



## An in-depth examination of funded and unfunded cognitive pharmaceutical services

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### ABSTRACT

**Background:** A substantial expansion in the scope of practice of community pharmacists has become evident over the years, with increased government remuneration pledged to support cognitive pharmaceutical services (CPS) delivery as part of the Australian Community Pharmacy Agreements. Exploring experiences in providing funded and unfunded CPS within the existing work environment will enable better understanding of community pharmacists' roles and responsibilities in delivering CPS.

**Objective:** To explore pharmacists' roles, responsibilities, experiences, and perceived impact associated with delivering CPS.

**Methods:** Qualitative semi-structured interviews ( $n = 25$ ) were conducted with practising community pharmacists in Australia who were engaged in delivering CPS during the time when the Sixth Community Pharmacy Agreement (6CPA) was in effect. Verbatim transcripts were thematically analysed (inductive analysis).

**Results:** All participants reported an expansion of services being provided in community pharmacies. Pharmacists offered a broad range of CPS within the community pharmacy setting, via 6CPA-funded and non-6CPA or unfunded initiatives. Almost all participants reported that their pharmacy provided 6CPA-funded initiatives such as dose administration aids, clinical interventions, MedsChecks/Diabetes MedsChecks, and Home Medicines Reviews. User-pay services being offered included pharmacist-led flu vaccinations, opioid substitution therapy, sleep apnoea services, and absence from work certificates, among other services. However, profit margins on user-pay services were minimal. CPS provision was seen to have positive impacts at patient and health care system levels. Pharmacists felt they enabled timely and convenient access to health care for patients in the community pharmacy setting, and facilitated quality use of medicines, which in turn had positive impact on the community pharmacy business.

**Conclusions:** A prominent shift in the provision of CPS was evident. Professional services provision has become the status quo for the practice of the profession, indicative of a likely shift in the work value of community pharmacists. Pharmacists should be further recognised professionally and financially for their contributions as health care professionals within the broader health care system.

### 1. Introduction

Pharmacists have a pivotal role as health care team members working either independently or collaboratively with other health care professionals in facilitating optimal care to meet the varying health care needs of the population. Provision of cognitive pharmaceutical services (CPS) in community pharmacy settings offers opportunities to improve patient outcomes. Also known as professional pharmacy services, CPS have been defined as “an action or set of actions undertaken in or organized by a pharmacy, delivered by a pharmacist or other health practitioner, who applies their specialized health knowledge personally or via an intermediary, with a patient/client, population or other health professional, to optimize the process of care, with the aim to improve health outcomes and the value of healthcare.”<sup>1(p990)</sup>

Community pharmacists are well placed to offer accessible health care and health-related information.<sup>2</sup> Within the Australian context, over recent years, there has been a substantial expansion in the scope of practice of community pharmacists. Notably, this change has occurred concurrently with increased government remuneration to support CPS delivery in community pharmacy settings. Australian Community Pharmacy Agreements (CPAs) are five-yearly agreements made between the Australian Federal Government and the Pharmacy Guild of Australia, which represents pharmacy owners. The current CPA was also signed by the Pharmaceutical Society of Australia. The CPAs commenced in 1990 and have provided funding to support community pharmacy initiatives in promoting quality use of medicines.<sup>3</sup> The allocation of funding increased from AUD \$400 million for pharmacy programs made available under the Third Community

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Pharmacy Agreement (3CPA)<sup>4</sup> to up to AUD \$1.20 billion in available funding under the current Seventh Community Pharmacy Agreement (7CPA).<sup>5</sup> However, to date, the investment in CPS has been modest and insufficient to sustain profitability of the community pharmacy sector. Expansion of remunerated service-oriented pharmacy models and CPS have increasingly been seen as a means of supporting future community pharmacy viability.<sup>6–11</sup> Pharmacists also view existing CPS as a vehicle to contribute towards improved consumer medication-related understanding as well as improved quality of life and accessibility to health care.<sup>12</sup>

Promisingly, a “strong belief in the value of the community pharmacy becoming a health hub; a health care destination that involved more than just the provision of medication advice”<sup>13(p868)</sup> has been previously reported. Collectively, these findings indicate the continuing movement away from the more “traditional” role of community pharmacists as solely medication dispensers towards more service-oriented roles. Undoubtedly, this dynamic shift will see a ripple effect on the roles and responsibilities of practising community pharmacists.

The previous 6CPA funding supported CPS initiatives promoting medication management (Home Medicines Reviews (HMRs), Residential Medication Management Reviews (RMMRs), MedsChecks, Diabetes MedChecks, clinical interventions (CIs)); medication adherence (dose administration aids (DAAs), staged supply); and rural and/or Indigenous health,<sup>14</sup> most of which have continued to be supported in the current 7CPA.<sup>5</sup> However, in recent years, community pharmacies have been diversifying with the provision of a plethora of other CPS that are not directly linked to the previous 6CPA,<sup>11</sup> for instance, or current 7CPA. Such services will only directly generate additional revenue for the community pharmacy if the pharmacy has implemented a fee-for-service or user-pay model. Notably, consumer awareness, receptivity, and uptake of CPS provision by community pharmacists in the primary care setting have been positive. Recognition of the expanding CPS offered by community pharmacists has become apparent, where the majority of respondents surveyed upon exiting a community pharmacy were aware of key services.<sup>15</sup> Pharmacists have been commended on the provision of CPS,<sup>13</sup> and consumers in general also feel that there is room for an increased scope of practice for pharmacists with respect to the delivery of CPS in primary care.<sup>16</sup>

A recent cross-sectional survey of extended and enhanced professional services delivered by community pharmacies in Western Australia demonstrated a lack of uniformity in the delivery of enhanced services.<sup>17</sup> Less than half of the respondents were providing extended services, with uptake being limited, even for services where remuneration was available.<sup>17</sup> Exploring community pharmacists' roles and responsibilities in delivering these CPS, in particular unfunded services, is much needed to provide insight into current experiences in providing CPS within the existing work environment.

Therefore, this study aimed to:

1. Investigate and describe the cognitive pharmaceutical / health services provided by community pharmacists, any reimbursement/revenue received, and factors influencing provision;
2. Determine the self-reported perceived patient and health system economic impacts of the cognitive pharmaceutical / health services delivered by the pharmacists;
3. Investigate the training received by pharmacists to enable provision of cognitive pharmaceutical / health services; and
4. Investigate perceptions of the work value of community pharmacists.

## 2. Methods

A phenomenological approach with qualitative semi-structured interviews was used to collate data from practising community pharmacists in Australia who were engaged in delivering CPS. Interviews were conducted between February and August 2017. This coincided with the period of the 6CPA.<sup>14</sup> Ethics approval to conduct this study was granted by the Human Research Ethics Committee at The University of Sydney (project number

2016/910). Participation in the study was voluntary; participants received no financial reimbursement.

The recruitment strategy was two-pronged. Firstly, an invitation to participate in the study was mailed to a random sample of pharmacists ( $n = 60$ ) within the Professional Pharmacists Australia (PPA) member database ( $n = 7500$ ). The invitation package included the Participant Information Statement and consent form for the study. Contact details for the research team were specified in these documents; any pharmacists interested in participating then directly contacted a member of the research team and returned their completed consent form prior to the conduct of the interview. Secondly, a purposive sample of pharmacists ( $n = 30$ ) known to the research team who, at the time of the study, were engaged in the provision of CPS were contacted and provided with the study information. A maximum variation sampling approach was used to capture pharmacists from a range of ages, years of practice, practice settings, cultural backgrounds, and employee/employer status, and to ensure gender representation.

The potential participants were provided with information about the study and those interested liaised with a member of the research team to organise an interview time and location. Recruitment continued until data saturation was reached. Face-to-face and phone interviews were conducted by one researcher (V.T.), primarily at The University of Sydney.

Once written informed consent was provided, all participants completed a short demographics questionnaire. The interviews were then conducted using a semi-structured interview protocol mapped to the study aims (Table 1). The first four core questions in Table 1 elicited information on the individual CPS provided by the participants, including financial reimbursements, such as fee-for-service paid by patients.

### 2.1. Data analysis

All interviews except one were audio-recorded. Field notes were taken during the interview (by the interviewer) where no consent for audio-recording was provided. The field notes/interview summary were included in the data analysis in lieu of a verbatim transcript.

The six broad steps recommended by<sup>18</sup> were followed to ensure trustworthiness in the thematic data analysis. Audio-recordings were transcribed verbatim, and the transcripts verified against the audio-recording and de-identified. Preliminary data analysis was conducted on verified and checked verbatim transcripts. This involved reviewing the transcription audio and multiple re-readings of the transcripts as part of the thematic analysis to become familiar with the data. As part of the data analysis, matrix displays<sup>19</sup> were established at the onset of the data analysis process to

**Table 1**  
Core semi-structured interview protocol questions.

Study aim	Topic	Core question
1	Types of CPS offered – within the pharmacy	• Could you please let me know what pharmaceutical and/or health services you deliver in your pharmacy?
1	Type(s) of CPS offered – outside the pharmacy	• Could you please let me know what pharmaceutical and/or health services you or your pharmacists deliver outside your pharmacy?
1	Description of CPS	• Could you describe each of these services?
4	Reimbursement/revenue for CPS delivery	• What kind of reimbursement or revenue do you receive for delivering these services?
3	Training undertaken	• For each of the services you have mentioned, what kind of training did you receive in order to be able to deliver these services?
2	Impact of CPS	• What, if any, has been the impact of each of the services you described on your clients in terms of <ul style="list-style-type: none"> <li>◦ Health?</li> <li>◦ Customer satisfaction?</li> <li>◦ Customer loyalty?</li> </ul>
2	Economic outcomes of CPS delivery	• What, if any, have been the economic outcomes for the pharmacy?

support the conduct of thematic analysis and identification of themes and subthemes. The initial matrix display set-up was informed by the structure of the semi-structured interview protocol questions and refined via the inductive thematic analysis approach taken for data analysis. Matrix displays were also advantageous as they helped to facilitate the cross-comparison between the descriptions of the various CPS types that arose in the respective interviews as well as pharmacists' perspectives on CPS provision. Themes by CPS type could then be consolidated per interview and then compared between interviews to support comparison and contrast of emergent themes and subthemes. Matrix displays were also checked and discussed by the research team.

Thematic analysis<sup>20</sup> was primarily conducted by the interviewer (V.T.). To mitigate the influence of researcher bias on the data analysis, and reporting of themes and subthemes, a proportion of transcripts were independently analysed by a second researcher (P.A.) to ensure validity and reliability of data analysis and establish trustworthiness in the data collected and analysed.<sup>18</sup> Any discrepancies that arose were discussed among the research team to ensure consistency in the identification and reporting of themes and subthemes.

Preliminary data analysis was conducted after each interview. Data saturation<sup>21</sup> was achieved after 22 interviews and confirmed upon completion of a further three interviews.

### 3. Results

A total of 25 interviews ( $n = 4$  from the PPA member database;  $n = 21$  from purposive sampling) were conducted with Australian community pharmacists, comprising 14 face-to-face and 11 telephone interviews. The average interview discussion length was 51 min (range 33–77 min).

**Table 2**  
Summary of participant demographics.

Demographic	Total ( $n = 25$ )	
Gender	Male	15
	Female	10
Age	< 25 years	1
	25–44 years	19
	45–64 years	4
	> 65 years	1
Country of birth	Australia	17
	Overseas	8
Main language(s) spoken at home	English	18
	Other <sup>a</sup>	13
	Bachelor's degree	18
Highest level of education	Graduate Certificate	2
	Diploma	1
	Master's degree	3
	PhD	1
	PhD	1
Primary job	Community pharmacist	19
	Consultant/locum pharmacist	2
	Academic	2
	Pharmaceutical advisor	1
	Student	1
Secondary job <sup>b</sup>	Community pharmacist	6
	Accredited pharmacist	2
	Academic/educator	7
	Higher degree research student	2
	Professional service position	2
	Other	2
	None	8
Number of years of practice as a pharmacist	< 5 years	6
	5–10 years	10
	> 10 years	9

<sup>a</sup> Four participants nominated two or more languages as the main languages spoken at home.

<sup>b</sup> Three participants nominated two or more secondary jobs. All participants worked as a pharmacist in a community pharmacy setting either in their primary or secondary job.

With respect to participant demographics (Table 2), the majority were aged between 25 and 44 years and had 10 or fewer years of pharmacy experience. Participants were mostly from the state of New South Wales ( $n = 22$ ), with a few pharmacists recruited from the Australian Capital Territory ( $n = 1$ ), South Australia ( $n = 1$ ), and Victoria ( $n = 1$ ). In relation to their nominated primary job, participants worked between 15 and 50 hours a week, with the majority working within a community setting. Of the 25 participants, 17 reported that they held secondary jobs/roles/responsibilities which they undertook in a range of settings (e.g., at home, university, community, hospital and/or nursing home).

The participant interviews encompassed discussions that centred on a broad range of themes and subthemes related to the research aims. The themes identified centred on the types of CPS delivered, including a description of each service provided, the roles and responsibilities inherent in delivering the service, their perceived impact on patient and health system outcomes (including economic impacts) and factors influencing provision; the training completed to support their capacity to deliver these CPS; financial reimbursements received for CPS provision; and participants' perceptions of the work value of community pharmacists.

#### 3.1. Trends in cognitive pharmaceutical services being offered in community pharmacies and factors influencing provision

A notable expansion of services being provided in community pharmacies was reported by all participants. Pharmacists' reported roles and responsibilities had changed and differed between services, with increased opportunities for clinical involvement and inter-professional collaboration in the provision of patient health care in more recent years. Participants perceived that a baseline level of service was applicable across the sector, and they felt that this level was higher with more CPS being provided by pharmacists. However, CPS provision varied between pharmacies, with the business structure influencing the extent of services being provided. Smaller pharmacies were required to structure and prioritise service provision within their working capacity, available resources and expertise. Additional support via increased number of pharmacists/pharmacy staff was noted as an enabler of CPS provision.

Reforms such as accelerated price disclosure and emergence of discount pharmacy models were reported to have impacted the sector and created an impetus for the industry to evolve.

*“One thing that comes to mind straight away is this very prominent emergence of different models of pharmacy. I mean there was always different models of pharmacy. But now I think it's quite clear..... I see it as a spectrum..... during my time as a pharmacy student and as a pharmacist, I've seen that distinction become more clear-cut.” (P06)*

*“The big elephant in the room is, you know, the rise of warehouse-style pharmacies which has changed the perception of pharmacy for consumers. They think it's now very retail-focused. And so as a clinical pharmacist then, it's up to us to differentiate ourselves. So that's been a big change as well.” (P18)*

Sole reliance by pharmacy on a supply function was no longer seen as viable. Decreased revenue generated from dispensing prescriptions had led to increased service provision, where services were used as a point of difference between pharmacies. Furthermore, an increased scope of practice for pharmacists had led to perceived opportunities for further role expansion. However, participants believed that the quality of services may not be uniform across all pharmacies.

*“I think a lot more people now are preaching services. They're talking about it [more] than they used to be. I think a lot of pharmacies still might not have the same general concept of what's a service, [and] what isn't, type of thing. So I think, you know, a lot of pharmacies might just be focusing on things like blood pressure and blood sugar where I think there's so much more that a pharmacy can be involved in.” (P16)*

Overall, continued engagement in providing CPS by pharmacists was primarily motivated by patient satisfaction, professional satisfaction, view of the optimal direction towards which pharmacy should be heading, altruism, wanting to provide a service to the community to promote health, and duty of care. A positive outlook on pharmacy stimulated support for increased scope of practice as well as ongoing provision of CPS. The service-oriented ethos of community pharmacy or positive professional experiences involving senior members of the profession contributed to the service-oriented practice of several participants. External factors such as decreased profit margins for dispensing medicines and that other pharmacies were also offering services were also motivators for CPS provision.

### 3.2. Types of CPS provided

Participants provided a range of CPS, those funded by the 6CPA as well as others, which were either user-pay or free (unfunded). Core 6CPA-funded services reportedly being delivered in community pharmacies included dose administration aids (DAAs), Home Medicines Reviews (HMRs), MedsChecks/Diabetes MedsChecks, clinical interventions (CIs), and staged supply (Table 3).

Participants also reported non-6CPA CPS that were being provided and commented on their perceived impact, such as blood pressure (BP) checks and monitoring, cardiovascular disease (CVD) risk screening, pharmacist-delivered vaccinations, and opioid substitution therapy (OST) (Table 4).

A range of other CPS, that spanned other point-of-care testing services, services provided to aged care and related facilities, chronic disease

management (with or without diagnosis), and medication-oriented services, were also reported. These included blood glucose, cholesterol, and/or international normalised ratio (INR) testing; weight management services (which varied between pharmacies, from less structured to more structured programs, and were generally linked to the sale of weight management products); and hospital-related services (such as assisting with hospital discharge, dispensing/supply of medicines prescribed by the hospital doctors, ward stock audits, and destruction of dangerous drugs/other ward stock where necessary). The aged care, nursing home and/or disability facilities services included provision of DAAs, supply of medication stock to the facilities, destruction of dangerous drugs, participation in Medication Advisory Committee meetings, medication reconciliation efforts, and/or facilitation of transitions of care.

### 3.3. Perceived impacts of CPS provided

Broad perceived benefits of CPS reported, included improved patient accessibility to services and convenience; community pharmacy as a triage system; cost-effective facilitation of quality use of medicines (QUM); improved patient adherence, satisfaction, and loyalty; and improved rapport with patients and patient health management through counselling and intervention(s); and/or improved patient education and empowerment.

*“There's always more positive health outcomes because anyone who's agreed to come and spend time with the pharmacist, you're usually getting people who generally are concerned with their health. You're not getting people who are a bit blasé about things or don't have an interest..... If you've got*

**Table 3**  
Summary of 6CPA-funded services reported being provided by participants and their perceived impact.

Service	Description provided by participants	Perceived impact of service
Dose administration aids (DAAs) <sup>22</sup>	<ul style="list-style-type: none"> <li>One of the most common services provided by pharmacies in which the participants worked.</li> <li>Provided to both community-based patients (supported by 6CPA funding) and residents of aged care facilities (not supported by 6CPA funding).</li> <li>Other pharmacy staff were involved with packing DAAs in many instances; however, a pharmacist was responsible for checking DAAs.</li> <li>Pharmacists also liaised with doctors where necessary regarding any issues, changes and/or prescriptions required.</li> <li>DAAs were often delivered to the patients, with no additional fees charged for delivery.</li> </ul>	<ul style="list-style-type: none"> <li>Afforded the pharmacist an opportunity to “informally check compliance” (P06)</li> <li>Enabled quality use of medicines through improved adherence</li> <li>Increased patient satisfaction and loyalty</li> <li>Increased direct and indirect adherence monitoring opportunities</li> <li>Reduced medication-taking related errors</li> <li>Increased medication-taking convenience for the patient</li> <li>Enabled more effective medication management among the patient population</li> <li>Guaranteed that prescriptions for the medicines packed in the DAA would be dispensed by that particular pharmacy</li> </ul>
MedsChecks/ Diabetes MedsChecks <sup>23</sup>	<ul style="list-style-type: none"> <li>Consultation between the pharmacist and the respective patient (expected to benefit from/eligible for a MedsCheck) and requires pharmacists to use their expertise in health and medicines.</li> <li>Discussions centred on the patient's medicines, how they were being used, answering any queries the patient may have, and relevant patient education/reinforcement.</li> <li>An assessment of the patient's current medications for any potential interactions and/or the need for referral (e.g., for an HMR) was also conducted.</li> <li>A report was also written on the findings and recommendations from the MedsCheck.</li> <li>In general, the time taken to conduct a MedsCheck was reported to be at least approximately 20–30 mins, and possibly up to an hour depending on the individual.</li> <li>MedsChecks reportedly linked to other services.</li> </ul>	<ul style="list-style-type: none"> <li>That “it gets the conversation going about something” (P16), an opportunity to bring up any concerns</li> <li>Timely intervention that does not depend on a formal request from a doctor</li> <li>Improved patient education and identification of medication-related problems</li> <li>May lead to a reduction in the number of medicines the patient has been taking (which may lead to potential economic and/or health benefits for the patient)</li> <li>Improved patient adherence due to increased understanding about their medicines and the rationale for their use</li> <li>Positive patient health outcomes due to the benefits from a MedsCheck</li> <li>Improved patient perception that the pharmacy is service-driven</li> </ul>
Home Medicines Review (HMR) <sup>24</sup>	<ul style="list-style-type: none"> <li>Involved an initial interview with the patient in the patient's home in order to obtain relevant information about the patient and their medicines.</li> <li>After sourcing relevant information e.g. recent blood test results, the pharmacist would undertake an assessment of the medication regimen, identify any medication-related problems, and formulate recommendations which were summarised in a written report sent to the patient's pharmacy and their doctor.</li> </ul>	<ul style="list-style-type: none"> <li>Positive feedback from doctors on the HMRs and frequent implementation of the pharmacist's recommendations</li> <li>Positive feedback on the HMR process from patients</li> <li>Positive driver for pharmacy loyalty</li> <li>Despite tangible impacts such as reviewed dosages and decreased pill burden, one participant noted that the impact of HMRs on health outcomes was “a hard one to..... see in a short time” (P12)</li> </ul>
Clinical interventions (CIs) <sup>25</sup>	<ul style="list-style-type: none"> <li>Interventions related to over-the-counter medicines.</li> <li>Problems/issues detected and resolved by the pharmacist.</li> <li>Potential interactions between medicines identified and resolved.</li> <li>Prevention of inappropriate medication use.</li> </ul>	<ul style="list-style-type: none"> <li>Positive benefits for patients due to the utilisation of pharmacists' health and medicines expertise e.g. prevention of side effects. The impact could vary according to the nature of the CI itself.</li> </ul>
Staged supply <sup>26</sup>	<ul style="list-style-type: none"> <li>Medicines supplied to the patient in instalments, over a period of time.</li> <li>Inter-professional collaboration between the prescriber and pharmacist was noted.</li> <li>Intended to help reduce the likelihood of overdosing, potential misuse or abuse, and to help promote their safer use with associated monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>“When they do come back to us, they feel like there is a point of care and that's increasing health outcomes. But also like, we are able to monitor how they are going and then we can communicate with their doctor. So it builds a rapport for all of these..... So I guess it impacts on their health.” (P05)</li> </ul>

someone for half an hour of their time, you generally know that they're going to take things seriously....." (P21)

However, it was noted that it was difficult to determine the true impact of CPS. The economic impact of CPS was multifactorial. Participants stated that the reimbursement for pharmacists' time associated with CPS provision at present was insufficient, where increased time was required to provide CPS.

### 3.4. Training to facilitate cognitive pharmaceutical service provision

Training that had been completed by pharmacists varied between undergraduate training, self-directed learning, and completion of accredited training courses. Of the service-specific training completed, accreditation courses were more likely completed for pharmacist-led vaccination, HMRs, and compounding. Non-specific training discussed for the services

**Table 4**  
Summary of non-6CPA funded services reported to be provided by participants and their perceived impact.

Service	Description provided by participants	Perceived impact of service
Opioid substitution therapy (OST) <sup>27</sup>	<ul style="list-style-type: none"> <li>Pharmacists' roles included interviewing patients potentially eligible to commence OST, measuring out doses for patients (including take-away doses and relevant labelling/dispensing of the OST, where applicable), and supervision of dosing at the pharmacy.</li> </ul>	<ul style="list-style-type: none"> <li>Economically and health-wise: <i>"it is definitely a beneficial service that we are providing like monetary-wise, financially, and also I guess service-wise, because it's much better for them to be on this program than doing what they were previously"</i> (P07)</li> </ul>
Pharmacist-delivered flu vaccinations <sup>28</sup>	<ul style="list-style-type: none"> <li>Answering initial patient queries regarding the vaccination, and patient completion of a consent form.</li> <li>Administering flu vaccinations.</li> <li>Monitoring patients in the pharmacy for 15 mins post vaccination.</li> <li>A few participants also mentioned that the patient or GP was provided with a record/letter that detailed the flu vaccination received by the patient.</li> </ul>	<ul style="list-style-type: none"> <li>Improved accessibility to, and uptake of, vaccinations by people who would not have otherwise been vaccinated</li> <li>Increased convenience for patients in receiving flu vaccinations</li> <li>Improved cost-effectiveness for the patient i.e. reduced time for patients to be vaccinated in comparison to wait times that would be associated with GP visits</li> <li>Positive feedback on the service from patients</li> <li>Improved professional satisfaction for pharmacists in being able to offer the service</li> <li>Opportunity for delivery of other services like MedsChecks when people are in the pharmacy for vaccination</li> </ul>
Blood pressure (BP) checks/ monitoring/ cardiovascular disease (CVD) risk screening <sup>29</sup>	<ul style="list-style-type: none"> <li>Most common health screening check/monitoring service offered, where most pharmacies offered it at no cost to the customer.</li> <li>Nature of the BP checks/monitoring service described by participants varied, ranging from self-service to pharmacist involvement.</li> <li>Although pharmacist-trained staff members may have taken the BP measurement, in general, the pharmacist or intern pharmacist was involved at some point in the provision of the service, in particular when interpreting the BP reading(s).</li> <li>A triage system was implemented in some pharmacies where if the BP reading was recognised as high or low, or if the patient had further queries, the pharmacist would then be involved by way of further counselling and/or recommendations for follow-up readings to be taken.</li> <li>Referral to the doctor also occurred where necessary.</li> <li>Counselling on cardiovascular risk, diet and/or lifestyle that could improve their BP, where relevant, was also provided by the pharmacist or intern pharmacist.</li> </ul>	<ul style="list-style-type: none"> <li>Level of perceived convenience and/or cost-effectiveness for the patient associated with doing BP checks at the pharmacy, and improved accessibility and/or motivation for members of the community to monitor their health. This was perceived to translate into patient satisfaction and/or loyalty to the pharmacy</li> <li><i>"By offering that ongoing free service of blood pressure monitoring, we can recognise when, you know, maybe their regimen could be improved, whether their dose is appropriate. So that in itself is directly help[ing] their health. At least we hope."</i> (P06)</li> </ul>
Sleep apnoea services <sup>30</sup>	<ul style="list-style-type: none"> <li>Included both the facilitation of at-home diagnostic testing for sleep apnoea and/or treatment of sleep apnoea i.e. continuous positive airway pressure (CPAP) machine provision and support for patients with sleep apnoea.</li> <li>Following completion of the home test, the machine was returned to the pharmacy, where the relevant data was downloaded from the machine and sent to a specialist for interpretation. A report was then provided to the pharmacy and/or GP. Where sleep apnoea was diagnosed, patients had the option of trialling a CPAP machine (in the case of moderate or severe sleep apnoea for instance) for a period of time and purchasing one for use at home in order to help manage their sleep apnoea.</li> <li>Support of patients using the CPAP machines as part of the treatment/management of sleep apnoea involved regular review of their results to check for adherence and ensure appropriate maintenance and use.</li> </ul>	<ul style="list-style-type: none"> <li>Comfort and convenience of the option for in-home sleep apnoea diagnostic testing</li> <li>Participant working in a rural/regional pharmacy also noted that it improved access to the testing as it meant that patients did not have to travel all the way to the city in order to do the test</li> <li>Positive benefits for those who were diagnosed with sleep apnoea and who were started on the use of a CPAP machine</li> </ul>
Diabetes education services <sup>31</sup>	<ul style="list-style-type: none"> <li>Where provided, diabetes education services involved the downloading of blood glucose meter readings, interpretation of these readings by the pharmacist, and subsequent counselling/patient education to assist with the patients' management of their diabetes.</li> </ul>	<ul style="list-style-type: none"> <li>One participant noted that the diabetes service helped with promoting customer loyalty <i>"because..... they felt that they're getting something special."</i> (P13)</li> </ul>
Compounding <sup>32</sup>	<ul style="list-style-type: none"> <li>A variety of medicines were able to be compounded.</li> <li><i>"We do all other non-sterile compounding, from veterinary compounding to women's health in terms of hormone replacement therapy, to men's health. Paediatric things..... commercial products from capsules to suspensions, you know, omeprazole suspensions that aren't available commercially."</i> (P21)</li> </ul>	<ul style="list-style-type: none"> <li>Patient satisfaction with compounded products, for example where the ability to tailor a medicine to the individual resulted in a better product for them</li> <li>One pharmacist proprietor also noted a higher level of financial reward and professional satisfaction associated with compounding due to the increased skills acquired and applied to provide the service</li> </ul>
Absence from work certificates <sup>33</sup>	<ul style="list-style-type: none"> <li>A consultation with the patient was conducted to ascertain whether the provision of an absence from work certificate was appropriate and within the scope of practice of the pharmacist. A certificate was issued to the patient where appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>Participants did not describe extensive impacts of this service</li> </ul>

typically included training received from company representatives and/or self-directed learning.

Financial support received for training undertaken by pharmacists varied; the most common course that was financially covered by employers was pharmacist-led vaccination training. However, training opportunities received by staff potentially varied depending on their role within the pharmacy.

### 3.5. Financial reimbursement for the provision of services

Sources of funding reported were either government or user-pay sources, with several services provided for free (unfunded). Reimbursements received for user-pay CPS varied between services and between pharmacies (Table 5).

Alternative sources of funding other than government funding or user-pay funding models were not commonly cited; however, one source that was mentioned was the financial incentive of AUD \$5–10 received from blood glucose monitor manufacturers for downloading and printing reports of blood glucose readings. This was a unique form of funding in comparison to other models as it was provided by the manufacturer themselves.

Profit margins on user-pay services were minimal. Moreover, a few participants noted that they had to decrease the fee-for-service for pharmacist-led vaccinations due to increased competition. Participants felt that increased competition has also fuelled a degree of expectation for service (s) to be provided at no additional cost, which has resulted in a shift in who bears the costs associated with providing the service. Pharmacists were cognizant of the notion that fee-for-service, although desired, should not act as a barrier for service uptake among patients. User-pay funding models were not deemed appropriate for all CPS, for instance blood pressure checks, as pharmacists perceived that patients expected the service (s) to be offered for free. The appropriateness of charging for services or monitoring considered necessary, such as blood pressure and blood glucose checks, was also raised.

*"I agree that we should be remunerated for our services, but at the same time if someone comes in and you feel that they really need..... a blood sugar measure or a blood pressure measurement, well one, I would feel awkward saying 'I think you need this' and then charging them..... I don't really see that as a true service..... that's more of a goodwill thing that pharmacies should provide as ongoing monitoring." (P16)*

Perceived receptivity among patients for fee-for-service models was mixed. Encouraging customer loyalty and maintaining rapport with other service users (e.g., aged care facilities) were facilitators for providing services for 'free'. Charging a nominal fee for some services was introduced, on occasion, using a stepwise approach. The rationale for this approach was to modify patients' expectations regarding free advice/service that had traditionally been made available through pharmacies; and in turn help patients place value on these services. Changing the mindset of patients regarding the introduction of a fee-for-service model was perceived to be harder for established services in comparison to new services such as pharmacist-led vaccinations.

*"We've always charged for [DAAs]. That's something that's been there since I started..... I think we are trying to change the mindset around blood pressure so that it's not just something free. So that's harder because consumers have been getting those for free for a long time. For immunisation, that was really easy because there was a brand-new service..... so that was certainly an easier one because you are applying a value to a pharmacist service that people have never had before." (P04)*

However, several pharmacists acknowledged that there was a degree of willingness to pay among patients (which may be more so than in the past) if they recognised the value in the service; if the benefits outweighed the cost, for instance the reduced wait time to receive their vaccination from the pharmacy in comparison to the GP surgery and the associated cost of

the pharmacist-administered vaccination; and if they appreciated the pharmacist's time dedicated to providing the service to them.

### 3.6. Perceptions of the work value of community pharmacists/pharmacy and the level of remuneration

Perceived core work value of community pharmacists centred on accessibility of health care and advice, and the resultant broader impact on the community. Participants perceived that pharmacists were undervalued by others (such as government, health care professionals, patients), which was negatively influenced by discount pharmacies. However, it was also acknowledged by the participants that pharmacists contributed to this undervaluing of the profession. Pharmacists perceived that governments should better recognise the value of pharmacists and remunerate appropriately.

Pharmacists recognised that there was limited profit earned for many CPS, where pharmacy proprietors noted that many services were being operated at a financial 'loss' to the pharmacy. As pharmacist roles were perceived as having expanded, there was support for recognition of this expansion both professionally and financially.

*"I feel the role has definitely expanded. I feel pharmacists today compared to five, ten years ago, are doing arguably more work and are working longer hours and spending a lot more time in private study than ever before to provide services that we may not have provided before or that are more efficient now and more comprehensive..... I have no argument for..... being recognised for that both professionally and as far as... pay as well." (P24)*

The government was an important stakeholder in facilitating the increased remuneration of pharmacists.

*"Nobody denies or doubts, from pharmacists to pharmacy owners to academics, that a pharmacist should be paid more. The question is who should wear that payment? A pharmacy owner is also a pharmacist. So they're also a business person. Should they have to... cough up more? I don't think so. I actually think the government; the only answer I can think of is either user-pay, which we know the sickest and most vulnerable in our population are not the ones that can access the user-pay [services]." (P01)*

In general, employee pharmacists did not receive additional reimbursements for delivering services within the community pharmacy above their regular salary. Some pharmacists felt that their wage received as an employee pharmacist was inadequate and did not reflect their knowledge, skills, and contribution to health care.

*"Look, the income is quite rubbish..... When I came out as a pharmacist, I was earning more per hour than I am now 15 years later. As a community pharmacist, I think with my experience, I'm delivering more. I'm offering more help and more experience to the patient..... I'm getting paid a good \$7 – \$8 less than what I was getting paid when I first came out 15 years ago as a pharmacist, where I had zero experience or one year of experience. And that is a bit disillusioning because sometimes you do start to think that 'Okay, I'm going to be working for six, seven hours. Is it worth my time?', you know, because I'm still gonna get paid that much. So do I need to go out of my way to do X, Y and Z or can I just do the bare minimum because I'm not going to get paid any more?" (P03)*

A multitude of factors were acknowledged as influencing pharmacist wage levels. Several pharmacists reported negotiating their wages and believed that the onus was on the pharmacist to demonstrate their value to their employer and to negotiate their wage accordingly.

## 4. Discussion

Participating pharmacists reported that their pharmacies were currently offering a wide range of CPS, both 6CPA and non-6CPA funded, where key

**Table 5**  
Summary of user-pay services.

Cognitive Pharmaceutical Service	N, total number of participants reported the service being offered	N, no fee-for-service paid by patients	N, user-pay fee-for-service	Minimum amount charged (AUD \$)	Maximum amount charged (AUD \$)	Median charge (based on user-pay fee-for-service) (AUD \$)
Dose Administration Aids	25 <sup>a,b</sup>	4	20	0	5.20 or 5.30	4.25 (for n = 20)
Flu vaccinations	13 <sup>c</sup>	0	11	14.95	30	19.95 (for n = 11)
Blood glucose checks	14 <sup>c,d</sup>	8	4	0	10	6.50 (for n = 4)
Cholesterol checks <sup>a,e</sup>	7	1	4*	0	30	10 (for n = 3)*
Blood pressure/ Cardiovascular disease checks	24 <sup>c</sup>	21**	1	0	2 (non-concession) 1 (concession)	2 (non-concession) 1 (concession) (for n = 1)
Sleep apnoea (diagnostic testing)	8 <sup>a</sup>	0***	6***	99	150 (non-concession)	100 (for n = 5)***
Opioid substitution therapy	11 <sup>f</sup>	0	7	30	42	35 per week (for n = 7)
Weight management	5 <sup>a</sup>	2	2	0	50 (initial consult fee)	50 (for n = 2)
Absence from work certificates	6	0	6	20	30	27.50 (for n = 6)

<sup>a</sup> Missing fee-for-service data for one participant.

<sup>b</sup> Two pharmacists reported that DAAs were offered in one of two pharmacies that they worked in.

<sup>c</sup> Missing fee-for-service data for two participants.

<sup>d</sup> One participant mentioned that they provided blood glucose checks as part of their participation in the diabetes screening 6CPA-funded Pharmacy Trial, therefore not a user-paid service.

<sup>e</sup> Two participants stated that the cholesterol testing was primarily integrated in the weight management programs that were offered in the pharmacy (one participant also mentioned that testing was available independently of the weight management program, despite no direct requests for the service from patients); therefore, calculation of the median did not include these.

<sup>f</sup> Missing fee-for-service data for four participants.

\* Stand-alone cholesterol checks (i.e., excluding checks integrated into weight management programs); one participant stated that they were unsure of the specific amount but that there was a charge to cover the cost of the test strip if a cholesterol check was requested on its own (however testing was primarily integrated in the weight management program).

\*\* One participant stated regarding blood pressure measurements: "We encourage a donation..... but that doesn't go to remunerating the staff members for taking the blood pressure." Therefore, this was considered as not fee-for-service.

\*\*\* One participant was unsure of the exact costs to the patient involved in providing the service; one participant was not completely sure however was of the mind that there was no charge for obtaining readings off the continuous positive airway pressure machine (however, this does not appear to relate to diagnostic testing).

CPS offered on an ongoing basis could be categorised as those aimed at medication management and review, point-of-care testing/screening/monitoring, chronic disease management and/or diagnosis, and vaccinations. Training completed by pharmacists to support CPS provision ranged from self-directed learning to completion of formal accreditation courses. Key perceived impacts of community pharmacy and the CPS provided included facilitating access to primary health care, patient monitoring due to regular contact, and the potential to contribute towards coordinated care. At a system level, CPS were considered by pharmacists to deliver savings for the overall health care system. However, at a pharmacy level, remuneration received for pharmacists' time associated with CPS provision was considered inadequate; remuneration ranged from no revenue, to 6CPA funding, to user-paid services.

The broad profile of CPS identified in the present study accords with CPS identified in previous research,<sup>7,11,12,17,34</sup> including the provision of unfunded services identified in a recent study from New Zealand.<sup>35</sup> Widespread provision of 6CPA-funded services is likely attributed to the available government funding that supports ongoing provision. Collectively, the identified range of CPS suggests that this qualitative study has captured the diversity of CPS offered in Australian community pharmacies and supports the validity of the study sample.

Interestingly, non-6CPA funded services such as weight management and smoking cessation services were only reported by a small proportion of participants. Considering that most pharmacies commonly stock products such as nicotine replacement therapy options and very low-calorie diet products/meal replacements, this was surprising. One explanation may be that certain CPS may be regarded now by some pharmacists as 'routine practice' or an extension of dispensing-related activities rather than formalised CPS and thus not flagged for discussion. This emphasises that services may have become normalised in the provision of health care within the community pharmacy setting and have altered routine pharmacy

practice. As a result, it is possible that all CPS provided during routine community pharmacy practice were not captured.

Key perceived impacts of CPS identified in the present study, included their convenience and accessibility, improved patient education and quality use of medicines, which concurs with previous research.<sup>12</sup> Difficulty in appraising the actual impact of CPS was acknowledged by participants, notwithstanding their perceptions of the broader impacts on health and/or economic outcomes. Although the accessibility of community pharmacists as health care professionals is well recognised,<sup>2,12,13</sup> how this translates to improved outcomes from CPS is difficult to ascertain. Compulsory cost-effectiveness appraisal for CPA-funded services, for instance, was only formally introduced as part of the 6CPA.<sup>14</sup> Furthermore, pharmacies may not have the financial resources to support cost-effectiveness studies for specific CPS being delivered. This highlights the need for longitudinal studies and improved CPS impact indicators that can be integrated into routine practice. To determine the quality and impact of CPS within the Australian context, future research should focus on gathering comprehensive economic, clinical, and humanistic outcomes data for the CPS currently implemented in practice. This will help determine where the work value of community pharmacists is most substantial, in the short, medium, or long term, and serve to inform the development of evidence-based standards and guidelines relevant to practice. Participants also commented on lack of uniformity in the quality of CPS provided by pharmacists. Whilst the reports were based on perceptions, it is important that assessment of quality of services provided focuses on the delivery of the service, and process evaluates the service provided, in addition to the impact of the service, as measures of service quality.

Pharmacists perceived the CPS they offered as having professional value for themselves (thus yielding professional satisfaction in their delivery), value with respect to the positive impacts for patients (predominantly centred on timely, convenient access to services in the primary care setting,

potentially contributing to improved health), value for the pharmacy (via indirect and direct remuneration received for CPS), and value for the health care system (translated as perceived net savings with respect to overall government health care expenditure). The value of CPS being offered by pharmacists has been recognised,<sup>13</sup> not only by others but by the pharmacists who are actively delivering these CPS, as also underscored by the findings of this study. However, the concept of perceived value of CPS is complex and is likely to vary in relation to different CPS and viewpoints. It is therefore important to assess the value of CPS delivered by pharmacists from the perspectives of a range of stakeholders, such as patients and the public receiving the services, other health care professionals, health insurance organisations and the government.

Perceived barriers to CPS provision and potential for expansion of CPS, such as financial viability of CPS provision, economic pressures, the increased resources required (e.g., need for increased staff to support CPS delivery, restrictions on available space necessary to provide CPS in the pharmacy), have been echoed in previous research that explored screening in the community pharmacy setting.<sup>36</sup> Changes in the profession from increased competition and revenue changes coupled with trends in increased CPS provision, represent an ongoing tension between the professional and business aspects of pharmacy that must be reconciled to promote the value of CPS for all key stakeholders. As the concept of value is fluid and perspective-dependent, it is important that the government's perception of the value of CPS aligns with the views of the profession as well as patients. This will encourage ongoing and expanded CPS funding to improve the financial viability of its provision and importantly, patient health outcomes.

In common with the findings of this study, the majority of CPS globally are funded via user-pay models or the CPS delivery costs are borne by the pharmacy itself.<sup>37</sup> Among participants, remuneration at both a pharmacy level as well as a pharmacist level for providing CPS was regarded as suboptimal. In accordance with the issues raised by participants, the profession is cognizant of the factors that have influenced the level of remuneration and viability of community pharmacy, such as the emergence of discount models of pharmacy and other reforms. Suboptimal remuneration continues to be a problem as perceived by members of the profession.<sup>2,38</sup> Within an international context, Australia has limited established government and/or third party payer systems of remuneration for the provision of CPS in comparison to other countries/regions of the world.<sup>39</sup> Improved remuneration in the short term, as well as systems to support ongoing improved levels of remuneration in the long term, are critical to enabling community pharmacists to deliver CPS and provide collaborative, patient-centred health care to their patient populations. The present study findings also suggest that remuneration of the individual pharmacist delivering a service to a patient is desired by members of the profession even though it is broadly absent in current systems of pharmacist remuneration within the Australian context.

There are limitations to this study. The two-pronged approach to recruitment helped to capture pharmacists both within the research team's networks who are engaged in CPS but also via the PPA membership network. However, there was a limited response rate from the PPA mail-out. The potential for self-selection bias for participation in the study is acknowledged as there were no reimbursements provided for time and/or travel associated with participation. There was a slight skew in the overall sample towards younger participants (despite pharmacists of a wide range of ages being approached) with most pharmacists having less than 10 years of experience. However, data saturation was achieved, and the range of CPS covered were similar to those reported in the literature.<sup>7,11,12,17,34</sup> Whilst generalisability was not the aim of this qualitative study, the study findings may not be representative of other pharmacy settings or community pharmacy practice in Australia, especially as the majority were from the state of New South Wales. The focus of the interview discussions was not on dispensing-related duties but on CPS. Thus, this study did not capture the full spectrum of the work value of a community pharmacist but a subset of the tasks and responsibilities inherent within the community

pharmacist's role. Furthermore, some services may not be offered on a routine basis and thus may have been inadvertently forgotten by the participant and not mentioned during the interview. Consequently, there is likely to be under-reporting of the services being offered in pharmacies as a result.

## 5. Conclusions

Pharmacists are offering a broad range of CPS within the community pharmacy setting via 6CPA-funded initiatives as well as non-6CPA initiatives which are unfunded or user-pay. CPS provision was perceived to have positive impacts at both patient and health care system levels. Pharmacists felt they enabled timely and convenient access to health care for patients in the community pharmacy setting, and facilitated quality use of medicines, which then in turn had some positive impact on the community pharmacy business.

A prominent shift was evident, where professional services provision has become the new status quo, indicative of a likely shift in the work value of community pharmacists. Despite the increasing provision of services and integration of CPS delivery within the community pharmacist's role, in most cases there was no additional reimbursement received by the pharmacist to deliver services specifically, other than the level of wages received. Pharmacists were aware of the complexities inherent within the impact of community pharmacy sector reforms, and CPS provision alongside the viability of the sector. However, it is imperative that pharmacists are recognised professionally and financially for all of their contributions as health care professionals within the broader health care system. The quality, frequency and extent of CPS depend on increased recognition of the services by all key stakeholders.

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## Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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## References

1. Moullin JC, Sabater-Hernández D, Fernandez-Llimos F, Benrimoj SI. Defining professional pharmacy services in community pharmacy. *Res Social Adm Pharm* 2013;9: 989–995.
2. Hermansyah A, Sainsbury E, Krass I. Investigating influences on current community pharmacy practice at micro, meso, and macro levels. *Res Social Adm Pharm* 2017;13: 727–737.
3. Tong V, Krass I, Luckie K, Aslani P. The evolving profile of cognitive pharmaceutical services in Australia. *Res Social Adm Pharm* 2021. <https://doi.org/10.1016/j.sapharm.2021.03.011>. Mar 26:S1551–7411(21)00117–0. [Epub ahead of print].
4. Australian Government Department of Health and Ageing. Compilation of the Fourth Community Pharmacy Agreement between The Commonwealth of Australia and The Pharmacy Guild of Australia. [https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Community-Pharmacy-Agreements/fourth-community-pharmacy-agreement-\(2005-2010\).pdf?sfvrsn=0](https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Community-Pharmacy-Agreements/fourth-community-pharmacy-agreement-(2005-2010).pdf?sfvrsn=0) 2007. (Published 2007. Accessed 04.12.20).
5. Australian Government Department of Health. Seventh Community Pharmacy Agreement. [https://www1.health.gov.au/internet/main/publishing.nsf/Content/214EBA91932A5572CA25844E001B779C/\\$File/Seventh%20Community%20Pharmacy%20Agreement%20\(execution%20version\).docx](https://www1.health.gov.au/internet/main/publishing.nsf/Content/214EBA91932A5572CA25844E001B779C/$File/Seventh%20Community%20Pharmacy%20Agreement%20(execution%20version).docx) 2020. (Published 2020. Accessed 20.10.20).



6. University of Technology Sydney. UTS Pharmacy Barometer Cegedim Strategic Data April 2012. <https://www.uts.edu.au/sites/default/files/barometer-apr12.pdf> 2012. (Published April 2012. Accessed 04.12.20).
7. University of Technology Sydney. UTS Pharmacy Barometer Cegedim Strategic Data October 2012. <https://www.uts.edu.au/sites/default/files/barometer-oct12.pdf> 2012. (Published October 2012. Accessed 04.12.20).
8. University of Technology Sydney. UTS Pharmacy Barometer November 2013. <https://www.uts.edu.au/sites/default/files/Barometer-nov13.pdf> 2013. (Published November 2013. Accessed 04.12.20).
9. University of Technology Sydney. UTS Pharmacy Barometer October 2014. [https://www.uts.edu.au/sites/default/files/UTS-Barometer-report-4-web\\_0.pdf](https://www.uts.edu.au/sites/default/files/UTS-Barometer-report-4-web_0.pdf) 2014. (Published October 2014. Accessed 04.12.20).
10. University of Technology Sydney. UTS Pharmacy Barometer October 2015. <https://www.uts.edu.au/sites/default/files/UTS%202015%20Community%20Pharmacy%20Barometer.pdf> 2015. (Published October 2015. Accessed 04.12.20).
11. University of Technology Sydney. UTS Pharmacy Barometer October 2016. <http://www.uts.edu.au/sites/default/files/2016%20UTS%20Pharmacy%20Barometer%20web.pdf> 2016. (Published October 2016. Accessed 04.12.20).
12. Tordoff J, Chang SY, Norris PT. Community pharmacists' perceptions of services that benefit older people in New Zealand. *Int J Clin Pharm* 2012;34:342–350.
13. McMillan SS, Wheeler AJ, Sav A, et al. Community pharmacy in Australia: a health hub destination of the future. *Res Social Adm Pharm* 2013;9:863–875.
14. Australian Government Department of Health. Sixth Community Pharmacy Agreement. <http://www.pbs.gov.au/general/pbs-access-sustainability/signed-sixth-community-pharmacy-agreement-commonwealth-and-pharmacy-guild.pdf> 2015. (Published 2015. Accessed 04.12.20).
15. Waterman P. Consumers Overwhelmingly Back Professional Service Delivery. <http://guild.org.au/news-events/forefront/forefront-article/2016/11/16/consumers-overwhelmingly-back-professional-service-delivery> 2016. (Published 2016. Accessed 21.11.16).
16. Consumers Health Forum of Australia. Pharmacists and Primary Health Care Consumer Survey: Results and Discussion July 2015. <https://chf.org.au/sites/default/files/survey-report-consumer-voices-on-pharmacists-and-phc.pdf> 2015. (Published July 2015. Accessed 23.02.21).
17. Sim TF, Wright B, Hattingh L, Parsons R, Sunderland B, Czarniak P. A cross-sectional survey of enhanced and extended professional services in community pharmacies: a pharmacy perspective. *Res Social Adm Pharm* 2020;16:511–521.
18. Nowell LS, Norris JM, White DE, Moules NJ. Thematic analysis: striving to meet the trustworthiness criteria. *Int J Qual Methods* 2017;16:1–13 <https://journals.sagepub.com/doi/full/10.1177/1609406917733847> 2017.
19. Miles MB, Huberman AM. *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd ed. Thousand Oaks, CA: Sage Publications. 1994.
20. Green J, Thorogood N. *Qualitative Methods for Health Research*. 3rd ed. London, UK: Sage Publications. 2014.
21. Guest G, Bunce A, Johnson L. How many interviews are enough?: an experiment with data saturation and variability. *Field Methods* 2006;18:59–82.
22. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Dose Administration Aids (DAAs). <https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/dose-administration-aids.pdf?sfvrsn=0>. (Accessed 04.12.20).
23. Pharmaceutical Society of Australia. Guidelines for Pharmacists Providing MedsCheck and Diabetes MedsCheck Services. <http://6cpa.com.au/files/psa-guidelines-for-pharmacists-providing-medscheck-and-diabetes-medscheck-2/> 2017. (Published 2017. Accessed 22.12.20).
24. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Home Medicines Review (HMR). <http://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/hmr.pdf?sfvrsn=0>. (Accessed 04.12.20).
25. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Clinical Interventions. <https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/clinical-interventions.pdf?sfvrsn=0>. (Accessed 04.12.20).
26. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Staged Supply. <https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/staged-supply.pdf?sfvrsn=0>. (Accessed 04.12.20).
27. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Opioid Dependence Treatment. <http://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/opioid-dependence-treatment-programs.pdf?sfvrsn=0>. (Accessed 04.12.20).
28. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Vaccine Administration. <https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/vaccine-administration.pdf?sfvrsn=0>. (Accessed 04.12.20).
29. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Health Checks - Screening and Monitoring. <https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/health-checks-monitoring-screening.pdf?sfvrsn=0>. (Accessed 04.12.20).
30. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Sleep Apnoea Support Services. <https://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/sleep-apnoea-clinics.pdf?sfvrsn=0>. (Accessed 04.12.20).
31. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Chronic Disease Management. <http://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/chronic-disease-management.pdf?sfvrsn=0>. (Accessed 04.12.20).
32. The Pharmacy Guild of Australia. Community Pharmacy Roadmap Program Development Template- Enhanced Compounding Services. <http://www.guild.org.au/docs/default-source/public-documents/tab—the-guild/Strategic-Direction/compounding-services.pdf?sfvrsn=0>. (Accessed 04.12.20).
33. Pharmaceutical Society of Australia, The Pharmacy Guild of Australia. Absence from Work Certificates: Guidelines for Pharmacists. <https://www.knowledgehub.qcppp.com/docs/librariesprovider4/member-documents/knowledge-hub/guidelines/absence-from-work-guidelines.pdf?sfvrsn=2> 2018. (Published 2018. Accessed 04.12.20).
34. The Pharmacy Guild of Australia. Pharmacy Services Expectations Report, April 2014. <https://www.guild.org.au/docs/default-source/public-documents/issues-and-resources/pharmacy-services-expectations-survey-report-april-20141ed28133c06d6d6b9691ff00026bd16.pdf?sfvrsn=0> 2014. (Published April 2014. Accessed 04.12.20).
35. Abdul Aziz YH, Heydon SJ, Duffull SB, Marra CA. What free services do pharmacists offer? Investigating the provision of unfunded pharmacy services in community pharmacies. *Res Social Adm Pharm* 2021;17:588–594.
36. McNamara KP, Peterson GM, Hughes J, et al. Cardiovascular disease risk assessment in Australian community pharmacy. *Heart Lung Circ* 2017;26:667–676.
37. Pinto GS. *Pharmacy: A Global Overview – Workforce, Medicines, Distribution, Practice, Regulation and Remuneration 2015–2017*. The Hague, The Netherlands: International Pharmaceutical Federation. 2017.
38. Pharmaceutical Society of Australia. Early Career Pharmacist White Paper 2017. <http://www.psa.org.au/wp-content/uploads/PSA-ECP-White-Paper-Final-Web-Version.pdf> 2017. (Published 2017. Accessed 06.10.17).
39. Pharmaceutical Society of Australia. Optimising Pharmacists' Contribution to Health: an Australian Snapshot 2017. <http://www.psa.org.au/wp-content/uploads/PSA-Snapshot-Flyer1.pdf> 2017. (Published 2017. Accessed 06.10.17).