Review of Pharmacy Remuneration and Regulation

Submission by the Pharmacy and Oral Health Working Group

22nd September 2016

Introductory statement

This submission is in support of pharmacists having an enhanced contribution to oral health.

The submission is presented by the Pharmacy and Oral Health Working Group which is a collaboration of dental practitioners and pharmacists with the aim to promote better oral health through the pharmacy sector at a national level.

The principal points of this submission are:

1. Pharmacists are well placed to play an important role in oral health promotion and prevention, including the provision of evidence based non-invasive preventive oral health procedures.

2. Pharmacists should be supported to implement preventive programs including the application of Fluoride varnish and the provision of products (prescribed or over the counter) including high fluoride toothpaste where appropriate, that would help prevent the manifestation or reverse early signs of chronic oral diseases in high risk and under-served patient groups.

3. In undertaking medication reviews, pharmacists should consider and make recommendations to counteract the detrimental impact of medications on the oral health of consumers. Pharmacists should also recognise that certain medical conditions are associated with oral health problems and where appropriate refer patients to either their GP or a dentist.

4. The implementation by pharmacists of an oral health preventive program for clients of methadone programs would help minimise or reverse adverse oral health outcomes of methadone use.

5. Pharmacist delivered oral health programs should be targeted at and subsidised for groups who are entitled to public dental health programs, cannot afford or have limited access to dental services.

6. Pharmacist, particularly those supported to deliver oral health promotion and prevention programs should recognise and advise patients on the detrimental effects of certain sweet drinks and products on oral health and reconsider displaying these items in the pharmacy.
Pharmacy and Oral Health Working Group

It is recognised by both pharmacy and dental professional groups that community pharmacists can collaboratively play a pivotal role in improving the oral health of consumers (particularly those in rural and remote areas). In so doing, pharmacists will help lower the risk of patients suffering from oral diseases.

Following the launch of the Victorian “ADAVB, DHSV, and PSA (Vic) Joint Position Statement on Oral Health and Pharmacy” in 2015 (Attachment 1), and the publication of the Australian paper “Describing the Role of Australian Community Pharmacists in Oral Health Care” by Taing et al, 2016, in the International Journal of Pharmacy Practice (Attachment 2), a group of interested dental practitioners and pharmacists from across a number of tertiary institutions (University of Queensland, Deakin University, Monash University, University of Melbourne and La Trobe University) have formed a ‘Pharmacy and Oral Health Working Group’ with the aim to promote better oral health through the pharmacy sector at a national level.

The Pharmacy and Oral Health Working Group is supportive of closer working relationships between pharmacists, dentists and other oral health professionals.

Members:  
Hanny Calache  Deakin University  
Pauline Ford  University of Queensland  
Christopher Freeman  University of Queensland  
Mark Gussy  La Trobe University  
John Jackson  Monash University  
Phyllis Lau  University of Melbourne  
Kevin McNamarra  Deakin University  
Meng-Wong Taing  University of Queensland

Contact:  
John Jackson  Pharmacist  john.jackson@monah.edu  
Hanny Calache  Dentist  hanny.calache@deakin.edu.au
Oral Health

Oral health is integral to general health and overall well-being; many health conditions have been linked to poor oral health. Tooth decay is Australia’s most prevalent health problem and the second most costly diet-related disease in Australia. More than 90% of Australian adults and 40% of young children have experienced tooth decay at some stage in their life (NACOH, 2004).

Expenditure
Expenditure in Australia on dental health services (excluding hospitals) was $8.7 billion in 2012-13, equivalent to approximately 6.5% of total national health expenditure (AIHW, 2013). On top of this expenditure, oral conditions are the third highest reason for acute preventable hospital admissions in Australia accounting for 22% of the acute potentially preventable hospitalizations (63,910 separations) in all hospitals in 2013-14 (AIHW, 2015). This places dental conditions in the top 10 conditions of acute potentially preventable hospitalizations.

Access and high-risk groups
Public dental health services are overwhelmed by the demand for their services from some of the most vulnerable groups in our society. The public dental health system capacity is such that it can only deal with the worst cases, and undertaking substantial prevention services appears impossible with current resources.

Access to dental services is difficult for population groups that are at high risk of oral diseases, particularly in geographical locations that are regional and remote. A particularly vulnerable high-risk group is children between the ages of 0 and 4 years. Current evidence indicates that the majority of young Australian children in this age group do not attend the dentist. The HILDA report states that, in 2015, 77% of 4 year old children never attended a dentist (Wilkins, 2016).

The current Australian recommendations are that young children should have their first dental visit as early as 12 months of age and definitely by 2 years of age. Despite these recommendations, 40% of Victorian children at school entry show evidence of untreated dental decay (DHSV, 2016)

Young children have the highest rate of preventable hospitalisations due to dental conditions. In Victoria, more than $9 million is spent on avoidable dental potentially preventable hospital admissions for 4,600 children admitted each year [Figures 1 & 2] (Dept of Health Victoria, 2012).

Nation-wide, in 2011-2012, 7,791 0-4 years old and 13,503 5-9 year old were admitted to hospital for dental conditions (AIHW, 2014).
The causal role of medications
An additional group that would benefit significantly from improved oral health care are poly-medicated patients. International research shows that polypharmacy is common in older patients. Almost 600 different drugs or medications that are currently in use lead to xerostomia (dry mouth) (Healthguides 2015). These include: antidepressants; antihypertensive; ADHD medication; antipsychotic; anticonvulsants; antihistamines; asthma medication, methadone, sedatives,
decongestants, and analgesics. Illegal drugs such as cocaine can also cause dry mouth. Other causes of xerostomia include: dehydration, mouth breathing, Sjogren's syndrome, infection, nerve problems, chemotherapy and radiotherapy (head and neck).

A conservative estimate of xerostomia prevalence is about 20% in the general population, with increased prevalences in females (up to 30%) and the elderly (up to 50%) (Furness et al, 2011). Patients with dry mouth are at a significantly higher risk of developing dental caries (Pitts & Zero, 2016).

Recent evidence indicates that the application of fluoride varnish (NaF 26,000pm) to teeth every six months will significantly reduce dental decay and prevent the progression of early carious lesions (Marinho, 2013).

Fluoride varnish is a highly concentrated form of topical fluoride which is applied to the tooth's surface, by a dentist, dental therapist, dental hygienist or other health care professional (Weintraub et al, 2006). It may be applied to the enamel, dentine or cementum of the tooth and can be used to help prevent decay, remineralise the tooth surface and to treat dentine hypersensitivity.

Fluoride varnish treatment has a better outcome at preventing cavities at a lower cost compared to other fluoride treatments such as the fluoride mouth rinsing. For fluoride varnish treatment, the benefit to cost ratio 1.8:1, whereas fluoride mouth rinsing is 0.9:1. With fluoride varnish treatments, one can save by preventing future restorations. Fluoride varnish also requires fewer treatments for measurable effectiveness, therefore in the long run it is cost effective when compared to other treatments (Scold, 2008).

Fluoride varnish is easily and quickly applied, dries rapidly and will set even in the presence of saliva. It has a sticky consistency which helps it to adhere to the tooth’s surface thereby allowing the fluoride to stay in contact with the tooth for several hours (Weintraub et al, 2006).

Based on published findings, professionally applied fluoride varnish does not appear to be a risk factor for dental fluorosis (a chronic condition caused by excessive intake of fluorine compounds, marked by mottling of the teeth), even in children under the age of 6. This is due to the reduction in the amount of fluoride which may potentially be swallowed during the fluoride treatment because of the small quantities used, the rapid setting time and the adherence of the varnish to the teeth (ADA Council Scientific affairs, 2006).

Example of clients that would benefit from the application of fluoride varnish to their teeth are children 0-4 years and people on medication that cause xerostomia. Recent evidence shows that non-dental health professionals can integrate preventive dental services into their practices with an average 17.7% and 21% reduction in caries and hospitalisations in children receiving 4 or more visits before three years of age (Kranz et al, 2014; Stearns et al, 2012).
Submission Review question No. 35. Are there non-medicine-related services that pharmacists can or should provide to consumers due to their expertise as pharmacists or for other reasons (e.g. consumer ease of access to community pharmacies)? If so, why are these services best provided by community pharmacy?

Pharmacist are health care professionals who are easily accessible, highly trusted and well respected by the communities that they serve. They are in an excellent position to provide oral health advice and non-invasive preventive oral health services to their clients.

A recent Australian Study by Taing et al (2016) showed nearly all pharmacists (97%) desired further education and training to benefit their practice in oral health care. With appropriate training, pharmacists are well placed to play important roles in oral health promotion and prevention, including performing ‘Lift the lip’ screening and the provision of evidence based non-invasive preventive oral health procedures such as the application of fluoride varnish products to teeth across the age spectrum.

‘Lift the Lip’ screen
‘Lift the lip’ screen entails lifting the upper lip of young children to examine the upper front teeth and look for signs of tooth decay, eg. white or brown spots that don’t brush off, and existing cavities. This screening procedure is used by Maternal and Child Health Nurses to screen young children’s teeth. During a lift the lip screen you can also look for:

- Plaque – colourless film that forms on the teeth. This can be easily removed with gauze;
- White spot lesions (that don’t wipe off); Brown and yellow spots (that don’t brush off); Cavities (decay); and
- Ulcers, lumps and sores.

Pharmacists trained to undertake ‘lift the lip’ oral health screens and examinations could determine the oral health risk status of clients/patients, check for risk factors (health behaviours, medication use) that contribute to dental decay, provide anticipatory advice to parents/carers/individuals to alter these risk factors and promote the implementation of protective factors.

Application of fluoride varnish
Pharmacists, in collaboration with dentists, can assist in the prevention and early intervention of dental caries in young children (0-9 years of age) and, in turn, help to reduce the rate of potentially preventable dental hospital admissions for this age group. The application of fluoride varnish to the teeth of these high risk population groups by pharmacists would help to significantly reduce the risk of young children, in developing dental caries and its consequences.

Application requires very little equipment and so it can be applied in settings where a dental operatory is not available (Marya & Dahiya, 2008).
Oral health advice
Furthermore, pharmacists can provide advice on oral health practices and oral care products that counteract the effect of medications that cause dry mouth (xerostomia). This would help to link oral health advice to oral care products stocked in pharmacies such as toothbrushes and interdental cleaning aids; and toothpastes (including preventive high-fluoride pastes), mouthwashes and gels that help reduce conditions such as xerostomia and halitosis. They can also encourage regular dental check-ups for those clients who are at high risk to dental problems, and refer them appropriately as required. A particular group that would benefit significantly from such a service by pharmacist are the poly-medicated patient.

With appropriate training, pharmacists can identify children/ clients/individuals with evidence of early signs of dental decay (or who are at risk of developing dental decay such as individuals on MMT and the poly-medicated patient), apply fluoride varnish to the affected teeth (and others that are at risk) to help prevent/reverse/arrest the dental caries process, and then refer to an oral health practitioner for ongoing management.

Pharmacists are well placed to play an important role in oral health promotion and prevention, including the provision of evidence based non-invasive preventive oral health procedures.

Pharmacists should be supported to implement preventive programs including the application of Fluoride varnish and the provision of products (prescribed or over the counter) including high fluoride tooth paste where appropriate, that would help prevent the manifestation or reverse early signs of chronic oral diseases in high risk and under-served patient groups.

Review question No. 25. As medicine specialists, what are the professional programs and services that pharmacists should or could be providing to consumers in order to best serve the consumers?

As medicine specialists, the professional programs and services that pharmacists should or could be providing to consumers in order to serve them best include:

1. Medication reviews
   When undertaking medication reviews, monitor for and make recommendations to counteract the impact of certain medications on the oral health of the consumer

   A Medication review is a formalised and comprehensive review process that is intended to optimise the therapeutic management of patients by assessing
any need for changes in medications and ensuring the patient’s understanding of the medication regimen.

The aim is to solve, address or prevent any medication-related problems that impact directly or indirectly on the patient’s health outcomes. This serves to improve patient medication concordance. Some problems may require further investigation and management.

Evidence shows that health professionals are often not aware of all the medications the patient is taking, especially over-the-counter and complementary medicines (FitzGerald, 2009), and their impact on the overall health of the patient including oral health. The review involves preparation of a complete patient medication history and provision of education about wise use of medicines and management of medication related problems and their impact on the overall health of the patient.

A pharmacist performing a medication review should consider the inclusion of the following:

- Assess oral health when determining the impact of medicines on the overall health of the patient. For example, many prescribed and over the counter drugs cause xerostomia (dry mouth). Patients with dry mouth are at a much increased risk of developing oral diseases such as dental caries and periodontal disease. Has this increased risk been considered and addressed?

- Screen high-risk patients for potential oral health issues.

- In developing an action plan, recommend or implement non-invasive preventive oral-health procedures to prevent or minimise the effect of direct or indirect impacts on the overall health of the patient.

- When contacting or referring the patient to other health professional for ongoing management or in relation to adverse effects, include dentists and oral health therapists where necessary.

2. Preventive programs
Implementation of preventive programs that involve the administration/dispensation/ or application of medicaments or products (prescribed or over the counter) that would help prevent the manifestation or reverse early signs of chronic diseases

Oral Health is as an example of a health preventive program that pharmacist would be in a good position to implement that would have a significant impact on the general health and well-being of the patient/client (Kranz et al, 2014; Stearns et al, 2012).
3. **Methadone maintenance therapy**
   Implementation of an oral health preventive component (in the form of Fluoride varnish application & recommendation of high fluoride tooth paste use) to the methadone program that would minimize or reverse any adverse oral health outcomes of methadone treatments (Brondani & Park, 2011).

Methadone is a prescription drug used to help individuals overcome and withdraw from highly addictive illicit substances, such as heroin, but it has detrimental oral health effects. Methadone is typically administered orally via a highly concentrated sucrose-syrup preparation. As a result, methadone has detrimental oral health effects, particularly when associated with poor oral hygiene, high sugary diet and other illicit drug use (Brondani & Park, 2011).

Smoking prevalence in this population remains very high (95%) (Chun, 2009), which can contribute to which contributes to tooth-staining, periodontal diseases (gingivitis/periodontitis), halitosis, dental caries, oral candidiasis, poor wound healing, poor oral hygiene, tooth loss, precancer lesions (leucoplakia) and oral cancer.

**Oral Manifestations of Methadone Maintenance Therapy (MMT) include:**

a. suppression salivary secretions leading to Xerostomia (dry mouth). Since MMT patients can be often medicated with anti-depressants that further inhibit salivary flow, xerostomia is a common finding. With low saliva flow, generalized bacterial plaque accumulation from poor oral health leads to the development of extensive dental caries (tooth decay) over most of the dentition.

b. Methadone users seem to favour a high intake of sugars and low intake of fibre, which might result in a high prevalence of plaque biofilm accumulation and dental caries as seen in any individual who favours a high sugary diet and carbonated beverages in the absence of proper oral hygiene (Nathwani & Gallagher, 2008; Zador et al, 1996).

c. Dental anxiety: Studies worldwide have found that nearly half of MMT patients have co-occurring mood, personality and anxiety disorders (Scheutz F, 1986; Titsas & Ferguson, 2002). Such disorders may contribute to a higher incidence of dental anxiety and needle phobia, discouraging dental or dental hygiene visits for cleanings or treatments (Robinson et al, 2005).

MMT patients might present with behavioural and psychosocial challenges that create barriers to accessing oral health care (Brondani & Park, 2011). Such disparity makes this population further vulnerable to dental diseases and in need of special attention and proper treatment. Charnock et al, 2004, demonstrated that 68% of drug users reported oral health problems, compared to 51% of non-drug users. Almost 60% of the non-drug users made use of dental services regularly, compared to only 29% of the drug users. About half of drug users sought dental treatment only when in severe...
pain, whereas only 30% of non-drug users visited the dentist under the same circumstances (Charnock et al, 2004).

**In undertaking medication reviews, pharmacists should consider and make recommendations to counteract the detrimental impact of medications on the oral health of consumers. Pharmacists should also recognise that certain medical conditions are associated with oral health problems and where appropriate refer patients to either their GP or a dentist.**

The implementation by pharmacists of an oral health preventive program for clients of methadone programs would help minimise or reverse adverse oral health outcomes of methadone use.

**Review question No.37. Is cost a barrier to accessing worthwhile health services offered by pharmacy?**

Cost should not be a barrier to worthwhile non-invasive oral health preventive procedures provided by pharmacists.

A program should be established to enable patients eligible for public dental services to be able to access these non-invasive oral health preventive procedures through pharmacies in a similar way as public dental services are made available through private dental practices. Currently, community dental programs run emergency, general practice, and denture vouchers schemes that can be used in private dental practices for provision of dental services subsidized by the state government. That is, the public dental patient can receive certain services in private dental practices that are subsidized by the government. A similar system should be set up for public non-invasive oral health preventive procedures provided by pharmacist

For patients not eligible for public dental services, the likely cost to consumers should be similar (if not less) than that incurred through private dental practices

Oral health anticipatory advice and oral care product use advice should not incur any fees by the pharmacists but rather form part of the program/suite of oral healthcare services offered by community pharmacies.

**Review question No. 40. What pharmacy services should be fully or partially Government funded and what is best left to market or jurisdiction demands?**
Pharmacist delivered oral health programs should be targeted at groups who are entitled to public dental health programs, cannot afford or have limited access to private dental services.

Any oral health services that are part of public dental programs and are provided by pharmacists should be fully or partially Government funded, depending on the jurisdiction’s policy.

Non-invasive oral health preventive procedures such as fluoride varnish applications should be fully funded by government for people who cannot afford or have limited access to dental services.

**Pharmacist delivered oral health programs should be targeted at and subsidised for groups who are entitled to public dental health programs, cannot afford or have limited access to dental services.**

Review question No. 26. Should there be limitations on some of the retail products that community pharmacies are allowed to sell? For instance, is it confusing for patients if non-evidence based therapies are sold alongside prescription medicines?

Evidence demonstrates the harmful effects of combining sweet tasting foods and drinks (including carbonated drinks) with cariogenic oral flora in the development of dental decay. Excessive consumption of sweet tasting foods and drinks are also implicated in obesity, and the development of diabetes. Therefore it is important that pharmacist limit easy access to sweet tasting foods and drinks to their clients. These sweet tasting foods and drinks include: jelly beans, chocolates, and other confectionaries, as well as, sweet tasting over-the-counter and prescription medicines, chewable vitamins, lozenges and syrups. These should be substituted with non-sweetened alternatives.

Highly acidic foods and drinks are also detrimental to oral health as they lead to erosion of dental enamel (chemical dissolution of tooth enamel) On average carbonated drinks (including carbonated mineral water) have a pH of <2. Tooth enamel dissolves (ie calcium and phosphates are removed from the enamel) at a pH <5. Some of the slimming products are also acidic and therefore are detrimental to oral health.

**Pharmacist, particularly those supported to deliver oral health promotion and preventative programs should recognise and advise patients on the detrimental effects of certain sweet drinks and products on oral health and reconsider displaying these items in the pharmacy.**
References:


National Advisory Committee on Oral Health for the Australian Health Ministers' Conference 2004, Healthy mouths, healthy lives, Adelaide: South Australian Department of Health


**Attachments:**

Attachment 1: Joint Position Statement on Oral Health and Pharmacy

Good oral health is fundamental for general well-being, while poor oral health can lead to a cascade of other health problems. Pharmacists in the community can play an important role in oral health promotion. In doing so, pharmacists should work collaboratively with dentists and other healthcare professionals to ensure patients receive the right advice, products and treatment and referral for their oral health conditions.

Background

- The Pharmaceutical Society of Australia (PSA) is the leading professional pharmacy organisation which represents the professional interests of pharmacists from a wide range of health-care settings across Australia. PSA supports the pharmacy profession through Professional Development and Practice Support, to help pharmacists deliver quality health care to consumers and improve the nation’s health through excellence in the practice of pharmacy.
- Dental Health Services Victoria (DHSV) is the leading public oral health agency in Victoria. DHSV partners with the wider health sector to support a stronger preventive focus to reduce the burden of oral disease in the community.
- The Australian Dental Association Victorian Branch (ADAVB) is the peak body representing public and private dentists in Victoria. ADAVB supports the dental profession through Professional Development and Practice Support to deliver quality dental care to the Victorian community.
- Pharmacists are easily accessible and highly trusted health care professionals who support the health and wellbeing of the community through medication supply and management, primary health care, screening and preventative programs and health promotion. Studies have shown that pharmacists are well placed to play an important role in oral health promotion.
- Oral health is fundamental to general well-being, and many health conditions have been linked to poor oral health including cardiovascular disease, diabetes, nutritional deficiencies, and adverse pregnancy outcomes (such as preterm birth, low birth weight, and preeclampsia).
- Almost all oral diseases are preventable; therefore a policy initiative between ADAVB, DHSV and PSA(Vic), and would support endeavours to promote better oral health through the pharmacy sector.
Our position

- Pharmacists can play an integral role in the improvement of oral health in the community
- PSA supports the role of pharmacists in the following areas of oral health:
  - Advise on preventive measures, good oral hygiene and minor oral health problems
  - Recommend patients see their dentist regularly for tailored oral health advice
  - Reinforce advice provided by the patient’s dentist on common oral health problems
  - Supply of oral health products and provision of evidence based advice,
  - Address common risk factors in chronic diseases
  - Advice for medications which may affect oral health
  - Assessment and referral pathways
  - Oral health promotion
- The role of pharmacists in oral health complements PSA’s Position Statement on Pharmacist Involvement in Preventative Health Care Services (2009), which states that strengthened primary care has been identified as a major means of alleviating the burden of preventable diseases and conditions (PSA, 2009)
- PSA (Vic) will provide ongoing professional development and practice support to pharmacists and their support staff in the area of oral health in consultation with ADAVB, DHSV and other relevant organisations for expert advice

Evidence based rationale

- Tooth decay is Australia’s most prevalent health problem, with more than half of all children and almost all adults affected. Gum disease is the fifth most prevalent health problem. The treatment of oral disease is the most common reason for avoidable hospital admissions, with more than 40,000 people hospitalised for preventable conditions. (Rogers, 2011)
- Dental decay is the second most costly diet-related disease in Australia, with an economic impact comparable with heart disease and diabetes. Approximately $8.7 billion was spent on dental services in 2012-13, representing 5.9% of total health expenditure. (Health expenditure Australia 2012-13)
- There are over 5,000 community pharmacies across Australia, with each pharmacy serving an average of 4,000 people. It has been estimated that the average person visits a pharmacy around 14 times per year, which offers a significant amount of intervention opportunities for pharmacists to discuss oral health with patients (PSA, 2009)
- Evidence shows that community pharmacists are well placed to recommend sugar free medicines, provide advice on minor oral health problems, make appropriate referrals to dental care and provide oral health educational materials (Rogers, 2011)
- Pharmacists agree that providing oral health information is within their scope of practice, however a study has shown that very few do so proactively (Buxcey et al, 2012)
- A UK study found that pharmacists receive little training in oral health, and pharmacists and public dental services are often not well connected, nor do pharmacists know how to refer clients (Maunder & Landes, 2005) In Australia, dental care is predominantly provided in the private sector and so pharmacist referral into both public and private sectors is necessary.
Pharmacists’ role in oral health

1) Advice on preventative measures and good oral hygiene
Pharmacists should provide evidence based advice to the public on simple ways to maintain good oral hygiene as well as diet and eating behaviours, to prevent tooth decay and gum disease. This can include best practice for brushing teeth with a soft toothbrush, use of appropriate fluoride toothpaste, having regular dental check-ups, prevention of early childhood caries, limiting intake of food and drinks containing added sugars and recommending sugar free medicines.

2) Advice on common oral health issues
Pharmacists should ask relevant questions and provide appropriate advice to patients presenting with common oral health problems including swollen or bleeding gums, tooth decay, gingivitis and, dry mouth. As part of this advice, pharmacists should encourage patients to seek further advice from an oral health professional for a definitive diagnosis.

3) Supply of oral health products and provision of advice
There are a number of products in the pharmacy which can support good oral hygiene or be used for the treatment and management of minor oral health issues. Pharmacists should offer appropriate recommendations and advice on their potential value to patients, including potential side effects, along with general advice on good oral hygiene.

4) Address common risk factors between oral and other chronic diseases
Oral disease shares common risk factors with other chronic diseases (including excessive alcohol intake, smoking and poor diet). Therefore complementary oral health messages should be incorporated into programs that focus on diet and healthy eating, diabetes management and smoking cessation. Some medications also impact on oral health so patients on long term medication for chronic diseases should be given advice to mitigate the risk. Further details are provided in point 5, below.

5) Advice for medications which may affect oral health
A number of medications can affect oral health, such as those that cause dry mouth, those implicated in causing acid wear, those that cause gingival hyperplasia, as well as illicit drugs such as cannabis, cocaine, ecstasy, heroin and methamphetamine (Deldot & Nissen, 2011). Pharmacists can help to reduce the risk of developing oral health problems by providing education to patients who are taking these products. Patients taking long term medications for chronic diseases such as psychotropic drugs, centrally acting analgesics, antiepileptics, antidepressants, etc. may be at risk of developing poor oral health because the medication may cause lethargy, fatigue and memory impairment as well as dry mouth (Deldot & Nissen, 2011). Pharmacists should recognise that these patients may benefit from reinforcement of advice regarding good oral hygiene practices and refer the patient to their dentist for further advice.

6) Assessment and referral pathways
Pharmacists need to be familiar with the trigger factors that require referral to a dentist or GP. This also includes providing information about how to access local dental services. Pharmacists should develop key contacts for referrals and advice, and work collaboratively with other health care professionals in the local area to support better oral health for the
community. For information about how to contact the public oral health clinic in your state or territory and the Australian Dental Association refer to Appendix 1.

7) **Oral health promotion**
Pharmacists can promote oral health by:

a. Creating a supportive environment
Pharmacists provide access to products in the community that support oral health. This also includes the availability and promotion of sugar free medicine, confectionery and gum. Raising awareness of oral health in the community
Pharmacists can hold an oral health promotion activity in the pharmacy to provide education and raise awareness of the issues surrounding oral health. This can coincide with the Australian Dental Association’s National Dental Health Week campaign and the FDI’s World Oral Health Day. In addition pharmacists should opportunistically discuss oral health with patients, where appropriate.

b. Providing health education and skill development
Pharmacists provide evidence based advice to the public on oral health consistent with the national consensus messages and guidelines on the use of fluorides in Australia.

- **Oral health messages for the Australian public. Findings of a national consensus**


Pharmacists should have access to a range of oral health information resources, which can be provided to patients as required.

**Recommendations**

To support the role of pharmacists in oral health promotion, ADAVB, DHSV and PSA (Vic) will engage in the following initiatives:

1. Pharmacist training and practice support
2. Referral pathways
3. Self Care program

Refer to Supplementary Information for further details of these initiatives.

**Summary**

Pharmacists play a key role in supporting better oral health for the community, through timely and easy access to products, advice and referral to dentists and other health professionals. PSA supports the education and professional development of pharmacists in the area of oral health, and encourages the collaboration between pharmacists and oral health care professionals, with the aim of delivering high quality oral care to patients.
References


Appendix 1 - Dental contacts

Public Oral Health Agencies

**Australian Capital Territory**
ACT Health  

**New South Wales**
New South Wales Health  

**Northern Territory**
Northern Territory Government Department of Health  

**Queensland**
Queensland Health  
www.health.qld.gov.au

**South Australia**
SA Dental Service  
www.sadental.sa.gov.au

**Tasmania**
Department of Health and Human Services  
Oral Health Services Tasmania  
www.dhhs.tas.gov.au/oralhealth

**Victoria**
Dental Health Services Victoria  
P: (03) 9341 1000  
E: dhsv@dhs.org.au  
www.dhsv.org.au

**Western Australia**
Western Australian Department of Health  
Dental Health Services  
www.dental.wa.gov.au

**Australian Dental Association Inc**
The Australian Dental Association is a professional association for dentists and there are Branches in all states and territories.  
www.ada.org.au  
The Australian Dental Association Victorian Branch Inc. is the professional association of dentists in Victoria  
www.adavb.net
Describing the role of Australian community pharmacists in oral healthcare

Meng-Wong Taing\textsuperscript{a}, Pauline J. Ford\textsuperscript{b}, Coral E. Gartner\textsuperscript{c} and Christopher R. Freeman\textsuperscript{a}

\textsuperscript{a}School of Pharmacy, The University of Queensland, Brisbane, QLD, Australia, \textsuperscript{b}School of Dentistry, The University of Queensland, Brisbane, QLD, Australia and \textsuperscript{c}School of Public Health and UQ Centre for Clinical Research, The University of Queensland, Brisbane, QLD, Australia

Keywords
community pharmacist; extended/enhanced roles; oral healthcare; primary care

Abstract

Objectives To investigate community pharmacist’s attitudes, beliefs and practices towards oral health in the Australian setting, describe the frequency and nature of consumer enquiries relating to oral health, and gain insight regarding smoking cessation support for people experiencing oral health problems.

Methods An online questionnaire was developed based on previous research, validated to ensure accuracy and reliability, and convenience sampling used to advertise across major pharmacy organisational websites and newsletters to maximise community pharmacist responses.

Key findings One hundred and forty-four valid community pharmacist responses were descriptively analysed. The majority of pharmacists (93%) believed it was their role to deliver oral health advice in the community and almost all (97%) pharmacists believed further education would benefit their practice. The top four consumer enquiries pharmacists reported confidence in handling related to analgesic medication to relieve oral-related pain (95.8%), mouth ulcers (95.1%), oral thrush (94.4%) and toothache (93.8%); and the most frequently reported consumer enquiries were those where the majority of pharmacists reported high confidence in handling. A small proportion of pharmacists (8%) always enquired about patient smoking status, and nearly all pharmacists (97%) desired further education and training to benefit their practice in oral healthcare.

Conclusion This study highlights that Australian pharmacists have an important role in oral health and there is opportunity to enhance this role, and address risk factors such as smoking with further training, support and education. The findings from this study can guide future research into the development of appropriate training programmes, standards, and best oral healthcare practices for Australian pharmacists.

Introduction

Traditionally, the pharmacist’s role has primarily involved compounding and dispensing medicines.\textsuperscript{[1]} More recently, this role has evolved to include a broader range of functions relating to primary care, including administering influenza and other vaccination programmes, as well as expanded roles in healthcare promotion and education.\textsuperscript{[2–4]} Within Australia, government-funded primary care services delivered by pharmacists include home medication reviews, clinical interventions, screening/risk assessment and disease state management services.\textsuperscript{[5]} The pharmacists’ role is continually expanding with a view towards contributing to and improving public health, as evidenced by the trend for greater government remuneration for delivering professional services and programmes.\textsuperscript{[6–8]} One area in which the pharmacy profession is under-recognised for its contribution is oral healthcare. This role is an important one, given pharmacists are in frequent contact with patients susceptible to a variety of oral health conditions.\textsuperscript{[2]} For example, in Chennai city, India, 84% of those participating in the study reported receiving...
The role of community pharmacists as oral health advisors has been studied internationally. To date however, no studies have assessed Australian pharmacists concerning their overall oral health advisory role, including whether they advise about oral health risk factors such as smoking cessation during oral health consultations. This exploratory study examined the current role of Australian community pharmacists as oral health advisors. In particular, this study assessed attitudes, beliefs and practices of community pharmacists towards addressing oral health issues; the frequency and nature of oral health enquiries; and community pharmacist smoking cessation practices for patients experiencing oral health problems.

Methods

Approval for the study was obtained by the University of Queensland’s Human Research Ethics Committee in October 2014 (approval no. 2014000899). An online questionnaire was developed using Checkbox (v 4.7) to explore pharmacist practices in relation to oral health and associated oral healthcare products in Australian community pharmacies. The questionnaire content was adapted from and guided by previously published studies from the UK, South Africa and New Zealand evaluating the role of community pharmacies in oral healthcare, and were developed by the authors based on a review of the literature and on experience. The questionnaire was divided into four sections: Section one consisted of items relating to participant demographics; section two contained eight questions relating to pharmacists’ practices, perceived education requirements and attitudes towards providing oral healthcare in the pharmacy; section three contained five items which assessed confidence and frequency/nature of oral healthcare presentations in community pharmacy; and the last section contained nine items eliciting pharmacist knowledge about oral health risks associated with smoking tobacco and smoking cessation preferences. The questionnaire underwent three iterations of content evaluation by the authors whereby survey items were deleted, reworded, added or remained unchanged (two rounds involved group discussion and third round involved individual evaluation). The survey was then piloted for face validity by eight practising community pharmacists. Suggested changes were then incorporated into the final questionnaire before it was published for national dissemination (see Appendix S1 for the questionnaire).

A variety of methods were used to recruit Australian community pharmacists. In October 2014, an electronic link to the online survey was published once in the Pharmaceutical Society of Australia’s (PSA) national eNews bulletin. The PSA is the peak national professional
pharmacy organisation and represents all of Australia’s pharmacists working in all sectors and locations. In 2014, there were 27,836 registered pharmacists in Australia; the PSA reported 18,093 members with the highest proportion being community pharmacists followed by pharmacist consultants, hospital pharmacists and pharmacy academics. The PSA eNews bulletin email was distributed to 15,041 PSA members. The survey link was open for 1 month with an incentive of winning a $250 Coles/Myer gift card or Amazon Kindle reader. Due to the very low response rate, we sought to increase responses through other means. During the months November and December, approval was given by the PSA to publish four postings of the survey (at 2 week intervals) on all national PSA social media platforms including Facebook, Twitter, and LinkedIn. The editor of AusPharm also permitted two publications of the survey during November-December on their websites. AusPharm websites are a forum of articles, news, continuing education and discussion groups originally designed as a community pharmacist’s homepage. There are approximately 10,200 registered members of AusPharm. All participants provided their contact details to be included in a draw to win a Coles/Myer $250 voucher or Amazon Kindle reader. The participant details were checked to confirm all submitted questionnaires were unique respondents.

Statistical Package for Social Sciences (SPSS v22 (SPSS Inc., Chicago, IL, USA)) and Microsoft Excel 2010 was used to analyse questionnaire responses. For each item in the questionnaire, frequencies and proportions were generated. Where filter questions were present, percentages were calculated based on those respondents given the opportunity to answer the question. Univariate and bivariate analyses were performed to explore pharmacist practices, beliefs, attitudes and smoking cessation practices relating to oral healthcare. Descriptive statistics were generated if responses were numerical and continuous. Cronbach’s alpha statistic was used as a measure of internal consistency for the survey sections. For this calculation, five and six point rating scales (always, most of the time, sometimes, hardly ever, never and not aware of this product) or a five-point Likert scale (strongly agree, agree, neither agree or disagree, disagree and strongly disagree) were used. The number of questions used in each section to calculate alpha ranged from 15 to 19 questions.

Results

In total, data from 144 community pharmacists were received and descriptively analysed. Responses to the questions were reliable (Cronbach’s alpha range 0.8–0.9). Due to publishing the survey on PSA social media forums and the AusPharmList, it was not possible to determine the overall participant response rate due to broad dissemination and the potential for respondents to disseminate the survey link to community pharmacists not associated with these professional pharmacy organisations. An approximate national community pharmacist response rate of 1% was however determined based on Australian pharmacy labour workforce statistics.

Demographics

Pharmacist respondents indicated they had practiced in community pharmacy for an average 17.7 ± 14.4 years and the majority worked full time (31 ± 12 h per week, median 38 h per week, IQR 20–40 h). The average age of respondents was 40 ± 14 years. A majority of respondents (72%; 104/144) were members with the PSA, as the PSA were the major source of recruitment for respondents. Demographic and practise characteristics of respondents are provided in Table 1.

Consumer enquiries and pharmacist attitudes to oral healthcare provision

Nearly all community pharmacists who participated in the survey (93%; 139/144) believed delivering oral health advice was within their role as a pharmacist. The majority (84%) were confident in recommending and giving advice about oral health products, however, only 68% of pharmacists were confident in identifying oral health conditions in patients. Almost all (97%) pharmacists believed further education in oral health would be of benefit to their practice. The frequency of consumer health enquiries and pharmacist’s confidence in handling patient enquiries is shown in Table 2. Over 90% of pharmacists agreed or strongly agreed they were confident in handling patient enquiries related to analgesic medication to relieve oral-related pain (95.8%; 138/144), mouth ulcers (95.1%), oral thrush (94.4%), toothache (93.8%) and smoking cessation (91.7%). Pharmacists also received more frequent enquiries for these oral health issues.

With regard to providing advice about drug-related adverse oral events, over 80% of pharmacists agreed or strongly agreed being confident in dealing with patient enquiries and 85% reported receiving the enquiry <1/week or never in the last 3 months.

Pharmacist oral health related activities and knowledge of nearby dental practices

Pharmacists were asked which person manages the majority of oral health-related presentations and requests in their workplace. Pharmacists (63%; 90/144) were ranked highest, followed by assistants (33%), pre-registration
have met their local dentist (63 and 76% versus 35% respectively) and were likely to be aware of local dental practice opening times (53 and 61% versus 29%). No other associations in relation to age, sex or background of pharmacists were found (data not shown).

**Pharmacist knowledge of oral health risks associated with smoking and pharmacist smoking cessation practices for patients with existing oral health conditions**

The most common smoking-related oral health conditions identified by pharmacists included oral cancer (77%; 111/144), staining of teeth (55%), periodontal diseases (52%) and halitosis (50%), see Figure 3. Pharmacists were asked whether they were comfortable asking about the smoking status of patients with an existing oral health condition. The majority (76%; 109/144) reported they were comfortable enquiring about patients’ smoking status for those who had an existing oral health condition, 7% were not and 17% were unsure. Pharmacists were asked to report how often in the preceding 3 months they enquired about the smoking status in patients presenting with an oral health condition or query. Only 8% (12/144) of pharmacists always asked, 17% most of the time, 35% sometimes, 30% hardly ever and 10% never.

Those pharmacists who reported asking patients about their smoking status (n = 130), were asked which smoking cessation services they offered patients who smoked and presented with an oral health condition/query in the preceding 3 months (Table 3).

Forty-two percent (55/130) of respondents recommended nicotine replacement therapy (NRT) to their patients, the most popular formulation recommended (always or most of the time) was patches (80%; 44/55), followed by gum (35%; 19/55), lozenge (31%; 17/55), mouth-spray (20%; 11/55), inhalator (18.2%; 10/55), dissolvable strip (16.3%; 9/55) and electronic cigarettes (3.6%; 2/55). Pharmacists were asked if they received requests for electronic cigarettes and refill fluid for them, 36% (52/144) responded that they previously had. Regarding pharmacists’ own smoking status, one respondent (0.7%) smoked on a daily basis, three (2.1%) smoked occasionally, 20 (13.9%) had quit smoking and 120 (83.3%) had never smoked.

**Discussion**

This is the first study to investigate Australian community pharmacists’ role in oral healthcare. It was found that a majority of pharmacists were regularly consulted about a variety of oral health presentations and were confident in handling many of these issues. Pharmacists believed it was
their role to deliver oral health advice in the community, however only a small proportion of pharmacists enquired about patient smoking status, an important risk factor for many oral health conditions. Pharmacists also desired further education and training to benefit their practice in oral healthcare.

There are a number of strengths and limitations associated with this study that should be considered before interpreting the results presented. Strengths of this study include a correlation of the demographic profile of our sample with Australian national statistics on gender and State/Territory of practise, it is likely however that responses are skewed to those with an interest in the topic.\[34]\ The questionnaire items were tested for face and content validity by experts and sample participants, and Cronbach’s alpha showed reliable pharmacist responses to

Table 2 Frequency and range of consumer oral health enquiries in the past 3 months and pharmacists confidence in handling enquiries (n = 144)

<table>
<thead>
<tr>
<th>Patient enquiry</th>
<th>Never</th>
<th>&lt;1 per week</th>
<th>1–5 per week</th>
<th>&gt;5 per week</th>
<th>Confidence level (agree/strongly agree)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgesic medication to relieve oral-related pain</td>
<td>1.4%</td>
<td>7.6%</td>
<td>40.3%</td>
<td>43.8%</td>
<td>95.8% (138)</td>
</tr>
<tr>
<td>Mouth ulcers</td>
<td>0%</td>
<td>12.5%</td>
<td>66.7%</td>
<td>15.3%</td>
<td>95.1% (137)</td>
</tr>
<tr>
<td>Oral thrush</td>
<td>0.7%</td>
<td>23.6%</td>
<td>61.8%</td>
<td>8.3%</td>
<td>94.4% (136)</td>
</tr>
<tr>
<td>Toothache</td>
<td>0.7%</td>
<td>27.1%</td>
<td>53.5%</td>
<td>13.9%</td>
<td>93.8% (135)</td>
</tr>
<tr>
<td>Advice on quitting smoking</td>
<td>8.3%</td>
<td>27.8%</td>
<td>49.3%</td>
<td>9.0%</td>
<td>91.7% (132)</td>
</tr>
<tr>
<td>Xerostomia</td>
<td>1.4%</td>
<td>38.9%</td>
<td>47.2%</td>
<td>6.9%</td>
<td>88.2% (127)</td>
</tr>
<tr>
<td>Teething in children</td>
<td>7.6%</td>
<td>30.6%</td>
<td>47.2%</td>
<td>7.6%</td>
<td>87.5% (126)</td>
</tr>
<tr>
<td>General oral hygiene</td>
<td>20.1%</td>
<td>48.6%</td>
<td>22.9%</td>
<td>2.1%</td>
<td>85.4% (123)</td>
</tr>
<tr>
<td>Oral health product</td>
<td>3.5%</td>
<td>36.1%</td>
<td>47.9%</td>
<td>5.6%</td>
<td>81.3% (117)</td>
</tr>
<tr>
<td>Advice about drug-related adverse oral events e.g. Increased risk of osteonecrosis related to Bisphosphonates</td>
<td>36.8%</td>
<td>47.9%</td>
<td>9.0%</td>
<td>0.7%</td>
<td>81.3% (117)</td>
</tr>
</tbody>
</table>

Not all rows relating to patient enquiry add to 100% which indicates a lack of response to that question. Other patient enquiries not included in Table 2 include one respondent (0.7%) receiving on average <1 enquiry per week regarding advice on reconstructive oral surgery care; and two respondents (1.4%; 2/144) receiving 1–5 enquiries per week relating to trigeminal neuralgia pain relief, and geographical tongue presentations.

Figure 1 Pharmacist-reported factors affecting recommendations for oral health products (n = 144).
questionnaire items. Limitations in this study included a small sample size and sampling methodology. Due to the limited responses in our initial sampling through the PSA, a blanket survey technique was used to maximise respondents, which made determining response rates difficult. Even with incentives and an extended sampling timeframe (2 months), we only achieved a modest sample size. In Australia, no public register comprising of pharmacist contact details is available for sampling the community pharmacist workforce. Convenience sampling via third party advertising across pharmacy organisational websites and newsletters was therefore used in this study to maximise community pharmacist responses. PSA was initially selected as it has the largest Australian member base of practicing pharmacists and is the most representative body for community pharmacists.[28] Members receive national eNews bulletin emails on a regular basis keeping them informed regarding the latest news and developments in the profession. Following dissemination of the eNews bulletin however, only a modest open rate for the bulletin (38.9%) and a very low click through rate to the survey (31 people clicked through) was observed. A blanket survey method was therefore additionally used (advertisement through AusPharm websites and PSA’s Facebook, LinkedIn and Twitter social media platforms) to maximise community pharmacist respondents.[34] Where no pharmacist register is publically available, convenience blanket survey methodology has been used in previous Australian studies to assess national pharmacist responses.[34–36] The low response rate in this study may potentially result from low interest in the topic or may reflect the limitation of this sampling methodology to achieve high response rates in the Australian setting. We believe it to be the latter, given numerous pharmacy studies using comparable sampling methodology achieved a similarly low sample size,[34–36] reflecting a potentially

Figure 2  Pharmacist knowledge of nearby dental practices (n = 144).

Figure 3  Frequency and range of community pharmacist knowledge concerning oral health risks associated with smoking tobacco (n = 144).
time poor and over surveyed population group in Australia.\textsuperscript{37} While there are no agreed standards or criteria for on-line survey acceptability\textsuperscript{,34} due to the low response rate in this study, the generalisability of our findings should be interpreted with caution and considered as hypothesis-generating only. Despite these limitations, from our knowledge, this is the first national study providing insight into pharmacist oral health-related activities in Australia.

In this study, nearly all pharmacists believed delivering oral health advice was within their role as a pharmacist. Currently, there are limited studies that have assessed the frequency and quality of pharmacist–patient oral health consults; of the studies available, a report by Cohen et al.\textsuperscript{38} in Maryland US, found 20% of adult toothache sufferers discussed their toothache pain with their pharmacist and 55.7% of patients reported their advice helped a lot. Studies in the UK and South Africa show 66.3% and 44.2% of pharmacists received 1–5 weekly enquiries relating to oral health topics respectively; and a more recent study in Chennai city, India, reported 84% of pharmacists received 10 or more oral health-related enquiries each day. The high frequency of pharmacist consultations for oral health issues in India may reflect differences in pharmacist practices such as the ability to dispense antibiotics without medical prescription compared to US and Australian practicing pharmacists,\textsuperscript{9} and differences in access to medical and dental care. Results from this study show up to 84.1% of pharmacists were regularly consulted each week regarding oral health advice. This is consistent with international findings and highlights the important role of Australian pharmacists in the provision of oral health care advice to the public.

This is also the first study to report the frequency and confidence of pharmacists managing different oral health presentations in community pharmacy. The most frequently reported enquiries related to analgesic medicines to relieve oral pain, mouth ulcers, oral thrush, toothache and advice on quitting smoking. Interestingly, a majority of pharmacists (>90%) in this study also reported high confidence when handling these enquiries. This may be due to the availability of OTC medicines to treat or relieve these presentations. Pharmacists are regarded as drug experts, and receive extensive training regarding quality use of medicines.\textsuperscript{39} It was therefore not surprising to find a high proportion of pharmacists reporting high confidence in handling oral health issues where OTC remedies exist. Conversely, pharmacists were least confident and were not frequently consulted for oral health advice/services where no OTC medicinal products were available (e.g. broken dentures, oral health advice for pregnant/breastfeeding mothers, gum problems). Future studies are required to assess pharmacists’ oral health practices’ compared to recommended practice standards to determine whether pharmacists are not just confident, but meeting requirements for best oral healthcare practices.

In this study, only approximately one in 10 pharmacists had oral health emergency referral procedures in place. Cohen\textsuperscript{12} reported pharmacists’ were consulted as frequently as medical doctors and twice as frequently than emergency departments for toothache pain. Pharmacists’ role in appropriately dealing with toothache pain is particularly relevant given it is one of the most frequent oral presentations in community pharmacy and in most cases, requires immediate referral to a dental practitioner. This is particularly important for people from disadvantaged populations who lack ready access to dentists due to either financial restraints or long waiting queues in the public health system.\textsuperscript{12,40} In this scenario, pharmacist education and the need for established dental emergency referral procedures and protocols could assist these patients to access appropriate and effective care.

In this study, the majority of pharmacists reported being comfortable asking patients about their smoking status (whom had an existing oral health condition),

<table>
<thead>
<tr>
<th>Table 3 Pharmacist smoking cessation services provided to patients who smoke and presented with an oral health enquiry/condition in the preceding 3 months (n = 130)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
</tr>
<tr>
<td>Provide brief advice</td>
</tr>
<tr>
<td>Discuss the use of nicotine replacement therapy</td>
</tr>
<tr>
<td>Refer patients to Quitline</td>
</tr>
<tr>
<td>Refer patients to their general medical practitioner</td>
</tr>
<tr>
<td>Refer patients to web-based resources for smoking cessation</td>
</tr>
<tr>
<td>Provide printed materials on smoking cessation</td>
</tr>
<tr>
<td>Schedule a time to discuss smoking cessation after oral health presentation is resolved</td>
</tr>
</tbody>
</table>

Not all rows add to 100% which indicates a lack of response to that question. Participants answering ‘never’ (10%; 14/144) to enquiring about patient smoking status did not have an opportunity to answer these questions.

However, when patients presented in pharmacy with an oral health condition/query, only eight and 35% of pharmacists always or sometimes enquired about consumer smoking status respectively. This low proportion suggests potential barriers exist and/or pharmacists are not potentially associating tobacco smoke with negative oral health influences. Barriers to pharmacists providing smoking cessation services include confidence to ask about smoking and fear of alienating patients.[41,42] Unpublished qualitative data from this study also revealed some pharmacists inappropriately assumed they could identify smokers (e.g. via smoker’s breath) which removed the need to query patients about their smoking status. Underpinning these factors, pharmacist variability during information gathering about patients’ smoking-status may result from the lack of a standardised protocol covering the kind of information that should be gathered during pharmacist consultations.[43] In Australia, pharmacists are required to ask smoking information (status and number of cigarettes) from patients only when providing disease state management services, which is financially incentivised for only four health conditions – diabetes, respiratory, cardiovascular disease and mental health conditions.[44]

This is the first study to assess pharmacist smoking cessation practices in patients who smoke and present with an oral health condition/enquiry. Almost half of the pharmacists stated that they recommended NRT, with the most popular formulation recommended being patches, followed by gums. Patches are often preferred by patients and presents a logical choice particularly if patients smoke consistently throughout the day (as patches provide constant nicotine delivery).[45,46] Orally administered NRT is also known to increase the risk of oral adverse events including mouth/throat soreness and ulcers compared to patch formulations.[47] Studies also show patch users are likely to respond more favourably compared to gum users.[48] These factors may have contributed to more pharmacists recommending the patch over other NRTs, however further studies are required to validate these findings. In this study, there was a fairly high prevalence of pharmacists (36%) responding to receiving requests for electronic cigarettes and refill fluid for electronic cigarettes. Electronic cigarettes have not been approved as cessation aids in Australia and there is a current debate about whether they assist smokers to quit or not.[49] Australian laws concerning electronic cigarettes and refill solutions containing nicotine are complex and involve both Commonwealth and State/Territory legislation covering therapeutic goods, drugs and poisons and tobacco products, with differences between states.[50] Our research suggests there may be a need to provide pharmacists with clear guidance on how to handle patient enquiries concerning e-cigarettes, given more than a third of respondents reported receiving patient requests for these products.

A recent Australian Dental Association (ADA) policy document and the US Institute of Medicine report advocate the importance of non-dental health professionals such as pharmacists to be active in oral disease prevention, health promotion and reducing oral health disparities.[51,52] Previous research, however, indicates pharmacists’ general knowledge and education in oral healthcare to be poor.[2,10] In this study, almost all pharmacists believed further education in oral health would be of benefit to their practice, and comprehensive product knowledge was the most important factor affecting recommendations for oral health products. This highlights the need for further pharmacist undergraduate and/or graduate oral health training and education. The Victorian branch of the ADA recently partnered with the PSA in recognition that pharmacists can play an important role in reducing the burden of oral disease.[53]

**Conclusion**

This is the first study to describe the current role of Australian community pharmacists as oral health advisors that we are aware of. The relative exclusion of oral health from non-dental health care professions is changing. This study, consistent with international findings, reports Australian community pharmacists believed delivering oral health advice was within their role and were frequently consulted regarding oral health issues, however, desired further training and education to enhance their practice. This study also revealed only a small proportion of pharmacists asked patients regarding smoking status whom have existing oral health issues, which highlights a potential barrier to effectively addressing an important cause of these conditions. Further studies are needed to examine the level of pharmacist training, the extent to which pharmacists who receive oral health training implement them in practice, and extended roles where pharmacists could improve oral healthcare in collaboration with dental and general practitioners. Data gathered from these studies are necessary to develop and model appropriate training programmes, standards, and best clinical practices.

**Declarations**

**Conflict of interest**

The Author(s) declare(s) they have no conflicts of interest to disclose.

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Authors’ contributions

All Authors state that they had complete access to the study data that support the publication.

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Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher’s web-site:

Appendix S1. Oral health questionnaire.