescribing attempts to balance the potential for benefit and harm by systematically withdrawing inappropriate medications, with the goal of managing polypharmacy and improving outcomes.[16] The paucity of guidelines in deprescribing for older people living with frailty may have

contributed to the cautious FP response. However, evidence for deprescribing is established and continues to grow, particularly around the withdrawal of potentially inappropriate medicines known to cause harm, such as long-term benzodiazepines and antipsychotics.[17] The Royal Commission into Aged Care Quality and Safety has pulled the care of older people into sharp focus, especially in residential aged care, so it would be naive to think that hospitals will be immune from scrutiny.

There are precedents to this negativity. Today, pharmacists frequently lead antimicrobial and analgesic stewardship programs, supported by national standards and guidelines, however early perceptions of pharmacist stewardship roles in antimicrobial and analgesic stewardship were ambivalent as the unmet need was poorly defined and the role of the pharmacist was uncertain.

The negative response by FPs toward deprescribing could also underlie an expectation that it is already core business for a clinical pharmacist, or that deprescribing is 'already being done' by other roles such as Geriatric Medicine Pharmacists. The SHPA *Standard of practice in geriatric medicine for pharmacy services* includes the role of pharmacy in deprescribing and the SHPA Position Statement on Geriatric Medicine advocates for the employment of Geriatric Medicine Pharmacists in hospitals and aged care service. Yet, the ageing population sees increasing numbers of geriatric patients admitted to emergency departments, surgical wards, intensive care units and rural hospitals where specialist geriatric services are unlikely to be provided. This could represent an opportunity to more clearly define the role of the deprescribing pharmacist in improving care for older patients suffering significant decline, who often present with delirium or falls. Referral to a highly skilled dedicated geriatrics team, including a Deprescribing Stewardship Pharmacist, could ensure timely comprehensive medicines review informed by shared decision-making with patients, carers and family members and focused on agreed goals of care. The inability to easily identify patients in need of deprescribing could also be a source of pessimism.

Having dedicated roles to improve medication management and reduce harm in our older vulnerable patients clearly aligns with expectations of the ACSQHC Comprehensive Care Standard.[18] With falls, pressure injuries, nutrition, mental health, cognitive impairment and end-of-life care specifically targeted, there appears a clear need for a greater understanding of the value a Deprescribing Stewardship Pharmacist can provide to improve medication management of the older, frail patient.

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TAILORING MEDICINE INFORMATION

It is widely acknowledged that religion, culture, beliefs and ethnic customs influence patients' understanding of health concepts, including medication management. A clear and personalised medication list, appropriate for the patient's language and literacy, is of the utmost importance. The National Safety and Quality Health Service (NSQHS) Standards lay out the requirements for the provision of an up-to-date medication list, including the reasons for any changes, to patients and healthcare providers on discharge from hospital. Only 58% of FPs were optimistic that all patients will receive a patient-friendly medication list and management plan on discharge, and 16% of FPs believed it is very unlikely (Figure 3, Item 5), suggesting there are existing challenges which have not been addressed.

One such challenge is health literacy, with more than half of Australians have been identified as having low health literacy skills;[19] despite most Australians having a positive view of their health literacy, this was less so for marginalised groups.[19,20] Inadequate tools are also a limiting factor; reviews into medication lists have found most tools do not meet all users' needs and patients and carers are largely unaware of the value and purpose of medication lists.[21] This is supported by a 2019 Australian NPS MedicineWise Galaxy Poll that found only about one in three (31%) Australians who regularly take two or more medicines actually keep a list of all their medications.[19]

The Australian Digital Health Agency is progressing a Pharmacist Shared Medicines List (PSML) medicine safety initiative, which recently began uploading to a patient's My Health Record to ensure a safer transition of care. The PSML is a breakthrough, providing a foundation for communication with patients and the healthcare team, however, it is reliant on the pharmacist and is not editable by the broader healthcare team which could limit the uptake and reliability. It will also take time for software to conform and healthcare organisations to adopt the PSML, meaning frustration and barriers to the provision of patient friendly medication lists, including insufficient tools to efficiently create and share a medication list, will be ongoing in many jurisdictions.

Regardless of the tool, pharmacists must remain a key trusted source for evidence-based medicines information for patients and champion the use of patient friendly medication lists as a tool to improve health and medication literacy.

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UTILISING TECHNOLOGY TO IMPROVE PATIENT CARE

Automated dispensing cabinets (ADCs) are computerised storage devices that allow medications to be stored and dispensed near the point of care, while controlling and tracking their distribution. Over half of FPs (57%) believe ADCs will be increasingly introduced in Australian hospitals to reduce medication errors, safeguard medications from improper use, and improve efficiency of medication processes – especially in high-risk settings (Figure 3, Item 7).[22] The 44% of FPs that think this 'unlikely' may indicate this may not be uniformly implemented across all hospitals where ADCs may not have the same return on investment. Equally, pharmacy departments may be seeing 'post COVID-19 response' budgetary changes coming into effect and responding to the tension between running projects to acquire or extend ADC in their facilities and managing the requirements of adjusted budgets to meet existing operational needs.

Implementing ADCs and inventory robotics in Australian hospitals can provide benefits in efficiency and accuracy; however, robust downtime procedures are essential.[23] Further, the benefits of ADCs as part of the Closed Loop Medications Management (CLMM) lifecycle can only be seen with complete implementations involving integration with other systems (e.g. dispensing, electronic health record, prescribing), workforce and workflow changes, and making use of the data made available through ADCs.[24] Larger ecosystem challenges such as having readable and data-rich barcodes on every medication, and at the unit dose packaging level, can be another challenging factor though many are advocating and pushing toward such fundamental changes.[25] A partial approach that may see the hardware only installed on wards (and little elsewhere) is unlikely to see a sustained and beneficial impact to healthcare services.

Caution is well-warranted that working with ADCs requires the right resources to do so. A longer-term, if not shorter-term plan to use ADCs as part of providing patient centred care is ideal to provide a key step in facilities moving towards CLMM.[24]

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CONCLUSION

The next five years will continue to see a seismic shift in the way pharmacists care for patients. It was positive to see FPs were generally optimistic about significant changes occurring, from incorporating information and technology, to expanding the delivery of clinical pharmacy services and personalising patient care. There will be further uptake of a variety of dynamic Clinical Pharmacy services that supplement traditional models of healthcare delivery, to meet the needs of every Australian, regardless of their age, location, cultural background, genetic makeup, social environment or health literacy level.

Further efforts are required to recognise and meet the diverse needs of Australians and to ensure every person has the opportunity to understand information about their medicines in a meaningful way, as a step towards empowering people to better manage their healthcare. Additional ways to minimise polypharmacy and potential unnecessary medication side effects must be identified. Pharmacists, pharmacy leaders and organisations have an integral role in planning, resourcing and driving these changes to what best meets the needs of individual patients and communities.

RECOMMENDATIONS

1. Collaborate toward single-source patient information

National and local organisations should work together to overcome barriers preventing the creation and use of a single patient medication information source.

2. Plan ahead for tech-led efficiency

Pharmacy leaders should be planning the higher value activities their workforce will undertake once technology delivers time savings.

3. Stay alert to emerging care models and funding opportunities

Pharmacy leaders should be aware of emerging clinical pharmacy models of care, advocate for their use across the healthcare continuum and apply for funding grants to implement new models of care, as well as outpatient and telehealth settings to support them.

4. Publish and promote to help spread innovation

Pharmacy leaders and clinicians involved in new specialty areas and models of care must partner with health researchers and academics to perform robust evaluations and publish the results. Professional bodies like SHPA can facilitate the collation and dissemination of models and their supporting evidence.

5. Start and build your local pharmacogenetics journey

Pharmacy departments should actively implement pharmacogenomics into their services and models of care, wherever possible.

6. Take the professional lead on pharmacogenetics

Pharmacy leaders, professional bodies and universities should help lead awareness and growth of pharmacogenomics through education and training, competency and guidance for pharmacists, and research collaborations.

7. Amplify advocacy on deprescribing pharmacists

The pharmacy profession should continue to advocate for specific skills in, and a focus on, deprescribing that is appropriate for specialist and generalist pharmacists.

8. Lead collaboration toward patient friendly medication lists

Pharmacy leaders, healthcare organisations, national agencies and consumers must work together to design, implement and champion appropriate electronic tools, including the PSML, which support the creation of medication lists that are appropriate for a patient's culture, language and level of health literacy that follows them across the care continuum.

9. Consider broad factors in the implementation of ADCs

Pharmacy leaders must advocate for appropriate resourcing, change management and integration with electronic medical records to provide workflow and safety benefits.

PARTNER PERSPECTIVE

Australian Medical Association (AMA)

The past two years have shone a light on the healthcare system, exposing the cracks, flaws and failings that have been hidden or ignored for too long. The AMA's immediate focus is repairing the system.

Issues like the hospital logjam crisis will continue to receive major attention. We need to see the new Government developing plans with the healthcare sector and then implementing them properly with appropriate funding. For our hospitals this means increasing funding to 50 per cent and removing the 6.5 per cent cap.

This is vital and will allow our hospitals and health services to build infrastructure and hire staff to care for our patients. But this will need to be complimented by smaller reforms and programs that will modernise our health system, promoting high-value models of care that integrate around patients, providing treatment for them in appropriate settings by the right practitioners.

As stated in the AMA's Vision for Australia's Health, the beginning point of all reform should be safe, high-quality, patient-centred care. Patient-centred care is the single, most important consideration in promoting good health outcomes for our patients. Our patients will benefit most if we can provide continuity of care and integrated care across professional boundaries.

Doctors and pharmacists do this in hospitals every day across the country. Hospital Pharmacists are deeply integrated into care models in hospitals, using their professional skills to increase patient safety and improve outcomes in collaboration with doctors and nurses providing the direct patient care. There are lessons here for care in the community – where fragmentation is the norm and increasing. This comes at a direct cost both financially and in terms of patient outcomes.

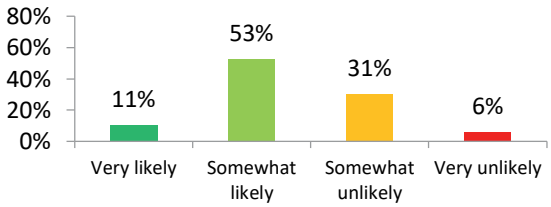
Australia has one of the best health systems in the world. We need to keep working collaboratively to keep it that way. We cannot afford to risk it with models that promote fragmented care and focus on cost-saving and convenience.

Dr Omar Khorshid, President

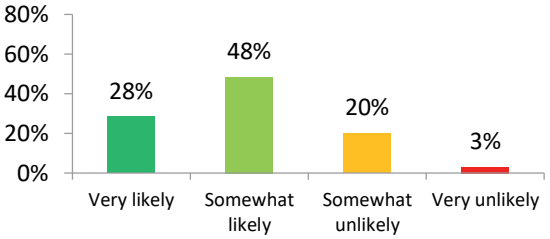
FIGURE 3. PATIENT-CENTRED CARE

Forecast Panelists' responses to the question, '*How likely is it that the following will occur by the year 2027 in the geographic region where you work?*'

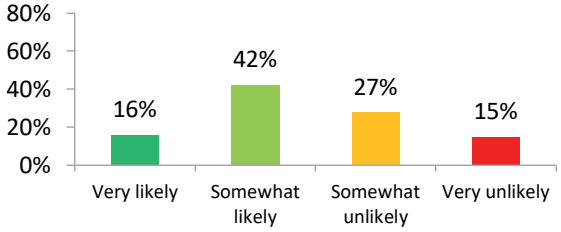
1. Hospital pharmacy services will allocate at least 80% of their clinical time focusing on patient centered, value-adding clinical pharmacy activities, and less time spent on medication reconciliation, due to better availability of accurate patient information



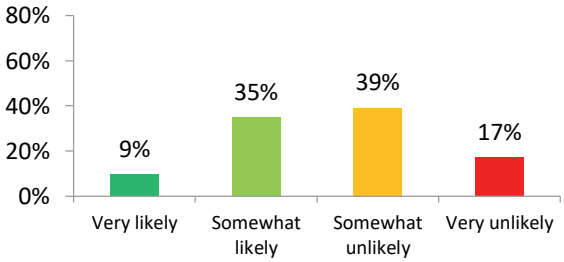
2. At least 75% of hospitals will provide clinical pharmacy services to admitted patients/consumers through models such as telepharmacy, hospital in the home or post-discharge services



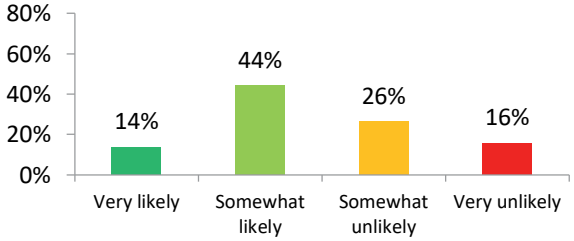
3. At least 10% of hospitals will provide "precision medicine" which are tailored treatments based on each person's genes, as well as their environment, lifestyle and other characteristics *(Pharmacogenomics, NIH, 2020)*



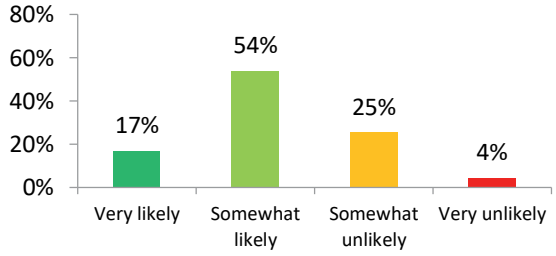
4. At least 50% of hospitals will have a dedicated staffing resource for a deprescribing stewardship pharmacist



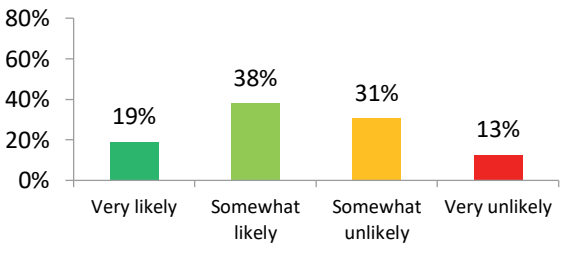
5. 100% of patients will be provided with a medication list and management plan upon discharge that is appropriate for their culture, language and level of health literacy



6. At least 75% of hospitals will have pharmacy staff dedicated to transition of care/liaison with community pharmacists and GPs



7. 80% of all facilities' inpatient wards will utilise automated medication dispensing cabinets in at least high-risk clinical settings in order to improve patient safety, workflow and staff efficiencies



THEME 4 – TECHNOLOGY

Advisory Committee Leads: Peter Smart, James Grant
Theme Leads: Aaron Van Garderen, Jarrod Yip

INTRODUCTION

Unsurprisingly, technology has re-emerged as a key theme when considering pharmacy's future. The COVID-19 pandemic has shown that health systems with advanced technological capabilities benefited their communities through provision of uncompromised patient care and by optimising use of (and minimising risk to) a critical workforce. Whilst technologies are constantly delivering new opportunities for improved patient care, they also harbor new threats that need combating. This theme explores these broadly through the lenses of medicines access, information access, data exchange and workforce professionalisation.

IMPROVING ACCESS

Technology's exponential rate of growth continues across all areas of healthcare. A recent increase in publications regarding 3D printing developments led the Pharmacy Forecast Advisory Committee to consider how pivotal a role technology would play in medication access improvements over the next five years, notably with supply chain issues and shortages a significant factor in Australian healthcare even before the COVID-19 pandemic.[1]

Ninety-five percent (95%) of Forecast Panellists (FPs) reported it was unlikely the 3D printing of pharmaceuticals would assist national supply efforts through local, on demand printing of medications (Figure 4, Item 1). 3D printing of medications is a nascent technology without a sizable track record to assess it. While there are similarities to the printing of foods, a key difference when viewed through the lens of technology-augmented medication creation is flexibility.[2]

University College London reported a custom dose of paracetamol was 3D printed within seven seconds.[3] This is still a far cry from a medicine being generated from its core, long shelf-life chemical components that would support on-demand creation of medicines at the location needed, when needed. Given the physical and chemical layers at which this would need to happen, the FPs have rightly eschewed 3D printing, as something more akin to a molecular printer would be required. However, the existing reported technology holds promise for its contribution to precision medicine given non-steroidal anti-inflammatory drugs, paracetamol, theophylline, caffeine, vancomycin, ofloxacin, tetracycline, dexamethasone, paclitaxel, and folic acid have all been 3D printed in custom doses and forms.[4]

FPs were more optimistic regarding the use of technologies like drones to provide medication delivery in 'after hours' scenarios, though most remained negative (66%) and responding this was unlikely or very unlikely (Figure 4, Item 3).

Telehealth's recent growth has improved communication options and timeliness of health assessment and review for all health professionals and patients. Yet patients that are more remote, particularly unwell, mobility limited or socially isolated will still face challenges in acquiring any medicine prescribed by their health practitioner.

While 'technology-assisted delivery' possibilities would incorporate tangible delivery options such as ride shares, specific examples weren't provided. It's therefore difficult to say if the results would have been more positive given these are already routine mechanisms used to deliver medicines, or to support changed patient flow dynamics such as discharging the patient immediately from the ward to their residence and following up with a delivery of medicines and teleconsultation.

A key statement and challenge within the delivery question is 'after hours'. Supplying patients with their medications irrespective of traditionally staffed hours requires more than a drone, parcel locker or rideshare account. To truly provide a consistent 24/7 option where the pharmacy service may not operate across these

hours, the technology and processes would have to be in place for remote labelling and checking of medicine prior to pick-up for delivery. Given the scarcity and price of automated dispensing technology that includes label printing and affixing, and not necessarily at a 100% success rate, other questions need to be answered before any type of implementation.

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KEEPING DATA (AND PATIENTS) SAFE

Ninety per cent (90%) of FPs agreed that at least 5% of hospitals will be subject to a data breach within the next five years (Figure 4, Item 2). This indicates there is high awareness within the profession that the risk is a significant issue.

The Australian Signals Directorate (ASD) identified in May 2020 that advanced persistent threat (APT) actors were actively targeting the healthcare sector as organisations rapidly changed how staff provided care in response to the COVID-19 pandemic. Increases in staff working from home and uptake of virtual health services provided more entry points for cybercriminals to target.[5]

In the Office of the Australian Information Commissioner Notifiable Data Breaches Report for January–June 2021,[6] the healthcare sector was the most represented industry, making up 19% of the 446 reported data breaches in that six month period. The majority (65%) of breaches were a result of malicious activity using phishing methods, stolen user credentials or ransomware. The use of centralised credentialing systems (e.g. Microsoft Active Directory) that allow users to only require one username and password – and for administrators to remove them when staff leave – have risen in popularity but contribute to this risk.

In December 2021, a critical vulnerability was discovered in Apache Log4j software library, an open-source tool which is used to log system information. It is estimated that over 100,000 software products from more than 100 vendors had incorporated Log4j, including those used by Services Australia at the time.[7] Because it was so widespread, the TGA issued an alert to help organisations resolve the issue.[8] Knowledge of what software vendor solutions are used is critical in helping to identify if systems are vulnerable and being proactive in contacting vendors to help mitigate potential breaches. It is troubling as this highlights the level of disruptions that are possible in managing a 'pre-emptive' cybersecurity concern, let alone an actual one.

As healthcare becomes increasingly complex, more organisations look to vendor solutions to help solve problems. Any software solution could leverage third party libraries and applications to carry out certain tasks, and so are vulnerable to attack if not updated regularly.

With these risks, increasing focus needs to remain on educating the pharmacy workforce to be better equipped for improving 'cybersecurity hygiene' within their workplace. Services need to ensure their downtime procedures are robust, maintained and able to be quickly enacted.

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LOTS OF IOT'S

The practicalities of delivering healthcare in a pandemic have changed Australians' perceptions of virtualised healthcare. To encourage physical distancing, support for accessing telehealth services has become widely available on the Medicare Benefits Schedule (MBS). Consumers accessing telehealth services grew significantly, making up to 25% of MBS services being accessed virtually in the 4th Quarter of 2021.[9] By 2027, it is likely that virtual health in Australia will be seen as a conventional means of accessing healthcare.

Additionally, electronic prescription adoption over this period has helped to supplement the delivery of telehealth services and has generated over 37 million electronic prescriptions from May 2020 to February 2022.[10] A 2021 paper on consumer expectations found that, despite a clear preference toward in-person care, younger consumers and those with dependants were more willing to use virtual healthcare services. These cohorts were identified as time poor and perceived the money and time costs associated with making a physical visit as high.[11]

With these gains in the uptake of virtual healthcare, Internet of Things (IoT) devices stand to gain widespread adoption in aiding patients to self-manage conditions in their home as more consumers gain access to stable high speed internet. Internet connected monitoring devices (such as blood glucose, blood pressure, heart rate and air quality monitors) could aid in clinical decision making, identify patient deterioration before hospitalisation and improve the diversity of virtual healthcare services offered in future.

More than half (66%) of the FPs replied in the affirmative that their health service would provide an expanded virtual healthcare service that included the upload of patient vital sign information (Figure 4, Item 4). FPs may be already aware of blood glucose monitoring apps that can export to a text file, or the existence of remote cardiac monitoring services available in Australia,[12] however these devices tend to require their clinical information to be sent to a specific vendor-controlled database for healthcare professionals to access. Ideally, this valuable patient data would also be made available in a vendor-agnostic platform for clinical use, such as My Health Record.

The greatest challenge with expanding this model of care is the lack of an open source integrated and secure IoT data exchange platform for patients to securely upload vital sign information and enable timely access by healthcare professionals. The survey used to inform the 2022 National Digital Health Strategy revealed that lack of integration is one of the greatest barriers to improving healthcare, suggesting this should be a main focus going forward.[13]

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KILLING OFF THE FAX

It is well known that serious medical errors occur due to miscommunication during the transition of care between primary and hospital healthcare providers.[14] A centralised electronic health record with the ability to manage various types of patient medical information flowing in and out from multiple sources would minimise this risk, however, remains a unicorn in healthcare management. Issues ranging from stakeholder engagement to willingness of organisations to exchange data have led to problems with realising the theoretical benefits associated with these implementations, resulting in declining support for centralised eHealth implementations.[15]

On the contrary, FPs expressed confidence (87%) that codified medication data will be uploaded into My Health Record (Figure 4, Item 5). My Health Record has made gradual progress since its inception, and now features

upload of discharge summaries, event summaries, medication prescribing and dispensing data from a number of different end user systems. This is on top of state-based implementations of real time prescription monitoring and electronic prescribing which, in turn, has forced the hand of a number of vendors to comply with legislation and inadvertently prepare these systems for codified medication data exchange. As it currently stands, 96% of the 22.54 million patient My Health Records now contain health related data within the system.[16] From the perspective of a clinician this is fast becoming a useful reference source and this level of engagement should drive continued development.

The challenge however remains being able to present all this data in a structured, clear way for clinicians to easily and quickly optimise recommendations for a patient's care. This is the challenge faced at local and state-wide levels where integrations across patient facing clinical systems are proving more difficult to realise, something reflected in the FPs' less confident responses that these outcomes can be achieved (Figure 4, Item 7).

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PROFESSIONALISING THE WORKFORCE

There is an ongoing drive towards implementing and optimising electronic health records (EHRs) within the Australian setting, with recognition for the importance of the pharmacist's role in clinical informatics to help deliver EHRs with effective management and safe practices for medication-use processes.[17]

Pharmacy Forecast Australia 2021 identified the importance of having Specialist Informatics Pharmacists in place to address the complexity of medication prescribing, but also to have expertise in assessing, training and implementing how an EHR should be or is being utilised.[18] This year's FPs tended to agree (60%) that more formalised training in a related technology field will become associated with these positions (Figure 4, Item 6).

Evaluations of these digital components are not something currently provided within pharmacy curriculums, while many who currently practice in this field develop these skills as part of their roles and within projects instead of understanding the underlying principles from the outset. In order for the full potential of an EHR to be unlocked there needs to be an understanding at multiple levels; local level understanding regarding the correct utilisation of the EHR, as well as the broader ability to identify opportunities to integrate the EHR bidirectionality with external systems to enhance the EHR experience. Having an individual trained to recognise and capitalise on clinical and technological opportunities would help many organisations in progressing EHRs from just an interaction tool to something closer to the more refined and developed system that clinicians are craving.

Within Australia, there are now Advanced Training Residencies that provide the perfect platform for those wanting to specialise in clinical informatics, to help refine and develop these unique skill sets.[19] The recognition of this evolving role is also occurring internationally with the emergence of dual degrees of Doctor of Pharmacy and Health Informatics in the United States.[20] Within the next five years it would be anticipated that these structures are formalised into basic requirements for job descriptions, helping to fast track medication process improvements and usability within an EHR system.

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CONCLUSION

Optimising the use of technologies in the healthcare sector requires expert understanding and consideration for the many intersecting elements at play. Whilst it is often tempting to focus on the benefits of individual applications or tools, it's clear that equal attention needs to be given to consolidating and developing system-wide strategic approaches to ensure their full potential can be realised. While it is often tempting to focus on the benefits of individual components in isolation, it's clear that equal attention needs to be given to developing and consolidating the broader strategic approaches. Agility and adaptability will remain essential given the rate of change in this environment.

RECOMMENDATIONS

1. Utilise technology to improve patient access to medicines

Pharmacists should consider leveraging existing and emerging technologies to inform and improve patient access to medicines.

2. Explore technology to enable efficiencies, safe and secure medicine delivery

Pharmacy departments should consider the financial and clinical benefits of delivering medicines directly to the patient and enabling patients to leave the hospital prior to delivery.

3. Focus on strengthening cybersecurity

Strong cybersecurity hygiene practices, such as passphrases and regular user access reviews, must be ingrained into workplace culture to be better placed to resist cybercriminal activity.

4. Prepare to embrace more virtual care delivery and new data devices

Prepare services for the increasing use of IoT devices, which will drive a decline in the need for patients to physically visit a hospital or outpatient clinic.

5. Build a culture of codified data use

Grow awareness of the impacts codified data has for patient analysis, system interoperability and long-term reporting to encourage its use wherever possible.

6. Build a workforce upskilled in technology

Support pharmacists with an interest or willingness to develop specific information technology skills or qualifications. This will accelerate electronic medical record adoption and usability, leverage opportunities to improve adoption and information flow and ensure critical systems and databases are maintained appropriately and can be recovered quickly.

PARTNER PERSPECTIVE

Australian Digital Health Agency

Incorporating digital tools, technology and data into health care brings opportunities to engage and support people in managing their health and wellbeing, connect them in meaningful ways to their care teams and offer choices for how, when and where care is delivered. Person-centred care and digitally enabled health environments that let people access appropriate health information, support and services can improve health outcomes, safety and quality use of medicines.

Pharmacists have been leaders in incorporating digital tools and technology into clinical practice, particularly where the benefits are clear and demonstrate that digital tools can optimise care delivery. This has been exemplified by the nationwide adoption of electronic prescribing and its expansion in hospital

and aged care settings. As at May 2022, 88% of prescriptions are digitally supported and over 10% of all PBS dispensed prescriptions are electronic prescriptions. Electronic prescribing now includes the Active Script List, an online prescription token management system, which streamlines management of prescriptions and delivers more convenience and flexibility to consumers.

Work is continuing in hospitals and residential aged care services to develop full software capabilities for electronic prescribing and to implement structured data format documents that will improve data quality and utility of information. This will encourage pharmacists to utilise medicines information available in My Health Record's Medicines View and Pharmacist Shared Medicines List more meaningfully and appropriately during Medication Reconciliation.

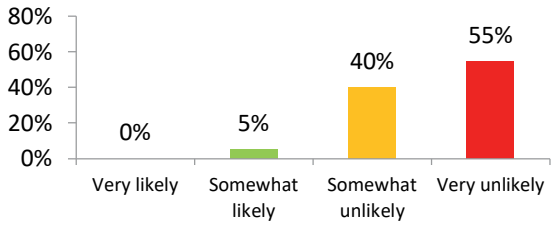
The Australian Digital Health Agency and its partners are continuing to improve data quality and digital health standards so that the entire care team can access relevant information as a person moves through the health system. As healthcare providers increasingly adopt these digital health platforms, management of a person's medicines information becomes more efficient and contributes to safe, high-quality care.

Vicki Ibrahim, Program Director, Medicines Safety Program – Program and Project Delivery Branch – Policy, Programs and Engagement Division

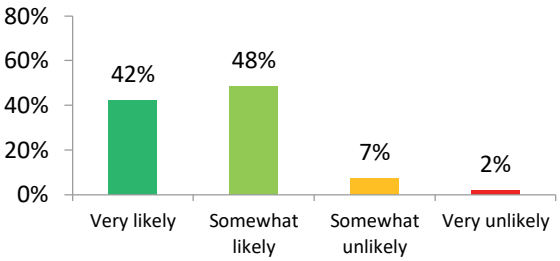
FIGURE 4. TECHNOLOGY

Forecast Panelists' responses to the question, *'How likely is it that the following will occur by the year 2027 in the geographic region where you work?'*

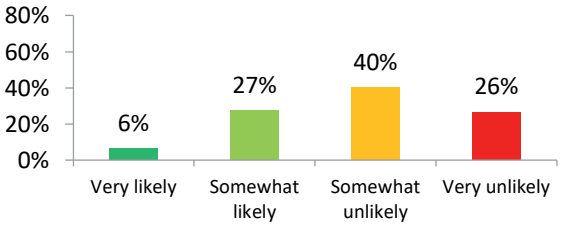
1. At least 2% of medication shortages for medicines through national supply chains will be shored up by on-demand 3D printing of medications



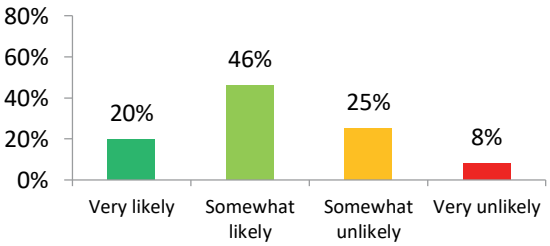
2. At least 5% of hospitals will have been subject to a cybersecurity data breach



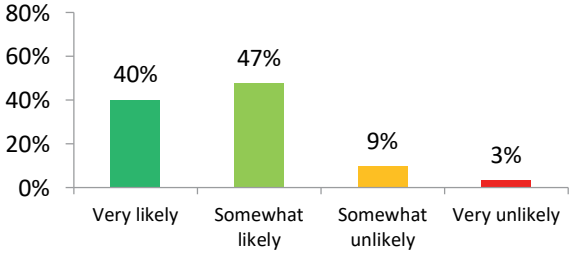
3. At least 15% of hospitals will utilise technology-assisted delivery services (e.g. a drone) to provide access to medication (i.e. after business hours, for patients who have far to travel, have mobility issues or have a disability)



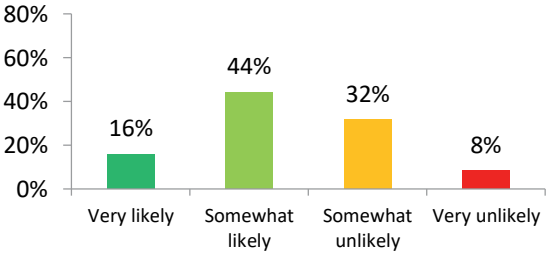
4. At least 50% of hospitals will offer a virtual health service that utilises Internet of Things (IoT) devices to upload patient vital signs/environmental conditions to the health service



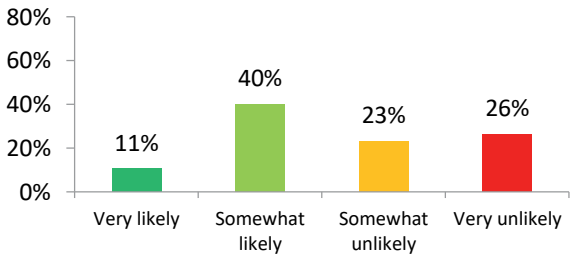
5. At least 50% of hospitals will be able to upload their codified medication data into the My Health Record (codified means AMT-mapped medication identifiers)



6. At least 75% of hospitals will employ a specialised health informatics pharmacist with postgraduate training in a related tech field (e.g., biotech/cybersecurity)



7. 100% of hospital patient records will be seamlessly linked electronically within hospitals and health networks of an entire state or territory



THEME 5 – FUNDING MODELS

Advisory Committee Leads: Tom Simpson, Paul Toner
Theme Lead: Anna McClure

INTRODUCTION

The Funding Models theme considered topics relating to the equity of access to medicines, and the pharmacy services required to safely provide those medications to patients. This theme explored whether the geographical, political, and funding divides that exist in the Australian health care system impact on equitable patient care; and whether these inequities will improve or worsen over the next five years.

EQUITABLE ACCESS TO THE PHARMACEUTICAL BENEFITS SCHEME

The first Pharmaceutical Reform Agreement (PRA) was signed in Australia in 2001 (Victoria).[1] Successively in the decade after this, South Australia, Northern Territory, Western Australia, Queensland and Tasmania also signed a PRA with the Commonwealth. PRAs enable access for public hospital patients to PBS medicines for outpatients, on discharge and for day treatment services. This ensures that participating hospitals implement best practice guidelines for the continuum of pharmaceutical care between hospital and the community. Except for minor modification to include revised arrangements for access to chemotherapy medicines in 2011, individual PRAs have not been revised or updated since their implementation. One party to the Agreements, the Commonwealth Department of Health, altered the terms of these Agreements in 2019 which resulted in a reduction in funding. Since then, the Department of Health has signalled its intent to review the Agreements.

Forecast Panellists (FPs) responded with some optimism to the concept of consistently applied, contemporary five-year PRAs across Australia. 70% indicated this outcome would be very, or somewhat likely, creating the ideal environment for a transition to single funding model for pharmaceuticals (Figure 5, Item 1).

The benefits of pharmaceutical reforms, which are ultimately describable in terms of medication safety and quality use of medicines, can be credited for this optimism, and the strong preference for agreements to be in place in all states and territories. The optimism expressed by FPs extends to the duration of the PRAs, with a suggestion to move towards five yearly agreements. This is similar to the Community Pharmacy Agreements between the Australian Government, the Pharmacy Guild and the Pharmaceutical Society of Australia, and Strategic Agreements between the Australian Government, Medicines Australia and Generic and Biosimilar Medicines Australia. The need for frequent review of the agreements provides a mechanism to remain abreast of the changing health and population landscape, and the important role of hospital pharmacy within it.

Regarding the expansion of PBS subsidy of medicines across all care settings, FPs were less certain. 75% of responses were ‘somewhat likely’ or ‘somewhat unlikely’ (Figure 5, Item 2).

Since the commencement of Pharmaceutical Reform there have been calls for PBS funding of medications to extend to all care settings, including private and public hospital inpatients in addition to day-admitted and outpatients. An editorial in the JPPR in 2002 opined, “Unfortunately, the Reforms do not yet address medication funding for hospital inpatients, but they are a significant step forward.”[2] Despite this step forward, 20 years later these arrangements continue to be limited to specific patient groups and care settings. In contrast, over this same time period, the definition of a hospital inpatient has evolved. Most states now offer Hospital in the Home, simultaneously described as “admitted care in the comfort of the patient’s home” and “an alternative to an inpatient stay.”[3] Hospital in the Home programs attract Activity-Based Funding but create a blurred line for funding of pharmaceuticals used by patients in their own home (including regular medications). The development of newer models of care has been accelerated by the COVID-19 pandemic, including hospital-initiated community inreach/outreach services. The adoption of telehealth has likewise been advanced, with telechemotherapy services in WA and Virtual Clinical Pharmacy services in NSW and Tasmania. These models make it clear that the boundaries between the patient, the care provider(s) and their physical location are no

longer relevant to the process of care delivery. Despite this, these factors play a key determinant in access to subsidised funding, as noted in the review of PBS Pharmaceuticals in Hospitals.[4]

"Public hospitals reported that they are sometimes unable to fund treatment for expensive medicines without PBS support. This was often problematic for drugs that require hospitalisation as part of the treatment", with blinatumomab cited as an example of a medication which is PBS subsidised but which cannot be initiated without hospital admission, a tension emblematic of historical federal-state funding conflicts and loopholes.[5]

The lack of uniform access to the PBS also affects equity of treatment and outcomes, even among states that are signatories to Pharmaceutical Reforms. Access to the PBS for private hospital inpatients means some patients will have access to medicines that are not available in a neighbouring public hospital.[6] These issues are further compounded by the federated approach to hospital funding, medicines formularies and funding.[7]

The extension of the PBS to cover all hospital medicines has been identified by the National Centre for Social and Economic Modelling as a key measure that would increase equity of access, remove incentives for cost shifting, and better meet the needs of patients.[8] This could improve patient flow as well as allow for medications to be dispensed prior to discharge, therefore alleviating a need to 'wait for pharmacy'. It is understandable therefore that FPs were more likely to select a positive view of this model, offset by an understandable level of uncertainty given the lack of change over the last two decades.

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CLINICAL PHARMACY RESOURCE ALLOCATION

FPs were generally pessimistic that the funding model for inpatient clinical pharmacy services in their region will be linked to the SHPA Standards of Practice. Overall, 59% of FPs gave a negative response, with 25% giving a strongly negative response (Figure 5, Item 3).

In the inpatient setting, clinical pharmacy represents a core patient care service[9] aimed at optimising patient care, reducing harm from medicines and facilitating patient flow. The more clinical pharmacy services a patient receives, the less likely they are to die in hospital.[10] Clinical pharmacy services take time. Just one service, Medication History and Reconciliation (MH&R) takes 46 minutes[11] per general medical patient. Clinical pharmacy services are now a mandatory expectation of the National Safety and Quality Health Service (NSQHS) Standards.[12]

SHPA's *Standard of Practice for Clinical Pharmacy Services* outlines appropriate pharmacist resource allocation for clinical pharmacy services based on hospital bed numbers. The ratios range from 1:10 (ICU13) to 1:30 (long stay14), but require adjustment for each organisation (e.g. to allow leave cover and non-clinical workload). Achievement of these ratios ensures sufficient resources exist to provide a core range of clinical pharmacy services for each patient. Despite the evidence underpinning the clinical pharmacy staffing ratios, it is also acknowledged that many health services are not routinely able to meet them due to funding and staffing issues.[15]

Despite the somewhat pessimistic response, it is nonetheless positive that 42% of FPs saw hope that resource decisions would be guided by these ratios over the next five years (Figure 5, Item 3). There is reason for

some optimism, too, with at least one state (Tasmania) known to have adopted pharmacist-to-bed ratios, as per SHPA's Standard of Practice for Clinical Pharmacy Services, into policy and another (Victoria) considering adoption into enterprise bargaining agreements.

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THE COST OF PROVIDING CHEMOTHERAPY

Provision of chemotherapy is one of the highest risk medication services[16]; and, due to the high cost of the medicines involved, is also an area where there is constant pressure to manage costs of care.

The Australian Government provides funding for the majority of intravenous chemotherapy in hospitals through the Section 100 Efficient Funding of Chemotherapy (EFC) Program of the PBS. The EFC Program aims to provide equitable, affordable access to chemotherapy via injection or infusion across Australia. Over the past decade, successive governments have introduced measures that have amended these arrangements (for example, vial size algorithms aimed at reducing the amount paid for chemotherapy by the PBS), with measures often facing backlash due to the perception funding changes may threaten patient care[17]. Previous measures have also highlighted the impact of funding model changes on the fragile chemotherapy ecosystem, including commercial compounders.[18]

Chemotherapy costs extend beyond the cost of dispensing and compounding; funding also needs to recognise the need for clinical pharmacist review at every step of service delivery, not just supply, to avoid patient harms from treatment errors such as those that have occurred in Australian hospitals in recent years.[19] Further, the full range of costs for chemotherapy compounding need to be recognised, including the costs of maintenance and redevelopment of aseptic facilities.

It is therefore highly concerning that the vast majority (71%) of FPs consider it likely that remuneration for PBS-funded chemotherapy will have fallen below the point at which it can be safely provided (Figure 5, Item 4). The Australian Government is currently reviewing the EFC program; the outcomes of this review will be keenly anticipated and will determine the viability of safe, equitable and affordable cancer treatment in Australia into the future.

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SELF FUNDING AND EQUITY OF ACCESS

Responses from FPs were evenly divided regarding views that at least 5% of patients will self-fund high-cost medicines that are not subsidised for their medical condition on the PBS or by the hospital system: 12% considered it either 'very likely' or 'very unlikely' this scenario may arise (Figure 5, Item 5).

As costs increase for new and innovative medicines, hospitals face challenges in ensuring they remain available for patients. Reimbursement through the Pharmaceutical Benefits Scheme (PBS) often aids these decisions, however it does not support inpatient treatment.[21] In the public setting, no charges can be raised except for PBS statutory co-payments to non-admitted patients and those on separation.[22]

When medicines are not eligible for PBS reimbursement, or are not listed at all, challenges and difficult decisions arise for organisations in what is supported locally. Alternative methods of funding and access to medicines are often sought, including Medicines Access Programs (MAPs), Compassionate Use, Expanded Access Programs (EAPs), Product Familiarisation Programs (PFPs) and Cost Share Programs between pharmaceutical companies and organisations.[23] When all funding opportunities for medicines have been exhausted, health services may consider or be asked by the patient about self-funding models. There are different levels of tolerance and approach to these across jurisdictions. Some models of care do not support self-funding while others may have clear governance and processes in place for these to occur.[24,25,26]

'At the heart of the issue is the tension that exists between the principles of equity – that every person should have access to health services based on their need and not on their ability to pay – and personal autonomy – that people should be free to spend their money as they choose'.[27]

Assessment processes for new therapies have come under scrutiny recently in Australia, including a parliamentary inquiry into approval processes for new drugs and novel medical technologies (results not yet available),[28] and a strategic review of Australia's Health Technology Assessment system, to be released later this year.[29]

Equitable access to medicines and services, particularly those that are non-PBS funded, can vary between jurisdictions resulting in a postcode lottery for patients.[30] If funding sources are not rapidly developed for new medicines and therapies, health services will continue to be faced with self-funding requests which can result in inequitable access to treatment.

Eighty per cent (80%) of FPs considered it very or somewhat likely that formulary listings will be state-based, removing variation in practice across their jurisdiction (Figure 5, Item 6). Many of the FPs who provided a 'likely' response will already be used to the application of a state-based formulary and a centralised review process.[20]

There are some jurisdictions in which a standard formulary has not been implemented or is not in the process of development.[20] In these circumstances, individual health services manage at a local level through their Drugs and Therapeutics Committees (DTCs). Based on decisions at this level, access to and availability of medicines may vary between health service organisations. Consequences of variation include patients bypassing their local hospitals to larger specialist centres to get access and issues arising at transfers of care, particularly for expensive non-PBS medicines.[27]

Procurement of pharmaceuticals is an additional benefit of a state-wide, cost-effective approach to medicines including best pricing, drug utilisation and governance for the healthcare system.[31,32]

There are many opportunities to further manage access to medicines and associated costs through the alignment of practice and formularies. These include at a jurisdiction or national level and also through the alignment of practice between hospitals and the community sector.

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AUTOMATED TECHNOLOGIES AND BUDGET MANAGEMENT

Many organisations are embracing or looking towards automated technologies to support all aspects of medication management. Financial benefits are a key component of any return on investment for these and using data to demonstrate this supports further investment. With many budgets carefully considering expenditure on medication, opportunities to refine this further aids decisions and planning.[33]

Responses from FPs were positive, with 73% considering it likely or somewhat likely that where deployed, automated pharmacy and medication technologies will be used to inform annual budgets based on accurate medication usage and transactional data (Figure 5, Item 7).

With a range of technologies available including in-pharmacy robotics, automated dispensing cabinets, unit dose packaging equipment and controlled substances cabinets, there are many options for monitoring and evaluating drug utilisation.[34] Having these technologies as standalone solutions does provide some benefits, however integration with pharmacy systems and electronic health records (EHRs) provides much more comprehensive and accurate data.[35] Visibility on medication usage across organisations can be maximised to improve understanding of drug usage and associated costs.[36] Use of these technologies has also been shown to minimise unnecessary stock wastage.[37]

Organisations need to embrace available data and optimise their reporting systems to provide a suite of information that can support financial analysis. Integration between systems should be developed to fully understand all aspects of the medication management cycle to provide greater knowledge and support budget planning and drug utilisation.

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CONCLUSION

Overall responses from FPs on funding models paints a somewhat pessimistic picture of the expectations of equitable medicines and pharmacy funding models over the next five years. FPs effectively stated that the current barriers to equitable treatment of patients across all care settings are not likely to improve. Whether patients can access contemporary clinical pharmacy care will continue to be dictated by the postcode in which that patient resides, as will the availability of different medications for different indications.

The impact of funding changes under the Pharmaceutical Reform Agreements, particularly relating to chemotherapy, is particularly concerning, with the majority of FPs indicating that within the next five years the cost of safely providing chemotherapy will exceed the funding provided for this service.

The impact of these changes to the landscape is uncertain. It is particularly worth considering the rapid evolution of models of care driven by the COVID-19 pandemic – increasing telehealth and adoption of hospital avoidance or inreach/outreach models – and how these models might be stifled by the funding models for pharmaceuticals and pharmacy services.

The outcomes of several national reviews of pharmacy and pharmaceutical funding, due in second half of 2022, will be keenly awaited as they will determine whether the sector is able to drive towards increased equity of access and increased adoption of novel models of patient-focused care – or in a different direction altogether.

RECOMMENDATIONS

1. Complete national coverage of Pharmaceutical Reform Agreements

Jurisdictions not currently subject to a Pharmaceutical Reform Agreement should commence negotiation in the interests of equitable medicines access and patient care.

2. Embed PBS access into care model planning

All jurisdictions should actively consider the impact of access to the PBS on existing and future models of patient care.

3. Adopt pharmacist-to-bed ratios as per SHPA's *Standard of Practice for Clinical Pharmacy Services*

Jurisdictions/hospitals should consider the adoption of SHPA pharmacist-to-bed ratios into funding or resourcing agreements to ensure equity of access to safe and comprehensive patient care and medicines management.

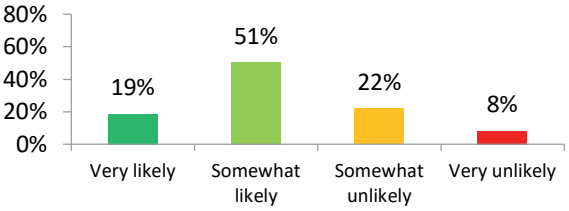
4. Work toward statewide formularies to ease inequity

Jurisdictions/hospitals should look to adopt state-wide formularies, to drive equity of access to safe, quality patient care within each state and territory.

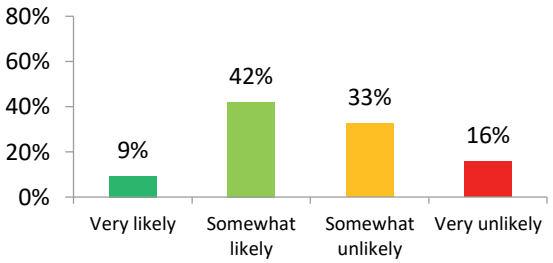
FIGURE 5. FUNDING MODELS

Forecast Panelists' responses to the question, *'How likely is it that the following will occur by the year 2027 in the geographic region where you work?'*

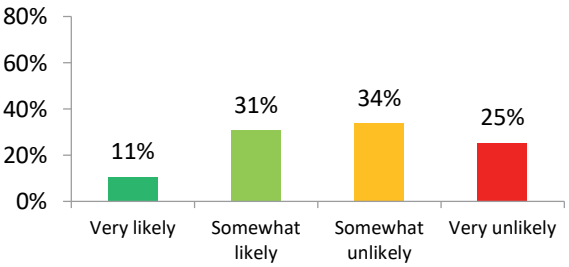
1. Contemporary five-year Pharmaceutical Reform Agreements will be in place in all States and Territories of Australia (similar to other five-year Agreements between the Commonwealth and other pharmacy industry stakeholders)



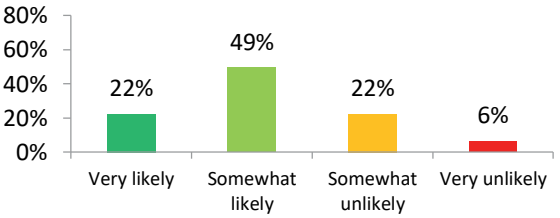
2. PBS funding for pharmaceuticals will be available to all Medicare-eligible patients, irrespective of their care location, including public hospital inpatients



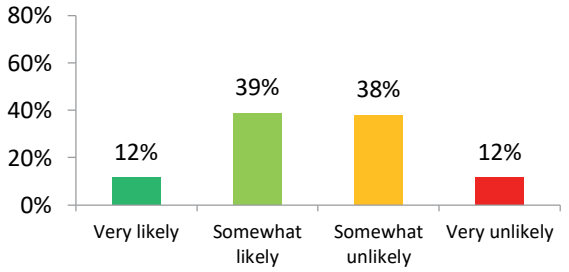
3. Inpatient clinical pharmacy services will be funded to meet staffing ratios in accordance with the SHPA Standards of Practice series



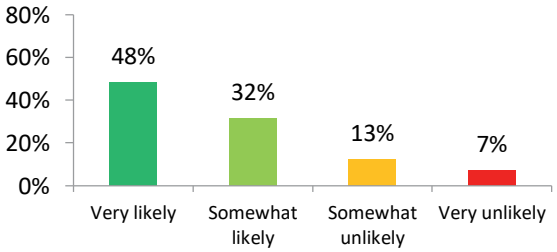
4. Reimbursement for intravenous chemotherapy from the Efficient Funding of Chemotherapy schedule on the Pharmaceutical Benefits Scheme will have fallen below the cost of safely dispensing and preparing chemotherapy medicines



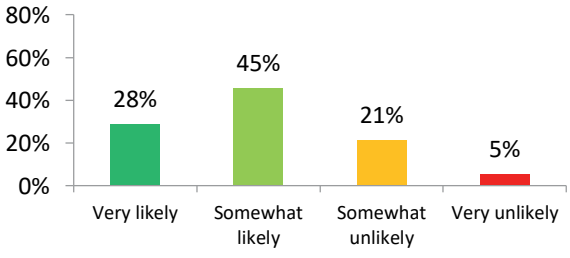
5. At least 5% of patients will elect to self-fund high-cost medicines that are not subsidised for them on the PBS or by the hospital system



6. Decisions for formulary listing of medicines will be made on a state-wide basis, ensuring patients have equal access to non-PBS medications irrespective of postcode within their state



7. In ALL facilities where they have been deployed, automated pharmacy and medication technologies will be used to inform annual budgets based on accurate medication usage and transactional data



THEME 6 – WORKFORCE WELLBEING

Advisory Committee Leads: Andrew McLachlan, Paul Toner
Theme Leads: Sally Marotti, Karlee Johnston

INTRODUCTION

There is an increasing awareness and response to the challenges of supporting wellbeing in the pharmacist workforce, including a growing literature and recommendations.[1] This focus has been sharpened by the demands on pharmacists (and the wider community) during the COVID-19 pandemic.[2,3] This theme framed questions to better understand the likely impact of workforce wellbeing on the hospital pharmacy sector, implications for staffing and how Forecast Panellists (FPs) considered the best way to respond to these challenges. At its core, workforce wellbeing is a work health and safety (WHS) issue that has broad reaching implications for staff effectiveness and retention as well as patient safety and quality care.

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AWARENESS

It was disappointing and concerning that 12% of FPs felt it was unlikely for pharmacy staff to have the knowledge and safe working environment to raise concerns about workplace stress, burnout and wellbeing (Figure 6, Item 1). This implies that even by 2027, 1 in 10 workplaces might not be considered a safe working environment when it comes to the wellbeing of staff. This is likely to reflect a broader organisational culture, perhaps outside of the pharmacy department, which places pressure on staff to 'soldier on' despite difficult working circumstances and, at times, unacceptable workplace pressures that result in stress and distress.

These responses might further be a reflection of individual leadership styles and personalities with some leaders simply not seeing stress, burnout and wellbeing as important issues. Healthcare leaders need to understand what factors are diminishing workplace wellbeing, nurture their workforce, and address the issues that drive burnout and contribute to employees not feeling valued.[4] There also needs to be a recognition of the many evidence-based interventions that support and develop the wellbeing of our workforce, which can be influenced and supported by healthcare leadership.

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IMPACT ON STAFF RETENTION

There was clear agreement from FPs that one in five pharmacy staff will leave or substantially change their role (within the hospital or even within the profession) due to unresolved pressures from the work environment, with 87% stating it was very or somewhat likely (Figure 6, Item 2). This response indicates the expectation that workplace stress is expected to increase over the next five years, or at least will not be adequately resolved.

The factors driving unresolved pressures were seen as multifactorial including the increasing complexity of care, demanding staff workload, recognition of the important roles of pharmacists in the clinical team, expectations of the organisation (a reflection of the organisational culture) and department funding models (which influence the pharmacy staff profile) within the healthcare sector. Many studies have reported that organisational commitment and job satisfaction had significant influence on pharmacist turnover intention

in all settings. Job stress and work climate as well as burnout, poor public perception and a lack of career progression had direct and indirect effects on turnover intention of hospital pharmacists.[5,6] In a survey by the Royal Pharmaceutical Society (UK) 89% of pharmacists reported a high risk of burnout, 33% considered leaving their current role and 32% leaving the profession altogether.[7]

There is an irreconcilable conflict here, given a motivation driving people to pursue a career in the pharmacy profession is the willingness to help people, and pharmacists will often choose to 'do more' sometimes at the expense of their own wellbeing. This is in contrast to being 'ordered' to do more, which does not support wellbeing. There is a need to ensure the sector has staff support systems that allow (and indeed expect) staff to be actively involved in planning their work and affords staff autonomy. Staff should be skilled to be able to say 'no', or at least 'not now', to further demands on their role within the department or hospital while also feeling they are making a valuable contribution in their roles.

Workplace culture plays a large role in supporting the wellbeing of staff. It should also be recognised that individuals can be supported to maintain their wellbeing in the presence of high workloads and pressures through recognition of what their needs are under these circumstances. Evidence suggests that having strong support networks, maintaining a healthy lifestyle, working collaboratively and cooperatively, maintaining perspective, feeling valued and making meaningful contributions can all assist individuals to maintain wellbeing and prevent premature attrition.[6]

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STRUCTURED TRAINING

The strong affirmative responses from FPs (77%) show there is positive recognition of the need for structured training to support mental health and wellbeing. The 23% of responses that considered pharmacy departments as unlikely to provide staff with this might be a reflection of the many demands for mandatory training already required by healthcare institutions for staff to complete each year (Figure 6, Item 3).

Further, a 'structured training scheme' might also be interpreted as programs that are not tailored to the individual's needs (which is essential) and focus on managers rather than developing peer support systems. Training opportunities may be internal to organisations and include peer support programs, or may be external such as mental health first aid (MHFA) training.[8] MHFA provides pharmacists and technicians with the skills to assist with mental health problems or crises.[9]

It is important, however, that staff wellbeing is prioritised and training is provided to leaders so they are able to identify practices that negatively impact staff wellbeing, and are able to support practices that develop resilience in individuals, their teams and the organisation as a whole.

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8. Johnston, K., O'Reilly, C.L., Scholz, B. and Mitchell, I., 2022. The experiences of pharmacists during the global COVID-19 pandemic: A thematic analysis using the jobs demands-resources framework. Research in Social and Administrative Pharmacy.
9. Mental Health First Aid, Pharmacy. Accessed at: https://mhfa.com.au/courses/public/types/blendedpharmacy

WELLBEING IS PART OF WORK HEALTH AND SAFETY

Each Pharmacy Department and institution develops, and is accountable to, a work health and safety (WHS) plan, outlining the major risks to the organisation, department, staff and patients (and visitors/carers). To mitigate their impact, these risks should be the priority for awareness and action and should include psychosocial hazards.[10]

The significant majority of FPs (76%) identified that staff mental health and wellbeing was a WHS issue, but 24% felt this was unlikely, with staff wellbeing disconnected from the pharmacy department's WHS plan (Figure 6, Item 4). This may reflect the stigma associated with mental health and a reluctance to acknowledge its presence and impact on staff. Thirty-one per cent (31%) of hospital pharmacists have reported feeling uncomfortable accessing help due to stigma, judgement and potential impact on their careers.[11] Increased understanding and cultural change is needed to reduce stigma and recognise incidents that significantly affect staff wellbeing as equivalent to other risks (slips, trips, physical injury) in the pharmacy department WHS plan.

Failure to consider staff wellbeing as a WHS issue means staff mental health episodes are not recorded in WHS incident management systems, establishing an false reality: 'if it is not recorded, it did not happen'. Effective monitoring (and reporting) of staff mental health and wellbeing risks is the next priority area to ensure prevention and mitigation strategies can be put in place and the impact can be routinely assessed.

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10. https://www.safeworkaustralia.gov.au/safety-topic/managing-health-and-safety/mental-health
11. Impact of COVID-19 on pharmacists' mental health and wellbeing, Royal Pharmaceutical Society, 2020. Accessed at: https://www.rpharms.com/about-us/news/details/Impact-of-COVID-19-on-pharmacists-mental-health-and-wellbeing

PRIORITISING WORKPLACE WELLBEING

FPs highlighted the important priority (75%) that is and will be placed on building capacity in workplace wellbeing (Figure 6, Item 5). The weight of positive response here recognises that workplace wellbeing is complex and multifactorial, requiring a longer-term strategic approach while also responding to day-to-day stressors. All members of the pharmacy team should commit to wellbeing and resilience in the workplace and lead a wellness approach.[12]

Stressors such as workload, job security and change in work tasks or the workplace need to be appreciated as factors that influence staff wellbeing. The rotational nature of many pharmacy staff may prevent individuals from having enough time to develop important workplace skills, relationships and networks that enhance autonomous practice and provide support during times of stress. It is essential for pharmacy leaders and managers to understand their staff and the stressors that impact each of them, and make efforts to support workplace practices that focus on individual needs.[13] Knowing team members strengths, and utilising their skill set to its fullest can lead to greater job satisfaction and improved wellbeing.[14] Communication (cascading down from leaders to staff, and back up) is an essential element of a supportive workplace that can quickly identify stressors and, where possible, remedy them quickly. Using a 'debrief' to enhance communication in the pharmacy team can provide an important mechanism for support. Further, having a culture that encourages healthy practices such as exercise can also develop important support networks and help stress management.

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12. Hagemann, TM, Reed, BN, Bradley, BA, et al. Burnout among clinical pharmacists: Causes, interventions, and a call to action. Journal of the American College of Clinical Pharmacy. 2020; 3: 832– 842.
13. Johnston, K., O'Reilly, C.L., Scholz, B. and Mitchell, I., 2022. The experiences of pharmacists during the global COVID-19 pandemic: A thematic analysis using the jobs demands-resources framework. Research in Social and Administrative Pharmacy.
14. How to become a Wellness Leader, American Society of Health-System Pharmacists. Accessed at: https://wellbeing.ashp.org/resources/how-to-become-a-wellness-leader

WELLBEING LEADERSHIP (AND CHAMPIONS)

There is growing evidence that wellbeing champions have a positive impact on staff productivity, retention and self-efficacy.[15] Over half of FPs (59%) supported the likelihood of having dedicated structures – such as committees or champions – to implement workplace wellbeing programs. For the remaining 41% of FPs who felt this was unlikely, this may reflect the fact that leaders do not have the resources to allocate to such staffing positions in their department (Figure 6, Item 6).

One avenue to resourcing could be an interprofessional role for a person supporting staff across departments, reporting to the institution's senior leaders or human resources manager. Indeed, it could be that pharmacy leaders may not see the value in a position of this type or recognise the potential gains in productivity and staff engagement. It is acknowledged that pharmacy leaders need to take responsibility for implementing workplace programs to support wellbeing and may need to be creative in allocating the required resources to such a role.

REFERENCES:

15. Wieneke, Kaisa C et al. "Well-Being Champion Impact on Employee Engagement, Staff Satisfaction, and Employee Well-Being." Mayo Clinic proceedings. Innovations, quality & outcomes vol. 3,2 106-115. 27 May. 2019, doi:10.1016/j.mayocpiqo.2019.04.001

DATA TO GUIDE PRIORITY SETTING TO IMPROVE WELLBEING

The majority of FPs (69%) agreed with the proposal that timely real time access to relevant data and decision tools would support time management by aiding clinical prioritisation of precious resources such as people and time (Figure 6, Item 7). Respondents agree that 'data is power' and such tools can prove invaluable in prioritising workload for efficient and effective work to improve patient outcomes.

While electronic systems have significant potential to facilitate real time reporting and decision support, for some staff this can impact workplace wellbeing due to reduced face-to-face time with colleagues and patients and a sense of being overwhelmed with data, increased clerical time and multiple alerts demanding the pharmacist's attention.[16,17]

The design of electronic systems is critical. Some e-systems create workplace stress due to the need for further training, increased documentation demands, lack of inter-operability between multiple electronic systems; there are some reports of these systems actually increasing clinician burnout.[18] A critical aspect in the likely impact on workplace wellbeing is how any system is integrated and implemented in the clinical workflow.[12] An overarching consideration is that all people (including health professionals) need to feel valued and connected, so it is important that any systems foster connectivity and complement valuable patient care work.[18]

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16. Page, N.J.B., Baysari, M.T. and Westbrook, J.I. (2019), Selection and use of decision support alerts in electronic medication management systems in Australian hospitals: a survey of implementers. J Pharm Pract Res, 49: 142-149

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18. Khammissa RA, Nemutandani S, Shangase SL, Feller G, Lemmer J, Feller L. The burnout construct with reference to healthcare providers: A narrative review.

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CONCLUSION

The findings highlight there is growing awareness of the importance of workplace wellbeing and that burnout and stress is a major issue. FPs indicated this is expected to continue to be the case over the next five years. The recommendations highlight the need for awareness, advocacy and change at multiple levels to address challenges related to workplace wellbeing. Among these, organisational culture stands out as a highly influential factor. As well as building and maintaining strong support networks, prioritising a healthy lifestyle and working collegially and collaboratively, dedicated, structured training that builds appreciation for individual stressors and wellbeing needs will support staff to feel valued in their role and can assist in maintaining wellbeing.

RECOMMENDATIONS

1. Normalise and embed deeper understanding of worker wellbeing

Raise awareness among pharmacy leaders of the factors that support an individual's wellbeing at work, and the risks and implications of workplace stress, burnout and wellbeing on individuals and the workplace.

2. Build leadership skills around proactive wellbeing interventions

Support and train pharmacy leaders and staff on the knowledge, skills and practices to support workforce wellbeing and to influence positive workplace culture.

3. Foster culture of two-way workload and wellbeing management

Senior staff and supervisors should lead a sustainable and safe working environment, help manage staff workloads and expectations and supporting pharmacy staff to develop self-efficacy in managing workload and developing practices that support their wellbeing.

4. Advocate for the importance of workplace wellbeing in achieving success

Directors of Pharmacy have a key role as advocates for the staff, prioritising workplace practices that support wellbeing.

5. Focus training for individuals on wellbeing factors

Structured training for individuals should focus on the various factors that contribute to an individual's development of wellbeing, and how to maintain this in times of flux. Complementary training in effective time management and creating self-awareness to recognise changes in mental health – and the need for support in self, peers and colleagues – could also be beneficial.

6. Focus training for leaders on fostering a supportive culture

It is important that structured training for leaders, focused on developing a workplace culture that supports and contributes to the development of workplace wellbeing in individuals and the team, has a positive focus on prevention and not just recognition of mental health problems once they have occurred.

7. Identify staff mental health and wellbeing as a high risk in operational WHS plans

WHS incident management (and recording) systems should be inclusive of staff mental health and wellbeing episodes to monitor the impacts of workplace issues on staff mental health and wellbeing.

8. Appreciate individual stressors and wellbeing needs

In prioritising workforce wellbeing pharmacy leaders should give careful consideration to the impact of initiatives and change plans on stressors that influence staff individually.

9. Explore value (not just cost) of resourcing wellbeing initiatives

Economic analyses should be conducted to examine the value of a wellbeing committee or champion to improve wellbeing, staff productivity, reduced sick days and staff retention.

10. Research connection between electronic systems and staff wellbeing

The impact of electronic systems on staff wellbeing is mixed and further research is needed into how these can be used in safe and appropriate workload allocation.

PARTNER PERSPECTIVE

Pharmacists' Support Services

The wellbeing of the pharmacy workforce is essential for patient safety and good patient outcomes. Workforce wellbeing is also known to enhance productivity and reduce expenditure on injury and illness, thus enhancing organisational performance and sustainability.

Wellbeing has two main components; physical and psychosocial. The International Standard for occupational health and safety ISO 45001:2018 was published in 2018 and provides a framework for organisations wishing to improve their occupational health and safety. In June 2021 this was supplemented by ISO 45003:2021 Occupational health and safety management — Psychological health and safety at work — Guidelines for managing psychosocial risks.

The three themes of ISO 45003 are:

- How work is organised.
- Social factors at work.
- Work environment.

These standards are valuable tools for the pharmacy profession and all healthcare workplaces.

There has been an increased focus on the importance of psychosocial wellbeing for the healthcare workforce, including pharmacy, in the setting of the COVID-19 pandemic. This has been necessary because of the impact of stress on healthcare workers subsequent to the following factors:

- The risks faced by frontline workers including both exposure to infection and being subject to aggression by members of the public.
- Rapid and unpredictable changes in work practices.
- High demand for services and limited resources, including staffing.

These pressures are ongoing, especially the workforce shortages which predispose staff to burnout.

Workplace culture has a significant influence on psychosocial wellbeing, especially when staff are already working under pressure. Poor culture is associated with poor patient outcomes. Lack of trust within teams impedes effective clinical discussion, debate and problem solving which puts patient care at risk. In addition learning opportunities from clinical discussion are lost.

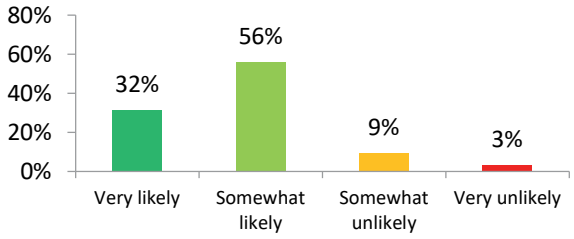
Cultural change is complex and requires a multifaceted approach with strong leadership. Mainstays of a good workplace culture include civility, respect, trust, support and care for all in the workplace. Respect and care for colleagues is as important as the care and respect shown to patients. Teamwork by staff who feel valued and supported by their colleagues and are treated with respect will enhance patient safety and good patient outcomes.

Kay Dunkley, Executive Officer

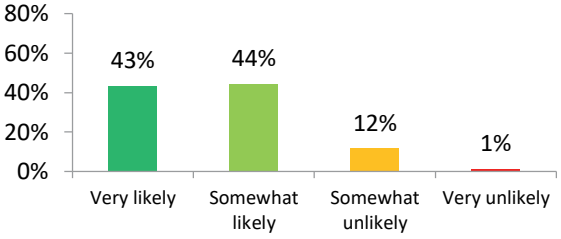
FIGURE 6. WORKFORCE WELLBEING

Forecast Panelists' responses to the question, *'How likely is it that the following will occur by the year 2027 in the geographic region where you work?'*

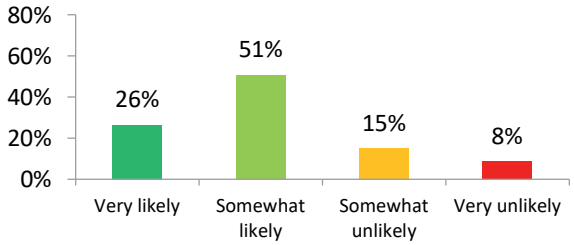
1. All pharmacy staff have the knowledge and the safe working environment to raise the concern about workplace stress, burnout and wellbeing in their workplace



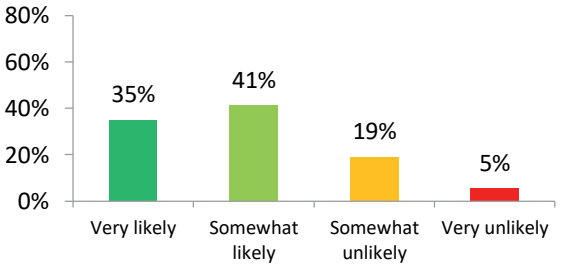
2. 20% of pharmacy staff will leave or change roles due to issues related to workplace stress, burnout and/or wellbeing



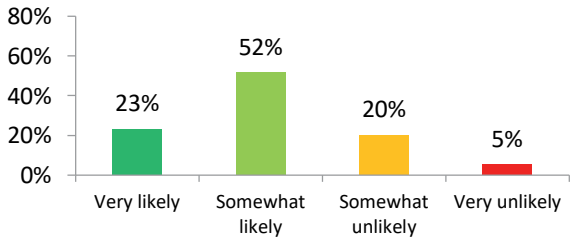
3. 100% of pharmacy departments will provide staff with structured training to develop the skills required to support mental health and wellbeing issues



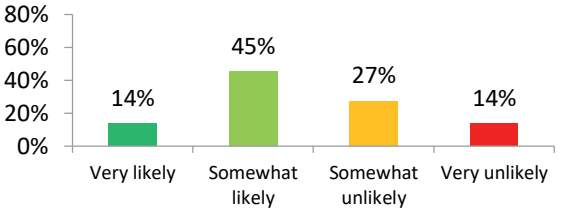
4. 100% of pharmacy departments have staff mental health and wellbeing as a priority area in their work health and safety plans



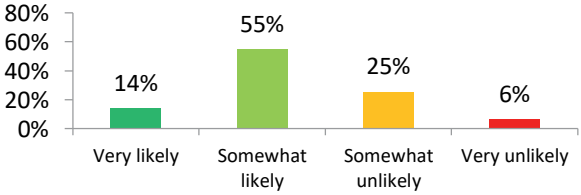
5. 100% of pharmacy departments implement processes to understand workplace practices that will prioritise staff wellbeing and implement practices to reduce identified stressors



6. 100% of pharmacy departments have a workforce wellbeing committee or wellbeing champion(s) with dedicated time and resources to implement programs to optimise workplace wellbeing and staff satisfaction



7. Facilities where pharmacy staff have access to real time data and analytical tools to enable decision making and clinical prioritisation, will see significant improvements in wellbeing of pharmacy department staff through empowered and supported clinical decision making



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