



OFFICIAL JOURNAL OF
The Pharmacy Guild

Understanding
Cyber Security

Community
Pharmacy
Innovation

Transforming
With Technology



INNOVATION

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IN THIS ISSUE

Business & Industry

- 02 Presidents Message
- 04 State of the Australian Economy
- 07 Vital Facts on Community Pharmacy
- 10 Understanding Cyber Security
- 14 Innovation in Community Pharmacy
- 19 Holiday Season Risk Management
- 20 Building Better Teams
- 22 Transforming With Technology
- 24 Priceline Pharmacy Kippa-Ring

Health

- 29 Healthy Gut Microbiota
- 32 Rise of Plant-Based Therapies
- 37 Nanotech For Antibiotic Resistance

Education & Continuing Professional Development

- 40 Student Lens on Pharmacy Innovation
- 43 Prescribing Success
- 50 Power of Pharmacogenomics
- 55 CPD Multiple Choice Questions

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PRESIDENT'S MESSAGE

I am pleased to write the final President's Message for the year as it gives me an opportunity to thank you all for what's been a very challenging year, but not without its successes.

We started 2023 on a high with the new lower maximum co-payment of Pharmaceutical Benefit Scheme (PBS) medicines coming into effect on the 1st of January.

It was the result of our effective 'Affordable Medicines Now' campaign which highlighted how the cost-of-living crisis was forcing Aussie families to go without some of their medicines, because they couldn't afford them.

Our campaign got the attention of both sides of politics with Labor and the Coalition committing to lowering the cost of medicines and at the beginning of this year, our patients were able to benefit from the new maximum co-payment of \$30; down from \$42.50.

It was the first time in the 75-year history of the PBS that the cost of medicines actually went down - not up - and the Federal Government says patients saved \$160 million on their cost of medicines in the first eight months of this year. This was a huge win for our patients.

Later in the year, we achieved another first by bringing forward negotiations for an 8th Community Pharmacy Agreement (8CPA) and it was thanks to your efforts in our 'Save your Local Pharmacy' campaign.

The campaign was brought about by the sudden announcement of 60-day dispensing, probably the most controversial change to the way we do things in local pharmacy going back 30 years.

This was an attack on our profession and caused widespread fear and anxiety among pharmacists and the community.

You told us the impact this was going to have on your practices and your voices resonated in Canberra.

So much so that when the policy became effective on September 1, the government changed tack and immediately agreed to sit down and negotiate a new 8CPA starting on March 1 next year, some fifteen months early.



“NEVER BEFORE HAS A COMMUNITY PHARMACY AGREEMENT BEEN BROUGHT FORWARD, HOWEVER AN EARLY AGREEMENT IS ONLY GOOD IF IT IS A GOOD AGREEMENT, ONE THAT PROPERLY REMUNERATES DISPENSING & AN AGREEMENT THAT CAN BE TRUSTED.”



A highlight of the year was the advances we made on our journey to pharmacists working to their full scope of practice.

Significant progress was made in Queensland with the trial of pharmacists treating women with uncomplicated urinary tract infections (UTIs) becoming permanent practice.

The full scope of practice pilot also in Queensland is taking shape with the first group of pharmacists undergoing the necessary training for services to commence in 2024.

Pharmacists undergo further study and training to be able to treat patients in the sunshine state with a range of common health ailments such as nausea and vomiting, rhinitis, skin conditions, asthma and swimmer's ear.

The training commenced in early 2023 led by the Australasian College of Pharmacy in conjunction with Queensland University of Technology and James Cook University.

Elsewhere, New South Wales announced that its pilot for treating women with uncomplicated UTIs would be widened to now include the contraceptive pill.

Victoria has also announced a trial for prescribing for treatment of UTIs and in South Australia a parliamentary select committee recommended pharmacists be able to

prescribe for uncomplicated UTIs without the need for a pilot, but with the necessary training.

Western Australia has also made it permanent practice for pharmacists to diagnose and treat women with uncomplicated UTIs.

In other states and territories pharmacists have been enabled to administer a wider variety of vaccinations.

Although each state and territory are at a different stage in their scope trial, your Guild is working with state and territory governments as well as the Commonwealth to ensure that eventually all jurisdictions will have a uniform model when it comes to scope of practice.

Once again, I'd like to thank you for the work you have done this past year in meeting the demands of not just our own high standards of quality care, but most importantly of all, that of our patients.

We are looking forward to 2024 being a year of greater certainty for pharmacists and the community as we work to ensure that community pharmacies don't just survive but thrive.

Trent Twomey
National President

STATE OF THE AUSTRALIAN ECONOMY

Economic Update: November – December 2023

The Australian economy is growing below its longer-term average, and this below par performance is expected to continue for the remainder of 2023.



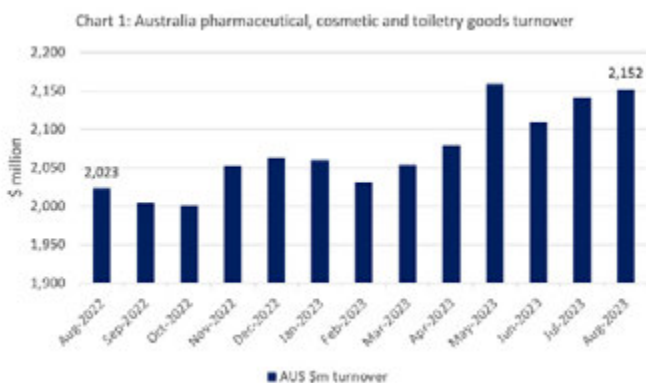


The Australian economy is growing below its longer-term average, and this below par performance is expected to continue for the remainder of 2023. Inflation signals are mixed – there was some indications of easing in headline inflation but not close to the 2- 3 per cent inflation target of the Reserve Bank of Australia (RBA). Households spending is weak, and the outlook for its growth is uncertain and depends not only on the outlook for inflation, but also whether there will be further interest rate rises to tackle inflation, and whether any weakening in the labour market will be larger than anticipated.

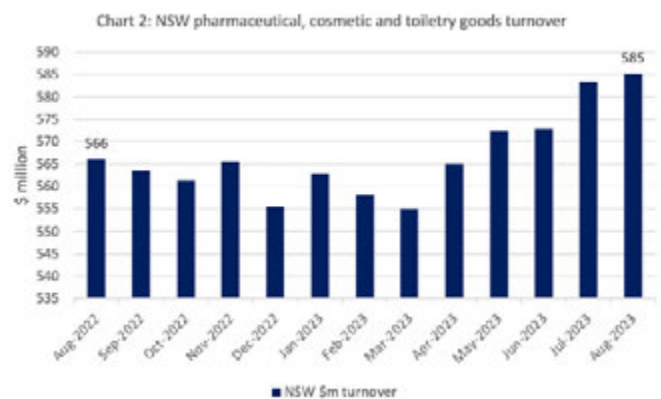
Retail trade

The dollar value in turnover for pharmaceutical, cosmetic and toiletry goods, which is an Australian Bureau of Statistics (ABS) definition that includes community pharmacy (including prescriptions, OTC, and front of shop items) has been relatively solid.

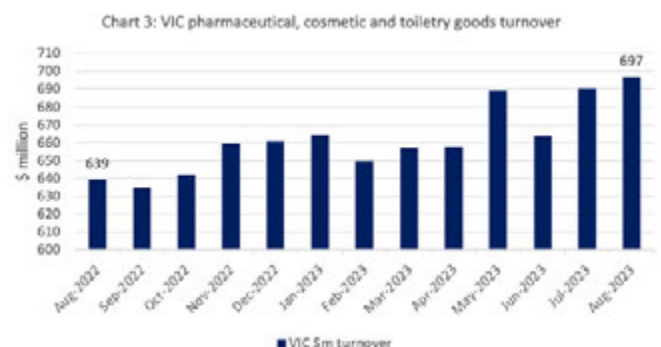
Chart 1 shows the monthly level of the dollar value of turnover for pharmaceutical, cosmetic and toiletry goods nationally. In August 2023 (latest data available at the time of writing), the dollar value reached \$2,152 million. This is up from \$2,023 million in August 2022, a 6.4 per cent increase. In comparison, retail turnover for all categories nationally has increased by 1.5 per cent over the same period.



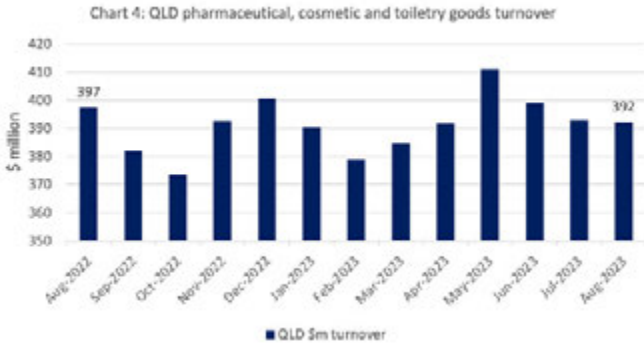
Turning to each jurisdiction, New South Wales recorded a 3.4 per cent year-on-year rise in the dollar value of retail trade for pharmaceutical, cosmetic and toiletry goods to August 2023, which while positive, was below the national rise of 6.4 per cent. Chart 2 shows a value of \$585 million in retail trade in August 2023 for New South Wales. In comparison, retail turnover for all categories in New South Wales has increased by 0.6 per cent over the same period.



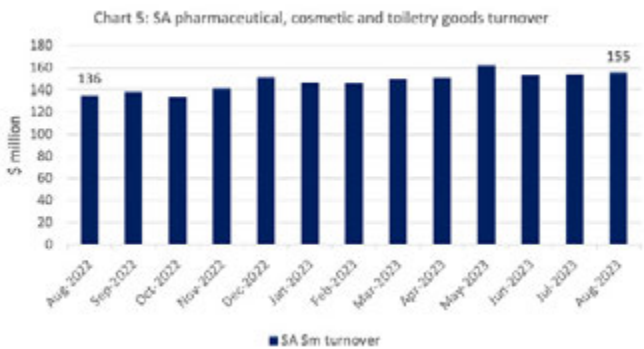
Victoria’s dollar value of turnover for pharmaceutical, cosmetic and toiletry goods is given in Chart 3. It shows that the August 2023 result (\$697 million) was a 9.0 per cent year-on-year improvement against August 2022 (\$639 million), above the national growth rate for pharmaceutical, cosmetic and toiletry goods and well above retail turnover growth for all categories in Victoria over the same period of 1.9 per cent.



Queensland’s pharmaceutical, cosmetic and toiletry goods turnover was slightly down on a year-on-year basis to August 2023. Turnover reached \$392 million in August 2023 (Chart 4) which is \$5 million lower than a year ago. Retail turnover for all categories in Queensland increased by only 0.3 per cent over the same period.



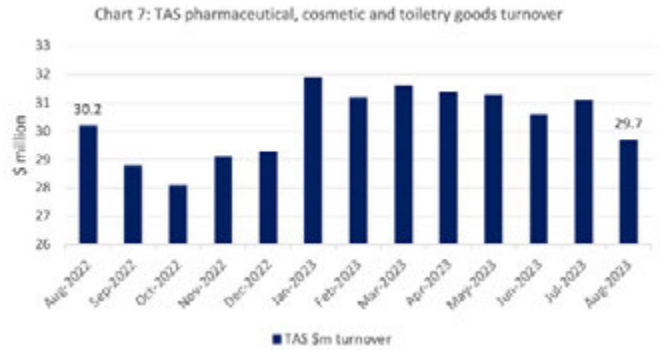
South Australia’s pharmaceutical, cosmetic and toiletry goods turnover recorded 14.5 per cent year-on-year growth to be \$155 million in August 2023 relative to \$136 million in August 2022 (Chart 5). In comparison, retail turnover for all categories in South Australia has increased by 2.6 per cent over the same period.



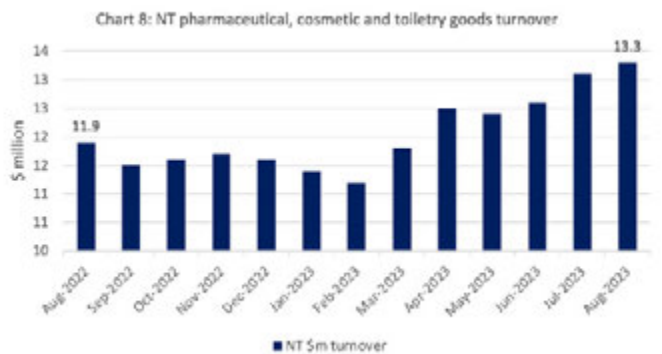
Western Australia has had very strong growth in pharmaceutical, cosmetic and toiletry goods turnover. For August 2023, the monthly dollar value was \$248 million (Chart 6), a 14.6 per cent year-on-year growth rate. In comparison, retail turnover for all categories in Western Australia has increased by 4.0 per cent over the same period.



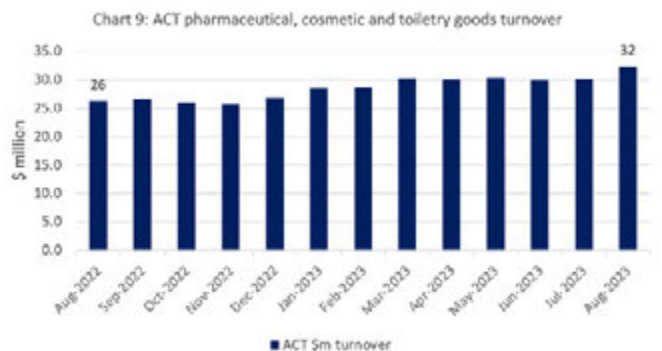
Tasmania’s turnover in pharmaceutical, cosmetic and toiletry goods retail trade was \$29.7 million in August 2023 (Chart 7), a marginal decrease of 1.7 per cent on a year-on-year basis. In comparison, retail turnover for all categories in Tasmania has declined 1.0 per cent over the same period.



The Northern Territory recorded 11.8 per cent year-on-year growth in pharmaceutical, cosmetic and toiletry goods turnover to August 2023 (Chart 8). In comparison, retail turnover for all categories in the Northern Territory has increased by 2.8 per cent over the same period.



Finally, off a low base, the Australian Capital Territory recorded the strongest growth on a year-on-year basis to August 2023, with growth of 23.3 per cent and a dollar value of retail trade in August 2023 of \$32 million (Chart 9). In comparison, retail turnover for all categories in the Australian Capital Territory has increased by 5.5 per cent over the same period.





The Pharmacy
Guild of Australia

Vital facts on community pharmacy

1



There are **5,901** community pharmacies in Australia¹

2

On average, every person visits a community pharmacy **18** times each year, in metropolitan, rural and remote locations².



3



Community pharmacies are the most frequently accessed and most accessible health destination, with over **333.2 million** individual patient visits annually and **2,127 pharmacies** open after-hours, including weekends³.

4



In 2022, under the PBS and RPBS, community pharmacies dispensed almost **222.1 million** Government subsidised (Above Co-Pay) prescriptions⁴.

5



Pharmacists are one of the most trusted professions along with nurses and doctors. Public opinion surveys have shown that **84%** of adults trust the advice they receive from pharmacists⁵.

1. PBS Expenditure and Prescription Report

2. Pearson, D., De lure, R. (2021) NAB Pharmacy Survey 2021. NAB. <https://business.nab.com.au/nab-australian-pharmacy-survey-2021-48091/>

3. GuildLink data

4. Department of Health, Date of Supply Report, downloaded 9 May 2022, Accessed at <https://www.pbs.gov.au/info/statistics/dos-and-dop/dos-and-dop>

5. <https://www.roymorgan.com/findings/7244-roy-morgan-image-of-professions-may-2017-201706051543>



6



In capital cities, **97%** of people have access to at least one pharmacy within 2.5 km radius, while in the rest of Australia **66%** of people are within 2.5 km of a pharmacy¹⁰.

7



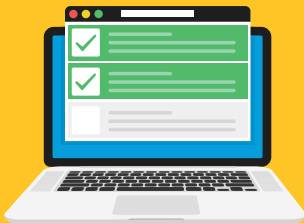
More than **94%** of pharmacies nationwide have achieved quality accreditation⁷.

10



There have been over **167 million** electronic prescriptions issued for patients (original and pharmacy repeat prescriptions)⁸.

8



As of 30 June 2022, **99.9%** of PBS or RPBS prescriptions are now claimed electronically online⁹.

11

As of 30 June 2023, there were **36,425** registered pharmacists in Australia. **64%** of pharmacists are women; and about **58%** are under 40 years of age¹¹.



9

53% of patients say they use one pharmacy for everything or at least one category of product / service. **38%** of patients state they were driven by convenience of location⁶.



Vital facts on community pharmacy

6. CP2025_Integrated Market Research Report 2018 – Orima Research

7. Quality Care Pharmacy Program

8. Australian Digital Health Agency, www.digitalhealth.gov.au, October 2023

9. <https://www.servicesaustralia.gov.au/annual-report-2021-22>; Page 68

10. The Pharmacy Guild of Australia 2020

11. Pharmacy Board of Australia Registrant Data; June 2023



12

7CPA 7th Community Pharmacy Agreement

Seven Community Pharmacy Agreements have been negotiated between the Government and the Guild, underpinning patient access to PBS medicines and professional services for over 30 years.

13

In 2020–21, **1,487,300** of all hospitalisations were classified as potentially preventable. Of these, **199,563** potentially preventable public hospitalisations and **64,366** private hospitalisations were due to chronic conditions (excluding diabetes). Medicines adherence is an important role for community pharmacists.¹³



14



Community pharmacies provide a national network of National Diabetes Services Scheme access points for the **1,451,094** Australians with diabetes registered with the NDSS¹⁵.

16



Pharmacies support public health initiatives such as Opioid Replacement Therapy and needle and syringe programs and participating in the Return of Unwanted Medicines Program improving social, economic and health outcomes.

15

Between July 2022 and June 2023 there were **16.2 million** dose administration aids provided by community pharmacies to patients to assist them to remain living at home¹⁴.



17



Community Pharmacist-Led medication adherence interventions have improved adherence rates by **9.3%** and reduced health system costs by **\$1.9 billion**¹².

Vital facts on community pharmacy

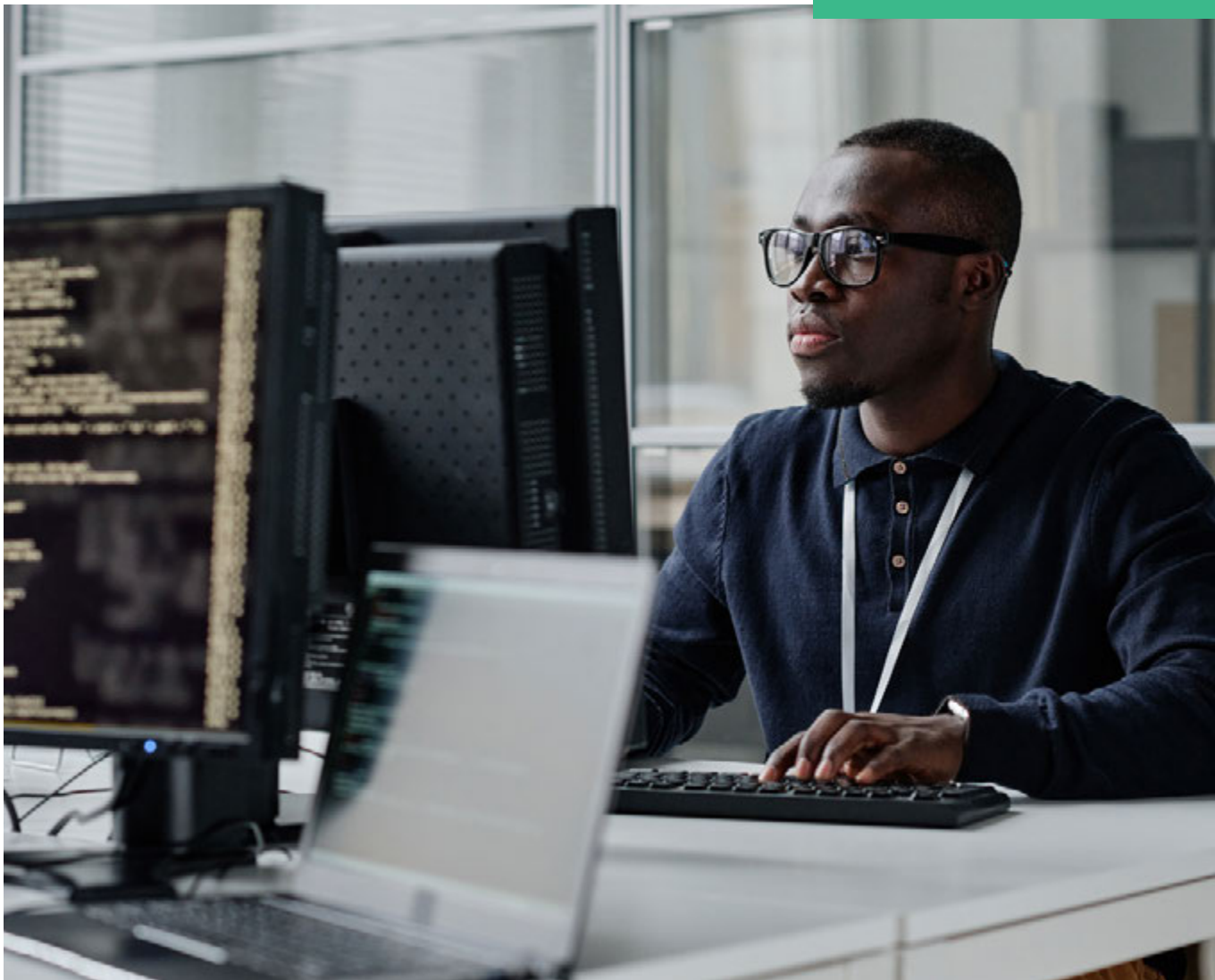
12. Dovepress Journal – Patient Preference and Adherence: Pharmacist-led medication non-adherence intervention: reducing the economic burden placed on the Australian Health Care system
13. Australian Institute of Health and Welfare Admitted Patient Care 2020-21; Table 8.2; <https://www.aihw.gov.au/reports-data/myhospitals/sectors/admitted-patients>
14. <https://www.health.gov.au/resources/collections/pharmacy-programs-data>
15. <https://www.ndss.com.au/about-diabetes/diabetes-facts-and-figures/diabetes-data-snapshots> (October 2023)

ARE YOU CYBER AWARE?

Understanding What Cyber Security is and
How you can Protect your Pharmacy

K Keeping your online information and assets protected from cyber threats has never been more critical. Special Counsel Hayley Bowman and Principal Mark Fitzgerald from Meridian Lawyers explain what cyber security is, why it's important and provide practical steps to safeguard your pharmacy business.

Words | Special Counsel Hayley Bowman
& Principal Mark Fitzgerald



October was Cyber Security Awareness Month (CSAM), an annual reminder for Australians to stay safe online and protect their online information and assets.

With the CSAM 2023 theme *'be cyber aware – don't compromise'*, it's a timely opportunity for pharmacies to review their understanding of 'cyber security' as a concept, while also continuing to educate themselves on the cyber security landscape and current cyber security threats and best practices.

Is there an Accepted Definition of Cyber Security?

The phrase 'cyber security' is an elusive term that is becoming increasingly referenced but rarely defined.

While there is no one generally accepted definition, 'cyber security' can broadly be categorised as the organisation and collection of resources, technologies, processes and controls to protect cyber-enabled systems, networks, programs, devices and, ultimately, data and personal information from an attempt by cyber criminals to damage, destroy or infiltrate a computer network or system (also known as a cyber-attack).

Cyber security involves dynamic interaction between humans and systems and aims to broadly protect those persons or systems from intentional as well as incidental threats and cyber-attacks. With the ever-evolving nature of cyber threats, security measures need to be designed and regularly reviewed and updated.

Currently, most cyber security regulation in Australia is sector-based and subject to different regulatory frameworks. There is not currently one overarching set of regulatory requirements and compulsory standards that establishes cyber security obligations that businesses must comply with.



What is the Impact of Cybercrime?

Over the past year alone, Australian businesses have witnessed cyber-attacks and privacy breaches making headlines around the world. Latitude, Optus, Medibank and many other businesses have felt the reputational and financial impact of cyber-attacks that have exposed the personal information of hundreds of thousands of Australians. Over the 2021-22 financial year, the Australian Cyber Security Centre (ACSC) reported receiving over 76,000 cybercrime reports, which equates to an increase of nearly 13% from the previous financial year and amounts to a report of cybercrime being received every seven minutes.

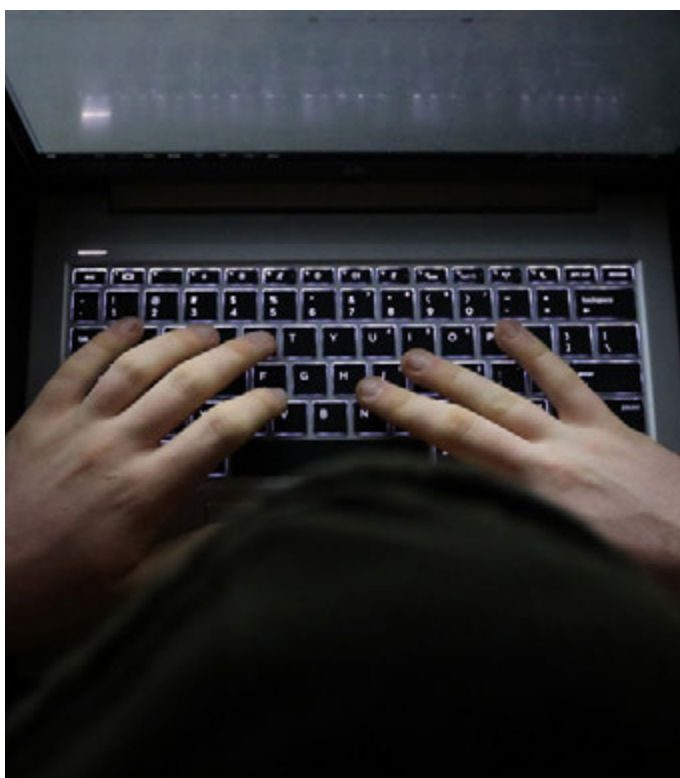
A lack of attention to cyber risks can result in financial costs by way of regulatory fines, damages, legal fees, lost revenue and business interruption, as well as significant non-financial costs such as reputational damage and loss of trust. Our ever-increasing reliance on technology only means that cyber risks are here to stay.

What Practical Steps Should Pharmacies take to Address Cyber Security?

There are several steps you can take now to mitigate cyber security incidents, prepare your pharmacy to be cyber wise and significantly boost cyber security.

In promoting CSAM 2023, the ACSC highlighted the following four simple steps:

1. **Update your devices regularly** - turn on automatic updates for all devices and software to ensure the latest security is in place at all times
2. **Turn on multi-factor authentication** - this adds another layer of protection to your accounts
3. **Back up your important files** - this helps to safeguard data from threats and avoid costly data recovery
4. **Use passphrases** (that is, a password that uses four or more random words) and do not re-use passwords or passphrases as this could compromise accounts





In addition to taking these steps, we also recommend:

1. Reviewing your current cyber policies and positioning concerning remote working (if applicable). It is largely accepted post the COVID-19 pandemic that at least some form of remote working is here to stay. Therefore, businesses need to consider the cyber security risks that remote working may pose and adopt and update their cyber security policy to address the risks posed by:
 - unsecured wireless networks used to access the business' corporate network either in public or at home
 - employees using their own devices to work and ensuring that these devices adhere to cyber security protocols
 - personnel who are not aware of current cyber risks, increasing the likelihood of human error allowing a cyber-attack to infiltrate systems
2. Your pharmacy keeps up to date with vulnerabilities and addresses any vulnerability promptly – reducing the ability of cyber criminals to exploit known vulnerabilities
3. Regularly testing your cyber security detection capability – this includes incident response, business continuity and disaster recovery plans, and your risk register.

While the burden of safeguarding computer networks starts with senior management, ultimately, all staff (no matter their position in the pharmacy) that have access to a computer network as part of their role are responsible for maintaining good cyber practices.

How We Can Help

Meridian Lawyers has experience working with insurance and pharmacy clients in particular, to manage privacy and cyber security risk by ensuring that services, distribution, alliance and other commercial arrangements support compliance with data protection laws and regulator requirements. We also have experience in responding to data breaches and developing training materials.



FIND OUT MORE

To learn more visit: meridianlawyers.com.au/pharmacy

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Principal

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1st November 2023 – 30th November 2023

INNOVATION IN COMMUNITY PHARMACY

A Necessity for Survival and Success

The COVID-19 pandemic has reshaped the world of community pharmacy. Some pharmacies have thrived, while others have struggled to survive. So what is the key factor that separates the winners from the losers? Innovation. In this article, we will explore why innovation is so important for community pharmacies in the face of unprecedented challenges and opportunities, and will explore some practical tips on how to cultivate an innovative mindset and overcome barriers to innovation in your own pharmacy.

Words | Zamil Solanki



The Crucial Role of Innovation

The pandemic has tested the resilience and adaptability of community pharmacies like never before. Pharmacies have had to cope with increased demand, supply chain disruptions, staff shortages, safety protocols, and changing customer expectations.

Today, the looming threat of increased dispensing quantities (otherwise known as 60 Day Dispensing) brings about a raft of challenges due to the financial impact of reduced foot traffic. Paired with decreasing margins, and increased competition, current, emerging, and future threats continue to put pressure on the viability of community pharmacies.

In this context, innovation is not a luxury, but a necessity. Innovation is not just about adopting new technologies or products, but about finding new ways of doing things better, faster, cheaper, or more effectively. Innovation is about creating value for your customers, your team, and your business.

The Flawed 'Sit and Wait' Approach

It's a common but flawed belief among some pharmacy owners that they can simply 'sit and wait' for the consequences of 60-day dispensing to become clear. This complacent attitude is what ultimately results in the failures of community pharmacies. We saw it when Price Disclosure happened, and we're seeing it today.

This approach, along with a mindset to blame others for the negative impacts that their business has and will endure does the business, their teams, and the communities they serve a complete disservice. And in reality, it leaves pharmacies unprepared and vulnerable to changes that are out of their control, such as government reforms that reduce profitability and ongoing viability.

Embracing the Need for Innovation

To innovate successfully, you need more than just tools and resources. You need a willingness to first embrace the need to adapt a mindset of innovation. And this has to be internally driven, and also inspired from those that have stood in the face of similar challenges before and have come out on top.

A mindset of innovation is a way of thinking that goes beyond adaptation to proactive growth. It is a way of seeing problems as challenges and challenges as opportunities. It is a way of embracing change and uncertainty as sources of learning and improvement.

A mindset of innovation is not something you are born with, but something you can develop and nurture. It requires curiosity, creativity, courage, and collaboration. It also requires a clear vision of what you want to achieve and why.

The Importance of Proactive Responses

As a community pharmacy owner or manager, you may be tempted to adopt a 'sit and wait' approach to the current situation. You may hope that things will go back to normal soon, or that someone else will solve your problems for you. However, this is a dangerous strategy that will put your pharmacy at risk.

The pandemic has created lasting changes in the pharmacy landscape that you cannot ignore or avoid. And now with the introduction of the 60-day dispensing policy, customers will visit your pharmacy less frequently, decreasing your revenues, reducing your opportunities to engage with them and to offer additional services or products, unless you do something about it NOW.

But innovating to survive is one thing. Innovating to thrive is much more.

To thrive and succeed in this new environment, you need to anticipate future challenges and respond proactively. You need to find ways to create value for your

customers beyond dispensing medications and saying "you offer good service" (what does this even mean these days??). You need to differentiate yourself from your competitors by offering unique solutions that meet your customers' needs and preferences.

And most importantly, you need to cultivate an innovative mindset throughout your organisation.

Cultivating an Innovative Mindset

So how can you develop a mindset of innovation in yourself and your team? Here are some steps you can take:

1. ESTABLISH A CLEAR PURPOSE

Having a clear purpose of what you want to achieve and why can help you stay focused and motivated. It can also help you communicate your goals and expectations to your team and your customers. Your purpose should be aligned with your mission and values, as well as with the needs and desires of your target market.

2. SEEK FEEDBACK AND INPUT

Innovation is not a solo activity, but a collaborative one. You can benefit from the insights and ideas of others who have different perspectives and experiences. You can seek feedback and input from your customers, your staff, your suppliers, your peers, and other stakeholders. You can also use data and research to inform your decisions and validate your assumptions.

3. EMBRACE CHANGE AND UNCERTAINTY

Change and uncertainty are inevitable in today's world. Instead of resisting or fearing them, you can embrace them as opportunities to learn and grow. You can adopt a learning mindset, that allows you to avoid repeating the failures of others, and learn from those that have done the hard work of trial and error already, to find and implement holistic and proven solutions that will work for you.

4. INVEST IN LEARNING AND DEVELOPMENT

Innovation requires constant learning and development. You need to keep up with the latest trends, technologies, best practices, and regulations in your industry. You also need to invest in developing the skills and capabilities of yourself and your team. You can do this by investing (notice it's not an expense, but an investment) in training, coaching, and mentoring.

5. EXPERIMENTATION AND ITERATION:

Innovation is not a one-time event, but a continuous process. You need to be willing to try new things, measure the results, learn from the outcomes, and make changes as needed. You need to be flexible and agile enough to respond to changing circumstances and customer feedback, and always be on the pursuit of a better way of doing things.

Overcoming Barriers to Innovation

While innovation is essential for community pharmacies, it is not easy. It is however the "lack" mindset without any evidence of the truth of these following objections that truly stifles innovation:

1. LACK OF TIME:

Hands down, this is the most common objection we face when working with pharmacies. But let me ask you this:

- If not now, when?
- If you don't have the time, then who does?
- We're all given 24 hours in a day. So why can others do it, and you can't?

2. LACK OF RESOURCES:

You may lack the financial, human, or technical resources to support innovation, but where is the actual hard evidence in this? And on the flip side, if you don't invest in ways to learn how to innovate and build your business, how can you grow?

3. LACK OF SKILLS:

This is totally understandable because at the end of the day, running a pharmacy didn't come with an owner's manual. So to overcome this, you need to learn from someone that's been in your shoes and knows exactly what you need to do to thrive.

4. LACK OF SUPPORT:

Working in, leading, running or owning a community pharmacy can often feel isolating and lonely. But it doesn't have to be. And when you're on a journey of change, bouncing ideas of trusted advisors and a network of people without fear of judgement or lack of confidentiality is essential.

5. LACK OF CONFIDENCE:

A lack of confidence comes from a lack of certainty. So to build certainty, you need to utilise a robust system that provides you with the tools and resources to innovate, change, adapt and thrive.

To build on the above, here are some more strategies you can use to overcome the barriers you might be facing towards innovation:

1. PRIORITISE INNOVATION:

Make innovation a priority for yourself and your team. Set aside time and resources for innovation activities, such as brainstorming, researching, testing, or learning. Reward and recognize innovation efforts and achievements.

2. START SMALL:

You don't have to innovate everything at once. Start with small changes that can have a big impact. Focus on one problem or opportunity at a time. Use existing tools or resources that are readily available.

3. SEEK HELP:

You don't have to innovate alone. Seek help from others who can support you in your innovation journey. Find mentors or coaches who can guide you and share their expertise. Join networks or communities of practice where you can exchange ideas and learn from others. Partner with external providers who can offer specialised services or solutions.

4. INVOLVE OTHERS:

Engage your team, customers, and other stakeholders in co-creating value for them. Solicit their feedback and input throughout the process. Communicate your vision and goals clearly and frequently. Build trust and rapport with them.

5. BELIEVE IN YOURSELF:

You don't have to innovate perfectly. Believe in yourself and your ability to innovate successfully. Embrace failure as an opportunity to learn and improve. Celebrate your progress and achievements. Seek constructive feedback and criticism that can help you grow.

Points to Leave With

If you're sitting and waiting to see what happens with 60 Day Dispensing, ask yourself if your competitor is doing the same. Because they're not.

Innovation is a necessity, not an option, for community pharmacies in today's world. It is the key to surviving today's challenges, and the ones that will undoubtedly come tomorrow.

To innovate successfully, you need a mindset of innovation that goes beyond adaptation to proactive growth. You need a clear purpose of what you want to achieve and why. You need to seek feedback and input from others who can help you create value for your team, and the various other stakeholders in your business. You need to embrace change and uncertainty as sources of learning and improvement. You need to invest in learning and development for yourself and your team. You need to understand that change and innovation doesn't happen overnight, and the return on your investment of time and resources is a direct result of your efforts towards innovating and learning new ways to do things better and smarter.

But without prioritising innovation, starting small, seeking help, involving others and believing in yourself, your ability to innovate will always be hindered. You will forever have a "lack" mindset and blame others for your challenges, rather than doing the work needed with the support of trusted experts to thrive while others fail.

Your future in pharmacy depends on your proactive approach to innovation.



“DON'T WAIT FOR SOMEONE ELSE TO DO IT FOR YOU. BECAUSE THE REALITY IS THAT THERE IS NO ONE ELSE TO DO IT FOR YOU. THAT'S THE POINT OF BEING A BUSINESS OWNER. YOU OWN THE BUSINESS, AND ITS SUCCESSES AND FAILURES THAT COME WITH IT.”

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Or do nothing, and simply sit and wait and end up wondering why your business is failing?



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ABOUT THE AUTHOR

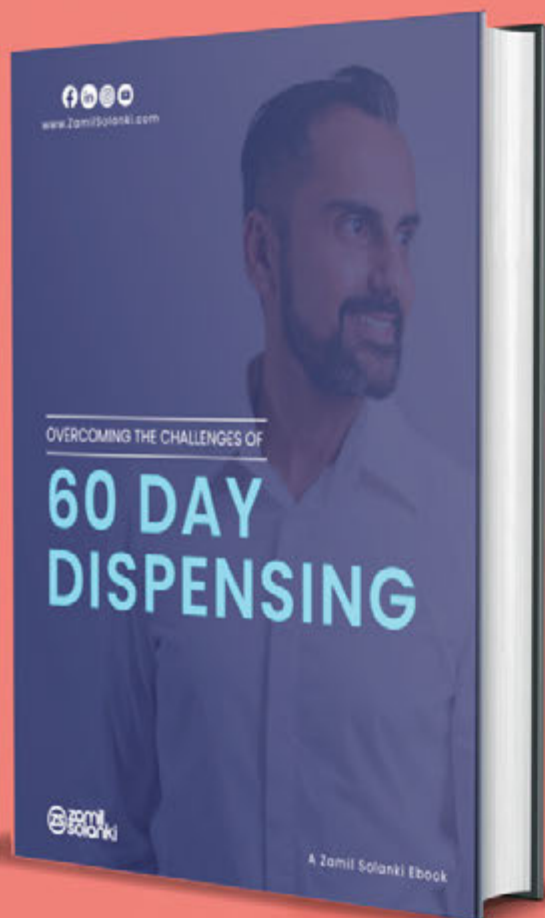
Zamil Solanki works with healthpreneurs – from individuals to large multi-national organisations – to help them overcome unique challenges and achieve their goals through curated training programs, and tailored holistic solutions. Unlike other coaches and consultants, we pair global research and techniques with our own experiences, having grown our own pharmacy by \$4 million and exiting it for 3x the industry average multiple. To do this, we focus holistically using 5 key pillars – mindset, planning, leadership, marketing and sales and specialize in workflow, innovation, automation and systems.

Zamil Solanki

Pharmacist, Business Strategist & Entrepreneurial Coach



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TIPS FOR THE HOLIDAY SEASON

You've worked hard all year. Don't let poor risk management ruin the holiday season.

Why do Risks Increase at this Time of the Year?

The summer months are a busy time of year for the retail sector. Extended trading hours and an increased number of shoppers creates a busy and often stressful environment for pharmacy staff.

Not surprisingly, this results in a significant increase in insurance claims for:

- Slips and trips due to crowding and poor housekeeping
- Dispensing errors by pharmacists exposed to frequent interruptions and distractions
- Breaches in patient privacy when good record keeping and dispensing practices aren't followed
- Thefts by opportunistic shoppers who capitalise on preoccupied staff
- Armed hold ups by thieves aware retailers are holding more
- Burglaries by those looking for higher stocks of perfume, medications and specialty goods



What Can You do to Reduce Risk Exposure?

Stop and think about the implications of a serious incident occurring in your pharmacy this holiday season.

Communicate with all of your staff about the importance of:

- Good housekeeping including checking more regularly for hazards
- Reducing interruptions and distractions when pharmacists are dispensing medications
- Adhering to good record keeping and dispensing practices despite increased demand for services
- Checking that security alarms, lighting and CCTV are operating properly and that sensors are not obscured
- Taking care with high-risk stock. Don't tempt thieves by storing desirable medications in areas visible to the public

Keep perfume and other expensive stock away from windows to discourage 'smash and grab' thefts.

- Heightened security measures including protecting all entry points and ensuring staff adhere to correct procedures for opening and closing the pharmacy
- Regular banking of cash earnings and the use of a time delay safe
- Knowing what to do during and after an armed hold-up



FIND OUT MORE

For further advice and support, please contact Guild Insurance on **1800 810 213**, or visit guildinsurance.com.au

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BUILDING BETTER TEAMS

How to Hire for a Positive Organisational Culture

A As any pharmacy owner or manager would know, having a strong and aligned team is not only essential for business success, but it's also critical to provide excellent patient care. When employees share a business's values and beliefs, they contribute to promoting and maintaining a positive workplace culture—one of the most potent ingredients to achieve a high performing business.

Words | Dean Anderson CEO, Leading Teams



Culture is a powerful influence on performance and productivity and has a direct impact on staff retention. In fact, according to research from Glassdoor, a toxic work culture was identified as one of the primary drivers causing workers to quit. And workers recognise this too, with a recent report by global jobsite Indeed revealing that workers consider their wellbeing at work to be essential to their overall job satisfaction and ability to thrive.

However, as many pharmacy managers would agree, successfully hiring employees with aligned values can be tricky and can take significant time and effort. But in good news, there are ways to streamline this process and increase the chances of finding people who encourage a positive workplace culture.

IF YOU HAVEN'T ALREADY FORMALLY DEFINED YOUR CULTURE, START HERE

We can't stress enough the importance of a business having a common purpose that employees live and breathe – and this can't just be words on a wall. To find your common purpose employees should ask themselves, 'if we stop working as a team, will anyone be affected by this?' For pharmacies, this is a relatively easy question to answer. Given pharmacy teams are responsible for providing patient care and support, they need to be aligned to deliver appropriate patient outcomes.

An effective common purpose improves employee motivation, alignment, and investment in the business. Leaders play a key role in making sure that employees are not only clear about their common purpose, but they understand the role they play in fulfilling this purpose. Staff members in high performing cultures do not use negative phrases like 'I only do' or 'I just do'. Every employee needs to understand their value and contribution to the common purpose.

A key to building a culture that enables people to thrive in their jobs and allows employers to hire better, is to first establish an agreed behavioural framework for the business. The important word here is 'agreed'. Employees need to agree to the behavioural framework in order to have a sense of ownership of the behaviours. This framework sets the minimum behavioural standards expected in a workplace and is an enabler of genuine conversations around performance. The other important component in driving performance improvement through culture is the establishment of strong professional workplace relationships. Investing time in workplace relationships provides the foundation for genuine conversations.

To begin the process, start by defining the culture you want to see reflected within your team, and determine the specific behaviours necessary to deliver this outcome. Behavioural examples could include a team that shows genuine care for others, collaborates well together, takes responsibility for their actions, or works harmoniously in a fast-paced setting. Based on your priorities, you can devise the agreed behavioural framework to promote these desired behaviours in consultation with your team.

Taking the time to understand the values and beliefs you want to underpin your business contributes greatly towards the recruitment process. Once you have established your common purpose, and have an agreed behavioural framework in place, you'll be much better positioned to vet potential candidates to ensure they share similar workplace values and beliefs. Ultimately, you'll know what to look for in potential candidates and won't become side-tracked by interviewees who fit the job description well, but not the defined culture you want to see.

INDUCTIONS ARE KEY WHEN HIRING FOR CULTURE

Once a new hire has been selected, a well thought out induction process is crucial to ensure they experience a smooth transition into the business. Ensuring new team members feel welcomed and supported is key to helping them integrate quickly and feel positively towards the team from the outset. This is where leaders, and all employees, need to walk the talk on culture – accepting counterproductive behaviour is a clear sign of a poor culture. In other words, first impressions really count.

THE TWO TYPES OF INDUCTIONS

When a new hire joins a team, they take part in two types of inductions—formal and informal inductions. The formal induction is a well-known process that includes a range of onboarding procedures. The informal induction, on the other hand, is an unofficial process where the new hire is exposed to team dynamics and behaviours as they settle into their role. These can be both negative and positive experiences. For example, a new hire might notice colleagues on their phone while serving customers and come to see it as an acceptable behaviour within the business. Alternatively, a new hire may overhear staff praising another team member about a job well done and feel encouraged by the team's synergy and supportiveness.

To ensure the new starter experiences positive inductions (both formally and informally) and is exposed to desirable behaviours, it's crucial that you're not just hiring for a positive culture, but that you are already promoting and maintaining a good culture within your existing team.

HOW TO USE TURNOVER TO IMPROVE CULTURE

While it might seem counter-intuitive, the exit interview plays a valuable role in the induction process. It's an opportunity to learn why departing employees have chosen to leave and what their experience was like within your organisation. How did they connect with other staff? How would they describe the leadership within the company? And did the organisation help them develop professionally?

If run effectively, an exit interview can offer clarity into your organisation's culture, and whether this reflects the culture you hope to achieve. The feedback received during these interviews can help you identify the strengths and weaknesses within your organisation and the necessary changes that need to be made to improve staff satisfaction. Of course, an exit interview is only valuable if you act on the feedback provided.

Most pharmacy owners and managers would have at some point in their careers deliberated over whether a particular candidate was a good fit. And while no one can ever be certain until the new employee has started their job, having a workplace culture that sustains high performance is a great place to start.

Understanding your common purpose, investing in strong professional relationships, establishing an agreed behavioural framework, and embracing genuine conversations all contribute to high performance and increase your chances of successfully recruiting for a positive culture.

If you want to learn more about how to improve workplace culture and performance in your organisation, please contact Dean Anderson on 0419 799 921 or office@leadingteams.net.au.

Innovating the Australian Pharmacy Space:

TRANSFORMING WITH TECHNOLOGY

The Australian pharmacy landscape is evolving rapidly, driven by the need for increased efficiency, improved customer service, and enhanced inventory management. To meet these demands, the industry has turned to technology as a powerful tool for innovation. We'll explore the role of technology in revolutionising Australian pharmacies, focusing on how the right solutions can ease workloads, enhance customer relationships, and streamline stock management.

Chief Innovation Officer,
The Platform Alliance Group

Words | Andrew Pattinson





With the Community Pharmacy sector evolving at such a rapid pace, pharmacies face mounting pressure to optimise their operations. As legislation evolves (6ODD and 8CPA are prime examples) and patients increasingly seek personalised healthcare solutions, adopting full scope of practice presents a significant opportunity to meet this demand. To stay competitive, pharmacies need to adapt and innovate and to integrate the 'old with the new' - technology offers a lifeline, providing the means to address these challenges effectively.

Pharmacies, at their core, are service providers in the healthcare ecosystem. Technology enables the Pharmacy to become more customer-centric, offering tailored solutions and personalised care. For instance, digital platforms and mobile apps allow customers to schedule appointments, request prescription refills, and access health information, promoting greater engagement and convenience.

The ability to collect and analyse customer data has become a game-changer. With the right technology, pharmacies can gain a deep understanding of their customers' preferences, history and purchasing habits. This knowledge empowers pharmacists to offer more informed advice and provide tailored recommendations. In turn, this strengthens customer loyalty and drives repeat business. Our challenge as a sector remains the battle for one 'source of truth' when it comes to patient data. We have dispense data, loyalty data, MedAdvisor data, just to name a few - harnessing this information to align our offer with consumer and patient needs is critical.

One of the most significant challenges pharmacies face is managing their inventory effectively. Medications have strict storage and handling requirements, and out of stocks can have dire consequences for patient health - it's critical to have the right product at the right time at the right price to meet patient needs. On the other hand, overstocking can lead to wastage and decreased profitability, particularly with the growth of high-cost drugs.

This is where inventory management systems come into play. Whilst this kind of technology is commonplace in other areas of retail it is relatively new to Pharmacy. These solutions are designed to provide real-time insights into stock levels, availability,

and order histories. By automating the inventory process, pharmacies can reduce the risk of out of stocks, minimise waste, and free up their team to provide a greater personalised service to customers. It offers several key advantages:

Stock Visibility: Real-time data on stock levels and product availability, empowering pharmacists to make informed decisions quickly. With the supply chain under pressure globally it's critical to know how we can access products.

Efficient Reordering: These systems can automate the reordering process, ensuring that vital medications and products are always in stock.

Reduced Errors: Automating manual inventory management tasks reduces the likelihood of human errors, improving patient safety and regulatory compliance. Inventory management systems have no emotion and never go on holidays! They merely order based on consumer demand.

Cost Savings: By reducing the chances of overstocking and stock-outs, as well as ensuring products are bought at the right price, pharmacies can maximise their profitability. Never miss a deal!

Data Analysis: Inventory management systems collect data on product sales and customer preferences, helping pharmacies make informed decisions about product selection and promotion.

Streamlined Workflow: By automating many inventory-related tasks, pharmacists and team members have more time to focus on patient care and other value-added activities.

Innovation in the Australian pharmacy space is fundamentally about harnessing technology to meet the evolving needs of patients and the industry. When you look at your pharmacy, ask yourself whether a task needs to be done by a human or whether it can be automated for efficiency and the human resource can be redeployed to deliver a patient focused task. From enhanced customer engagement to streamlined inventory management, technology offers a host of benefits for pharmacies looking to thrive in a rapidly changing environment. As the pharmacy landscape continues to evolve, embracing the right technology solutions is the key to success in this dynamic sector.

PRICELINE PHARMACY OF THE YEAR 2022

Priceline Pharmacy Kippa-Ring Uses BD Rowa™ Technology

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We were delighted to have the opportunity of interviewing siblings Andrew and Matilda Twist, franchise partners of Priceline Pharmacy Kippa-Ring.

The dynamic duo provided fascinating insights into their pharmacy, passion for automation and experiences working with BD Rowa™ Technology where automation has been a priority for over 6 years.





Congratulations on winning Priceline Pharmacy's Store of the Year for 2022, what does this achievement mean to you and your colleagues?

We could not believe it when we were announced as Priceline Pharmacy Store of the Year at the conference in Singapore. This was the second time we have won the award and we are so happy that we are able to share the win with our team who put in 110% effort every day. Our grandma, Jane Wilson opened the pharmacy in 1972 and my sister and I went on to become pharmacists and worked alongside her for many years before we bought the business from her 7 years ago. We have a long history of service within the community and have a great loyal customer base that makes turning up to work easy. The award was an accumulation of all the hard work from our team, who are driven by their love of customer service.

What do you believe are the contributing factors to winning this prestigious award?

There are a number of criteria factors that are taken into consideration when they decide on the recipient of the award. Our store scores extremely high on customer satisfaction and has had solid sales growth in the last 2 years, which is no easy feat when we are such a longstanding store with two other pharmacies in the same shopping centre. We believe that investment in staff and the way we always seek improvement and efficiency in our processes is a large contributing factor to our success and our ability to deliver exceptional customer service. The BD Rowa™ Robot has helped immensely in our dispensary operations which has then driven our growth across the whole store. Particularly during COVID when our team was under immense pressure, our dispensary continued to thrive.



“IT IS EVEN MORE IMPORTANT NOW WITH 60-DAY DISPENSING, THAT WE DO ALL DISPENSARY OPERATIONS AS EFFICIENTLY AS POSSIBLE, SO WE CAN MAXIMISE OUR TIME EXPLORING ALL OTHER REVENUE OPPORTUNITIES.”

How long have you had automation in your pharmacy?

Back in 2017, we wanted to transform our dispensary to a forward dispense model. We really wanted to improve our patients' access to the white coat, but we were having trouble getting our pharmacists to leave their computers to serve our customers. We looked at other brands of dispensing robots, however the BD Rowa™ Smart was the best product on the market and was a comparable price to other inferior brands. Buying the BD Rowa™ Smart was the best business decision we ever made. It has greatly improved efficiency in our dispensary and given us the ability to maximise the opportunity in professional services. It enabled us to continue our normal script numbers while also administering over 10,000 COVID vaccines during the pandemic.

This year we bought a sachet packing machine and our storage capacity needed to increase, so we decided to trade in our BD Rowa™ Smart for a larger BD Rowa™ Vmax™ with internal ProLog™, which increased our storage capacity by five thousand packets. Having already discovered the advantages of automation and being so pleased with the return on investment of our original BD Rowa™ Smart, it was an easy decision for us to upgrade to the BD Rowa™ Vmax™ and further future-proof our business.

What would you say to pharmacists out there who believe that you must have an Autoloader when investing in a BD Rowa™ Robot?

Buying the BD Rowa™ Smart was the best business decision we ever made, as it eliminates walking and the time required to pick stock, we are able to dispense a lot faster with optimal accuracy. It frees my team's time to focus on customer engagement and profit growing activity. Our customers are always amazed at how quickly we can turn their scripts around, and it has no doubt improved our patient loyalty. For example, our pharmacists are able to dispense an antibiotic script in front of the patient, whilst discussing adjunct products to assist their condition.

While the autoloader has massive advantages and we require it now, we grew our business and reaped the benefits for over 6 years by having a junior team member load the robot in between doing other tasks. In other words, with or without an autoloader will transform your dispensary and business, it simply depends on personal preference and what stage your business is at.

Another major advantage of the BD Rowa™ Robot is stock control as keeping on top of short-dated stock and slow movers is a breeze. Stocktaking the whole dispensary takes under one hour compared to the two days when we did not have the robot. The biggest advantage of having a BD Rowa™ Robot is you gain so much time to do other tasks that you never had time to do in the past.

Can you share some benefits of your new BD Rowa™ Vmax™ with Internal ProLog™?

Having upgraded to the BD Rowa™ Vmax™ with internal ProLog™ has meant we no longer have to manually receive our dispensary orders as the BD Rowa™ Vmax™ marks your stock off against our wholesaler's delivery manifest as it puts it away. This is one less job we have to do each day, allowing our staff to gain valuable time to complete other critical jobs.

How has BD Rowa™ Mosaic software improved your inventory and dispensing processes?

Having a BD Rowa™ Robot has revolutionised our dispensary processes. The biggest advantage is that it allows us time to maximise our forward dispense offer. All our staff have time to actually connect with our customers. When we first installed our BD Rowa™ Smart, our customers were concerned that it meant our staff's jobs could be at risk, however it's the exact opposite - our dispensary team has grown significantly since the installation of our robot. Our team also love having the time and ability to interact with our customers, as the BD Rowa™ Robot makes dispensing so easy.

Another benefit of BD Rowa™ Mosaic software is instantaneous stock reporting. At the touch of a button, we can see what is out of stock, what is in stock. We can also project orders from the software and see dead stock, quickly identifying items we can offload.

What would you say to other pharmacy owners who are thinking of Automation?

Two things, BD Rowa™ Technology is the only brand I would partner with, as you can't go wrong and the second is you will never regret this investment. I wish we had invested in automation years and years ago. We were concerned that our business was not big enough to warrant the investment, but we had it wrong, the BD Rowa™ Robot has enabled our business to get to where we want it to be. It is even more important now with 60-day dispensing, that we do all dispensary operations as efficiently as possible, so we can maximise our time exploring all other revenue opportunities.

I urge any owners out there to contact BD Rowa™ Technology and get your automation journey started today.



FIND OUT MORE

To learn more about BD Rowa™ Technology, you can visit the website: bd.com/rowa

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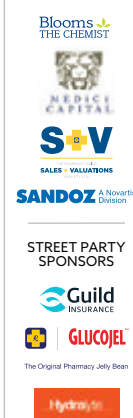
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SHOULD WE TRUST OUR GUTS?

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Almost daily there seems to be a new study linking the gut microbiota to a different health outcome or disease. Prolonged consumption of emulsifiers has been linked to an increased abundance of pro-inflammatory bacteria.¹



The presence of uric acid consuming bacteria in the microbiota may be protective against gout.² The avoidance of gluten in non-coeliac populations has been linked to a lower abundance of beneficial bacteria species.³

Given their well-established importance, should health professionals be encouraging patients to have their microbiota tested to help diagnose and manage health conditions?

What is the Microbiota?

The microbiota and microbiome are two terms that are often confused. The microbiota refers to the diverse collection of microbes that reside in the gastrointestinal tract, which includes bacteria, archaea, fungi, microbial eukaryotes and viruses.⁴ The microbiome encompasses the microbiota in addition to their genes and the environmental factors that influence them.⁴

Within the gastrointestinal tract of a healthy adult, researchers have only identified two dominant bacterial phyla, Firmicutes and Bacteroidetes, along with an additional four phyla that are represented in lower concentrations; Actinobacteria, Proteobacteria, Verrucomicrobia and Euryarchaeota.⁵

The Gut Microbiota and Health

A healthy gut microbiota plays a crucial role in maintaining health, influencing immune function, mental health and digestion.⁵ One of the most well-understood and important functions of the gut microbiota is their ability to ferment non-digestible dietary fibres.⁶ This fermentation process results in the production of beneficial microbial metabolites, such as the short chain fatty acid butyrate; an anti-inflammatory metabolite known to inhibit the production of cytokines.⁶ While the precise strains with this capability have not been identified, it is believed that most bacteria in the phylum Firmicutes are butyrate producing.⁵ As such, it could be hypothesised that an abundance of these bacteria may be protective against inflammatory disease states.

Yet what constitutes the composition of a 'healthy gut microbiome' is yet to be explicitly defined, and the evidence that is currently available suggests that microbial diversity is the most reliable indicator of a healthy microbiome. Microbial diversity is a measure of how many different species are present and how evenly they are distributed.⁵

The Gut Microbiota and Disease

Low microbial diversity and a depletion of short chain fatty acid-producing bacteria are considered common features of dysbiosis. This state of dysbiosis can induce negative effects like inflammation or infection which has been linked to various disease states.⁷

Current Methods for Testing Microbial Diversity

The composition of gut microbiota is commonly quantified using DNA-based methods such as next generation sequencing of 16S ribosomal RNA genes and whole genome shotgun sequencing.

16S rRNA gene sequencing is the most widely used throughout the literature. The 16S rRNA gene is a reliable marker for identifying bacteria since it is ubiquitous to members of this domain. However, this sequencing method is limited to genus-level resolution and is unable to identify microbial functions.⁸

On the contrary, shotgun sequencing offers strain-level resolution for all microorganisms present within a given sample.⁸ In addition, shotgun sequencing can give insight into potential microbiota functions.⁸ Given the greater specificity of this method, it is becoming more widely used.

What Can These Tests Tell Patients About Their Health

Existing microbiome tests focus on taxonomy, with a one-time test able to provide patients with an indication of their overall microbial health, delivering a snapshot of the specific types and overall diversity of microbes that are present in the stool at the time of testing. Routine testing can also show the effect that illnesses, dietary changes and medications can have on the microbiome.⁹

Yet, the vast majority of microbes that reside in the human gut remain unknown and unfortunately these tests are not yet able to accurately identify the functions of the microbiota that are present. Ultimately, these tests cannot diagnose health conditions.⁹

The microbiome is incredibly complex. It is unlikely that there is one ideal microbiome that is indicative of good health, instead it is more likely that there are several different species of microbiota that are able to produce the same metabolites, meaning it is highly probable that there are many different representations of a healthy microbiome.

This isn't to say patients should be discouraged from having their microbial composition tested, but we are still years away from incorporating microbiome testing into regular health checks. Health professionals should do their best to ensure patients have realistic expectations when it comes to microbiome testing.



The Potential of Faecal Microbiome Transplants (FMT)

As our understanding of the human microbiome deepens, faecal microbiome transplants (FMTs) have emerged as a potentially revolutionising treatment approach. FMT is defined as the infusion in the colon of faeces from a healthy donor to a recipient with presumed gut dysbiosis.¹⁰

This procedure has been effective in treating *Clostridium difficile* infection and is now routinely used for this purpose. While FMTs are not yet clinical practice for any other conditions, they are still being explored. For example, researchers have been able to demonstrate that body composition and metabolic phenotypes are transmissible through FMTs. In one frequently referenced study, researchers transplanted faeces from human adult twins, in which one was obese and the other lean, into germ-free mice. After feeding the mice the same calorie-controlled diet it was found that the mice who were colonised with the obese twin's gut microbiota became obese themselves whilst the mice who received the transplant from the lean twin remained lean.¹¹ Animal models such as this are helping to guide a new era of innovation in microbiome therapeutics.

Current Recommendations for Improving Microbial Diversity

While we are not yet able to recommend precise foods that will feed specific microbiota to treat different diseases, we do know that dietary intervention is the most powerful influence on the gut microbiome. For patients wanting to improve their microbial diversity, the following simplified recommendations can be made.

1. Consume 30 different fibre-rich plant-based foods each week
2. Consume regular small amounts of fermented foods, such as milk, cheese and yoghurt, kimchi, sauerkraut, miso and tempeh
3. Limit the consumption of processed and ultra-processed foods



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THE RISE OF PLANT-BASED THERAPIES

In Australia

The Australian medicinal cannabis industry has witnessed an unprecedented surge in patients wanting a natural treatment option and turning to the power of plant-based therapies.

Words | Astrid Dispensary & Clinic



Since October 2016 when the Australian Government passed legislation for medicinal cannabis-based products to be prescribed to patients by registered healthcare professionals, there has been a rise in curiosity about plant-based therapies.

From a modest 819 medicinal cannabis patients in Australia in 2019, the numbers have skyrocketed to 982,502 in 2022 according to the TGA, demonstrating the need for more alternative medicine treatment options.

Despite this surge and the profound, positive impact witnessed in the lives of countless patients, it is important to note that the majority of plant-based medications fall into the category of “unapproved products”. This means they are not listed on the Australian Register of Therapeutic Goods (ARTG) and the information on the efficacy and safety of the products has not been assessed as many of these products did not undergo clinical trials.

While the lack of clinical evidence might be of concern, let’s keep in mind that evidence-based medicine relies on three equally important pillars: ‘research evidence,’ ‘clinician expertise,’ and ‘patient preferences.’ Striking the right balance among these factors is crucial for delivering effective healthcare.

Currently, in the context of medicinal cannabis, there is an imbalance: patients are the driving force, with many reporting its benefits. Although more clinicians are becoming proficient in prescribing, clinical evidence is trailing behind, taking time to align with these advancements.

In practice we see many patients being prescribed medicinal cannabis to help symptom management in anxiety, insomnia and depression, even though robust clinical trial data is lacking. Lately endometriosis is mentioned more and more as one of the conditions researched for treatment with medicinal cannabis.

Needless to say, pharmacists play a significant role in this space, providing essential expertise in medication management and counselling which is essential for providing high-quality healthcare.

However, seven years after legalisation, medicinal cannabis remains a complex challenge for pharmacists.

Navigating the realm of medicinal cannabis in the pharmacy profession is multifaceted:

- **Diverse Information Sources:** There is no single source of truth regarding the endocannabinoid system, cannabinoids, terpenes, plant properties, products and terminology used by patients. Training courses vary widely.
- **Variety of Products:** Pharmacists encounter a multitude of cannabis products, formulations, and suppliers in the market.
- **Numerous symptoms:** Medicinal cannabis has been prescribed for 149 distinct indications in Australia, adding to the complexity of its use.
- **Legislative Differences:** Significant differences in legislation between states require pharmacists to adjust their practices for patients from different states, including dispensing and driving advice for example.
- **Interchangeability Challenges:** There is a lack of data on bioequivalence studies for medicinal cannabis products, making it difficult for pharmacists to confidently advise on product substitutions.
- **Lack of Prescribing Guidelines:** The absence of clear prescribing guidelines results in a wide range of possible starting doses for apparently similar patients, highlighting the non-uniform nature of medicinal cannabis treatments.



Prescribers, too, grapple with these challenges, often turning to pharmacists for guidance. Many patients have complex medical histories, having exhausted conventional medications. Their journey into medicinal cannabis often fosters a collaborative partnership between prescribers and pharmacists, both dedicated to aiding these patients in their pursuit to successfully manage their symptoms.

To support patient growth, many dispensaries and clinics are building pathways to accessibility for Australians in the advancement of plant-based medicines, including Australia's first female-led Dispensary and Clinic, Astrid.

Founded by Lisa Nguyen and guided by the exceptional expertise of Dr Shu Ng, Astrid Clinic is committed to providing compassionate and personalised care to patients through plant-based medicines.

One of the early adopters of medicinal cannabis treatments, Dr Shu Ng, Chief Medical Officer at Astrid Clinic, an Authorised Prescriber with over three years of experience in cannabinoid medicine, shares:

"We have many patients who come to our clinic seeking alternative therapies for chronic symptoms, when traditional therapies like opioids or antidepressants have not provided relief, or conversely caused side effects. Plant-based therapies have offered patients a natural and potentially effective option in their symptom management toolkit"



With a team of ten experienced pharmacists, four doctors, and four nurses, Astrid proudly stands as a holistic modern clinic and pharmacy specialising in the power of plant-based medicines.

"Since 2016, we have experienced a surge in patient numbers who are not only curious but also eager to explore the potential benefits of plant-based therapies as a viable and effective treatment for a wide range of medical conditions.

Like traditional medications, plant-based therapies come with their unique benefits and risks. However, what sets this journey apart is the remarkable, life-changing effects we've witnessed medicinal cannabis have on our patients. It's not just about medicine; it's about transformation and empowerment. We are proud to be building a community in Australia for plant-based therapies." – Lisa Nguyen, Founder of Astrid Dispensary and Clinic



FIND OUT MORE

Astrid Dispensary is located at Suites 57-58/1 Porter St, Byron Bay NSW 2481 and 575 Chapel St, South Yarra VIC 3141.

For more information and to book your free screening consultation with Astrid Clinic, visit astrid.health



A/Prof Ralph Audehm



Viktoria Todorovska



A/Prof Peter Van Wijngaarden

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ULTRATHIN NANOTECH

Promises to help tackle
antibiotic resistance

R Researchers have invented a nano-thin superbug-slaying material that could one day be integrated into wound dressings and implants to prevent or heal bacterial infections.



The innovation – which has undergone advanced pre-clinical trials – is effective against a broad range of drug-resistant bacterial cells, including ‘golden staph’, which are commonly referred to as superbugs.

Antibiotic resistance is a major global health threat, causing about 700,000 deaths annually, a figure which could rise to 10 million deaths a year by 2050 without the development of new antibacterial therapies.

The new study led by RMIT University and the University of South Australia (UniSA) tested black phosphorus-based nanotechnology as an advanced infection treatment and wound healing therapeutic.

Results published in *Advanced Therapeutics* show it effectively treated infections, killing over 99% of bacteria, without damaging other cells in biological models.

The treatment achieved comparable results to an antibiotic in eliminating infection and accelerated healing, with wounds closing by 80% over seven days.

The superbug-killing nanotechnology developed by RMIT was rigorously tested in pre-clinical trials by wound-healing experts at UniSA. RMIT has sought patent protection for the black phosphorus flakes including its use in wound healing formulations, including gels.

RMIT co-lead researcher, Professor Sumeet Walia, said the study showed how their innovation provided rapid antimicrobial action, then self-decomposed after the threat of infection had been eliminated.

“The beauty of our innovation is that it is not simply a coating – it can actually be integrated into common materials that devices are made of, as well as plastic and gels, to make them antimicrobial,” said Walia from RMIT’s School of Engineering.

A previous study led by RMIT revealed that black phosphorus was effective at killing microbes when spread in nano-thin layers on surfaces used to make wound dressings and implants such as cotton and titanium, or integrated into plastics used in medical instruments.



How the Invention Works

Black phosphorus is the most stable form of phosphorus – a mineral that is naturally present in many foods – and, in an ultra-thin form, degrades easily with oxygen, making it ideal for killing microbes.

“As the nanomaterial breaks down, its surface reacts with the atmosphere to produce what are called reactive oxygen species. These species ultimately help by ripping bacterial cells apart,” Walia said.

The new study tested the effectiveness of nano-thin flakes of black phosphorus against five common bacteria strains, including E. coli and drug-resistant golden staph.

“Our antimicrobial nanotechnology rapidly destroyed more than 99% of bacterial cells – significantly more than common treatments used to treat infections today.”



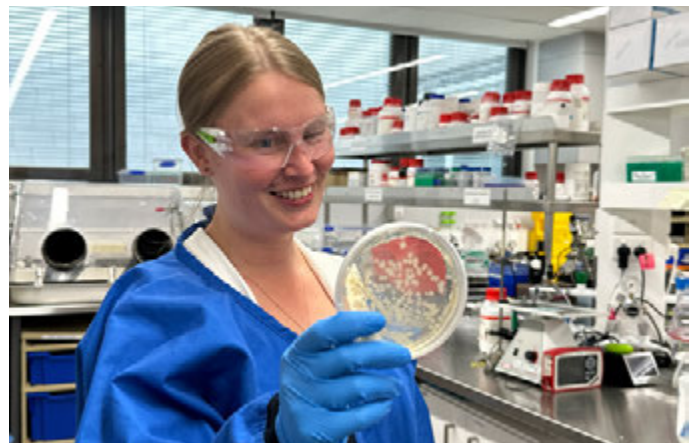


The Global War on Superbugs

Co-lead researcher Dr Aaron Elbourne from RMIT said healthcare professionals around the world were in desperate need of new treatments to overcome the problem of antibiotic resistance.

“Superbugs – the pathogens that are resistant to antibiotics – are responsible for massive health burdens and as drug resistance grows, our ability to treat these infections becomes increasingly challenging,” Elbourne, a Senior Research Fellow in RMIT’s School of Science at RMIT, said.

“If we can make our invention a commercial reality in the clinical setting, these superbugs globally wouldn’t know what hit them.”



Treatment Efficacy in Preclinical Models of Wound Infection

Lead researcher from UniSA, Dr Zlatko Kopecki, and his team performed the pre-clinical trials to show how daily topical application of the black phosphorus nanoflakes significantly reduced infection.

“This is exciting as the treatment was comparable to the ciprofloxacin antibiotic in eradicating wound infection and resulted in accelerated healing, with wounds closing by 80% over seven days,” Dr Kopecki said.

Dr Kopecki, who is also a Channel 7 Children’s Research Foundation Fellow in Childhood Wound Infections, said antibiotic treatments were becoming scarce.

“We urgently need to develop new alternative non-antibiotic approaches to treat and manage wound infection,” he said.

“Black phosphorus seems to have hit the spot and we look forward to seeing the translation of this research towards clinical treatment of chronic wounds.”

The team wants to collaborate with potential industry partners to develop and prototype the technology.

‘Layered Black Phosphorus Nanoflakes Reduce Bacterial Burden and Enhance Healing of Murine Infected Wounds’ is published in Advanced Therapeutics (DOI: 10.1002/adtp.202300235).

Emmeline P. Virgo, Hanif Haidari, Z. L. Shaw, Louisa Z. Y. Huang, Tahlia L. Kennewell, Luke Smith, Taimur Ahmed, Saffron J. Bryant, Gordon S. Howarth, Sumeet Walia, Allison J. Cowin, Aaron Elbourne and Zlatko Kopecki are co-authors.



INNOVATION IN PHARMACY – A STUDENT LENS

Innovation. The development and application of new ideas to improve the quality of existing goods or services. This topic holds a strong reputation in current times, specifically in the world of pharmacy where the profession is ever changing, growing and evolving to improve patient health and give back to the community.

Executive Director of Internal
and External Affairs National
Australian Pharmacy Students'
Association (NAPSA)

Interview | Shylee-Jade Hadar-Pagliari





In my personal experience, there is no better way to learn about the future innovations of pharmacy than networking, engaging, and attending conferences which provide countless educational opportunities to uncover the future of the profession.

Throughout the year, the National Australian Pharmacy Students' Association (NAPSA) provides students with many opportunities to attend and get involved with many industry conferences such as APP, Pharmacy Connect, PSA and their state annual therapeutic updates. As well as this, NAPSA strives to provide student focused education and awareness of industry innovations in our own annual NAPSA Congress.

In September Brisbane hosted the International Pharmaceutical Federation (FIP) World Congress, which connected pharmacists from different countries to share and discuss their current and future pharmacy trajectories. The world of pharmacy is expanding in ways such as utilising robotics, automation and new technologies in the pharmaceutical manufacturing industry and understanding new evidence-based practice guidelines. Greener, cleaner, and smarter is the future with an increased awareness of ways in which we can not only give back to our patients but also to the environment.

Pharmacy is growing in all avenues, ranging from community, hospital, manufacturing, clinical trials, humanitarian, military, and aged care settings. But perhaps the biggest expansion and innovative development in the Australian setting is the expanding scope of pharmacists. Providing pharmacists with an increased clinical capacity will allow them to not only directly impact and improve a patient's health, but to also impact the overall healthcare system by improving efficiency and accessibility to maintain long-term stability.



“THE WORLD OF PHARMACY IS EXPANDING IN WAYS SUCH AS UTILISING ROBOTICS, AUTOMATION AND NEW TECHNOLOGIES IN THE PHARMACEUTICAL MANUFACTURING INDUSTRY AND UNDERSTANDING NEW EVIDENCE-BASED PRACTICE GUIDELINES.”

Coming from far North Queensland, I was involved in assisting the training of the first pharmacist cohort undertaking expanded scope, and the experience opened my eyes to the exciting path that lies ahead for all graduating and incoming pharmacy students.

From the student perspective, it is evident that the future of the profession is bright. We are entering an ever changing and evolving industry which will be able to provide us with an increasing number of skills and opportunities.

This year World Pharmacist Day had a focus on the impact pharmacists have on strengthening healthcare systems, and from the many innovations in the profession, it is not hard to see why. As NAPSA, we will continue to strive in providing students a strong foundation for their future careers through promoting new leadership practices and empowering the next generation of pharmacists. The topics for pharmaceutical innovation are endless and we cannot wait to enter the profession and be the future changemakers!



“WE ARE ENTERING AN EVER CHANGING AND EVOLVING INDUSTRY WHICH WILL BE ABLE TO PROVIDE US WITH AN INCREASING NUMBER OF SKILLS & OPPORTUNITIES.”

CONTINUING PROFESSIONAL DEVELOPMENT

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ASSESSMENT Q'S | P.55



ASSESSMENT Q'S | P.56

43

Prescribing Success: Business and Innovation in Community Pharmacies

- Recall what factors influence business according to Porter's 5 Forces and PESTLE analyses.
- Recognise five generic business strategies that can be applied in community pharmacy.
- Recognise four different business innovation strategies and how they apply to community pharmacy.
- Understand how to prioritise innovative ideas.

50

Utilising the Power of Pharmacogenomics To Improve Medication Outcomes

- Define pharmacogenetics and recognise its role in medicine.
- Identify examples of current use of pharmacogenetics in drug selection and dosing.
- Recognise the benefits of pharmacogenetics in medicine.
- Recognise the perceived barriers to wider implementation of pharmacogenetics in practice.
- Recognise the importance of the role of the pharmacist in embracing and adopting pharmacogenomics into clinical practice.

PRESCRIBING SUCCESS

Business and Innovation in Community Pharmacies

The word 'strategy' continues to litter conversations amongst business leaders, managers, and staff. For many, the word invokes a sense of importance, legitimacy, and urgency and captures significant funding from businesses globally.





Learning Objectives

On completing this activity pharmacists should be able to:

- Recall what factors influence business according to Porter's 5 Forces and PESTLE analyses. (MCQ1,4)
- Recognise five generic business strategies that can be applied in community pharmacy. (MCQ2)
- Recognise four different business innovation strategies and how they apply to community pharmacy (MCQ5)
- Understand how to prioritise innovative ideas. (MCQ3)

Competency standards addressed:

4.3, 4.4, 4.5, 4.6, 4.7



Accreditation Number: A2311TK1

Expires: 31/10/2025

This activity has been accredited for 1.0 hr of Group 1 CPD (or 1.0 CPD credit) suitable for inclusion in an individual pharmacist's CPD plan which can be converted to 1.0 hr of Group 2 CPD (or 2.0 CPD credits) upon successful completion of relevant assessment activities.

It's estimated that by 2031, \$111.4 billion USD will be spent on strategy consulting worldwide (Allied Market Research 2022). Whilst strategy can be powerful, it is also estimated that up to 70% of strategies fail. This sobering statistic may create doubt on whether strategic planning should even be attempted by a pharmacy owner/manager, especially when formal business education has not yet been undertaken. In this article, we will look at the significance and advantages inherent in the formulation of a comprehensive business strategy. Furthermore, we will demonstrate how the integration of the business strategy with an innovation strategy can significantly contribute to the realisation of its ultimate success.

Business Strategy

The following screening questions can assist in determining if strategic planning would add value to a business.(Thompson et al. 2022):

To be viable and successful, my pharmacy needs:	Yes	No
to be uniquely positioned in the marketplace.		
to attract customers.		
to compete strongly against rivals.		
to achieve performance targets.		
to capitalise on opportunities for business growth.		
to respond to changing economic and market conditions		

If any of these statements hold true for a business, then undertaking targeted strategic planning matters. Because the pharmacy sector is highly competitive and sensitive to economic change, it is difficult to imagine a pharmacy business that would not benefit from having a well-thought-out business strategy. For example, discount pharmacies offer value to price-conscious buyers. Additionally, consumers are not immune to cost of living pressures. *(A valuable activity for business leaders is to research the economic concept of 'price elasticity'.)*

A robust framework useful to illustrate the sensitivities that affect the capture of value is Porter's 5 Forces (Thompson et al. 2022). As seen in Figure 1, at the centre of this model, a pharmacy is exposed to pressures on its profitability by an array of forces. For instance, suppliers/wholesalers may capture increased margins if a pharmacy's purchasing power is weak. Competitor pharmacies or supermarkets may draw away customers with a different value proposition, such as price or convenience. Surrounding these immediate sector forces are macro influences, defined by a PESTLE analysis. A timely example of Political Factors is the 60-day dispensing policy, which is having a significant impact on community pharmacy business.

This highlights why a business strategy matters. Business is complex due to the variety of influences and demands it is exposed to. Successful businesses effectively identify which of these forces matter to their specific situation. They then focus on mitigating risks and taking advantage of opportunities through a set of coordinated policies and actions ('a strategy'). These must be relevant and impactful to their environment and situation, meaning other actions are left behind despite being doable with the resources available.

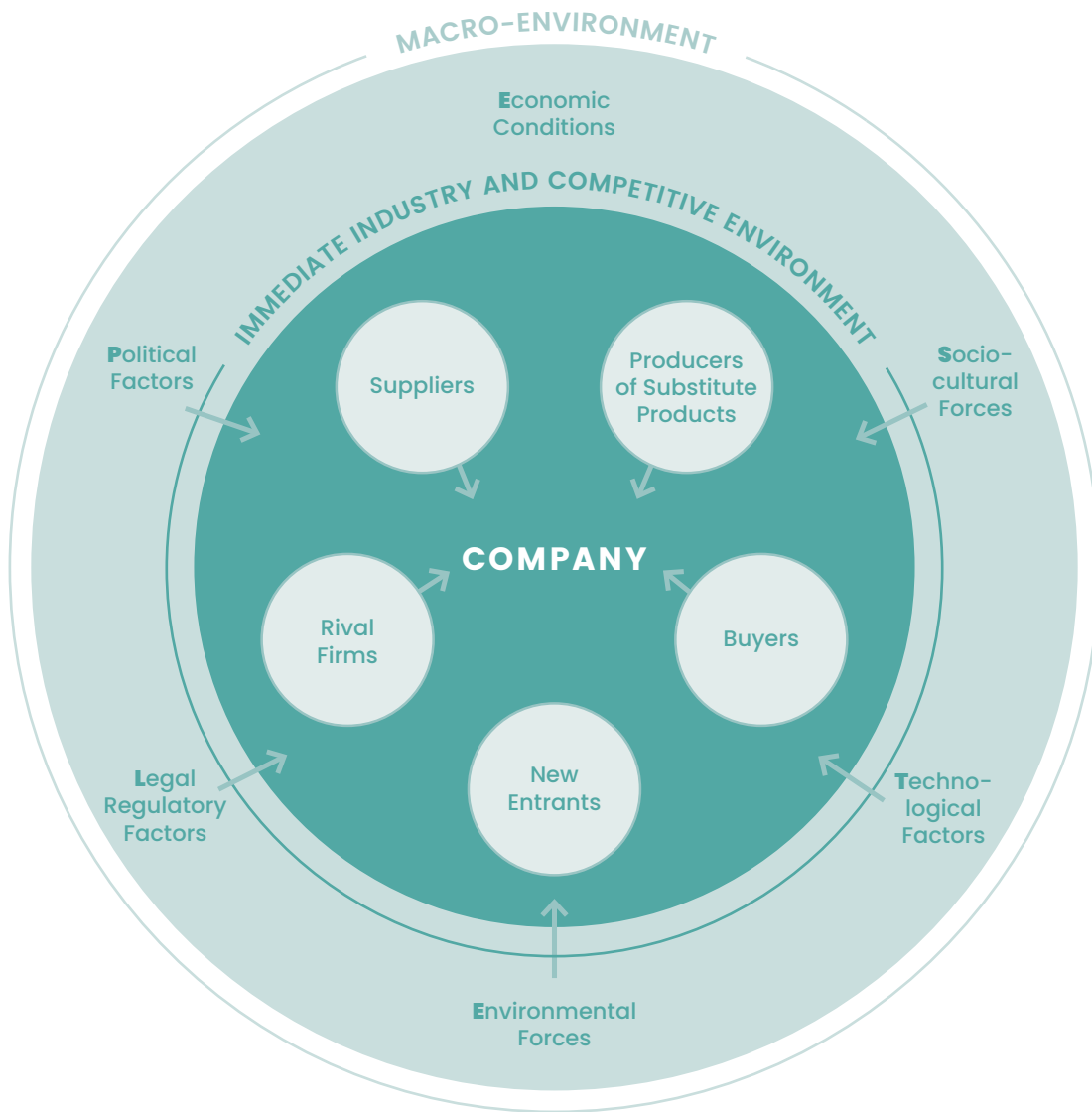


Figure 1: Porter's 5 Forces surrounded by PESTEL Analysis

Upon identifying the key influences the pharmacy is facing, the five 'generic' strategies in Figure 2 help to plot a path forward on how the business will compete. Each strategy demands key business characteristics. For instance, if lower cost is pursued, the business must perform internal value chain activities and eliminate or bypass cost-producing activities. However, if differentiation is chosen, unique product offerings and experiences are required underpinned by buyer loyalty (Thompson et al. 2022).

For example, a pharmacy pursuing a low-cost strategy may join a discount pharmacy brand that delivers better buying and marketing to price sensitive customers. Alternatively, a pharmacy seeking a differentiation strategy may invest in professional services fixtures and staff training to capture a greater spend from customers (Pisano 2015). For these businesses to succeed, they will need to undergo significant changes that align with their strategic direction. One way to achieve this is by integrating an innovation strategy with the business strategy.

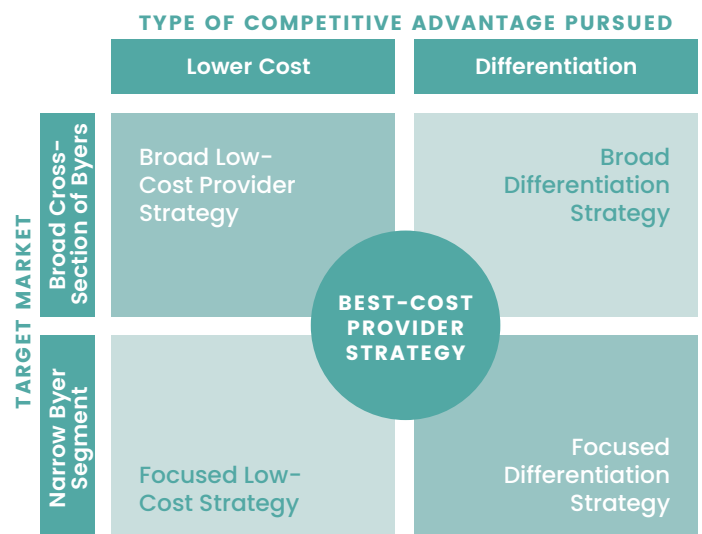


Figure 2

Innovation Strategy in Pharmacy

To innovate is to “make new”. When a business is pursuing innovation it has identified profitable opportunities, assessed its resourcing and capabilities, analysed its sector and macro factors, and then chosen to renew the business in a position where sustained competitive advantage is attainable. For example, if the business strategy is to become a best-cost provider, from being a low-cost provider, the role of innovation strategy is to coordinate the activities toward that change.

The purpose of innovation is to capture customer value. This could manifest in customers paying less, getting a higher quality product, or accessing greater convenience. Aldi Food Stores is a prime example of a well-known company with a broad low-cost strategy. This strategy relies on lower operating costs to deliver on high quality at a low cost. An example of innovation (a new way of operating) is Aldi’s adoption of shopping trolley tokens. By requiring customers to return their shopping carts, the store saves money on collecting and replacing lost carts. This delivers lower operating costs leading to lower costs for customers. Another lesson in cost minimisation that community pharmacy can learn from, is Aldi’s decision to charge credit card fees. If customers use their credit card, they must pay the transaction fee, but still have the choice of no fee if they use debit or cash (Mansukhani, Nicholson & Ruiz 2019). Those bank savings are then passed on to the customers through lower product prices. These examples are seemingly simple and obvious; however, they are genuine results of innovation. Aldi has delivered a competitive advantage through their policies and actions (business strategy), and renewal of business operations (business innovation).

This simplicity demonstrates that an innovation strategy is not always rooted in technical competence. It can be derived from the business model. This was discussed by Gary Pisano’s 2015 article in the Harvard Business Review titled

‘You need an Innovation Strategy’. In this article Pisano articulated the ‘Innovation Landscape Map’ seen in Figure 3 which clearly illustrates how an innovation strategy can be defined through a business-technology matrix. The key questions of this matrix are (Kennedy 2020):

- 1) Does the innovation create a new market or does it target an existing market?
- 2) Does the innovation use a new technology or an existing technology?

In the trolley token example above, Aldi leveraged an existing business model (Customer’s shopping at their supermarket) with existing technology (shopping trolleys). This routine innovation successfully aligned on Aldi’s low costs business strategy.

ROUTINE INNOVATION EXAMPLE

Abigail Central Pharmacy is pursuing a Broad Differentiation Strategy. It has identified that two nearby pharmacies are discounting to appeal to a lower socio-economic market in the community. Local trends indicate gentrification of the suburb with a growing middle class family population especially in the 0-40 age bracket. Within this business strategy, the owners decide to pursue customer demand for convenience and service. They recognise they have a technological and marketing strengths because they have a medication management app and a pharmacy website.

Their innovation strategy (coordinated actions and policies) includes:

- 1) Market the app on their website including convenient downloading
- 2) Train all staff on how to use the app
- 3) Incentivise staff to sign up customers to the app
- 4) Offer every customer the app when in store
- 5) Ensure the dispensary staff quickly dispense and respond to app generated prescription orders

This incremental change renews the business’s resources (staff and technology) to adopt innovative capabilities (digital engagement) to meet the convenience demands of the local market. This opens opportunities to capture value by offering added services.

ARCHITECTURAL INNOVATION EXAMPLE

Denzeltown Dispensary, a medical centre pharmacy currently offering ‘best-cost’, is pursuing an Architectural Innovation Strategy. A new private hospital specialising on cancer treatment has been opened next to the pharmacy. The owner has identified that Focussed Differentiation offers higher value opportunities for business. To facilitate the business renewal, the owner pursues:

- 1) Increased financing
- 2) Training for staff
- 3) Shopfitting to build a sterile chemotherapy preparation facility
- 4) Technology to support the services
- 5) Delivery partnerships

This is a significant change for the business that carries high financial risk. The strategic plan is critical here to mitigate the downside risks associated of creating a new market and using new technologies.

RADICAL INNOVATION EXAMPLE

Pharmacy Andreville has recently seen significant population growth in the local area. The pharmacy is in a shopping centre with a major supermarket chain as the anchor. With one other local pharmacy down the road who are focussing on Professional Services, the leadership group believe a Broad Differentiation Strategy will capture demand for convenient dispensing supported by intimate retail engagement. As a traditionally laid-out pharmacy with a dispensary to retail ratio of 70:30, the innovation strategy to support the business strategy is to:

- 1) Not take a dividend and instead invest in the business
- 2) Shopfit to implement forward dispensing pods and install a dispensing/automation robot
- 3) Train staff in new dispensary workflows
- 4) Train staff in retail engagement during the upfront dispense process

The same market is being targeted here with new technology and technical competences.

Disruptive – Aged care

DISRUPTIVE INNOVATION EXAMPLE

Callum City Chemist have been approached by a major aged care provider who run numerous aged care facilities within 20Km of the pharmacy. They are looking for one pharmacy provider to service their facilities with DAA packing services. The pharmacy currently use sophisticated packing machines for community patients and are enabled for ePrescribing (Active Script List). This is a key requirement for their innovation strategy because the aged care provider has mandated the use of the ASL with their medical providers and nurses. The pharmacy’s innovation strategy includes:

- 1) Engagement with the facilities to develop codesigned processes and procedures centred on the use of the ASL
- 2) Engagement with the existing delivery company to ensure complete digital tracking and auditing of deliveries

In this example, the blue ocean thinking of the customer has shifted the pharmacy’s innovation strategy to implement new ways of working using existing technologies. This demonstrates that often, demand, constraints and structure stimulate innovation strategy.

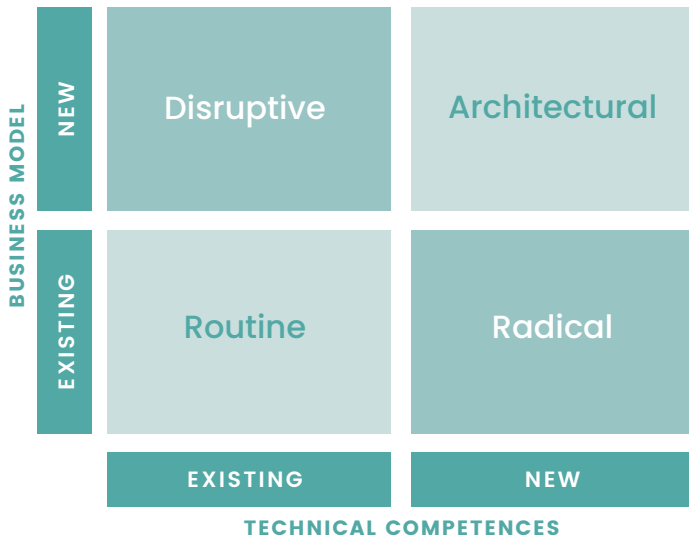


Figure 3



Innovation Strategy Implementation

In a Harvard Business Publishing Corporate Learning blog, author Janice Molloy outlined five steps used by organisations who have successfully implemented innovation strategy (Molloy 2019).

1. Look for innovation opportunities
2. Prioritise opportunities
3. Test your innovation opportunities
4. Build support for your innovation choices with stakeholders
5. Learn and pivot quickly (e.g. fail fast!)

LOOK FOR INNOVATION OPPORTUNITIES

A key characteristic of innovation is solving problems. A register of problems is not hard to develop once business leaders and owners develop customer and staff intimacy. This approach has been applied by Google/Alphabet itself by recognising that innovation comes from any source. Furthermore, the company encourages staff, through structured time and reward, to offer innovative ideas (Livescault 2022). This offers an inexpensive way to gather ideas on problems and solutions. Google Reviews are another excellent mechanism to monitor the experiences of customers. Copying the text of these reviews into online word-cloud tools can assist in uncovering frequently used terms in customer feedback. This offers innovation opportunities. Furthermore, many pharmacies use their website to gather in-depth customer feedback and sentiment analysis for their performance.

PRIORITISE INNOVATION OPPORTUNITIES

When an innovation strategy is aligned to support the business strategy, prioritisation becomes clear. A useful tool that helps to communicate why some innovative ideas are to be implemented is the simple Importance Vs Difficulty framework shown in Figure 4. When a score from 1-5 is offered to each component, objective decisions can be made. This is especially useful when superimposed upon the Innovation Landscape Map (Figure 3).

How important is it?	How difficult is it to build?
Value • Potential revenue	Cost
Benefit • To current customers • To potential customers	Effort • Development effort • Operational effort • Implementation effort
Impact • On the business goals • On the strategic goals	Risk
Complexity	

Figure 4

Routine innovation such as implementing a medication management App may have a low difficulty, and high importance because it is an existing technology, with low risk and complexity that also offers high revenue that results in a positive impact on business strategy within months. It would be a high priority for many pharmacies. Alternatively, implementing an Automation robot could mean a higher difficulty with higher importance however, the potential longer-term benefits would be of significant impact to the business within three years. The prioritisation becomes simple – Routine innovation first, followed by Disruptive. This approach offers a pharmacy leadership team a road-mapping opportunity which helps to communicate and manage change more effectively.

TEST INNOVATION OPPORTUNITIES

Whilst innovation is often associated with blue sky thinking (thinking that is not limited by the realities of the present which encourages new ideas)– a powerful force to harness the creative thinking of staff is to set constraints to ensure ideas are feasible and viable. Often, business leaders use ‘budget’ and ‘risk’ as key constraints. This makes sense as seen with the examples above requiring financial investment. This however doesn’t work well with an innovation strategy because innovation is about renewal which means movement into new business/technology

ultimately requiring financing and risk appetite. Murray and Johnson propose that an alternative approach is to support innovation by setting constraints through ‘outcomes’ and ‘time’ (Murray & Johnson 2021). This ‘what’ and ‘when’ view leads staff and managers to dynamically own the ‘how’. If this approach is applied to Abigail Central Pharmacy the owners may set a target of 100 new customers on the app within 50 days. This assists to strengthen the connection between strategy and implementation that so often fails.

BUILD SUPPORT FOR YOUR INNOVATION CHOICES WITH STAKEHOLDERS

Another tool to assist the strategy to implementation journey is to communicate through a narrative with stakeholders. Story telling is a powerful tool to communicate strategy within organisations. A study into Walt Disney Enterprises shows that official and unofficial stories gave employees clear guidance on how they should behave leading to alignment with company values (Spear & Roper 2016). Spear and Roper’s investigation concluded that employees felt proud about sharing stories of their organisation’s achievements, service and customer engagement. This means owners and managers of pharmacies are encouraged to develop a narrative of the innovation strategy then support all team members to tell their own story of trials and success along the implementation journey.



“TOLERATING FAILURES BUILDS EXPERIENCE THAT DIRECTS THE BUSINESS TO UNDERTAKE THE RIGHT INNOVATION STRATEGIES WITH COMPETENCE AND A PRIZE OF A HIGHER QUALITY OF OUTCOME.”

LEARN AND PIVOT QUICKLY

Successful innovators have learned to fail fast. Literature reviews confirm that failures through experimentation are an important source of organisational learning (Khanna, Guler & Nerkar 2016). In this journal article, the researchers concluded that when pharmaceutical companies tolerate failures in their R&D processes it results in an overall decrease in R&D output but the quality of the output is higher (Khanna, Guler & Nerkar 2016). This offers a potential valuable lesson to small businesses. Tolerating failures builds experience that directs the business to undertake the right innovation strategies with competence and a prize of a higher quality of outcome.



Conclusion

All pharmacies compete in an internal sector that is influenced by external factors. These internal and external factors lead to competitive pressures. The crux of viability is competitive advantage which is why an innovation strategy that supports the business strategy matters.

Innovation offers business renewal. When an innovation strategy is planned and executed with consideration the following benefits can result:

- 1) The right trade-offs are made (e.g. effective prioritisation)
- 2) Resources are used efficiently and effectively
- 3) Stakeholders are engaged in a timely and appropriate manner
- 4) The right capabilities are built for sustainability

- 5) Failure is quick but nourishing
- 6) The business strategy is realised

Business leaders in pharmacy should ensure that their planning and decision-making skills are sharpened to undertake the challenges of innovation and change. Routine innovation is the home ground where a pharmacy can strengthen and develop internal capabilities for innovative change. It is recommended to begin with routine innovation then review outcomes and refine systems before undertaking other innovation types.

When the frameworks listed in Figure 5 are implemented, the effects are synergistic. This empowers business leaders to drive competitive advantage.

These frameworks offer a substantive opportunity for pharmacies to convert weaknesses to strengths, allowing for the seizing of opportunities and fortifying against competitive threats and pressures facing the industry.



Figure 5



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UTILISING THE POWER OF PHARMACOGENOMICS

To Improve Medication Outcomes

Traditional undergraduate pharmacy education typically provides in-depth teaching encompassing the intrinsic factors affecting drug metabolism and response. These intrinsic factors include factors like age, gender, weight, disease state, organ function, body size, and genetics. These factors and their impact on medication response are discussed in depth; however, the integration of genomic education in undergraduate curricula remains scarce to this day.





Learning Objectives

On completing this activity pharmacists should be able to:

- Define pharmacogenetics and recognise its role in medicine.
- Identify examples of current use of pharmacogenetics in drug selection and dosing.
- Recognise the benefits of pharmacogenetics in medicine.
- Recognise the perceived barriers to wider implementation of pharmacogenetics in practice.
- Recognise the importance of the role of the pharmacist in embracing and adopting pharmacogenomics into clinical practice.

Competency standards addressed:

1.2, 2.1, 2.2, 3.1, 3.2, 3.5



Accreditation Number: A2311ITK2

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Traditional undergraduate pharmacy education typically provides in-depth teaching encompassing the intrinsic factors affecting drug metabolism and response. These intrinsic factors include factors like age, gender, weight, disease state, organ function, body size, and genetics. These factors and their impact on medication response are discussed in depth; however, the integration of genomic education in undergraduate curricula remains scarce to this day. Despite the evolution of pharmacy practice, education on the influence of genetics on medication response remains limited in pharmacy programs, hampering its broader application in clinical practice.

Arguably, the evidence for the influence of genes on medication response continues to rise. Still, real-world adoption continues to lag due to the constraints that will be explored in-depth in this article.

Pharmacogenomics, the topic of discussion in this article, is an emerging field poised to enable personalized medication regimens tailored to individual genetic profiles. It is the field that is hailed as shaping the future of prescribing, as it will allow us to tailor medication choice to genetics.

This article aims to explore the potential of Pharmacogenomics to impact clinical practice, inform the choice of medication therapy, and discuss the challenges hindering its widespread adoption.

What is Pharmacogenomics (PGx)?

Pharmacogenomics (PGx) is the field of research that studies how an individual's genes affect how they respond to medicines. It falls under the broader area of medicine called Precision Medicine.

Like the genetic determinants of phenotypic traits such as hair or eye colour, genetic factors similarly influence an individual's response to medications.

Genes are DNA instructions used to create protein molecules. The same gene might exist in several forms in different people; consequently, the DNA sequence also varies. These variations come in both common and uncommon forms. Additionally, some have an impact on health, such as gene variations connected to specific disorders.

Some proteins, such as liver enzymes, alter how medications work. Pharmacogenomics examines differences in the genes that code for these proteins and the resulting variations. As a result of some variations, drugs that are metabolised by these enzymes can become more or less active in the body. Even slight variations in the genes encoding liver enzymes can significantly impact the safety or efficacy of a medicine.

A good example is CYP2D6, a liver enzyme that is involved in the metabolism of 25% of all prescription medications. The CYP2D6 gene has more than 160 variations. Many people merely differ in their DNA sequence by a single point; however, some have more significant alterations. A person usually has two copies of each gene, one from each parent, known as alleles. However, the CYP2D6 gene can be present in hundreds or even thousands of copies in some individuals. Individuals with extra copies overproduce the CYP2D6 enzyme and, as a result, metabolise some medications to a greater extent than what is usually observed. On the other hand, there are some inactive variants of CYP2D6, and individuals with these variants will be poor metabolisers of certain drugs.

A commonly prescribed drug that is metabolised by this enzyme is codeine. CYP2D6 changes codeine into its active form, morphine. A typical dose of codeine may be too high for people with multiple copies of the CYP2D6 gene because of how fast their bodies convert it into morphine, leading to an increased risk of side effects such as sedation. Conversely, individuals with inactive variants of CYP2D6 will poorly metabolise codeine, resulting in a lower concentration of morphine and inadequate pain relief. For these patients, alternative medications need to be prescribed.¹

Some of the common medications that pharmacists dispense regularly are impacted by genetic polymorphisms or variations; this is a non-exhaustive list of examples:

Pain	Opioids, NSAIDs, Tricyclic antidepressants
Cardiology	Beta-blockers, Warfarin, Clopidogrel, Anti-arrhythmic, Statins
Psychiatry/Brain	SSRIs, Venlafaxine, Mirtazapine, Methylphenidate, Aripiprazole, Atomoxetine, Clozapine, Carbamazepine, Donepezil, Phenytoin
Gastrointestinal	Metoclopramide, Ondansetron, PPIs
Oncology/ Immune Conditions	5-Fluorouracil, Mercaptopurine, Tamoxifen, Capecitabine, Azathioprine, Imatinib, Dasatinib, Trastuzumab, Abacavir

ONCE WE IDENTIFY A PATIENT'S GENETIC VARIATION, HOW DO WE DETERMINE THE APPROPRIATE DOSAGE?

Prescribing guidelines based on pharmacogenetic testing are provided and facilitated by the Clinical Pharmacogenetics Implementation Consortium (CPIC).² CPIC is an international consortium of volunteer clinicians who work to address the barriers to PGx implementation by creating, curating, and posting freely available, peer-reviewed, evidence-based, updatable, and detailed gene-drug clinical practice guidelines. These guidelines are based on the best available evidence and provide recommendations on how to use genetic test results to optimize drug therapy. CPIC guidelines help clinicians determine the appropriate dose of medications for patients with specific genetic polymorphisms.

WHAT DOES A PGX TEST INVOLVE?

A pharmacogenetic test involves a simple cheek swab, blood sample, or saliva collection, depending on the variances (called gene panels) that need to be identified. The most commonly used PGx test is a simple cheek swab.

The collected sample is sent to a laboratory and undergoes lab analysis to extract and analyse the individual's DNA. The focus is on specific genes that are known to be relevant to drug metabolism and response and have actionable CPIC guidelines.

A pharmacogenetic test will identify the individual's genotype, which is composed of specific combinations of alleles. This is then translated to the specific phenotype, which is the observable expression of the gene, and is one of the following states:³

Poor Metaboliser: reduced or non-functional enzyme activity

Intermediate Metaboliser: low or reduced enzyme activity

Extensive Metaboliser: normal enzyme activity

Rapid or Ultra-rapid Metaboliser: high enzyme activity

The findings are compared to known pharmacogenetic data and established CPIC guidelines to determine potential medication recommendations.

A poor metaboliser of a certain enzyme would experience medication side effects due to poor enzyme activity resulting in drug accumulation. On the other hand, a rapid metaboliser of an enzyme may experience inefficacy and require a higher dose or an alternative medication due to the rapid metabolism of medication leading to lower concentrations. Note that the case is reversed for medications that are prodrugs, such as codeine or clopidogrel, as these are inactive forms of the drugs and require activation, meaning a poor metaboliser would not actually activate the medication altogether, and hence, the drug is ineffective

The Clinical Impact

In 2022, the largest pharmacogenomics clinical trial, the PREPARE (Pre-emptive Pharmacogenomics Testing for Preventing Adverse Drug Reactions) trial, was conducted in multiple healthcare systems across seven European countries. The trial assessed the clinical utility of a 12-gene pharmacogenetic panel in preventing adverse drug reactions. The primary outcome was the occurrence of clinically relevant adverse drug reactions within a 12-week follow-up period. The researchers reported a 30% reduction in the odds of adverse drug reactions, primarily due to a decrease in grade 2 adverse drug reactions (reactions that are bothersome but not dangerous). This reduction in adverse events was observed in participants with actionable test results compared to the control group.⁴

As a result of the findings of the PREPARE trial, in June 2023, the UK NHS initiated a pilot to test the feasibility of rolling out PGx testing for patients taking statins, antidepressants, and PPIs, an endeavour spearheaded by the University of Manchester.⁵

In January 2023, a systematic review and meta-analysis were conducted to assess the effectiveness of PGx tests, including CYP2D6 and CYP2C19 genomic variants, for guiding the treatment of depressive disorders. The study found that testing for genetic variants in these CYPs was found to be more effective than treatment as usual for improvement, response, and remission in major depression.⁶

A systematic review of pharmacogenetic interventions to improve outcomes in patients with multimorbidity or polypharmacy found that overcoming barriers to implementing pharmacogenetic guidelines will enable the realization of the potential of pharmacogenetics. The review also produced a process diagram outlining the steps required for a pharmacogenetic intervention that can prompt medicine optimisation, patient benefit, and a reduction in adverse events.⁷

The research and evidence underscoring the potential of PGx to enhance medication outcomes are extensive, with the body of evidence extending beyond the scope of this article.

As such, below is a non-exhaustive list of real-life examples of how pharmacogenetics is already improving patient outcomes:

A real-world implementation of a PGx-enriched comprehensive medication management program in the state of Kentucky, USA, has been shown to have positive impacts on individuals, providers, and the healthcare system. This program identifies medication responders and non-responders to avoid specific adverse events and optimise drug doses. The program resulted in a reduction of approximately \$7000 per patient in direct medical charges (a total of \$37 million over 5288 enrollees compared to 22,357 non-enrolled) in Medicare Advantage patients (≥65 years) receiving benefits through a state retirement system over the first 32 months of a voluntary PGx-enriched CMM program.⁸

Pharmacogenomic testing already benefits NHS patients in some special cases, such as breast cancer and colorectal cancer, where it is used to understand whether someone can safely be prescribed the drug 5-fluorouracil.⁹

A study of patients taking five or more medications in long-term care focused on the cost savings generated by three real-world impacts of pharmacogenetics. The study found that pharmacogenetics improves patient health outcomes, health system performance, and cost savings.¹⁰

As identified in the examples above, pharmacogenetics can lead to safer prescribing by identifying medication responders and non-responders, benefiting patients with various disease states, such as certain types of cancer, treatment-resistant depression, and cardiovascular disease, to name a few. It improves patient health by individualizing and personalizing medication doses, thereby generating cost savings.

Challenges and Limitations

Despite the mounting evidence that supports PGx, its adoption into routine care is still lagging. As always, there are challenges that must be overcome for effective implementation. Some of the existing challenges are:

Genetic complexity and lack of diversity in clinical trials: The diversity between populations is still not captured in pharmacogenomic data. This makes it difficult to develop targeted therapies that work consistently across diverse patient populations. In addition, this poses study design challenges such as the selection of appropriate patient populations, the choice of drugs and genetic variants to test, and the endpoints to measure.¹¹ Clinical trials often enrol a limited population, which can limit the generalizability of findings. This lack of diversity can result in disparities in PGx testing and drug response.

Data interpretation: Genomic data interpretation is a challenge in PGx as it requires specialized expertise and experience in data analysis. This is where the clinical expertise of a certified pharmacogenetics pharmacist is invaluable. There is also a need for guidelines that provide clear and actionable recommendations for the use of pharmacogenetic testing in clinical practice and a lot of advancements have been made by CPIC in this aspect.¹²

Integration with electronic health records (EHR): Incorporating pharmacogenomic information into EHR systems can be challenging due to variations in the data formats and the need to ensure patient privacy. The clinical implementation of pharmacogenetic testing requires the integration of genetic information into the

electronic health record, the development of clinical decision support tools, and the training of healthcare providers.

Education: The lack of knowledge and education around PGx is still lacking in many universities around the globe. This significantly impedes PGx adoption. Education and training programs need to be developed to ensure that healthcare providers have the knowledge and skills required to incorporate PGx into their clinical practice. This includes providing access to continuing education courses and incorporating PGx education into undergraduate curricula.

Prescriber inertia: Healthcare providers may be hesitant to adopt PGx testing due to concerns about the cost and reliability of tests, a lack of evidence-based guidelines, and a fear of liability. Some prescribers may also be reluctant to incorporate new technologies and practices into their routine patient care.

The cost and accessibility of pharmacogenetic testing are important considerations for its implementation in clinical practice.

The cost of pharmacogenetic testing varies depending on the type of test, the number of genes tested, and the laboratory performing the test. A systematic review of studies assessing the cost-effectiveness of pharmacogenetic testing for drugs with existing guidelines concluded that most studies favoured pharmacogenetic testing.¹³ The cost of pharmacogenetic testing was identified as a concern, regardless of self-reported race group, ethnicity, or socioeconomic status. In saying that, the cost of pharmacogenetic tests is becoming more affordable as the technology uptake increases; in Australia, a standard PGx test that identifies the most common genetic variances for which we have actionable clinical guidelines costs around \$200 AUD.

The availability of guidelines that provide clear and actionable recommendations for the use of pharmacogenetic testing in clinical practice can also improve accessibility, and a significant advancement in guideline development has been and continues to be made by CPIC, as discussed earlier in this article. As PGx becomes mainstream, undoubtedly, guidelines will be shaped by wide adoption and data gathering.

Ethical Considerations

The adoption of PGx in clinical practice raises several ethical considerations that need to be addressed. Pharmacogenetic testing poses several challenges related to informed consent, privacy and confidentiality, data storage and use, as well as equity and access.

Patients must be informed about the benefits and risks of testing and their consent must be obtained before testing. Patients must also be made aware of the potential implications of test results, such as discrimination by insurance companies and employers. Genetic information must be kept confidential and not used for discriminatory purposes, and the storage and use of genetic information must be regulated to ensure that it is used appropriately and ethically, as there are concerns about potential misuse. Perhaps the most important of all ethical considerations is equitable access to pharmacogenomic tests; patients must have equal access to testing, regardless of their socioeconomic status or geographic location.

Another important aspect is the disclosure of information following a PGx test, in that some gene variants identified through pharmacogenomic testing that affect drug metabolism may also be associated with an increased risk of certain diseases. An

example of this is the APOE4 allele, which has been associated with decreased warfarin dose requirements and statin response, and informs warfarin dosing or statin selection, but is also associated with increased risk of Alzheimer's disease and age-related macular degeneration. Therefore, it is important to recognize the potential to reveal more than is intended and obtain consent for the level of information disclosure prior to PGx testing. Findings such as this may also require the involvement of a genetic counsellor; hence, it is important to establish this prior to testing.

Addressing these ethical considerations requires collaboration between researchers, healthcare providers, policymakers, and patients to ensure that PGx can be used ethically and responsibly to improve patient outcomes.

The Future of Pharmacogenetics

Pharmacogenetic research is an evolving field that continues to make breakthroughs in identifying genetic variations that affect drug response. Emerging trends and breakthroughs include the identification of rare pharmacogenetic variations. These rare variations can have a significant impact on drug response and can further help explain why some patients do not respond to standard treatments.¹⁴

Advances in high-throughput genotyping and DNA sequencing have shifted the focus of pharmacogenomic studies to explore a broader, genome-wide spectrum of potential genetic contributions. This approach has led to the identification of new genetic variants associated with drug outcomes and has expanded the scope of pharmacogenetic testing.¹⁵

In addition, The Industry Pharmacogenomics Working Group has identified several emerging trends and breakthroughs in pharmacogenetic research, including the development of new technologies for genotyping and sequencing, the identification of new genetic variants associated with drug outcomes, and the increasing use of pharmacogenetic testing in clinical practice.¹⁶ These breakthroughs have the potential to improve patient outcomes and revolutionize clinical practice.

From this, we can deduce that PGx is undoubtedly a field of medicine that has significant potential not only to save healthcare costs by eliminating the standard trial-and-error approach to prescribing but, more importantly, to be a significant enabler of safe prescribing of medications.

The conventional guideline-based approach operates under the premise of a uniform, "one-size-fits-all" framework, thereby disregarding the pivotal role played by genetic variability in drug metabolism. Research findings often fail to account for individuals at the extremities of populations, rendering the guidance applicable to the majority (60-70%) while leaving the minority (30-40%) possibly less responsive to treatment due to their genetic variability.

Hence, in this respect, PGx holds significant potential to influence medication outcomes as it could allow clinicians to personalize medications to match an individual's genomic variants. This aligns with the fundamental tenet that underpins sound pharmacy practice - the provision of the right medicine at the right dose.

In conclusion, PGx is a field that holds many promises for the future of pharmacy practice. In saying that, it is imperative to acknowledge that a more extensive reservoir of real-world evidence needs to accrue in order to expedite its widespread adoption. As PGx adoption expands, it is imperative that pharmacists lead the implementation as medication experts who have extensive knowledge about medication response. Indeed, it has been highlighted in international research assessing pharmacists' knowledge and perception of PGx implementation that pharmacists saw PGx implementation as a significant opportunity to be involved in patient care and clinical decision-making when it comes to the choice of therapy at a deeper level.¹⁷

As esteemed medication experts, pharmacists stand as the foremost proponents of PGx implementation, serving as advocates for patients to select appropriate medications to suit their genetic variability.



Prescribing Success: Business and Innovation in Community Pharmacies

01 By identifying key influences on business using Potter's 5 forces and the PESTLE analysis business owners can: (select two that apply)

- a) Identify and mitigate risks to the business
- b) Identify opportunities for innovation and growth
- c) Develop profit and loss statements
- d) Protect the business from litigation

02 Which of the following is not one of the five generic business strategies mentioned in the article

- a) Broad Low-cost Strategy
- b) Broad Environmental Strategy
- c) Focused Low-cost Strategy
- d) Focused Differentiation Strategy

03 When deciding on which innovative idea to adopt the pharmacy leaders should consider using

- a) SWOT analysis
- b) Ansoff Matrix
- c) Importance Vs Difficulty framework
- d) Potter's Five Forces Model

04 Which of the following factors form part of the PESTLE analyses (select 3 that apply)

- a) Political factors
- b) Rival Firms
- c) Environmental Forces
- d) Technological Factors
- e) Suppliers

05 Glenview Pharmacy is pursuing a Broad Differentiation Strategy. The only other pharmacy in town is part of a discount chain appealing to the more price conscious customers in the community. Within this business strategy, the owners decide to pursue customer demand for convenience and service. They recognise they will need to develop technological and marketing strengths and invest in developing medication management app and a pharmacy website. This is an example of which type of innovation:

- a) Disruptive
- b) Architectural
- c) Routine
- d) Radical



LEARNING OBJECTIVES

After completing this CPD activity, pharmacists should be able to:

- Recall what factors influence business according to Porter's 5 Forces and PESTLE analyses.
- Recognise five generic business strategies that can be applied in community pharmacy.
- Recognise four different business innovation strategies and how they apply to community pharmacy.
- Understand how to prioritise innovative ideas.



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Utilising the Power of Pharmacogenomics To Improve Medication Outcomes

01 Define pharmacogenetics and recognise its role in medicine. Pharmacogenetics is best defined as:

- a) The study of genetic mutations in plants.
- b) The study of how genes influence hair color.
- c) The study of how genetic variations impact an individual's response to medications.
- d) The study of how genes determine personality traits.

02 Identify examples of current use of pharmacogenetics in drug selection and dosing. Which of the following medications is mentioned in the article as an example of a medication that is influenced by genetic variations in the CYP2D6 gene?

- a) Aspirin
- b) Antibiotics
- c) Codeine
- d) Antihistamines

03 Recognise the benefits of pharmacogenetics in medicine. Which of the following is not a benefit of pharmacogenetics:

- a) Decreased healthcare costs.
- b) A reduction in medication-related harm and hospital admissions.
- c) Applicability to all drugs with narrow therapeutic index
- d) Improved medication efficacy.

04 Recognise the perceived barriers to wider implementation of pharmacogenetics in practice. The article mentions a challenge related to data interpretation in pharmacogenetics. What does this challenge involve?

- a) Interpreting patient symptoms.
- b) Accurately predicting the long-term effects of genetic variations
- c) Providing patient education about genetic testing.
- d) Handling, managing, and analyzing genetic data generated by testing requiring specialized expertise.

05 Recognise the importance of the role of the pharmacist in embracing and adopting pharmacogenomics into clinical practice. According to the article, what pivotal role do pharmacists play in pharmacogenomics?

- a) Pharmacists primarily focus on data collection for genetic testing.
- b) Pharmacists have no significant role in pharmacogenomics.
- c) Pharmacists advocate for patients to receive personalized medication based on pharmacogenetic data.
- d) Pharmacists solely interpret genetic test results without involving other healthcare professionals.



LEARNING OBJECTIVES

After completing this CPD activity, pharmacists should be able to:

- Define pharmacogenetics and recognise its role in medicine.
- Identify examples of current use of pharmacogenetics in drug selection and dosing.
- Recognise the benefits of pharmacogenetics in medicine.
- Recognise the perceived barriers to wider implementation of pharmacogenetics in practice.
- Recognise the importance of the role of the pharmacist in embracing and adopting pharmacogenomics into clinical practice.



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