

Australian community pharmacy mental health role

## **FULL TITLE**

**Exploring an increased role for Australian community pharmacy in mental health professional service delivery: evaluation of the literature**

## **ABSTRACT**

### **Background:**

Australian general practitioners primarily treat mental health problems by prescribing medication dispensed by community pharmacists. Pharmacists therefore have regular interactions with mental health consumers and carers.

**Aims:** This narrative review explored the potential role of community pharmacy in mental health services.

**Method:** Medline, CINAHL, ProQuest, Emerald, PsycINFO, Science Direct, PubMed, Web of Knowledge and IPA were utilised. The Cochrane Library as well as grey literature and “lay” search engines such as GoogleScholar were also searched.

**Results:** Four systematic reviews and ten community pharmacy randomised controlled trials were identified. Various relevant reviews outlining the impact of community pharmacy based disease state or medicines management services were also identified.

**Conclusion:** International studies involving professional service interventions for mental health consumers could be contextualised for the Australian setting. Australian studies of pharmacy professional services for chronic physical health conditions provided further guidance for the expansion of community pharmacy mental health professional services.

### **Declaration of interest:**

This study was funded by the Australian Government Department of Health as part of the Fifth Community Pharmacy Agreement Research and Development Programme managed by

the Pharmacy Guild of Australia. The financial assistance provided must not be taken as endorsement of the contents of this report.

**KEYWORDS**

Community pharmacy, mental health, medication management, professional service, adherence, intervention

## **INTRODUCTION**

The management of mental health problems constitutes a significant part of general practice (GP) . and data provided by the Australian Institute of Health and Welfare (AIHW) estimated that approximately 12.1% of GP encounters in 2011-12 involved a component of mental health (Australian Institute of Health and Welfare, 2013). This translates to almost 15.0 million mental health-related GP encounters annually and the most common management option was to prescribe, supply or recommend medication (Australian Institute of Health and Welfare, 2013). There were 31.1 million prescriptions dispensed for mental health-related medicines subsidised under the Pharmaceutical Benefits Scheme (PBS) and the Repatriation Pharmaceutical Benefits Scheme (RPBS) in 2012-13, accounting for 11.4% of all prescriptions (Australian Institute of Health and Welfare, 2014). GPs generated 86% of prescriptions while psychiatrists and non-psychiatric specialists prescribed 8% each; the majority of prescriptions were for antidepressant medicines (65.9%) followed by anxiolytics (12.2%), antipsychotics (10.6%) and hypnotics and sedatives (8.7%) (Australian Institute of Health and Welfare, 2014).

Prescriptions were dispensed at community pharmacies approved to provide PBS and RPBS medicines. Community pharmacists therefore have regular contact with mental health consumers and as medication management experts have potential to play an increased role in assisting consumers with high prevalence illnesses such as depression and anxiety with medication related problems (MRPs). Although the appropriate use of medicines forms an integral part of effective management of mental illness, data shows medicines are often used sub-optimally (Meagher & Moran, 2003; Mort & Aparasu, 2002). Medication adherence to manage mental illness, like most chronic conditions, is an ongoing international concern (World Health Organization, 2008; World Health Organization and

World Organization of Family Doctors, 2008). Regular interaction between community pharmacists and mental health consumers provide pharmacists with opportunities to work with consumers to address MRPs, facilitate communication with prescribers and other members of the healthcare team, and improve medication adherence.

This narrative review focused on literature reporting professional community pharmacy service delivery to improve mental health medication use. It incorporated community pharmacy studies in other areas including chronic conditions, those diseases requiring lifestyle change and those for which there potentially is stigma attached as recent research has highlighted that there is still stigma attached to mental illness despite numerous education campaigns (Knox et al., 2014).

The narrative review was undertaken considering that:

- Mental illness is common in the Australian community with the 2007 National Survey of Mental Health and Wellbeing revealing one in five adults had been affected by mental illness at some time during the previous 12 months (Australian Bureau of Statistics, 2008).
- In Australia, mild to moderate mental illnesses such as anxiety-related disorders are most common (14.4%) followed by mood disorders (6.2%) such as depression (Australian Bureau of Statistics, 2008).
- Government mental health policy supports the management of mild to moderate mental illnesses at primary care level (Roxon et al., 2011).
- Only one third of those with a mental illness used health services for problems with their mental health in the previous 12 months (Slade et al., 2009).

- Community pharmacists are ideally positioned to provide medication management support to consumers with mental illness and their carers at primary healthcare level (Pharmaceutical Society of Australia, 2013)

## **METHODS**

A review of the literature was conducted during May to July 2013. Databases utilised included Medline, CINAHL, ProQuest, Emerald, PsycINFO, Science Direct, PubMed, Web of Knowledge and IPA. The search was limited to English-language studies published in peer-reviewed journals between January 2002 and December 2012. The search focused on systematic reviews about the provision of mental healthcare at primary care level and randomised controlled trials in developed countries of mental health services provided by pharmacists. Titles and abstracts of articles were scanned and discarded if they did not fit the selection criteria. Studies identified as potentially relevant were retrieved and screened for relevance.

The Cochrane Library, Pharmacy Guild of Australia, Pharmaceutical Society of Australia and government health sites were also searched as well as “lay” search engines such as GoogleScholar. University libraries were explored to access relevant theses if papers had not been published in peer-review journals.

This narrative review involved synthesis and sense-making of the literature as well as an interpretation of the studies in the context of professional service delivery in Australian community pharmacy. Search terms used were community pharmacy, community pharmacist AND mental health, interventions, services, service provision, medicines management, adherence, concordance, assessment and skills, attitudes, beliefs, stigma,

self-efficacy, collaboration, change, change management, practice change, barriers, facilitators.

## **RESULTS**

Four systematic reviews investigating the provision of medication management at primary care level and ten randomised controlled trials of mental health services provided by pharmacists were identified. A number of reviews outlining the impact of community pharmacy based disease state or medicines management services were also evaluated as well as literature on the Australian community pharmacy setting.

### **Community pharmacy mental health professional services**

Four systematic reviews were undertaken investigating the role of community pharmacy delivering mental healthcare services:

1. Bell et al. (2005) described pharmacy services to community based mental health consumers living at home or in residential care as well as clinical pharmacy services to other health professionals. This review provides evidence that pharmacists can contribute to optimising the use of medications in the community setting.
2. Rubio-Valera et al. (2011) focussed on pharmacist interventions to improve consumer adherence to antidepressant therapy. The authors suggested that a pharmacist intervention is effective in the improvement of consumer adherence to antidepressants but acknowledged that data were still limited.
3. Chong et al. (2011) reviewed 26 studies with interventions that improved both adherence and depression outcomes. Several of the studies were in primary care settings and the review concluded that educational interventions alone were

ineffective and that there was evidence for the need for multifaceted interventions including educational, behavioural, affective and provider targeted strategies.

4. Al-Jumah and Qureshi (2012) published a systematic review of the impact of pharmacist interventions on consumer adherence to antidepressants and patient-reported outcomes. The review concluded that pharmacists' interventions were effective in the improvement of adherence to antidepressants.

The systematic reviews largely focussed on improvements in adherence to medication and consumer/patient outcomes relating to depressive symptoms. These reviews are important as they lay the foundation for understanding what may and may not work for mental health consumers provided with medication management services by community pharmacists. From these systematic reviews eight RCTs were identified. Another two RCTs were added through a further review: (1) a PhD thesis by Harris (2005) from Nottingham University describes a pilot RCT of community pharmacists and key workers undertaking joint domiciliary visits providing pharmaceutical care and adherence support to older adults with mental health problems, and (2) a Spanish study reports on adherence and depression outcomes in patients newly initiated on antidepressants (Rubio-Valera et al., 2012). In total, ten community pharmacy based mental health RCTs were identified. An overview of these studies is provided in Table 1.

The RCTs and systematic reviews provide valuable lessons to be considered in the development of future community pharmacy mental healthcare services. A number of themes emerged that could result in service delivery shortcomings namely: focus on participants newly initiated on antidepressants; focus on adherence as outcome; focus on delivering "information" and/or "education" over behaviour change strategies; and lack of

focus on collaboration with other health professionals. Each of these is described in more detail below.

*Focus on participants newly initiated on antidepressants*

The large majority of the community pharmacy-based mental health RCTs involved consumers who were newly initiated on antidepressants (Brook et al., 2003; Bultman & Svarstad, 2002; Capoccia et al., 2004; Finley et al., 2003; Rickles et al., 2005; Rubio-Valera et al., 2012). The first four to six weeks of therapy is a crucial time both from an adherence perspective and for monitoring response to therapy (Best Practice Advocacy Centre, 2009). However, this period may not be ideal for a medication management intervention that requires consumer time and commitment for the following reasons: coping with a new diagnosis, acute symptoms of illness, and information overload. Also, mental health consumers, like consumers with other chronic conditions, have medication management needs throughout their treatment journey and not only when initiated on new medicines. Research has indeed highlighted that about 50% of people with long-term conditions are not adherent, irrespective of the illness or setting (World Health Organization, 2003). Medication management services should therefore target all consumers with chronic conditions throughout their journey.

*Focus on adherence as outcome*

All of the studies focussed on adherence as the key outcome with indirect measures such as pharmacy records or consumer self-reports dominating. However indirect measurements lack robust evidence. Additionally, evidence highlights that concordance,



which involves shared decision making between the consumer and the health professional, provides better outcomes (National Institute of Clinical Excellence, 2009).

There is a scarcity of community pharmacy-based literature around medicine concordance and medication management models in mental illness. However, there is literature on other pharmacy settings (e.g. hospital outpatient services) and interventions to improve medication management and mental health outcomes (Al-Jumah & Qureshi, 2012; Bell et al., 2005; Chong et al., 2011; Dolder et al., 2003; Rubio-Valera et al., 2011). Doctor and nurse led interventions have also been included in broader systematic reviews (Vergouwen et al., 2003).

Few of the community pharmacy based studies included physical medication aids (e.g. blister packaging) and yet they are part of other multifaceted outpatient programs such as MedsHelp in the United States (US) (Valenstein et al., 2011) and dose administration aids programs in Australia (Pharmacy Guild of Australia, 2013).

Some of the studies report improvements in clinical outcomes or health-related quality of life without significant differences in adherence rates between the control arm and the intervention (Capoccia et al., 2004; Rubio-Valera et al., 2012). There is evidence to support the notion that clinical improvement may not be mediated through adherence alone (Chong et al., 2011; Vergouwen et al., 2003). Disentangling the influence of different interventions on various outcomes is also challenging. A better understanding of the mode of action of different programs is therefore required.

#### *Focus on delivering “information” and/or “education” over behaviour change strategies*

The word “coaching” is used in several studies (Brook et al., 2003) whilst the majority of interventions seem to focus more on educational aspects rather than behavioural

strategies. There is suggestion that educational activities alone may be ineffective and that combinations of educational, behavioural, affective and provider-targeted strategies are more likely to improve adherence and clinical outcomes (Chong et al., 2011). Consumer education and medication monitoring appear to be the most commonly employed pharmacist interventions (Al-Jumah & Qureshi, 2012). Other interventions included monitoring and management of adverse events, provision of written or visual information, and recommendation or implementation of changes or adjustments in medication (Rubio-Valera et al., 2011).

Educational strategies included information provision largely in oral and written formats but also by telephone and mail (Al-Saffar et al., 2005; Rickles et al., 2005). Behavioural strategies included telephone follow-up and monitoring, scheduled pharmacy clinic visits, psychotherapy, behavioural prevention plans, and pharmacy refills and checks. Emotional and social support were the most commonly adopted affective strategies, with motivational interviewing being used in fewer studies (Crockett et al., 2006; Rickles et al., 2005).

#### *Lack of focus on collaboration with other health professionals*

There seems to be little collaboration between pharmacists and the general practice team in the community pharmacy based studies and yet this is not the case in models of clinical pharmacists working in advanced primary or secondary care settings (Bell et al., 2005; Chong et al., 2011; Vergouwen et al., 2003). Few assessments were made by other healthcare professionals as part of the mental health community pharmacy RCTs whilst in some advanced primary care based models, collaborative care is in fact “the intervention” (Vergouwen et al., 2003). The collaborative practice approach is not reflected in the community pharmacy based RCTs. Provider targeted strategies predominantly included

feedback on consumer progress to the GP, although it was missing from the majority of community pharmacy based interventions. Facilitation of referrals to the mental healthcare sector and supervision from specialist psychiatric care were strategies frequently used in the wider primary care literature. This highlights the absence of any integration or collaboration within the community pharmacy RCTs.

## Summary

There are limited studies exploring professional service interventions for mental health consumers in community pharmacy. From the evaluation of the limited literature three themes emerged that provide insight into useful strategies in the provision of community pharmacy mental health services namely: pharmacist coaching sessions alongside take-home videos; ongoing monitoring (face-to-face and telephone); and domiciliary visiting service. These themes, discussed below, need to be considered in the development of future service delivery models. However, the majority of studies in systematic reviews relating to medication adherence in mental health were either inpatient (Vergouwen et al., 2003) or primary care based clinical pharmacy services (Bell et al., 2005; Chong et al., 2011). As such, the conclusions from these systematic reviews are not entirely applicable to community pharmacy practice.

A number of strategies for professional service delivery seemed to have worked in community pharmacy for mental health consumers. However, there is a dominance of reported research from the US with different health systems to Australia. The findings therefore need to be contextualised for the Australian setting. Nonetheless the learnings from these intervention studies are useful in the development of future Australian community pharmacy mental health professional services and are discussed below.

*Pharmacist coaching sessions alongside take-home videos*

Three coaching sessions with the addition of a take home video including illness and education-related information improved consumers attitudes to medication and adherence, and the intervention consumers were less depressed and less anxious based on a standard analysis but not on an intention to treat analysis (Brook et al., 2003). This intervention was more effective in consumers with lower levels of education.

Contrary to these outcomes a similar study in the Netherlands using three education sessions and a take-home video found that consumers had no significant difference in adherence as measured by electronic pill counter (Bosmans et al., 2007). Further, there were no significant differences in depressive symptom scores. The inclusion of a cost-effectiveness analysis led the authors to conclude that “standard care” should be continued. Short duration education sessions (15min first contact and half that for subsequent visits) covering both medications and mental illness also demonstrated no statistically significant difference in adherence at three and six months nor clinical symptoms or satisfaction with service. Despite this a statistically significant improvement in health-related quality of life was noted.

*Ongoing monitoring*

Face-to-face medication management monitoring by pharmacists was predictive of consumer satisfaction and self-reported adherence for individuals taking antidepressants for the first time (Bultman & Svarstad, 2002). One interview focused on how pharmacists covered medication history, knowledge, use and beliefs; the second on pharmacist monitoring and behaviour.

Rickles et al. (2005) found that telephone calls by pharmacists to consumers to educate, assess, monitor and make recommendations to improve antidepressant adherence resulted in significantly improved feedback from consumers. There was a 50% improvement in adherence but no statistically significant difference between intervention or control arms in terms of either depressive symptomatology or adherence.

#### *Domiciliary visiting service*

A single RCT reported the impact of domiciliary (home) visits by trained community pharmacists in conjunction with key workers. Significant improvements in adherence and reductions in consumers reporting problems taking medicines were reported (Harris, 2005).

The literature covering professional service interventions for mental health consumers in community pharmacy provide valuable insight into aspects that were proven successful and less successful. Of interest is that nine of the ten RCTs report on interventions developed for depression and no studies reported on more serious mental illnesses (i.e. illness such as schizophrenia) requiring antipsychotic treatment. As consumers on antipsychotics would similarly benefit from pharmacist services and interventions (i.e. management of adverse effects) pharmacists at primary care level could play a critical role in providing care for all consumers with mental illness. However, the literature in this area is limited and the review was therefore expanded to include non-mental health community pharmacy services.

#### **Community pharmacy non-mental health professional services**

A number of reviews outlining the impact of community pharmacy based disease state or medicines management services provide understanding into successful interventions and

could have some relevance to provision of community pharmacy mental health professional services:

1. Blenkinsopp et al. (2003) undertook a comprehensive overview of the published peer-reviewed evidence relating to community pharmacy based activity in the reduction of risk behaviours and risk factors for coronary heart disease. RCTs and non-randomised experimental studies were identified with positive evaluations in the effectiveness of community pharmacy smoking cessation advice. RCTs and observational studies were identified for community pharmacy-based lipid management. These studies provide evidence of clinical and cost-effectiveness of community pharmacy services in smoking cessation and lipid management in the prevention and management of heart disease.
2. Armour et al. (2008) reviewed studies of community pharmacy based disease management programs targeting adherence in consumers with asthma, diabetes mellitus, and cardiovascular disease. The findings suggested a positive effect on clinical outcomes in addition to adherence. A variety of adherence measuring methods were used in these studies, ranging from consumer self-report and qualitative descriptions to electronic recording. In most cases, strategies to improve adherence were part of a complex intervention, and a direct link between the intervention and adherence improvement could not be demonstrated.
3. Blalock et al. (2013) recently suggested that many studies have demonstrated the beneficial effects that professional services provided by pharmacists can have on consumer health outcomes. From 21 US studies in community pharmacy settings information concerning 134 outcomes was extracted. Of these, just over one third (37.3%) demonstrated statistically significant, beneficial intervention effects. The

percentage of studies reporting favourable findings ranged from 50% for blood pressure to 0% for lipids, safety outcomes, and quality of life. The authors concluded that evidence supporting the effectiveness of pharmacist provided professional services delivered in the community pharmacy setting was more limited than in other settings.

There appears to be significantly more investigation of professional service delivery relating to chronic conditions (such as asthma and cardiovascular disease), and lifestyle interventions such as weight management and smoking cessation than for mental health conditions. In the Australian context considerable research has been generated in these areas with many of the studies funded by the Australian government through the Community Pharmacy Agreements (Department of Health, 2014).

Community pharmacy asthma interventions that involved on-going cycles of assessment, goal-setting, monitoring and medication reviews showed improved adherence outcomes, significant improvements in symptom control, self-efficacy and quality of life (Saini et al., 2007). Recent research supports these findings but also highlights the importance of face-to-face contact between the pharmacist and consumer (Bereznicki et al., 2013).

A pharmacist delivered health promotion and screening service for cardiovascular disease risk factors in a rural community with GP engagement reported community benefit through identification and cholesterol testing of at-risk consumers (Hourihan et al., 2003). Protocols for improving adherence in hypertensive consumers through comprehensive medicines management packages have resulted in increased consumer education (Lau et al., 2010), detection and referral of high risk cardiovascular disease consumers (Peterson et al.,

2010). A pilot study outlining a holistic approach to multiple cardiovascular disease risk factors reported a significant reduction in risk (McNamara et al., 2012).

The on-going cycle of assessment, management, monitoring and review provided at regular intervals over a six-month period in community pharmacy for diabetic consumers demonstrated significant improvements in clinical and humanistic outcomes (Krass et al., 2007). Community pharmacy based weight management programs involving diet advice, behavioural therapy/modification and medication reviews found pharmacies to be accessible locations (Kellow, 2011; Reick et al., 2006). However consumers' opinions about the role of community pharmacy in weight management showed that some consumers considered pharmacists' motivations to provide advice related to gaining profit from selling a product and expressed concerns about the perceived conflicts of interest as well as lacking expertise and time (Um et al., 2012).

An Australian study that examined pharmacists' role in smoking cessation considering current practice and barriers to service provision found that there was a greater service scope for pharmacist involvement in this area (Edwards et al., 2006). In a New Zealand study the role of community pharmacists in the provision of opiate substitution therapy (OST) was seen as pivotal and integral to addiction treatment (Walters et al., 2012). Although the effectiveness of pharmacy based OST is evident and the demand increasing the participation rates of community pharmacies varies in the different Australian jurisdictions (Australian Institute of Health and Welfare, 2012). Factors influencing non-provider pharmacies have been identified as stigma and fear, additional workload, lack of knowledge and absence of government sponsored dispensing fees (Department of Health, 2008; Shepherd et al., 2014).

The findings from the literature of Australian community pharmacists providing medication management services to consumers with chronic physical health conditions, that



require significant lifestyle changes such as smoking cessation or weight management, or conditions that have associated stigma such as drug addiction, provide a framework for the expansion of community pharmacy mental health professional services. This is particularly important as there is a dearth of holistic medication management studies about mental health services in the community pharmacy context compared with these other chronic diseases and conditions.

### **Australian community pharmacy setting**

Australian community pharmacy practice has changed throughout the past two decades towards a more significant focus on the provision of professional services to improve consumers' medication management. These changes reflect the international move for the pharmacy profession to accept an increased medication management responsibility. Community pharmacists' medication management role is important as it has been estimated that 190,000 medication-related hospital admissions occur per year in Australia, an estimated 2-3% of all admissions with estimated costs in excess of \$660million (Roughead & Semple, 2009). As community pharmacists have frequent and regular interaction with consumers during dispensing of repeat prescriptions and primary healthcare advice (Australian Institute of Health and Welfare, 2012) they are in an ideal position to provide medication management services, reduce medication related incidents and problems, and facilitate medication information transfer during episodes of care.

Although there is a clear need for community pharmacists to increase medication management services, research by Roberts et al. (2008) showed that the lack of remuneration for professional services and deficiency in understanding of sustainable models of service provision have been barriers to the provision of services. The community

pharmacy remuneration model has traditionally not included financial compensation for the provision of professional services but rather revolved around pharmacists' dispensing and medication supply functions. There has, however, over recent years been a move away from the 'profit-on-medicines' model through PBS Reforms as medicine is not an ordinary commodity of trade (Commonwealth of Australia, 2010). Financial incentives have been introduced for the provision of professional services with government-funded remuneration to provide medication management services negotiated through the Community Pharmacy Agreements (Australian Government, 2010). Professional services currently funded are:

- Home medicines and residential medication management review services by accredited pharmacists, targeted towards older Australians and those using multiple medications (Pharmacy Guild of Australia, 2011).
- In-pharmacy medication review services, referred to as MedsCheck and Diabetes MedsCheck, which are reviews of consumers' medications by pharmacists to facilitate consumer discussion to improve medicines use through education, self-management and medicines adherence strategies to improve health outcomes (Department of Health and Ageing & The Pharmacy Guild of Australia, 2012).
- The Pharmacy Practice Incentive (PPI) program which involves services in six priority areas (Pharmacy Guild of Australia, 2012): (1) dose administration aids services for consumers who are facing adherence issues; (2) clinical interventions to facilitate the recording of recommendations to prescribers for a change in a consumer's medication therapy, means of administration or medication taking behaviour; (3) staged supply services to provide medicines in instalments when requested by the prescriber; (4) primary healthcare services to provide screening and/or risk assessment and disease state management for consumers with diabetes, respiratory

disease, cardiovascular disease or mental health conditions; (5) community services support such as a pharmacy delivery service, mental health first aid training and return of unwanted medicines; and (6) working with other healthcare professionals to facilitate cooperation, collaboration and better integration of community pharmacy into the wider primary healthcare team.

The overall aim of these services is to improve quality use of medicines and reduce adverse medicine events and all of these professional services could be utilised to improve the medication management of mental health consumers. There has been numerous research evaluating the impact of the home medicine review program which has been in place since 2001 (Gilbert et al. 2002). The in-pharmacy medication review services and PPIs were only introduced in 2010 with data being collected for assessment.

Community pharmacies participating in Medscheck and Diabetes Medscheck services are required to have a screened area or separate room distinct from the general public area of the pharmacy. This area could be utilised to provide services to mental health consumers given that there may be situations that could be sensitive to discuss and require privacy. This is important as a need for increased community pharmacy privacy and confidentiality requirements for mental health consumers has been identified as a barrier to utilising community pharmacy services (Hattingh et al., 2014).

Recent research has provided insight into mental health consumers' experiences of community pharmacy. Telephone interviews with 201 mental health consumers and carers from three Australian states explored their experiences of community pharmacy services (Knox et al., 2014). The results highlighted service gaps as only 36% received verbal advice, the majority were not asked whether they experienced side effects, and 60% reported

rarely or never receiving written medicine information. Despite these shortcomings the majority of participants indicated that their expectations were being met and qualitative comments showed that consumers value high-quality services that reflected patient-care. Semi-structured interviews and focus groups with 74 purposively selected mental health consumers and carers highlighted the importance of positive relationships between pharmacy staff and consumers to reduce stigma experienced in community pharmacies (Knox et al., 2013). The same study found patient-centred care provided by community pharmacies promoted mental health consumers' and carers' trust in pharmacists and promoted relationship development (Mey et al., 2013). The findings from these studies provide valuable information about consumers' experiences and needs and expectations of community pharmacy to be considered in the development of mental health professional services.

## **DISCUSSION**

This narrative review identified international studies involving professional service interventions for mental health consumers that could be contextualised for the Australian setting. Although community pharmacy is ideally placed to provide support to mental health consumers, there is a scarcity of literature regarding community pharmacy RCTs in mental health professional service delivery. A search found 10 RCTs, largely from the US, the majority of which were focused on adherence as the main outcome. Multiple measures have been used to assess adherence as well as clinical outcomes, general wellbeing and quality of life in these studies. The interventions within these RCTs included both education alone and education in conjunction with cognitive and behavioural change strategies. Those

RCTs identified were conducted with consumers who had recently started on antidepressants and collaboration with GPs and other health professionals was largely missing. Systematic reviews which explored the impact of various pharmacy models on the medication adherence of mental health consumers provide some insight although the conclusions drawn may not necessarily relate to the community pharmacy model as most of these involved hospital inpatient or primary care clinical pharmacy services.

There is a dearth of holistic medication management studies involving mental health in the community pharmacy context compared with other chronic conditions such as asthma, cardiovascular disease, diabetes, obesity/weight management and addiction services for smoking cessation and opiate substitution. It therefore seems timely to explore a larger role for community pharmacy in mental health service delivery in collaboration with GPs and other members of the healthcare team. Newer community pharmacy services provide opportunity for funding of medication management services. Various professional pharmacy service models have developed over recent years to facilitate consumers' medication management at a primary healthcare level (Moullin et al., 2013).

Australian community pharmacists are in regular contact with mental health consumers and carers through the dispensing of medicines. In addition to dispensing services, pharmacists and pharmacy staff members also provide other services to mental health consumers such as the provision of general healthcare and lifestyle advice, management of minor ailments, medication review services and newer professional services. Pharmacists are therefore in an ideal position to play a more significant role in the medication management of mental health consumers in partnership with other healthcare professionals.

This review focused on medication management mental health services at primary healthcare level and the impact of community pharmacy based disease state management services. The strength of this review lies in the review of both published literature identified through databases and unpublished (grey) literature to contextualise the review in terms of contemporary Australian community pharmacy practice. The combination ensured a comprehensive review of topics amidst the lack of research about the role of community pharmacists in medication management of mental health consumers. However, as this is a narrative rather than a systematic review it is possible that not all studies were incorporated. Another limitation of this review is the comparison to non-mental health pharmacy services. Although these studies provide some insight mental healthcare is unique and pharmacy mental health services will require careful planning.

## **CONCLUSION**

The literature identified a need for community pharmacy to become more involved in the provision of mental health professional services. Information from mental health systematic reviews may not be entirely applicable to community pharmacy although the studies provide a framework that needs to be contextualised for the Australian community pharmacy setting. These include initial face-to-face interactions between pharmacists and mental health consumers and carers as well as ongoing monitoring. A number of strategies seemed to have worked as professional service interventions in community pharmacy for other physical health conditions and in non-mental health areas associated with stigma. Learnings from these studies could be tailored for mental health service provision. The development of a community pharmacy intervention that focuses on mental health

professional services should ideally incorporate elements from the mental health reviews as well as non-mental health studies that have proven successful.

### **Acknowledgements**

The authors acknowledge all the members of the project team Bradley McConachie, Fiona Kelly, Andrew Davey, Amary Mey, Kathy Knox, Jasmina Fejzic and Rhonda Knights.

## REFERENCES

- Adler, D.A., Bungay, K.M., Wilson, I.B., Pei, Y., Supran, S., Peckham, E. (2003). The impact of a pharmacist intervention on 6-month outcomes in depressed primary care patients. *General Hospital Psychiatry*, 26, 199-209
- Al-Jumah, K. A., & Qureshi, N. A. (2012). Impact of pharmacist interventions on patients' adherence to antidepressants and patient-reported outcomes: a systematic review. *Journal of Patient Preference and Adherence*, 6, 87-100.
- Al-Saffar, N., Deshmukh, A.A., Carter, P., & Adib, S.M. (2005). Effect of information leaflets and counselling on antidepressant adherence: open randomised controlled trial in a psychiatric hospital in Kuwait. *International Journal of Pharmacy Practice*, 13, 123-131.
- Armour, C., Smith, L., & Krass, I. (2008). Community pharmacy, disease state management, and adherence to medication: A review. *Disease Management and Health Outcomes*, 16(4), 245-254.
- Australian Bureau of Statistics. (2008). National survey of mental health and wellbeing: summary of results. Retrieved 1 January, 2014, from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4326.0>
- Australian Government. (2010). The Fifth Community Pharmacy Agreement Between the Commonwealth of Australia and the Pharmacy Guild of Australia. Retrieved from [http://www.health.gov.au/internet/main/publishing.nsf/Content/7B92BC8114A7059CCA25771C0022E78C/\\$File/5CPA%20Agreement%2005%20August%202010.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/7B92BC8114A7059CCA25771C0022E78C/$File/5CPA%20Agreement%2005%20August%202010.pdf).
- Australian Institute of Health and Welfare. (2012). Australia's Health 2012. Australia's health series no.13. Cat. no. AUS 156 Retrieved 13 August, 2012, from <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737422169>



Australian Institute of Health and Welfare. (2013). Mental health-related services provided by general practitioners. Retrieved 24 February, 2014, from <https://mhsa.aihw.gov.au/services/general-practice/>

Australian Institute of Health and Welfare. (2014). Mental health-related prescriptions. Retrieved 13 August, 2012, from <https://mhsa.aihw.gov.au/resources/prescriptions/>

Bell, J. S., McLachlan, A. J., Aslani, P., Whitehead, P., & Chen, T. F. (2005). Community pharmacy services to optimise the use of medications for mental illness: A systematic review. *Australia and New Zealand Health Policy*, 2, 29-40.

Bereznicki, B. J., Peterson, G. M., Jackson, S. L., Walters, E. H., George, J., Stewart, K., et al. (2013). Uptake and effectiveness of a community pharmacy intervention programme to improve asthma management. *Journal of Clinical Pharmacy and Therapeutics*, 38(3), 212-218.

Best Practice Advocacy Centre. (2009). Assessment of depression in adults in primary care. Retrieved 10 May, 2013, from <http://www.bpac.org.nz/magazine/2009/adultdep/assessment.asp>

Blalock, S. J., Roberts, A. W., Lauffenburger, J. C., Thompson, T., & O'Connor, S. K. (2013). The effect of community pharmacy-based interventions on patient health outcomes: A systematic review. *Medical Care Research & Review*, 70(3), 235-266.

Blenkinsopp, A., Anderson, C., & Armstrong, M. (2003). Systematic review of the effectiveness of community pharmacy-based interventions to reduce risk behaviours and risk factors for coronary heart disease. *Journal of Public Health Medicine*, 25(2), 144-153.

Brook, O. H., Van Hout, H. P. J., Nieuwenhuysse, H., & Heerdink, E. (2003). Impact of coaching by community pharmacists on drug attitude of depressive primary care patients and

acceptability to patients: A randomized controlled trial. *European Neuropsychopharmacology*, 13(1), 1-9.

Bultman, D., & Svarstad, B. L. (2002). Effects of pharmacist monitoring on patient satisfaction with antidepressant medication therapy. *Journal of American Pharmacists Association*, 42(1), 36-43.

Capoccia, K.I., Boudreau, D.M., Blough, D.K., Ellsworth, A.J., Clark, D.R., Stevens, N.G., et al. (2004). Randomized trial of pharmacist interventions to improve depression care and outcomes in primary care. *American Journal of Health-System Pharmacy*, 61, 364-372

Chong, W. W., Aslani, P., & Chen, T. F. (2011). Effectiveness of interventions to improve antidepressant medication adherence: a systematic review. *International Journal of Clinical Practice*, 65(9), 954-975.

Commonwealth of Australia. (2010). The impact of PBS reform. Retrieved from [http://www.health.gov.au/internet/main/publishing.nsf/Content/95DCCB478B78DBD9CA2576C500130B0A/\\$File/Impact%20of%20PBS%20Reform%20Report.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/95DCCB478B78DBD9CA2576C500130B0A/$File/Impact%20of%20PBS%20Reform%20Report.pdf).

Crockett, J., Taylor, S., Grabham, A., & Stanford, P. (2006). Patient outcomes following an intervention involving community pharmacists in the management of depression. *Australian Journal of Rural Health*, 14(6), 263-269.

Department of Health. (2008). National Health Reform. Retrieved 12 August, 2014, from [http://health.nt.gov.au/Health\\_Reform/National\\_Health\\_Reform/index.aspx](http://health.nt.gov.au/Health_Reform/National_Health_Reform/index.aspx)

Department of Health. (2014). Research & Development. Retrieved 28 August, 2014, from <http://5cpa.com.au/programs/research-and-development/>

Department of Health and Ageing, & The Pharmacy Guild of Australia. (2012). Program Specific Guidelines MedsCheck and Diabetes MedsCheck. Canberra: Department of Health and Ageing.

Dolder, C. R., Lacro, J. P., Leckband, S., & Jeste, D. (2003). Interventions to improve antipsychotic medication adherence: Review of recent literature. *Journal of Clinical Psychopharmacology*, 23(4), 389-399.

Edwards, D., Freeman, T., & Gilbert, A. L. (2006). Pharmacists' role in smoking cessation: An examination of current practice and barriers to service provision. *International Journal of Clinical Practice*, 14(4), 315-317.

Finley, P.R., Rens, H.R., Pont, J.T., Gess, S.L., Louie, C., Bull, S.A., et al. (2003). Impact of a collaborative care model on depression in a primary care setting: a randomized controlled trial. *Pharmacotherapy*, 23(9), 1175-1185.

Gilbert, A. L., Roughead, E. E., Beilby, J., Mott, K., & Barratt, J. D. (2002). Collaborative medication management services: improving patient care. *Medical Journal of Australia*, 177, 189-192.

Harris, D. J. (2005). Pharmaceutical care and adherence support by community pharmacists for older people with mental health problems in the community: A randomised controlled trial. Unpublished Ph.D., The University of Nottingham, United Kingdom.

Hattingh, H. L., Knox, K., Fejzic, J., McConnell, D., Fowler, J. L., Mey, A., et al. (2014). Privacy and confidentiality: perspectives of mental health consumers and carers in pharmacy settings. *International Journal of Pharmacy Practice*, 23, 52-60

Houriham, F., Krass, I., & Chen, T. F. (2003). Rural community pharmacy: A feasible site for a health promotion and screening service for cardiovascular risk factors. *Australian Journal of Rural Health*, 11(1), 28-35.

- Kellow, N. (2011). Evaluation of a rural community pharmacy-based waist management project: Bringing the program to the people. *Australian Journal of Primary Health*, 17(1), 16-22.
- Knox, K., Fejzic, J., Mey, A., Fowler, J. L., Kelly, F., McConnell, D., et al. (2013). Mental health consumer and caregiver perceptions of stigma in Australian community pharmacies. *International Journal of Social Psychiatry*, 60(6), 533-543.
- Knox, K., Kelly, F., Mey, A., Hattingh, H. L., Fowler, J. L., & Wheeler, A. J. (2014). Australian mental health consumers' and carers' experiences of community pharmacy service. *Health Expectations*.
- Krass, I., Armour, C., Mitchell, B., Brilliant, M., Dienaar, R., Hughes, J. D., et al. (2007). The Pharmacy Diabetes Care program: Assessment of a community pharmacy diabetes service model in Australia. *Diabetic Medicine*, 24(6), 677-683.
- Lau, R., Stewart, K., McNamara, K. P., Jackson, S. L., Hughes, J. D., Peterson, G. M., et al. (2010). Evaluation of a community pharmacy-based intervention for improving patient adherence to antihypertensives: A randomised controlled trial. *BMC Health Services Research*, 10(34).
- McNamara, K. P., O'Reilly, S. L., Dunbar, J. A., Bailey, M. J., George, J., Peterson, G. M., et al. (2012). A pilot study evaluating multiple risk factor interventions by community pharmacists to prevent cardiovascular disease: The PAART CVD Pilot project. *Annals of Pharmacotherapy*, 46(2), 183-191.
- Meagher, D., & Moran, M. (2003). Sub-optimal prescribing in an adult community mental health service: prevalence and determinants. *Psychiatric Bulletin*, 27(7), 266-270.

- Mey, A., Knox, K., Kelly, F., Davey, A. K., Fowler, J. L., Hattingh, H. L., et al. (2013). Trust and safe spaces: mental health consumers' and carers' relationships with community pharmacy staff. *The Patient: Patient-Centered Outcomes Research*, 6(4), 281-289.
- Mort, J. R., & Aparasu, R. R. (2002). Prescribing of psychotropics in the elderly: why is it so often inappropriate? *CNS Drugs*, 16(2), 99-109.
- Moullin, J. C., Sabater-Hernandez, D., Fernandez-Llimos, F., & Benrimoj, S. I. (2013). Defining professional pharmacy services in community pharmacy. *Research in Social and Administrative Pharmacy*, 9(6), 989-995.
- National Institute of Clinical Excellence. (2009). Guideline CG76 - Medicines adherence: Involving patients in decisions about prescribed medicines and supporting adherence Retrieved 27 June, 2013, from <http://publications.nice.org.uk/medicines-adherence-cg76>
- Peterson, G. M., Fitzmaurice, K. D., Kruup, H., Jackson, S. L., & Rasiah, R. L. (2010). Cardiovascular risk screening program in Australian community pharmacies. *Pharmacy World & Science*, 32(3), 373-380.
- Pharmaceutical Society of Australia. (2013). Mental health care framework. Retrieved 4 March, 2013, from <http://www.psa.org.au/archives/21010>
- Pharmacy Guild of Australia. (2011). Home medicines review. Retrieved 23 April, 2011, from [http://www.guild.org.au/iwov-resources/documents/QLD\\_Branch/Home%20Medicines%20Review/HMR%20FAQs%20and%20Information/Information%20about%20HMR.pdf](http://www.guild.org.au/iwov-resources/documents/QLD_Branch/Home%20Medicines%20Review/HMR%20FAQs%20and%20Information/Information%20about%20HMR.pdf)
- Pharmacy Guild of Australia (Writer). (2012). Program Specific Guidelines Pharmacy Practice Incentives. Canberra.

Pharmacy Guild of Australia. (2013). The Guild. Retrieved 10 May, 2013, from <http://www.guild.org.au/>

Reick, A., Clifford, R., & Everett, A. (2006). Community pharmacy weight management: Project Stages One and Two (2005-02). Perth, Australia: University of Western Australia.

Rickles, N. M., Svarstad, B. L., Statz-Paynter, J. L., Taylor, L. V., & Kobak, K. A. (2005). Pharmacist telemonitoring of antidepressant use: effects on pharmacist-patient collaboration. *Journal of American Pharmacists Association*, 45(3), 344-353.

Roberts, A. W., Benrimoj, S. I., Chen, T. F., Williams, K. A., & Aslani, P. (2008). Practice change in community pharmacy: Quantification of facilitators. *Annals of Pharmacotherapy*, 42(6), 861-868.

Roughead, E. E., & Semple, S. (2009). Medication safety in acute care in Australia: Where are we now? Part 1: A review of the extent and causes of medication problems 2002–2008. *Australia and New Zealand Health Policy*, 6(1), 18.

Roxon, N., Macklin, J., & Butler, M. (2011). National Mental Health Reform. Retrieved from [http://www.health.gov.au/internet/budget/publishing.nsf/Content/849AC423397634B7CA25789C001FE0AA/\\$File/DHA%20Ministerial.PDF](http://www.health.gov.au/internet/budget/publishing.nsf/Content/849AC423397634B7CA25789C001FE0AA/$File/DHA%20Ministerial.PDF).

Rubio-Valera, M., March Pujol, M., Fernández, A., Peñarrubia-María, M. T., Travé, P., López del Hoyo, Y., et al. (2012). Evaluation of a pharmacist intervention on patients initiating pharmacological treatment for depression: a randomized controlled superiority trial. *European Neuropsychopharmacology*, 23(9), 1057-1066.

Rubio-Valera, M., Serrano-Blanco, A., Magdalena-Belío, J., Fernández, A., García-Campayo, J., Pujol, M. M., et al. (2011). Effectiveness of pharmacist care in the improvement of

- adherence to antidepressants: a systematic review and meta-analysis. *Annals of Pharmacotherapy*, 45(1), 39-48.
- Saini, B., Krass, I., & Armour, C. (2004). Development, implementation, and evaluation of a community pharmacy-based asthma care model. *Annals of Pharmacotherapy*, 38(11), 1954-1960.
- Shepherd, A., Perella, B., & Hattingh, H. L. (2014). The impact of dispensing fees on compliance with opioid substitution therapy: a mixed methods study. *Substance Abuse Treatment, Prevention, and Policy*, 9, 32.
- Slade, T., Johnston, A., Oakley Browne, M. A., Andrews, G., & Whiteford, H. (2009). 2007 National Survey of Mental Health and Wellbeing: methods and key findings. *Australian and New Zealand Journal of Psychiatry*, 43(7), 594-605.
- Smith, L., Bosnic-Anticevich, S. Z., Mitchell, B., Saini, B., Krass, I., & Armour, C. (2007). Treating asthma with a self-management model of illness behaviour in an Australian community pharmacy setting. *Social Science & Medicine*, 64(7), 1501-1511.
- Um, I. S., Armour, C., Krass, I., Gill, T., & Char, B. B. (2012). Consumer perspectives about weight management services in a community pharmacy setting in NSW, Australia. *Health Expectations*, 17(4), 579-592.
- Valenstein, M., Kavanagh, J., Lee, T., Reilly, P., Dalack, G. W., Grabowski, J., et al. (2011). Using a pharmacy-based intervention to improve antipsychotic adherence among patients with serious mental illness. *Schizophrenia Bulletin*, 37(4), 727-736.
- Vergouwen, A., Bakker, A., Katon, W., Verheij, T., & Koerselman, F. (2003). Improving adherence to antidepressants: a systematic review of interventions. *Journal of Clinical Psychiatry*, 64, 1415-1420.

Walters, C., Raymont, A., Galea, S., & Wheeler, A. J. (2012). Evaluation of online training for the provision of opioid substitution treatment by community pharmacists in New Zealand. *Drug and Alcohol Review*, 31(7), 903-910.

World Health Organization. (2003) Adherence to long-term therapies: evidence for action. Retrieved 30 September 2014, from

<http://whqlibdoc.who.int/publications/2003/9241545992.pdf>

World Health Organization. (2008). The Global Burden of Disease: 2004 Update. Retrieved 26 June, 2013, from

[http://www.who.int/healthinfo/global\\_burden\\_disease/GBD\\_report\\_2004update\\_full.pdf](http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf)

World Health Organization and World Organization of Family Doctors. (2008). Integrating Mental Health into Primary Care: A Global Perspective. Retrieved 26 June, 2013, from [http://whqlibdoc.who.int/publications/2008/9789241563680\\_eng.pdf](http://whqlibdoc.who.int/publications/2008/9789241563680_eng.pdf)



**Table 1: Summary of Randomised Controlled Trials**

Title	Country Study Details	Findings
Effects of pharmacist monitoring on patient satisfaction with antidepressant medication therapy (Bultman & Svarstad, 2002)	Wisconsin, US <u>Intervention:</u> newly initiated consumers provided with education and monitoring, two consumer interviews, two months apart <u>Evaluation:</u> perceived/self-reported adherence	Pharmacist monitoring was predictive of satisfaction and adherence for individuals taking antidepressants for the first time
Impact of a collaborative care model on depression in a primary care setting: a randomized controlled trial (Finley et al., 2003)	California, US <u>Intervention:</u> consumers assigned to collaborative care arm were assessed at baseline, potential stressors identified and provide with education, regular follow-up included telephone calls and clinic visits <u>Evaluation:</u> adherence to antidepressant medication therapy calculated according to prescription refill records, consumer satisfaction with pharmacists' services	A collaborative care model that emphasised the role of clinical pharmacists had positive effect on multiple consumer aspects
The impact of a pharmacist intervention on 6-month outcomes in depressed primary care patients (Adler et al., 2003)	Massachusetts, US <u>Intervention:</u> consumers with major depression and/or dysthymia received in person and telephone consultations with clinical pharmacist <u>Evaluation:</u> improved antidepressant medicine adherence	Pharmacist intervention for depressed consumers reported improved adherence and management of depression
Randomized trial of pharmacist interventions to improve depression care and outcomes in primary care (Capoccia et al., 2004)	Washington, US <u>Intervention</u> pharmacists collaborated with primary care providers to provide education, adjustment of doses, management of adverse effects and adherence monitoring <u>Evaluation</u> depression scores, adherence, consumer satisfaction and use of depression-related health care services	No statistically significant difference in depression symptoms, quality of life, adherence, provider visits or consumer satisfaction; frequent pharmacist telephone contacts and interventions resulted in improvements in depression outcomes
Impact of coaching by community pharmacists on drug attitude of depressive primary care patients and acceptability to patients: A randomized controlled trial (Brook et al., 2003)	Netherlands <u>Intervention:</u> in-pharmacy "drug coaching" sessions and a take home video about depression <u>Evaluation:</u> attitudes to antidepressants, adherence – electronic pill container and depressive symptoms	Pharmacist coaching evaluated positively; improved adherence; decreased depression and anxiety; intervention particularly effective in consumers with lower levels of education

<p>Effect of information leaflets and counselling on antidepressant adherence: open randomised controlled trial in a psychiatric hospital in Kuwait (Al-Saffar et al., 2005)</p>	<p>Kuwait  <u>Intervention:</u>                  treatment groups received a patient information leaflet written in Arabic with or without counselling from a clinical pharmacist  <u>Evaluation:</u>                  improved consumer understanding of therapy, higher rates of clinic attendance, improved adherence</p>	<p>Pharmacist educational intervention evaluated positively; improved adherence</p>
<p>Pharmacist telemonitoring of antidepressant use: effects on pharmacist-patient collaboration (Rickles et al., 2005)</p>	<p>Wisconsin, US  <u>Intervention:</u>                  three monthly telephone calls, assess, monitor and make recommendations to improve adherence  <u>Evaluation:</u>                  adherence, pharmacy records (self-reported), depression symptoms</p>	<p>Improvement in depression symptoms and compliance (non-significant); significantly more feedback to pharmacists regarding different aspects of antidepressant therapy</p>
<p>Patient outcomes following an intervention involving community pharmacists in the management of depression (Crockett et al., 2006)</p>	<p>Australia  <u>Intervention:</u>                  pharmacists trained to provide medication education, consumer monitoring  <u>Evaluation:</u>                  pharmacist surveys and interviews, consumer adherence self-report, Kessler10 score, drug attitude index</p>	<p>Adherence to medication high in both groups; both groups improved significantly in well-being; no significant change to attitude in medicine treatment</p>
<p>Pharmaceutical care and adherence support by community pharmacists for older people with mental health problems in the community: A randomised controlled trial (Harris, 2005)</p>	<p>England  <u>Intervention:</u>                  domiciliary visiting service by trained community pharmacists and key worker  <u>Evaluation:</u>                  adherence as judged by key worker</p>	<p>Significant improvements in adherence; reductions in discrepancies with medicines; improvement in medicines storage</p>
<p>Evaluation of a pharmacist intervention on patients initiating pharmacological treatment for depression: A randomized controlled superiority trial (Rubio-Valera et al., 2012)</p>	<p>Spain  <u>Intervention:</u>                  consumers newly initiated on antidepressants, training session for pharmacists, implementation and data collection guidelines, medication education, illness education, monitoring  <u>Evaluation:</u>                  adherence, clinical severity of depression, health related quality of life, satisfaction with pharmacy care</p>	<p>No statistical difference in adherence; statistically significant in quality of life but not in clinical symptoms or satisfaction with the pharmacy service</p>