



Australian Government
Department of Health and Aged Care



Understanding the impact of medicine shortages in Australia

Discovery report

Health Design Lab project - April 2024



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Executive Summary

Therapeutic Goods Administration (TGA) engaged the Health Design Lab to understand and explore the following question:

How Might We better prevent, manage and mitigate medicine shortages and support Australian medicine supply into the future?

The Health Design Lab engaged with prescribers, pharmacists and consumers to understand their experiences of medicine shortages, and to explore in more depth the pain points, gaps and opportunities for improvement. This report outlines the challenges of medicine shortages focusing on clinical, economic and personal impacts. The findings are based on desktop research as well as survey and in-depth interviews with consumers, prescribers and pharmacists.

This report outlines opportunities identified by prescribers, pharmacists and consumers to better prepare and respond to medicine shortages, focusing on the **clinical, economic and personal impacts**. Prescribers, pharmacists and consumers currently address these challenges with varying levels of involvement and coordination. While pharmacists are the trusted source of information for medicine shortages, opportunities include mobilising prescribers through earlier and targeted information to address shortages for consumers. Addressing this could help to prevent consumers from being delayed or having to go without treatment as the result of medicine shortages.

There are many stakeholders across the medicine supply-chain whose experiences and perspectives were out of scope for this project. However, the work reported here was conducted in parallel with a broader public consultation led by the TGA. The findings from this project together with the consultation aim to provide a more comprehensive understanding of the challenges and impacts of medicine shortages experienced across the supply-chain. The insights from both projects will be taken into a workshop with key stakeholders to prioritise areas for future improvement and inform the development of a workplan.



Executive Summary

Key research insights from the project include:

FINDING OUT ABOUT MEDICINE SHORTAGES

Insight 1: Information: Too little too late. All cohorts find out about medicine shortages too late, and no one knows why it's happening or how long it will last

Insight 2: Pharmacists are the trusted advisors about medicine shortages

RESPONDING TO MEDICINE SHORTAGES

Insight 3: Who's meant to do what?

Each cohort has varied expectations of what others are meant to do
Prescribers and pharmacists are involved to different extents and face many challenges in coordinating a solution

Insight 4: Self navigation of medicines shortages: Consumers left to find solutions themselves

OUTCOMES OF MEDICINE SHORTAGES

Insight 5: There are barriers and risks to using substitute and alternative medicines

Insight 6: Many consumers are delayed or go without their medicine.
This can result in negative health impacts when conditions are left unmanaged



Project Overview

This section provides an overview of the challenge and its context as well as an overview of our research methodology.



Background

Medicine shortages are a wicked and complex policy problem with global reach¹. Factors contributing to medicine shortages span manufacturing, supply chain and regulation as well as challenges relating to increased demand for some medicines classes¹. Since the COVID-19 pandemic, medicine shortages management has faced additional challenges such as increased production costs and complex logistics, compounded by a lack of Australian domestic manufacturers².

There is a paucity of Australian and international research that examines the impacts of medicine shortages on consumers and health care professionals (HCPs). However, based on the limited evidence, medicine shortages can be characterised as having **clinical, economic and personal impacts** for consumers and HCPs.

- **Personal:** shortages impact patient-care. Shortages lead to increased dissatisfaction and frustration for consumers and HCPs³. It reduces consumer credibility and trust in HCPs^{3,4} who in turn report higher rates of physical and verbal abuse⁴. HCPs experience challenges switching consumers to alternative medicines. Challenges include difficulties communicating between HCPs as well as consumer hesitancy³.
- **Clinical:** shortages can compromise treatment outcomes for consumers³⁻⁵ and lead to adverse health outcomes, including disease complications^{3,4}, medication errors, adverse drug reactions³⁻⁵, treatment delays and inferior alternative medicines³⁻⁵. Increased mortality has also been reported³⁻⁵.
- **Economic:** shortages increase HCP workloads^{6,7} and financial cost to HCP^{3,7} because of the additional time and resources needed to manage shortages^{6,7}. Shortages also often result in higher out-of-pocket costs for consumers³⁻⁵.

Desired outcomes and project scope

These insights generated from this project will be used by the TGA to prioritise areas of focus for future reform to improve the experience of people directly affected by medicine shortages.

The project aimed to:

- Communicate the impacts of medicine shortages from the perspective of prescribers, pharmacists and consumers
- Identify future reform priorities to inform the development of a work plan
- Complement the broader consultation project conducted by the TGA.

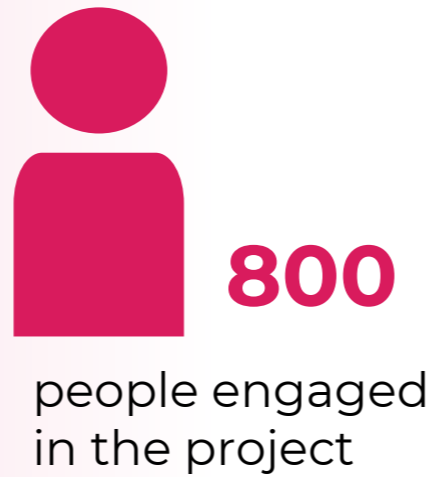
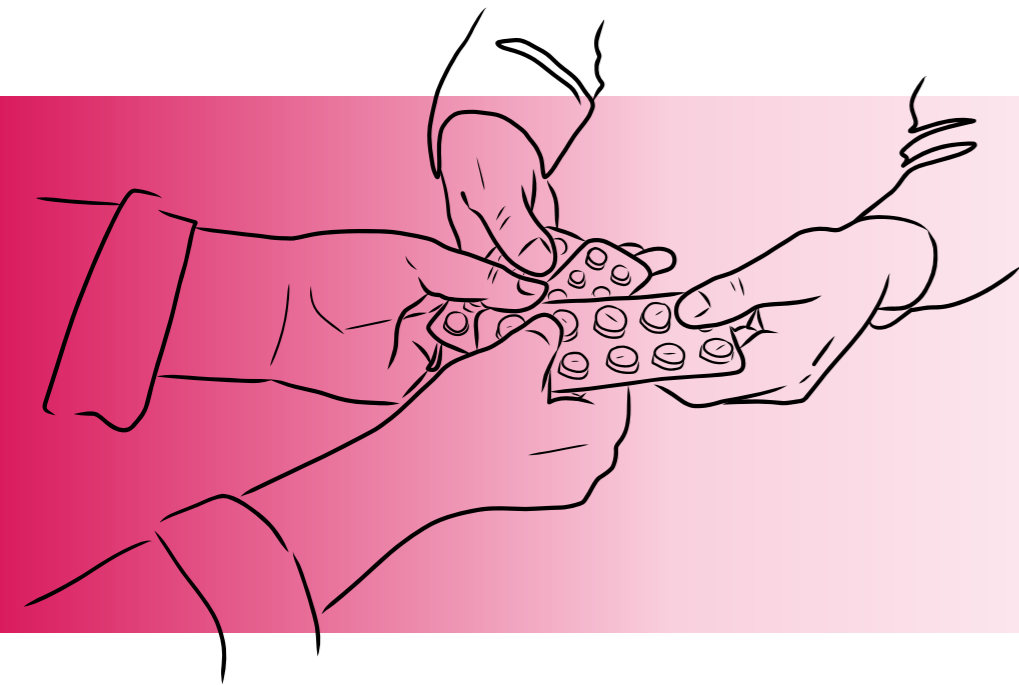
In scope:

- Impact of medicine shortages on consumers, prescribers and pharmacists within the past 12 months
- Survey and in-depth interviews
- Workshop with key stakeholders to identify priority areas for future improvement

Out of scope:

- Duplication of consultation activities underway by the Medicine Shortages Strategy Section
- Impact of non-prescription medicines and illicit drug shortages

Research Snapshot



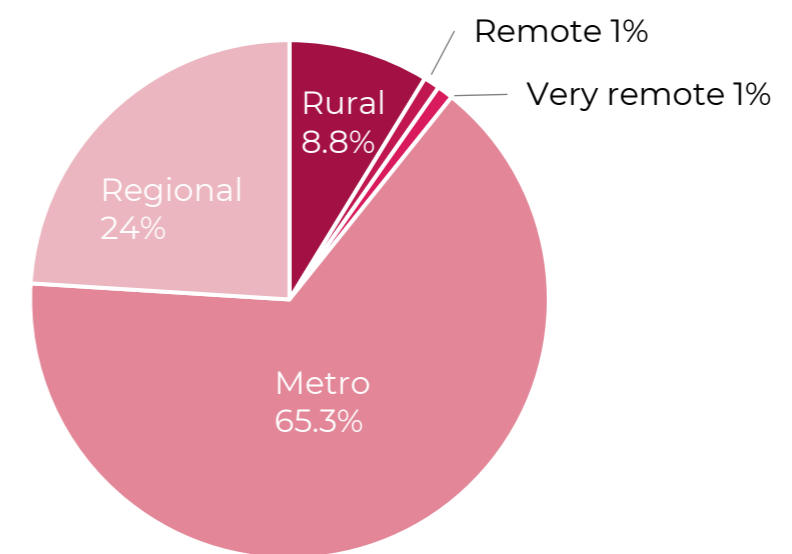
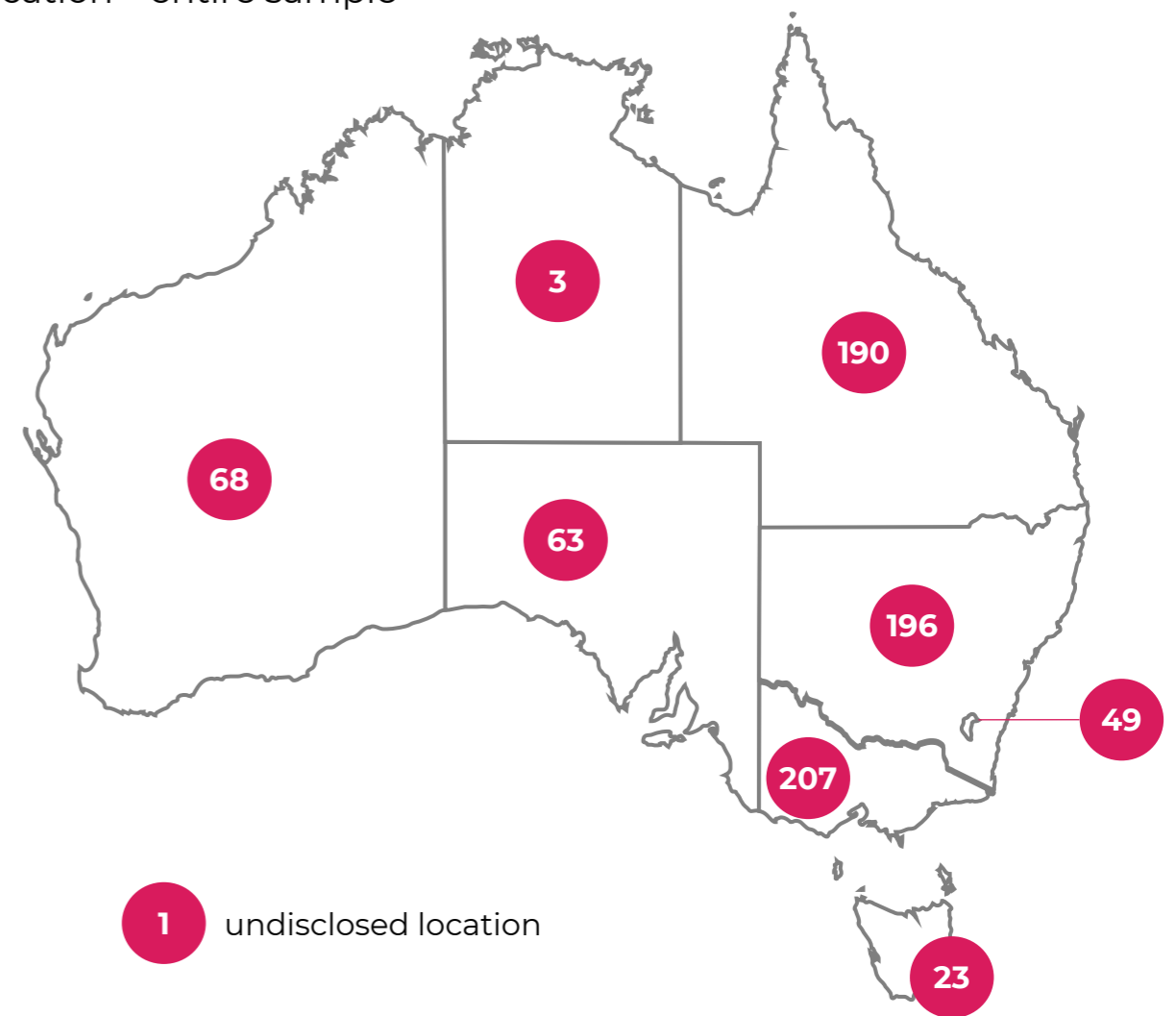
Survey respondents



1:1 interviews

Refer to Appendix 1 for detailed cohort breakdowns

Location – entire sample



Primary Research Insights

At commencement of the project, we conducted desktop research and identified that medicine shortages results in clinical, economic, humanistic impacts for consumers, prescribers and pharmacists. We conducted primary research activities to test, explore and understand these impacts.



Insights overview

Based on our primary research findings, we identified key challenges that prescribers, pharmacists and consumers experience during medicine shortages:



FINDING OUT ABOUT MEDICINE SHORTAGES

Insight 1: Information: Too little too late

All cohorts find out about medicine shortages too late, and no one knows why it's happening or how long it will last

Insight 2: Pharmacists are the trusted advisors about medicine shortages

RESPONDING TO MEDICINE SHORTAGES

Insight 3: Who's meant to do what?

Each cohort has varied expectations of what others are meant to do. Prescribers and pharmacists are involved to different extents and face many challenges in coordinating a solution.

Insight 4: Self navigation of medicines shortages: Consumers left to find solutions themselves.

OUTCOMES OF MEDICINE SHORTAGES

Insight 5: There are barriers and risks to using substitute and alternative medicines

Insight 6: Many consumers are delayed or go without their medicine. This can result in negative health impacts when conditions are left unmanaged



Insight 1: **Information: Too little too late**

All cohorts find out about medicine shortages too late, and no one knows why it's happening or how long it will last



INSIGHT 1: INFORMATION: TOO LITTLE TOO LATE

All cohorts find out about medicine shortages too late, and no one knows why it's happening or how long it will last.

INFORMATION SOURCES

Pharmacists are the main health profession impacted when information is delayed or inaccurate. They rely on both formal and informal communication channels to monitor shortage situations. The most common sources pharmacists reported using to stay up-to-date regarding medicine shortages were:

- Therapeutic Goods Administration (TGA) website or email alert (68.5%)
- Wholesaler Portals (67%)
- Informal networks (61.9 %)
- Pharmaceutical companies (61.4 %).

Prescribers and consumers do not utilise formal sources of information as often. Prescribers don't always have access to the same communication channels as pharmacists, such as Wholesaler portals, nor do they have time to seek out information about shortages that is not always relevant to their specialty area.

The most common sources prescribers reported using to stay up-to-date with medicine shortages were:

- Advice from another healthcare professional (62.8%)
- Professional healthcare organisation (e.g. Medical colleges, Professional associations etc.) (56%)
- Therapeutic Goods Administration (TGA) website or email alert (36.7%)

Regarding the use of the TGA website: a third of prescribers (36.7%) compared to two thirds (67.7%) of pharmacists have used the TGA website or email alert for information about shortages. Only 5.1% of consumers have used the TGA website or email alert.

GAPS LIMIT USEFULNESS

We heard that formal communication channels are inconsistent and often perceived as unreliable. These channels miss vital facts about the shortage, including details about why it's happening and accurate dates for when stock is going to be consistently available. Without knowing this information, pharmacists and prescribers find it difficult to make informed decisions about how they will manage the shortage.

To fill this gap, almost three quarters of pharmacists (67%) indicated that they rely on their informal networks to gather information about medicines shortages or source medicines in shortage.



INSIGHT 1: INFORMATION: TOO LITTLE TOO LATE

All cohorts find out about medicine shortages too late, and no one knows why it's happening or how long it will last.

FINDING OUT TOO LATE

We heard that **prescribers, pharmacists and consumers** find out about shortages when it's too late – i.e. when the consumer's medicine is running out. Delays to communications about shortages are challenging - few pharmacists and prescribers find out about shortages ahead of time.

One quarter (25.1%) of surveyed **prescribers** reported limited to no awareness of current medicine shortages. Without forewarning, it is hard for pharmacists and prescribers to proactively plan and manage shortages.

People don't know ahead of time. It's always afterwards, we need full warning. – Prescriber

The following graph outlines the frequency **prescribers** and **pharmacists** had **difficulty prescribing or dispensing** due to medicine shortages:

	Prescribers (difficulty prescribing)	Pharmacists (difficulty dispensing)
Always or Often	21.3%	64.4%
Sometimes	54.1%	29.4%
Rarely or Never	24.7%	6.1%

Finding a solution to the shortage can be a lengthy process because there are many barriers. We heard from both **consumers and pharmacists** that they find it challenging to contact prescribers for urgent medicine changes/adjustments. Consumers may need to book appointments weeks, if not months, in advance to see their prescribers, or the prescriber may be slow to respond to messages. This is exacerbated in rural areas. Without earlier awareness of shortages, it is hard for pharmacists to coordinate with prescribers to arrange an appropriate solution or proactively address medicines shortages that may impact customers. This results in consumers being delayed their treatment and going without their medicine.



FINDING OUT
RESPONDING TO
OUTCOME OF

Insight 2: **Pharmacists are the trusted advisors about medicine shortages**



INSIGHT 2: PHARMACISTS ARE THE TRUSTED ADVISORS ABOUT MEDICINE SHORTAGES

PHARMACISTS ARE THE 'BEARERS OF BAD NEWS'

Pharmacists are the trusted source of information for both prescribers and consumers about medicine shortages. Most consumers (88.1%) reported finding out about shortages from a pharmacist. Pharmacists experience many challenges performing this role:

- As the 'bearers of bad news', many pharmacists experience negative interactions (83.2% reported negative interactions with consumers compared to 51.7% of prescribers).

Pharmacists are also a trusted source of information for prescribers (62.8% of prescribers including 72.9% of surveyed GPs reported finding out about shortages from another healthcare professional). In depth interviews with prescribers and pharmacists suggest that the health professionals referred to in the survey are likely to be pharmacists.

When the cause and timeframes of shortages are unclear to pharmacists, they are unable to provide accurate information or answers to consumers and prescribers.

- 47.3% of surveyed pharmacists reported negative interactions with other health professionals (compared to 23.7% of prescribers).

PHARMACISTS CARRY THE BURDEN

Pharmacists also reported experiencing stress (80.2%), frustration (79.2%), verbal or physical abuse (63.5%), loss of credibility (43.1%) and financial loss (45.2%) associated with managing medicines shortages. Impacts described included dissatisfied consumers going to another pharmacy to purchase their medicine, or not believing the pharmacist.

Prescribers reported lower - though still concerning - rates of stress (56%), frustration (60.4%), verbal or physical abuse (24.6%) and loss of credibility (22.1%) associated with managing medicines shortages. The most common impact of medicines shortages reported by **prescribers** was switching patients to alternative medicines (62.8%).



INSIGHT 2: PHARMACISTS ARE THE TRUSTED ADVISORS ABOUT MEDICINE SHORTAGES

PHARMACISTS ARE EXPECTED TO KNOW THE ANSWERS

We heard that there is an expectation among **consumers and prescribers** that pharmacists know enough about medicines shortages to advise them appropriately.

There is the perception that **pharmacists** know when the medicine is likely to be back in stock, its wider availability, or any equivalent substitute or alternative medicine that could be used. This expectation is particularly apparent in the hospital setting. We heard that this expectation can be equivalent to a full-time workload for pharmacists who deal with multiple shortages on a daily-basis.



Insight 3: **Who's meant to do what?**

Each cohort has varied expectations of what others are meant to do. Prescribers and pharmacists are involved to different extents and face many challenges in coordinating a solution.



INSIGHT 3: WHO'S MEANT TO DO WHAT?

Each cohort has varied expectations of what others are meant to do.

Prescribers and pharmacists are involved to different extents and face many challenges in coordinating a solution.

UNCLEAR ROLES AND EXPECTATIONS

Prescribers and pharmacists have varying levels of willingness and ability to find solutions for consumers experiencing medicine shortages. We heard that both professions are often time-poor and are managing multiple competing priorities.

WHEN NO ONE TAKES THE LEAD, CONSUMERS FALL THROUGH THE CRACKS

When no HCPs provide solutions, **consumers 'fall through the cracks'** and may go without their medicine as a result. We heard that consumers may be turned away by prescribers and pharmacists and left to find solutions themselves. Consumers often do not know what to do or where to go to find solutions. They are restricted in what they can do themselves as many solutions require prescriber or pharmacist involvement. For example, consumers can not source an alternative medicine without prescribers or pharmacist authorisation. This can force consumers to give up and go without their medicine.

'WHO'S MEANT TO DO WHAT?'

We heard about unclear expectations and poor coordination between **prescribers and pharmacists** and how unclear roles are confusing – especially for consumers. Without clearly defined roles and responsibilities to respond to shortages, the assistance consumers receive rests at the discretion of the pharmacist or prescriber. We also heard that pharmacists and prescribers often respond to medicines shortages without informing the other and risking negative health outcomes, especially in the community-setting. This can have negative impacts for consumers.



INSIGHT 3: WHO'S MEANT TO DO WHAT?

Each cohort has varied expectations of what others are meant to do. Prescribers and pharmacists are involved to different extents and face many challenges in coordinating a solution.

ADDED WORKLOAD FOR PRESCRIBERS AND PHARMACISTS

When pharmacists or prescribers seek out solutions to address a medicine shortage, the most common **economic impacts** reported by **pharmacists and prescribers** included:

- Increased workload and/or time spent with patients (74.6% pharmacists and 64.7% of prescribers)
- Increased administrative work (64% of pharmacists and 61.8% of prescribers)
- Delays in other patients getting medications which are available (45.2% of pharmacists and 42% of prescribers).

Only 0.5% of pharmacists and 9.2% of prescribers reported no economic impacts of medicine shortages.

The following graph outlines the **average time spent per week** by **pharmacists and prescribers** managing medicine shortages:

	Prescribers	Pharmacists
Less than an hour:	46.9%	15.7%
1-3 hours:	31.9%	47.2%
4-7 hours:	8.7%	28.7%
8+ hours:	12.6%	8.6%

This added responsibility has led to increased stress (reported by 79.1% of pharmacists and 56% of prescribers) and frustration (reported by 78.1% of pharmacists and 60.4% of prescribers). Prescribers and pharmacists told us that it takes a mental toll on them as circumstances are largely out of their control.

Refer to Appendix 1 for more information about the ways that prescribers and pharmacists respond to medicine shortages.



FINDING OUT
RESPONDING TO
OUTCOME OF

Insight 4: **Self navigation of medicines shortages: Consumers left to find solutions themselves**



INSIGHT 4: SELF NAVIGATION OF MEDICINES SHORTAGES: CONSUMERS LEFT TO FIND SOLUTIONS THEMSELVES

CONSUMERS ARE LEFT TO FIND SOLUTIONS

We heard that often **consumers are left to shoulder the responsibility** for finding medicines in short supply. When prescribers and pharmacists don't assist in finding solutions to a medicine in shortage, consumers are now required to take on this work to find locations where they can purchase their prescribed medicine in shortage.

Finding medicines in short supply requires consumers to advocate for themselves, take on additional workload, travel, and costs.

The most common **economic impacts** of managing medicine shortages reported by **consumers** include:

- Increased travel (46.8%)
- Increased administration (34.6%)
- Paid more for an alternative medicine (30.8%)
- Paid for additional appointments with prescribers (31.5%)

Consumers also reported experiencing frustration (75.3%), stress (60%) and anxiety (54.6%) as a result of managing medicine shortages. Consumers who experience long-term medicine shortages told us that it can be exhausting, and many feel helpless to improve their situation.

Importantly, **consumers** have varying levels of ability, capacity and willingness to take up this task. We heard that self-navigating medicines shortages adds further burden and workload for people living and managing chronic health conditions.



INSIGHT 4: SELF NAVIGATION OF MEDICINES SHORTAGES: CONSUMERS LEFT TO FIND SOLUTIONS THEMSELVES

VULNERABLE CONSUMERS ARE AT GREATER RISK OF GIVING UP

We heard that some **consumers** are more vulnerable, including the elderly, people from low socio-economic backgrounds, rural/remote areas, people with mental health conditions, Aboriginal and/or Torres Strait Islander people and people living with co-morbid chronic conditions, have less capacity to find medicines in short supply themselves and face more obstacles. For example, lack of transport, competing priorities and low health literacy. Among consumers, 11.5% of consumers did not purchase an alternative medicine due to costs. These consumers are at risk of giving up and choosing to go without medicine when the obstacles are too high.

Consumers were asked to identify the **most common actions** after learning of a medicine shortage.

These were:

- I purchased the medicine at another pharmacy (26.4%)
- I went back to my pharmacy to collect my medicine at a later time (32.3)
- I was offered an alternative medicine (25.4%)
- I was offered the medicine in a different strength or form (for example, capsule instead of a tablet) (22.7)
- I rationed my medicine to make it last longer (20.3%)
- I got a new prescription from my prescriber (17.3)



Insight 5: **There are barriers and risks to using substitute and alternative medicines**



INSIGHT 5: THERE ARE BARRIERS AND RISKS TO USING SUBSTITUTE AND ALTERNATIVE MEDICINES

BARRIERS TO SOURCING ALTERNATIVE MEDICINES

Prescribers and pharmacists experience challenges with sourcing alternative medicines using the following methods. These methods can be administration heavy, expensive and have long wait times. Many avoid using these methods, especially in the community-setting. Of the surveyed **prescribers** and **pharmacists**:

- 44.2% of pharmacists and 22.7% of prescribers (including 29.2% of GPs) reported PBS barriers when prescribing or dispensing substitute medicine
- Prescribers most commonly reported never using the Special Access Scheme (52.2% of prescribers including 62.5% of GPs) and never prescribing overseas-versions (65.2% of prescribers including 81.3% of GPs)
- Pharmacists most commonly reported sometimes using the Special Access Scheme (55.8%) and sometimes dispensing overseas versions (section 19A) (54.3%)
- 64.5% of pharmacists reported never compounding the prescribed medicine

Refer to appendix 1 for a more detailed description.

SWITCHING TO SUBSTITUTES AND ALTERNATIVE MEDICINES CAN BE RISKY AND COMPLEX

Prescribers and pharmacists need to consider many factors to determine if substitutes – the original medicine in a different dosage form/presentation, strength, brand or generic – or alternative medicines are appropriate on a case-by-case basis. The process adds workload and complexity to identify suitable options, navigate treatment adjustments, and deal with any negative consequences (i.e. side effects) that may result.

Alternative medicines may be less effective than the original medicine and cause treatment disruptions and adverse health outcomes. 57.9% of surveyed pharmacists and 35.3% of prescribers reported that patients experienced lack of therapeutic effect from alternative medicines.

Many prescribers and pharmacists utilise substitute medicines when there is a medicine shortage. However, we heard that in some cases using substitutes can prolong treatment and add workload for HCPs, placing additional pressure and strain on the healthcare system. For example, switching from oral to IV medicine means that consumers need to be hospitalised and monitored by HCPs.

INSIGHT 5: THERE ARE BARRIERS AND RISKS TO USING SUBSTITUTE AND ALTERNATIVE MEDICINES

BARRIERS FOR CONSUMERS

Of the surveyed **prescribers**, 62.8% experienced challenges switching consumers to alternative medicines. It can be especially challenging to switch consumers who have been stabilised on a medicine long-term. We also heard that many consumers become confused when changes are made to their medicines (reported by 65.5% of pharmacists and 50.7% of prescribers). This is especially apparent in the elderly. This can sometimes result in accidental errors and disrupt treatment outcomes.

We also heard that **consumers** may be reluctant to use substitute or alternative medicines. Sometimes their prescriber has instructed them to avoid these medicines, or they may have had previous negative experiences. Consumers may also be reluctant due to costs of alternative medicines. Of the surveyed consumers, 30.8% paid more for an alternative medicine and 31.5% paid for additional appointments with their prescriber. Some consumers told us that they would rather go without any medicine.

This can be highly distressing for **consumers**:

- 72.6% of prescribers and 61.4% of pharmacists reported that their patients experienced distress due to medicine shortages.
- 75.3% of consumers reported feeling frustration and 60% reported increased stress.

We asked **pharmacists** about the **clinical impacts** of medicines shortages amongst their customers. The most common were:

- Stopped or delayed treatment of taking medication (81.7%)
- Confusion about treatment (65.5%)
- Distress (72.6%)
- Lack of therapeutic effect of alternative medication (57.9%)
- Withdrawal effects (56.9%)

We also heard that there are no substitute or alternative medicines available to treat certain conditions. When there are no alternative options for consumers, they are forced to go without their medicine until the shortage resolves.



FINDING OUT
RESPONDING TO
OUTCOME OF

Insight 6: **Many consumers are delayed or go without their medicine**
This can result in negative health impacts when conditions are left unmanaged



INSIGHT 6: MANY CONSUMERS ARE DELAYED OR GO WITHOUT THEIR MEDICINE.
This can result in negative health impacts when conditions are left unmanaged.

THE PREFERRED OUTCOME IS TO FIND THE ORIGINAL MEDICINE

When there is a medicine shortage, sourcing the original medicine is the preferred outcome for **all parties**. We heard that many **prescribers** continue to prescribe these medicines and encourage consumers to try their luck before they prescribe substitutes or alternative medicines. We heard that they would prefer consumers receive the most appropriate medicine to treat their condition, rather than risk the alternative being less effective.

Pharmacists hold a similar sentiment and do their best to source the original medicine that has been prescribed. We also heard that consumers go to great lengths to source their original medicine before they consider other options. For example, we heard about consumers from rural areas travelling interstate to source their medicine.

Sometimes people resort to unhelpful behaviours when trying to find these medicines. For example, we heard about consumers and pharmacists' 'hoarding' stock which has resulted in consumers being unable to source their medicine.

INEVITABLE DELAY

In pursuing this outcome, many **consumers** are delayed their treatment and go without their medicine. This was the highest rated clinical impact reported across all surveyed cohorts (reported by 80.6% of pharmacists, 67.6% of prescribers and 51.2% of consumers). 19.7% of consumers reported waiting 1 month or more to purchase their medicine or an alternative during a medicine shortage. We heard that consumers in rural and remote areas may experience longer and more frequent delays.



FINDING OUT
RESPONDING TO
OUTCOME OF

INSIGHT 6: MANY CONSUMERS ARE DELAYED OR GO WITHOUT THEIR MEDICINE.
This can result in negative health impacts when conditions are left unmanaged.

CONDITIONS ARE LEFT UNMANAGED RESULTING IN NEGATIVE HEALTH OUTCOMES

We heard that when conditions are left unmanaged, it can have significant **impacts on the consumers health condition and overall quality of life**. 56% of prescribers and 24.2% of pharmacists reported that their patients experienced withdrawal effects from stopping their medicine due to a shortage. Additionally, 33.8% of prescribers and 47.8% of pharmacists reported that consumers experienced worsened health or disease complications. Only 6.3% of prescribers said their patients experienced no health impacts and only 2.9% said that their patients' health improved as a result of medicine shortages.

However, this data is referring to **consumers** experience of medicine shortages more broadly and may not be a direct result of a delay.

We heard that sometimes **prescribers and pharmacists** are unaware when patients have been delayed or stopped their medicine as the result of shortages. This can result in negative health outcomes when medicine is stopped without clinical supervision or guidance.



FINDING OUT
RESPONDING TO
OUTCOME OF

Prescriber and Pharmacist Snapshots

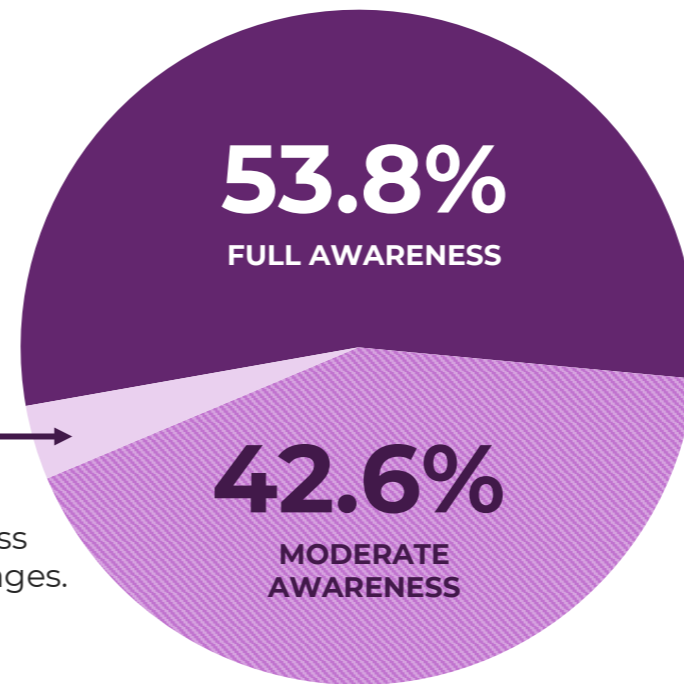
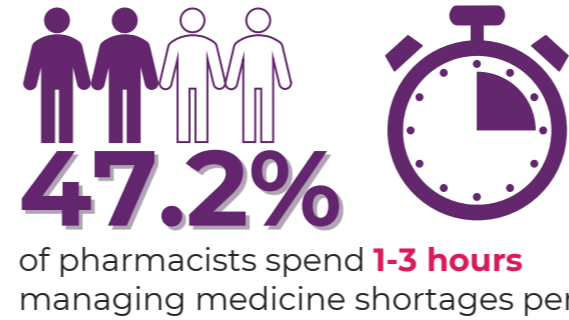
This section provides a snapshot of the impact of medicine shortages on pharmacists and prescribers based on our research findings.



PHARMACISTS

“Every day you have something that’s not available and you have to explain to someone that there is a shortage.”
 – Pharmacist

Difficulty dispensing medicines due to medicine shortages:



Top 3 Personal Impacts

1. Negative interactions with patients (83.2%)
 2. Increased stress (80.2%)
 3. Frustration (79.2%)
- Only 0.5% reported no personal impacts.



Top 3 Economic Impacts

1. Increased workload and/or time spent with patients (74.6%)
 2. Increased administrative work (64%)
 3. Delays in other patients getting medications which are available (45.2%)
- Only 0.5% reported no financial impacts.



Top 5 Clinical Impacts on their Patients

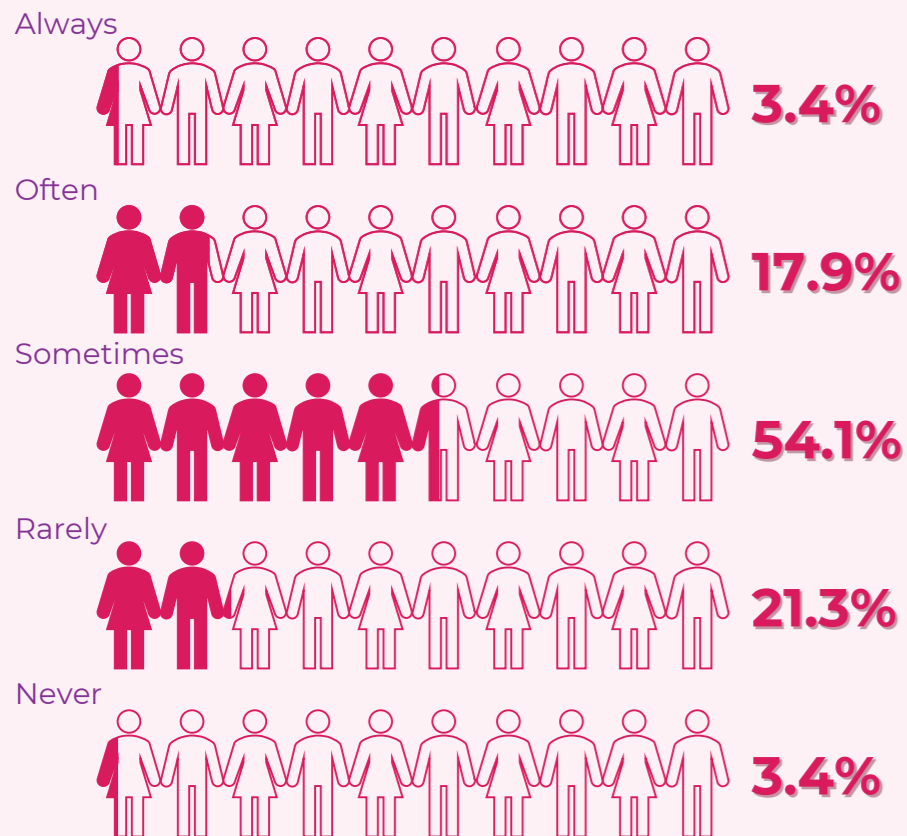
1. Stopped or delayed their medicine (81.7%)
 2. Distress (72.6%)
 3. Confusion about treatment (65.5%)
 4. Lack of therapeutic effect from stopping medicine (57.9%)
 5. Withdrawal effects from stopping medicine (56.9%)
- Only 7.6% reported no change or health impacts.

PRESCRIBERS

“I would like to know more. I don’t go to work to make things difficult for patients like prescribing them something then they are discharged and can’t get the medicines.”

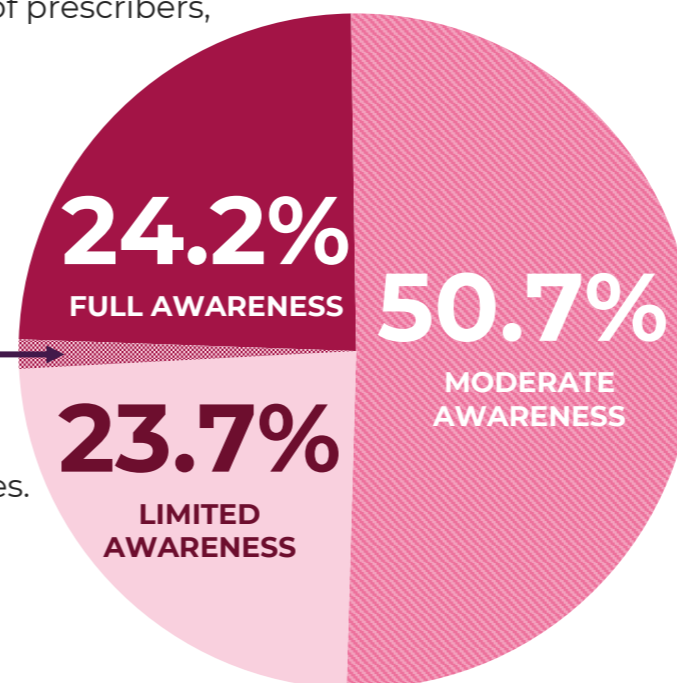
- Prescriber

Difficulty prescribing medicines due to medicine shortages:



Less than a quarter have full awareness of current shortages. (**24.2%** of prescribers, **12.5%** of GPs)

1.4% reported **no awareness** of current shortages.



Top 3 Personal Impacts

1. Challenges with switching patients to alternative medicines (62.8%)
 2. Frustration (60.4%)
 3. Increased stress (56%)
- 8.7% reported no personal impacts.



Top 3 Economic Impacts

1. Increased workload and/or time spent with patients (64.7%)
 2. Increased administrative work (61.8%)
 3. Delays in other patients getting medication which are available (42%)
- 9.2% reported no financial impacts.



Top 5 Clinical Impacts on their Patients

1. Stopped or delayed their medicine (67.6%)
2. Distress (61.4%)
3. Confusion about treatment (50.7%)
4. Lack of therapeutic effect from stopping medicine (35.3%)
5. Withdrawal effects from stopping medicine (35.3%)

Only 6.3% reported no change or health impacts.

Opportunities and Next Steps

This section provides a summary of the opportunity areas identified by prescribers, pharmacists and consumers in the primary research activities.

This section also provides an overview of next steps for this project.



Opportunity areas to be explored

The following opportunity areas were identified in the research activities by consumers, prescribers and pharmacists:

SYSTEM-LEVEL

- Better **collaboration** and **shared responsibilities** between government, the health sector, industry and all stakeholders along the supply chain to address challenges and implement strategies
- Better **preparedness** through forecasting, earlier detection and planning (i.e. strategic stockpiling of critical medicines)
- Consider how **technological advancements** (i.e. Artificial Intelligence), innovation and research could be utilised across the supply chain to improve efficiencies and gaps
- Consider ways to **tackle unhelpful behaviours** that create further issues during shortages, such as excessive stockpiling, hoarding and off-label use

PRODUCTION AND SUPPLY

- Consider ways to increase **production and supply** of medicines to Australia, i.e. diversification, on-shore manufacturing, partnering with overseas allies for stock exchanges, strategic stockpiling
- Ensure **equitable distribution** and allocation of stock across the country, i.e. implementing purchase limits, to ensure fair distribution of medicines
- List more **medicines** on the TGA and PBS with faster approval times
- Reduce the red tape with using SSSI, SAS, overseas-versions and compounded versions, and explore other **alternative ways to source medicines**

Opportunity areas (continued)

INFORMATION

- **Align formal sources** of medicine shortages information to fill gaps and inconsistencies between sources and allow a shared understanding
- **Accurate, transparent** and **timely** information about why the shortage has occurred and expected end dates
- **Targeted** and earlier communication with prescribers from manufacturers through existing and user-friendly channels, i.e. notifications integrated into clinical practice software systems

COMMUNICATION

- Establish **clear lines of communication** between manufacturers, suppliers, wholesalers, pharmacists and prescribers to improve awareness and transparency of shortage situations
- Explore ways to improve communication and **collaboration** between pharmacists and prescribers when responding to shortages to avoid consumers 'falling through the gaps'
- Provide **guidelines** for pharmacists and prescribers on medicine shortage management, including advice on alternative medicines, to improve awareness and encourage better prescribing/dispensing behaviours

Glossary of key terms

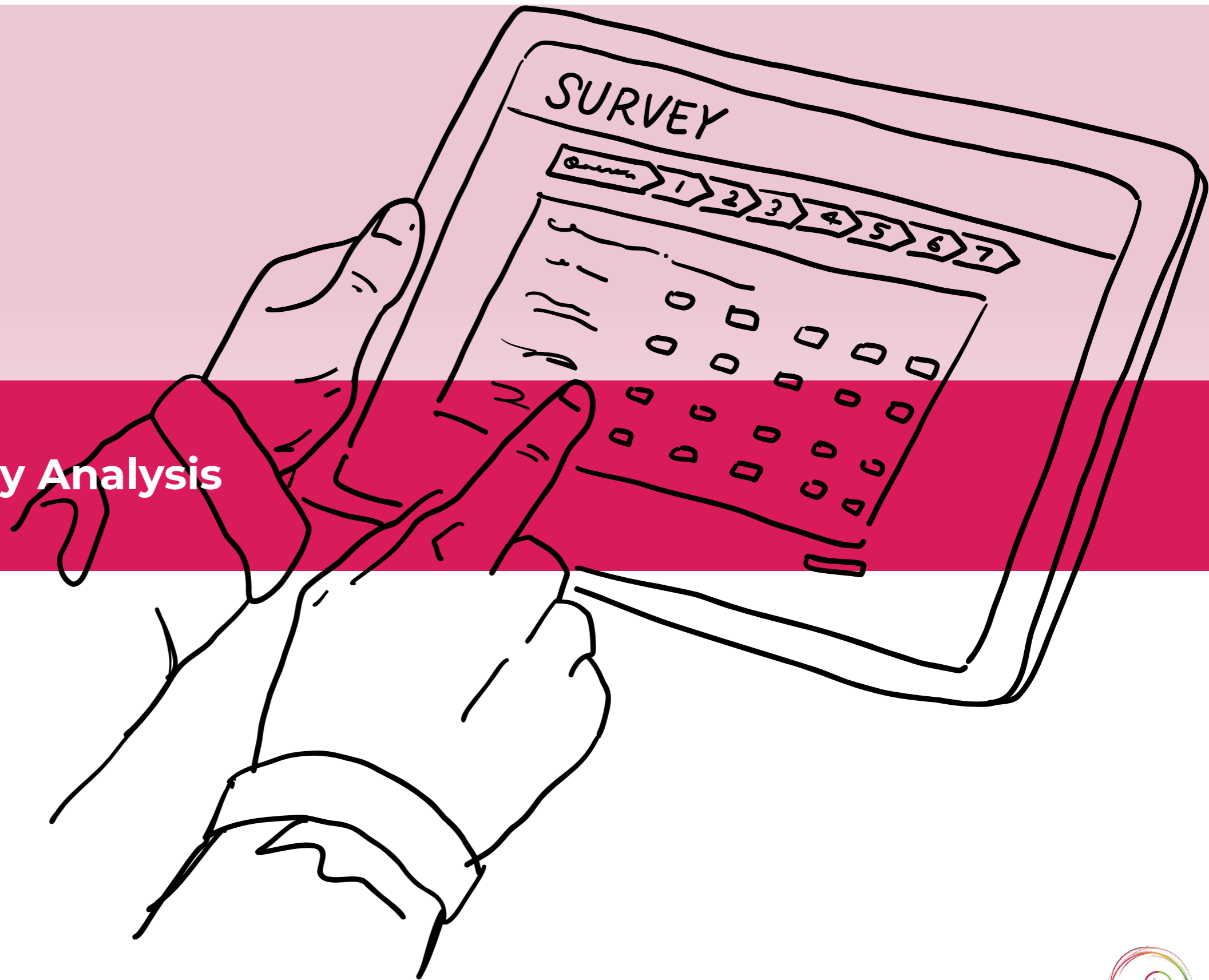
Term	Definition
Alternative medicines	An alternative medicine used to replace the original medicine (does not include generic or brand substitution).
GP	General Practitioner
HCP	Healthcare Professionals
Pharmacists	Authorised pharmacists in Australia who can dispense prescription medicines, operating as community pharmacists, consultant pharmacists and hospital pharmacists.
Prescribers	Authorised health professionals in Australia who can prescribe medicines, including GPs, specialists, nurse practitioners, midwife practitioners, dentists and optometrists.
Substitute medicines	The original medicine in a different brand/generic, strength or dosage form/presentation.
TGA	Therapeutic Goods Administration

Reference list

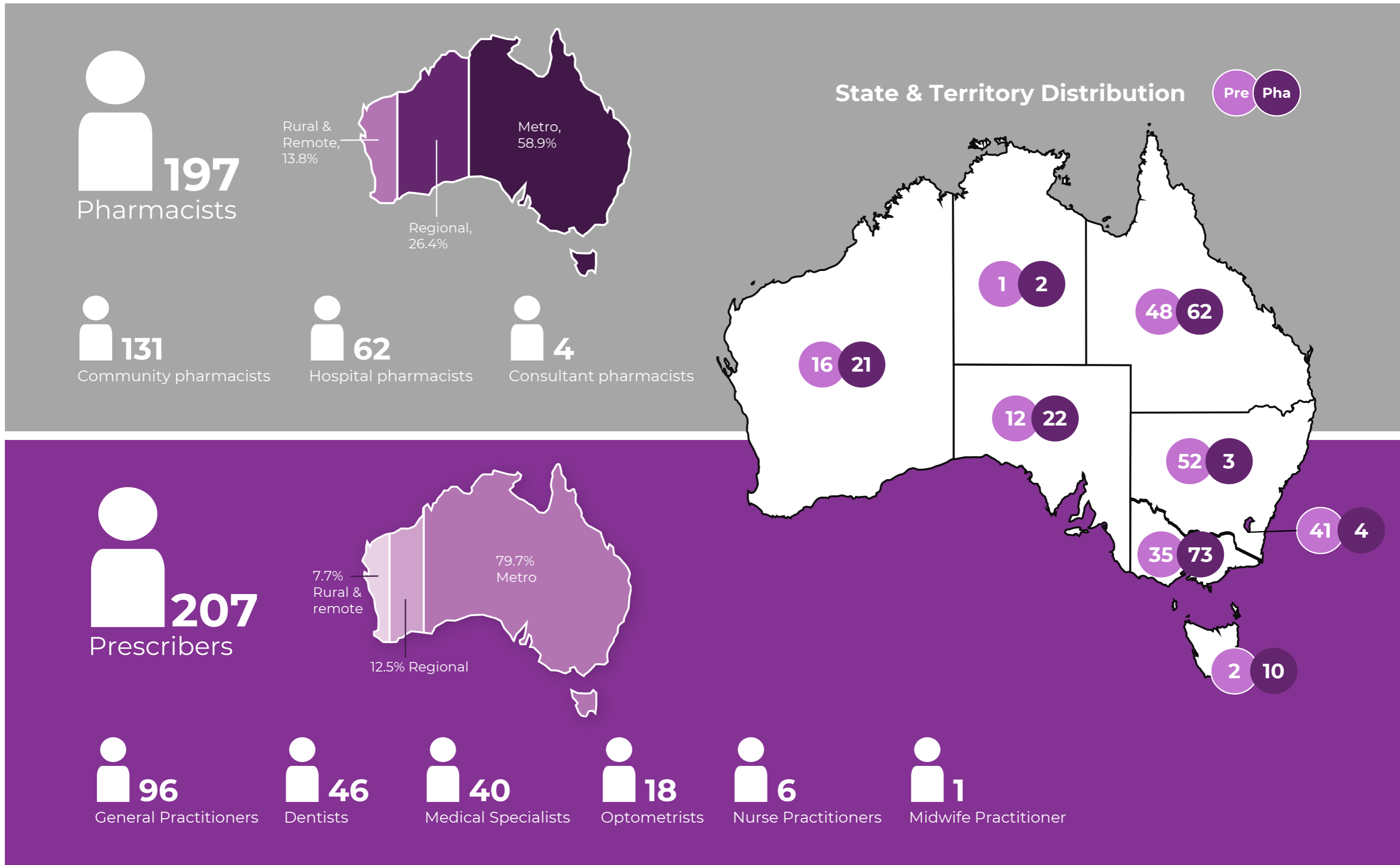
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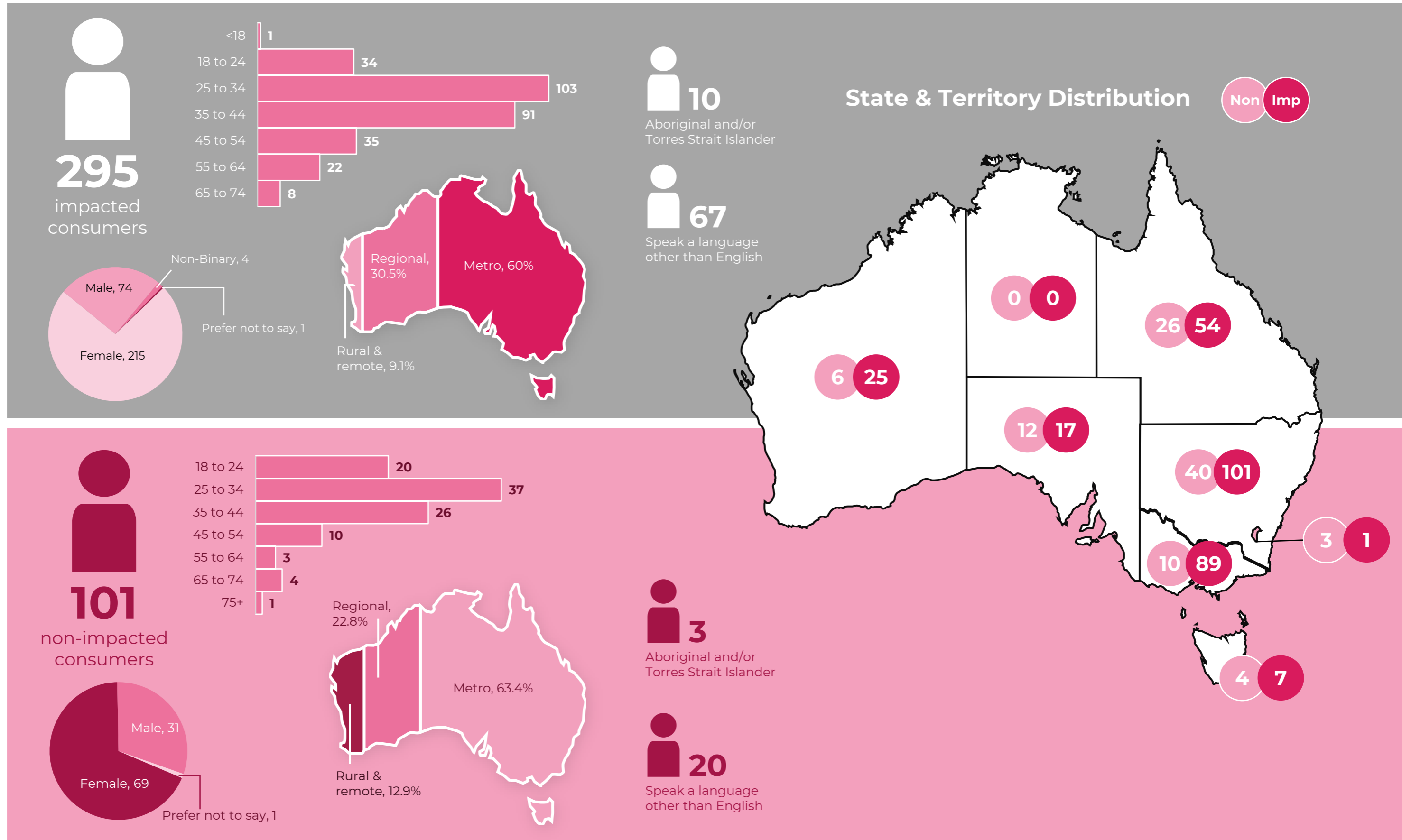
Appendix 1: Survey Analysis



Prescriber and pharmacist demographic breakdown



Consumer demographic breakdown



Consumer medicine profile

- Impacted consumers were prescribed more medicines on average compared to non-impacted consumers
- Both impacted consumers (56.2%) and non-impacted consumers (68.3%) were most commonly prescribed between 0-3 medicines in the past 12 months
- Impacted consumers visit the pharmacy more frequently than non-impacted consumers to purchase medicine
- 66.1% of impacted consumers visit the pharmacy monthly compared to 45.5% of non-impacted consumers.

How many medicines were you prescribed in the past 12 months?	Impacted consumers (%)	Non-impacted consumers (%)
0 – 3	56.2	68.3
4 – 6	30.2	25.7
7 – 10	9.5	5.0
11 – 20	3.4	1.0
21 or more	0.6	0

How often did you visit the pharmacy in the past 12 months?	Impacted consumers (%)	Non-impacted consumers (%)
Every 3 months	18.6	25.7
Every 6 months	3.1	12.9
Monthly	66.1	45.5
Weekly	10.5	3.0
Once-off	1.7	11.9



Impacted medicines – prescribers and pharmacists

Top medicines that pharmacists and prescribers find it difficult to dispense/prescribe:

1. Medicines to treat stomach and digestive problems, obesity, and diabetes (OTHER THAN insulin)
2. Antibiotics, antiviral medicines and vaccines
3. Hormonal contraceptives, hormone replacement therapy, medicines for menstrual disorders, and erectile dysfunction treatments (pharmacists)
4. Medicines used in eyes or ears (prescribers)

How often did you experience difficulties in prescribing/dispensing the following medications due to medicine shortages?	Pharmacist: any difficulty dispensing (%)	Prescriber: any difficulty prescribing (%)	Pharmacist: never had difficulty dispensing (%)	Prescriber: never had difficulty prescribing (%)
Medicines to treat stomach and digestive problems, obesity, and diabetes (OTHER THAN insulin)	90.8	70	9.1	26.6
Blood thinning medicines, medicines for anaemia, and blood products	62	43	38.1	53.6
Medicines for the heart, blood pressure, and cholesterol	75.5	47.7	24.4	48.9
Topical medicines to treat skin conditions (NOT including topical medicines to treat muscle and joint pain)	60.4	48.3	39.6	48.3
Hormonal contraceptives, hormone replacement therapy, medicines for menstrual disorders, and erectile dysfunction treatments	80.7	48.3	19.3	48.3
Steroid medicines, insulin, and hormone medicines NOT included in the above section (e.g. medicines for thyroid conditions, bone conditions (e.g. osteoporosis), and infertility)	73.5	45.9	26.4	50.7
Antibiotics, antiviral medicines, and vaccines	87.4	76.3	12.7	20.3
Chemotherapy, and medicines for the immune system (NOT including steroids)	47.2	35.3	52.8	61.4
Anti-inflammatories (e.g. diclofenac (voltaren), celecoxib (celebrex), muscle relaxants, medicines for gout	44.2	40.6	55.8	56
Medicines for depression, anxiety, and other psychological conditions, pain relief, epilepsy and Parkinson's disease	76.6	50.7	23.4	45.9
Medicines to treat parasites (e.g. worm infections, scabies, and malaria)	53.3	40.1	46.7	56.5
Medicines to treat nose, throat, and lung conditions (e.g. asthma, chronic obstructive pulmonary disease, allergies, as well as nasal sprays and gargles)	56.8	45.9	43.1	50.7
Medicines used in eyes or ears	66	62.2	34	34.3

Medicines prescribed vs medicines in shortage – consumers

Top medicines that consumers found difficult to purchase due to a medicine shortage:

1. Medicines to treat stomach and digestive problems, obesity, and diabetes (OTHER THAN insulin)
2. Medicines for depression, anxiety, and other psychological conditions, pain relief, epilepsy and Parkinson's disease
3. Antibiotics, antiviral medicines, and vaccines
4. Hormonal contraceptives, hormone replacement therapy, medicines for menstrual disorders, and erectile dysfunction treatments

Medicine Category	Impacted consumers who have been prescribed this medicine (%)	Percentage of impacted consumers who experienced a shortage of their prescribed medicine
Medicines to treat stomach and digestive problems, obesity, and diabetes (OTHER THAN insulin)	41.0	30.8
Blood thinning medicines, medicines for anaemia, and blood products	8.8	4.1
Medicines for the heart, blood pressure, and cholesterol	23.7	10.8
Topical medicines to treat skin conditions (NOT including topical medicines to treat muscle and joint pain)	28.8	7.5
Hormonal contraceptives, hormone replacement therapy, medicines for menstrual disorders, and erectile dysfunction treatments	31.5	13.2
Steroid medicines, insulin, and hormone medicines NOT included in the above section (e.g. medicines for thyroid conditions, bone conditions (e.g. osteoporosis), and infertility)	20.3	10.8
Antibiotics, antiviral medicines, and vaccines	58.0	18.6
Chemotherapy, and medicines for the immune system (NOT including steroids)	2.4	1.0
Anti-inflammatories (e.g. diclofenac (voltaren), celecoxib (celebrex), muscle relaxants, medicines for gout	21.4	4.7
Medicines for depression, anxiety, and other psychological conditions, pain relief, epilepsy and Parkinson's disease	45.4	23.7
Medicines to treat parasites (e.g. worm infections, scabies, and malaria)	3.7	1.0
Medicines to treat nose, throat, and lung conditions (e.g. asthma, chronic obstructive pulmonary disease, allergies, as well as nasal sprays and gargles)	28.8	8.1
Medicines used in eyes or ears	10.8	2.0



Responding to medicine shortages - consumers

In the last 12 months, what is the longest time you have waited to purchase a medicine in shortage or an alternative medicine?	Impacted Consumers %
1 day or less	8.1
2-6 days	31.9
1-2 weeks	20.7
2-3 weeks	14.9
1 month or more	19.7
I wasn't able to purchase the medicine or an alternative	4.7

- 55.3% of impacted consumers spent more than a week waiting to purchase a medicine in shortage, or an alternative.

Select all actions that happened when trying to purchase your medicine.	Impacted Consumers %
I went back to my pharmacy to collect my medicine at a later time	32.2
I purchased the medicine at another pharmacy	26.4
I was offered an alternative medicine	25.4
I was offered the medicine in a different strength or form	22.7
I rationed my medicine to make it last longer	20.3
I got a new prescription from my prescriber	17.3
My pharmacist organised an alternative medicine from my prescriber	16.6
I did not purchase any medicine (original or alternative)	13.6
I purchased natural remedies or complementary therapies	5.8
I purchased a non-prescription medicine	4.4
Other	4.1
I was offered an overseas version of the medicine	3.7
I went to hospital	2



Responding to medicine shortages - pharmacists

	Always %	Most of the time %	About half the time %	Sometimes %	Never %
Check if other pharmacies have stock available	27.4	29.4	12.2	29.9	1
Advise the patient to try another pharmacy	19.3	28.4	19.3	29.4	3.6
Advise the patient when the medicine is back in stock	33	29.4	12.7	20.3	4.6
Advise the patient to return to their prescriber for a new prescription or alternative medicine	11.7	21.8	26.4	36.5	3.6
Contact the prescriber and recommend an alternative	10.7	22.8	26.9	36	3.6
Dispense an alternative strength or dosage form using the Serious Shortage Substitution Instrument (SSSI)	9.1	12.7	17.3	43.1	17.8
Dispense an alternative strength or dosage form without using the Serious Shortage Substitution Instrument (SSSI)	5.1	4.6	6.6	40.1	43.7
Ration supplies to patients (for example, dispense smaller quantities and ask patient to pick up remaining supply at a later time)	6.1	7.6	10.7	48.7	26.9
Dispense an overseas-registered version (section 19A)	4.6	5.6	12.2	54.3	23.4
Dispense an alternative medicine under the Special access scheme (SAS)	4.6	6.6	6.6	55.8	26.4
Compound the prescribed medicine	2	3.6	6.6	23.4	64.5
Contact the relevant pharmaceutical company	7.1	4.6	6.1	40.6	41.6
Recommend non-pharmaceutical treatment (for example, allied health)	2.5	5.6	7.1	48.7	36
Recommend non-prescription medication	3	2.5	5.1	50.3	39.1
Recommend complementary therapies	3	3	5.6	45.2	43.1
advise the patient to go to hospital	5.6	9.6	4.6	41.6	38.6

Responding to medicine shortages - prescribers

Action	Always %	GP: Always %	Most of the time %	GP: Most of the time %	About half the time %	GP: About half of the time%	Sometimes %	GP: Sometimes %	Never %	GP: Never %
Prescribe a different strength	2.4	1	18.8	8.3	10.6	13.5	44.9	56.3	23.2	20.8
Prescribe a different dosage form/presentation	1.9	2.1	16.9	16.7	13.5	12.5	52.2	55.2	15.5	13.5
Prescribe an alternative medicine	10.6	3.1	28	29.2	17.4	25	40.6	39.6	3.4	3.1
Recommend patient to cease medicine (in appropriate cases)	1.4	1	5.3	2.1	8.2	6.3	35.3	45.8	49.8	44.8
Contact local pharmacies to find out if/where the medicine is available	12.1	5.2	21.3	19.8	15.5	20.8	15.5	35.4	35.7	18.8
Contact a pharmacist for advice about availability of alternatives	12.6	9.4	22.2	26	15.9	24	34.3	29.2	15	11.5
Prescribe an overseas-registered version of the medicine	2.4	0	10.6	3.1	5.3	5.2	16.4	10.4	65.2	81.3
Use the Special access scheme (SAS) or personal importation scheme to access the medicine in shortage	1.9	0	7.2	3.1	5.8	3.1	32.9	31.3	52.2	62.5
Contact the relevant pharmaceutical company	9.2	0	6.3	3.1	6.8	6.3	22.7	18.8	55.1	71.9
Arrange non-pharmaceutical treatment options (eg allied health)	2.9	0	11.1	6.3	6.8	6.3	43	49	36.2	38.5
Recommend non-prescription medicine	1.9	0	8.2	4.2	11.1	7.3	37.2	41.7	41.5	46.9
Recommend complementary therapies	2.9	0	9.7	5.2	7.7	7.3	33.8	28.1	45.9	59.4
Advise patient to go to hospital	2.9	2.1	8.2	2.1	6.3	3.1	33.3	34.4	49.4	58.3

Using the TGA’s website or email alert for information about medicine shortages

Finding out information about medicine shortages through the TGA	Pharmacists %	Prescribers %	Impacted consumers %	Non-Impacted consumers
	67.7%	36.7%	5.1%	22.8%

How satisfied or dissatisfied are you with information from the TGA about medicine shortages?	Pharmacists		Prescribers		Impacted consumers		Non-Impacted consumers	
	Count	%	Count	%	Count	%	Count	%
Extremely satisfied	12	8.82	7	8.97	2	13.33	1	4.35
Somewhat satisfied	56	41.18	26	33.33	5	33.33	17	73.91
Neither satisfied nor dissatisfied	23	16.91	28	35.90	4	26.66	1	4.35
Somewhat dissatisfied	38	27.94	17	21.79	4	26.66	4	17.39
Extremely dissatisfied	7	5.15	0	0	0	0	0	0
Total Count	136		78		15		23	

