



The Pharmacy
Guild of Australia

The Workforce Capability Project

CHAPTER 1

Pharmacy Workforce Supply and Demand Executive Summary

Edition 1.1

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Introduction

This chapter identifies current and future supply and demand for the pharmacist workforce, with special insight into community pharmacists as well as some initial consideration of the non-professional pharmacy workforce.

The findings outlined in this chapter are based on a comprehensive study of trends in pharmacist demographics and working hours, along with interviews with industry experts.

The analysis of recent trends in supply and demand and the forecasting model used in this report draw on data from a number of sources, including the Australian Census (2020 data), Pharmacy Board of Australia (September 2022 data), Australian Pharmacy Council, Department of Home Affairs, a Vacancy Survey conducted by the Pharmacy Guild and the Department of Health (DoH) (2020 data).

The forecasting model is built primarily on DoH data on full-time equivalent (FTE) workforce numbers. The reasons for using DoH data include the method of data collection (registration statistics as opposed to survey responses) and frequency of reported data over the past decade (annual as opposed to every 5 years).

- The model will be updated with the release of DoH data for 2021 and the findings presented in this report should therefore be considered preliminary.

Forecasts are presented for two scenarios to control for the possibility of sample bias in data collected through the Pharmacy Guild survey.



Key Findings

- > The Australian pharmacy workforce comprises two major sub-categories, the pharmacist workforce and the non-professional pharmacy workforce.
- > While there has been steady growth in the number of registered pharmacists, growth in demand in the form of observed employment FTE and vacancies outstripped growth in practising registrations (2.35% vs 0.86%) between 2013 and 2020.
- > Forecasting pharmacist workforce supply and demand solely on the basis of headcount indicates there is adequate or surplus supply in the pharmacist workforce to meet demand. However, this is misleading – due to trends such as decreasing average hours worked per week and availability, there is a gap between supply and demand of around 5,420 FTE per year.
- > Workforce shortages do not appear to be driven by an increasing proportion of pharmacists working in hospital or other job settings, nor by feminisation of the workforce.
- > Distribution of the pharmacist workforce is a likely driver of localised workforce shortages. Growth in the employed pharmacist workforce by location shows relatively flat trends across more remote locations and stronger growth in metropolitan or regional centres. This is despite steady growth in prescription volume in all areas, indicating employment may not be keeping pace with local demand.
- > The increasing workforce pressure in regional areas may be exacerbated by a drop in immigration in 2013 following the removal of Pharmacists from the Skilled Occupation List for certain medium and long-term visas.
- > Excess demand in the pharmacist workforce may increase through other expected population, practice, or policy changes and pressures such as increased clinical service focus or scope of practice changes.
- > Advances in competencies for the non-professional workforce may have potential to offset this gap; however, the non-professional workforce faces similar and other pressures which may also result in excess demand for this sub-category.
- > Supply and demand for the non-professional workforce will be explored in Edition 2 of this Chapter.

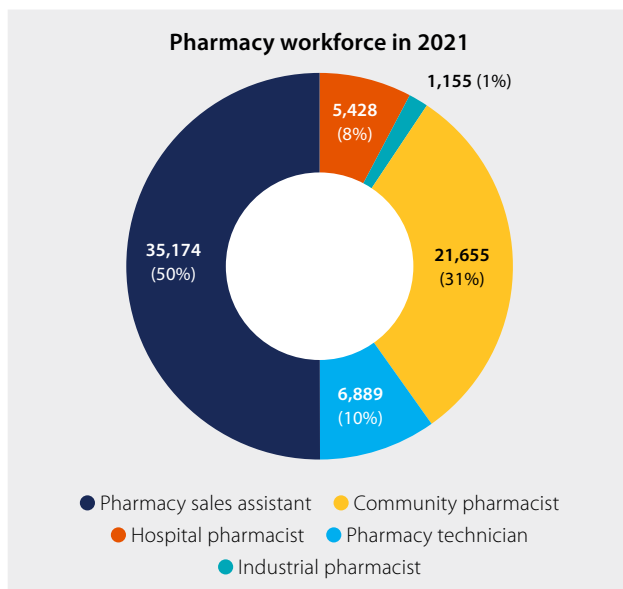
Pharmacy workforce – structure and trends

The Australian Bureau of Statistics (ABS) recognises three major groups of pharmacists – retail/community, hospital and industrial – and two major support groups – ‘pharmacy sales assistants’ and ‘pharmacy technicians’.

- As of 2021 the approximate size of the employed pharmacy workforce was 70,360, comprising 28,297 pharmacists (40.2%), 35,174 pharmacy sales assistants (working in community settings) (50%) and 6,889 pharmacy technicians (working in hospital settings) (9.8%).
- As of September 2022, there were 35,173 registered pharmacists, including non-practising pharmacists and those who were part of the short-term COVID-19 pandemic sub-register, which allowed a temporary return to the workforce for experienced and qualified professionals..
- DoH data indicates that in 2020, 52.88% of pharmacists were employed in the community pharmacy setting.
- Based on ANZSCO codes recognised by ABS, community pharmacists and pharmacy sales assistants formed about 90% of the total pharmacy workforce in 2021.

Figure 1 shows the breakdown of the pharmacy workforce by work setting for 2021 in Australia. Community pharmacists as a proportion of the total pharmacy workforce grew from 30% in Census 2016 to 31%, while the proportion of hospital pharmacists grew from 6% to 8%.

Figure 1: Pharmacy workforce by sub-category and employment setting, 2021



Source: Australian Bureau of Statistics (2021), Customised Report



Since 2016 there has been small (<1% per annum) but steady growth in the pharmacist workforce. This growth may be partly driven by increasing numbers of graduates since 2018 (2–3% average yearly growth) as well as some increase in skilled immigration (7% between June 2013 and 2020).

However, the impact of these factors has been offset to some extent by the effects of the COVID-19 pandemic and steady workforce leakages, with approximately 400–600 registered pharmacists exiting the industry per year. Reasons for this leakage include occupational mobility, retirement, emigration and death/disability.

At an average of 2.35% per annum, growth in demand – as indicated by FTE employment and industry vacancies – over the same period outstripped growth in supply. Moreover, closer investigation of underlying patterns of employment demonstrates that FTE is lower than the headcount would suggest and the gap between demand and supply consequently greater.



Trends impacting supply and demand

Pharmacist immigration

On the supply side, the number of pharmacists migrating to Australia declined sharply, albeit briefly, in 2013 following the removal of pharmacists from the Skilled List of certain medium and long-term visas. While the number of pharmacists migrating to Australia increased thereafter up to financial year 2020-21, growth due to immigration has been insignificant compared with the sharp drop in numbers immediately after 2013. Pharmacists remain on the Short-term Skilled Occupation List with eligibility for temporary visa classes, which limit their ability to apply for permanent residency.

In July 2021, pharmacists were placed on the Priority Migration Skilled Occupation List as part of the government's pandemic response, which allowed for prioritisation and travel

exemptions (although the eligibility criteria for visa classes remain unchanged). The modelling in this chapter assumes that inclusion of pharmacists on the priority list counteracted any decline caused by pandemic visa restrictions.

Pharmacist workforce by employment setting

The majority of the pharmacist workforce is employed in community pharmacy, a trend which has been fairly constant over the last decade. There has been growth in the number of registered pharmacists employed in the hospital setting as a proportion of the total pharmacist workforce (from 15.02% in 2013 to 19.63% in 2020). However, this growth has not appeared to reduce the proportion working in the community setting (Figure 2).

Figure 2: Pharmacy workforce by employment setting, 2013–2020



Source: Department of Health (2020), National Health Workforce Dataset



It should be noted the proportions depicted in Figure 2 do not capture changes in ratios of hours worked where pharmacists work across multiple job settings. It is also worth noting that while the impact of growth in the hospital pharmacist workforce on the community pharmacist sector may be sustainable, increasing pressures from factors such as increased roles and hours of service and higher comparative remuneration and benefits may further increase workforce mobility towards the hospital setting.

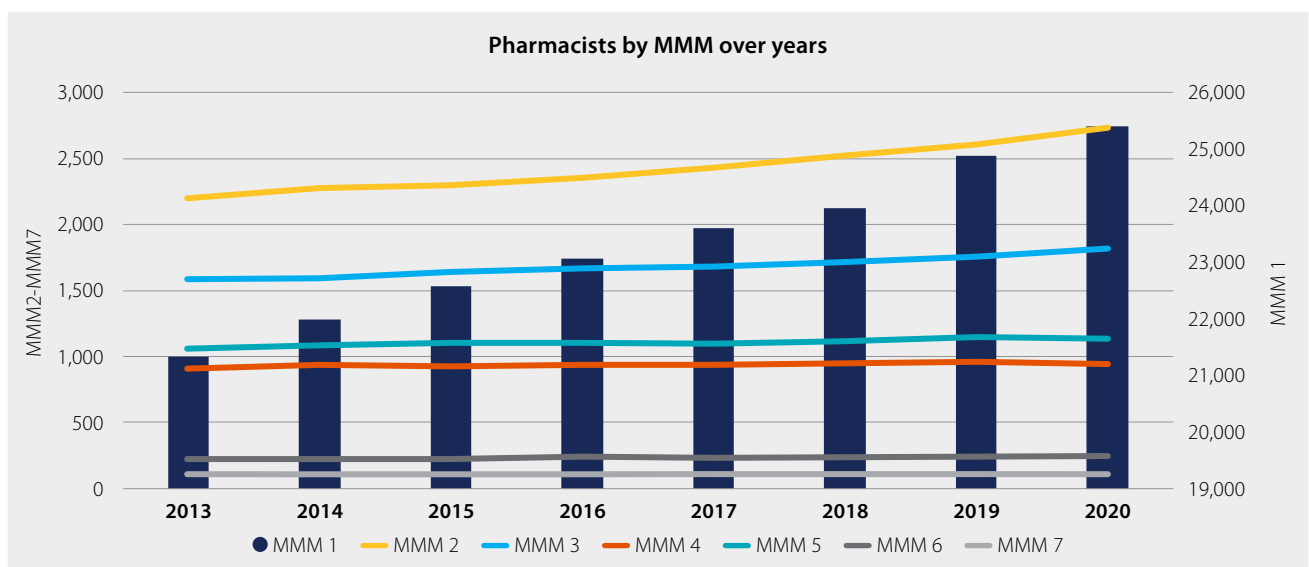
In addition, there is a risk that other job settings – particularly in other primary healthcare sectors such as general practice, aged care and Aboriginal Health Services – may experience growth similar to that of the hospital sector, further limiting the community pharmacy sector’s ability to attract, recruit and retain its workforce.

Pharmacist workforce by location

There has been consistent growth in the pharmacist workforce in Modified Monash Model (MMM) locations 1–3 (metropolitan, regional centres and large rural towns). This growth largely mirrors growth in script volume for MMM 1 but lags behind script volume growth (2.89% per year on average) in all other MMMs, particularly 4–7. This suggests employment may not be keeping pace with local business growth, particularly when considered in the context of expansion of clinical service offerings in pharmacies (Figure 3). These findings suggest that unbalanced distribution of the pharmacist workforce is a likely driver of localised workforce shortages.

This increasing workforce pressure in regional areas may be exacerbated by a reduction in immigration following removal of the Pharmacist ANZSCO from the Skilled Occupation List for certain medium and long-term visas in 2013. Some of these visas have particular requirements for location of employment.

Figure 3: Pharmacists by MMM, 2013–2020



Source: Department of Health (2020), National Health Workforce Dataset



Pharmacist demographics

Women continue to represent a majority of the pharmacy workforce, accounting for approximately 63% of pharmacists (2020), 87% of pharmacy sales assistants (2021) and 88% of pharmacy technicians (2021).

The feminisation of the pharmacist workforce appears to have stabilised since 2017 (from 0.93% growth rate in proportion in 2017 to 0.54% in 2019), reducing the likelihood that this factor significantly impacted demand trends over the same period.

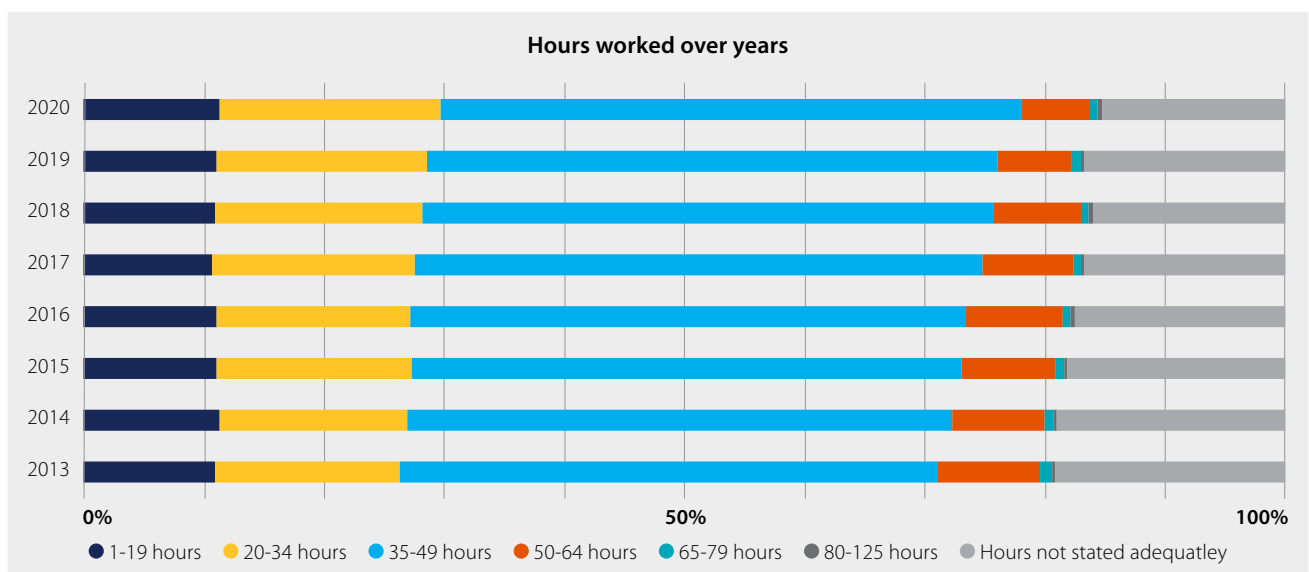
The average age of employed pharmacists increased; the largest growth as a proportion of the overall workforce occurred in pharmacists aged 35–44, with this age group taking a share of proportion from the 20–34 age cohort since 2013. This is likely driven to some extent by increases in the number

of universities offering pharmacy degree programs from the late 1990s, with the 35–44 age cohort being at the front of the increased graduate wave.

Perhaps reflecting these demographic factors, as well as the increasing importance of work–life balance more generally, there has been a significant decline in the number of pharmacists working 35 hours or more (Figure 4). This is driving the average hours worked per headcount down, creating a gap between headcount and FTE.

Among pharmacists aged 35–44 years, 42% worked less than 35 hours per week in 2020, indicating a correlation between the growth of this age group as a proportion of the pharmacist workforce and a reduction in available FTE per headcount.

Figure 4: Distribution of hours worked per week by pharmacists, 2013–2020



Source: Department of Health (2020), National Health Workforce Dataset

Pharmacist supply and demand forecasts

As noted earlier, the forecast model utilised data collected through a vacancy survey conducted by the Pharmacy Guild. The survey asked respondents for details about vacancies at a pharmacy level to estimate the number of vacancies in the industry.

Survey data may be susceptible to sample bias due to several factors. In particular, in the context of the vacancy survey, individual pharmacy owners suffering workforce shortages might find the survey more salient and thus be more likely to complete the survey, skewing the sample statistics. In the absence of data on sample bias, the model presents forecasts for two scenarios reflecting different assumed participation/response rates for the survey (see Appendix to this chapter).

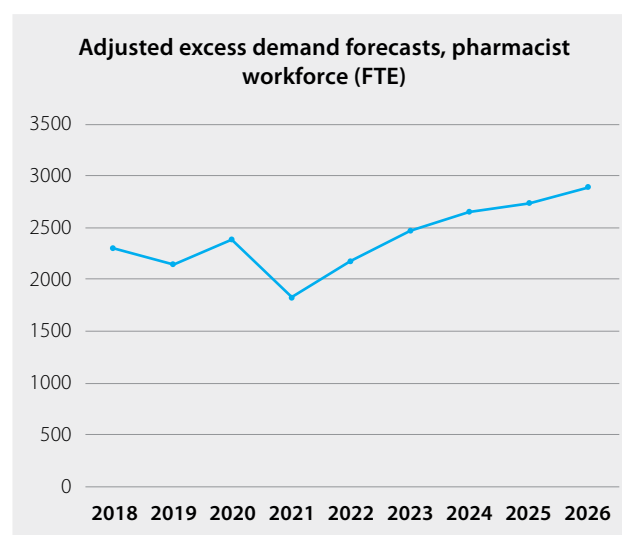
To account for geographic differences in demand, the data used to estimate the number of vacancies is disaggregated by state/territory.

Taking the decreasing ratio of workforce headcount to FTE into account, the forecasting model indicates excess demand in the pharmacist workforce from 2018 onwards (Table 1 and Figure 5). Note that the brief decline in excess demand shown for 2021 is likely an anomaly driven by the temporary use of the COVID-19 pandemic sub-register and recruitment changes due to the pandemic, with a return to the previous trend by 2022.

Table 1: Adjusted supply and demand forecasts, pharmacist workforce

Year	Supply (FTE)	Demand (FTE)	Supply - Demand
2018	24,948	27,240	2,292
2019	25,555	27,690	2,135
2020	26,065	28,434	2,369
2021	26,786	28,595	1,809
2022	27,271	29,428	2,157
2023	27,831	30,279	2,448
2024	28,390	31,029	2,640
2025	28,946	31,671	2,725
2026	29,500	32,369	2,869

Figure 5: Adjusted excess demand forecasts, pharmacist workforce (FTE)

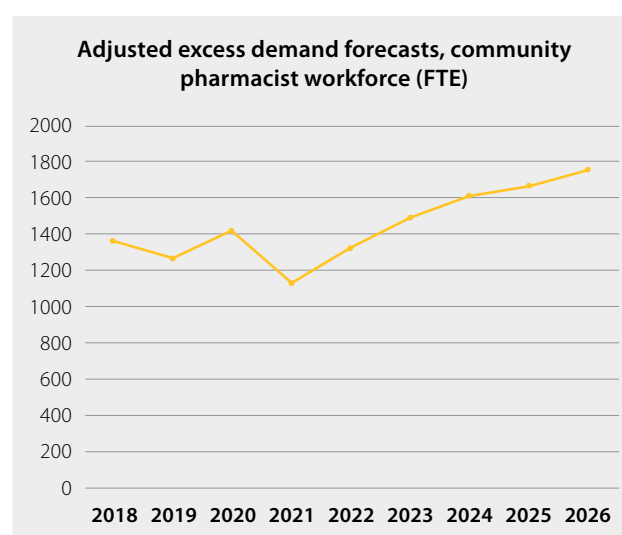


When considering the proportion of the pharmacist workforce working in community pharmacy, the trends in FTE align with those observed in the broader pharmacist setting. The model estimates excess demand from 2018 onwards (Table 2 and Figure 6). 2021 represents an anomaly driven by above-mentioned factors.

Table 2: Adjusted supply and demand forecasts, community pharmacist workforce

Year	Supply (FTE)	Demand (FTE)	Supply - Demand
2018	13,170	14,525	1,355
2019	13,506	14,765	1,259
2020	13,750	15,162	1,412
2021	14,128	15,248	1,119
2022	14,375	15,692	1,317
2023	14,661	16,145	1,484
2024	14,946	16,545	1,599
2025	15,230	16,887	1,657
2026	15,512	17,260	1,748

Figure 6: Adjusted excess demand forecasts, community pharmacist workforce (FTE)





Potential future impacts on supply and demand in pharmacist workforce

It is important to note that the figures presented in the forecast models represent a baseline for pharmacist supply and demand and only capture existing trends at a national level. There are likely multiple other drivers at population, practice, and policy levels that will have significant impacts on both supply and demand. Major examples include:

- listing on Skilled Occupation Lists for medium and long-term visas
- funding for any number of places offered for Pharmacy degrees
- increased focus on professional pharmacy programs and clinical services
- expanded scope of pharmacist practice
- increased range of roles for pharmacists outside traditional settings (community, hospital and industrial)
- new and emerging medicines or changes to therapeutic approaches, such as biosimilars and pharmacogenomics, that may impact on time to dispense or counsel
- advances in professional competencies for pharmacy assistants and pharmacy technicians
- automation and technology advances
- increases in the number of students applying to study pharmacy
- career changes

With respect to advances in professional competencies for pharmacy assistants and pharmacy technicians, there is some potential to offset excess demand in the pharmacy workforce by utilising the non-professional workforce.

However, it is worth noting that the non-professional pharmacy workforce, comprising around 42,063 employees in 2021 (35,174 pharmacy sales assistants and 6,889 pharmacy technicians), is also subject to pressures, including but not limited to:

- a declining trend in the ratio of pharmacists to non-professional workforce (from 2.11 to 1.62 between 2006 and 2021)
- high turnover rates
- a young average age of the workforce, with a trend towards casual and part-time employment (over 88% work less than 38 hours per week)
- employment conditions (wages, flexibility, hours of work)
- career pathways
- general retail workforce trends exacerbated by the COVID-19 pandemic

The pressures on this workforce component might be offset by expanding the role of non-professional responsibilities to include supporting pharmacists undertaking clinical activities, which may attract further workforce growth. Supply and demand of the non-professional pharmacy workforce will be explored in Edition 2 of this chapter.

Appendix – Scenarios

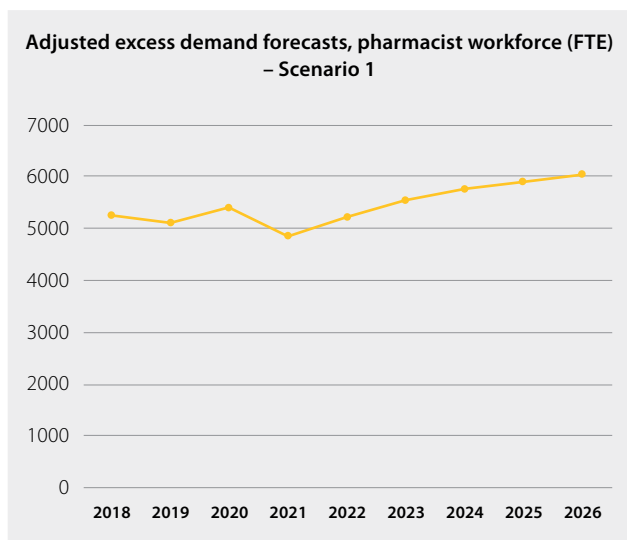
Data collected through surveys may be susceptible to several forms of statistical bias that can skew the results of the model. Given that results of the forecasting model are highly sensitive to data collected as part of the Pharmacy Guild’s vacancy survey, we have presented forecasts of adjusted supply and demand for two scenarios.

Scenario 1 assumes that all pharmacy owners are equally likely to respond to the survey (Table 3 and Figure 7).

Table 3: Scenario 1 – Adjusted supply and demand forecasts, pharmacist workforce

Year	Supply (FTE)	Scenario 1	
		Demand (FTE)	Supply - Demand
2018	24,948	30,170	5,222
2019	25,555	30,639	5,084
2020	26,065	31,414	5,349
2021	26,786	31,595	4,809
2022	27,271	32,462	5,191
2023	27,831	33,346	5,515
2024	28,390	34,127	5,738
2025	28,946	34,796	5,850
2026	29,500	35,523	6,022

Figure 7: Scenario 1 – Adjusted excess demand forecasts, pharmacist workforce (FTE)

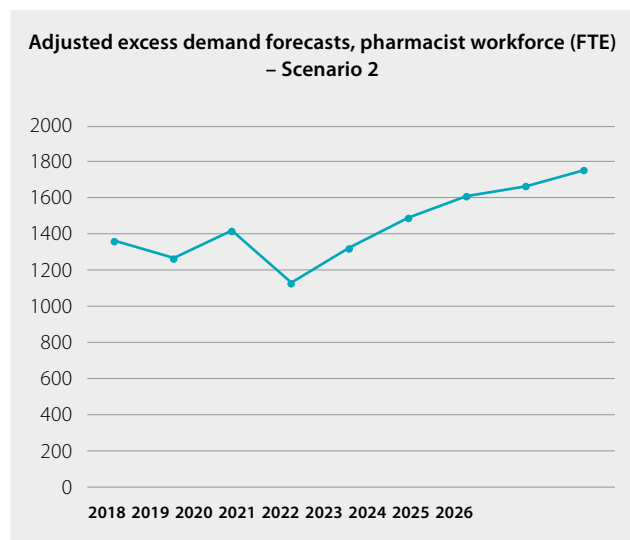


Scenario 2 assumes that pharmacy owners facing workforce issues will find the survey questions more salient in their circumstances and are **twice** as likely to respond as pharmacy owners not facing workforce issues (Table 4 and Figure 8).

Table 4: Scenario 2 – Adjusted supply and demand forecasts, community pharmacist workforce

Year	Supply (FTE)	Scenario 2	
		Demand (FTE)	Supply - Demand
2018	13,170	14,525	1,355
2019	13,506	14,765	1,259
2020	13,750	15,162	1,412
2021	14,128	15,248	1,119
2022	14,375	15,692	1,317
2023	14,661	16,145	1,484
2024	14,946	16,545	1,599
2025	15,230	16,887	1,657
2026	15,512	17,260	1,748

Figure 8: Scenario 2 – Adjusted excess demand forecasts, community pharmacist workforce (FTE)



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