

# Prevention Research.

ISSN 1832-6013

## Is there a pill for that?

...

The increasing harms from opioid and benzodiazepine medication

adf.org.au

## Acknowledgements

This publication was written by Julie Rae, Dr Ben O'Mara, Geoff Munro and Laura Bajurny, and edited by Kate James, at the Alcohol and Drug Foundation.

They were supported by a reference group that included:

**Lesley Brydon**, Painaustralia  
**Malcolm Dobbin**, Victorian Department of Health & Human Services, Victorian Government  
**Craig Holloway**, Victorian Aboriginal Community Controlled Health Organisation  
**Anna Keato**, Department of Health & Human Services, Victorian Government  
**Eddie Micallef**, Ethnic Communities Council of Victoria  
**Jennifer Pilgrim**, Victorian Institute of Forensic Medicine  
**David Taylor**, Victorian Alcohol & Drug Association  
**Hester Wilson**, General practitioner, Royal Australian College of General Practitioners

In keeping with the Alcohol and Drug Foundation's commitment to reconciliation and respect we acknowledge the Traditional Owners of this land and recognise that this land has always been under their custodianship. We pay our respect to Elders past and present and to emerging community leaders.

Copyright© Alcohol and Drug Foundation, November 2016. Contents may be freely photocopied or transmitted, provided the authors are appropriately acknowledged. Copies of this publication must not be sold.

...



# Prevention Research.

## Contents

Foreword —	2
Introduction —	6
Harmful use of pharmaceuticals —	8
How big is the problem? —	11
Pharmaceutical drugs causing the most harm —	14
Alternative treatments —	18
Who is at risk of harm? —	28
What is causing the problem? —	34
What is being done to address the issue? —	36
What else can be done? —	42
Health literacy —	42
Awareness raising —	43
What can health professionals do? —	44
What can parents do? —	46
What can workplaces do? —	48
What can communities do? —	52
Conclusion —	54
Resources —	58
References —	59



# Foreword

• • •

“ Kids are different today, I hear every mother say  
 Mother needs something today to calm her down  
 And though she’s not really ill, there’s a little yellow pill  
 She goes running for the shelter of her mother’s little helper  
 And it helps her on her way, gets her through her busy day...”

— **Mother’s Little Helper**, The Rolling Stones

When the Rolling Stones wrote the song ‘Mother’s Little Helper’ in 1966 about the risks and benefits of prescribed sedatives, they were probably referring to Valium, a type of benzodiazepine. Valium® emerged a few years earlier and became wildly popular, even with the risk of dependence. Despite the name, in Australia today it is men in their 30s who are increasingly misusing pharmaceuticals.

In this edition of **Prevention Research**, our attention is focussed on two pharmaceutical drugs causing the most harm; opioid analgesics, (used to treat pain), including codeine; and benzodiazepines, including Valium®, used to treat stress, anxiety and insomnia. Both types of drugs are generally only recommended for short-term use, but they are commonly being used for long periods of time in Australia.

At the Alcohol and Drug Foundation, we believe pharmaceutical misuse is Australia’s fastest-growing drug problem. The number of people dying after taking codeine has doubled in the past decade (1). More people die from overdosing on pharmaceuticals than all illicit drugs combined (2), and this number is overtaking the national road toll (3). These deaths may also in part be linked to our alcohol culture, as many are caused by mixing medication with alcohol (4) (1). In Australia 5,500 people die from misuse of alcohol every year and 170,000 are hospitalised (5).

Pharmaceutical drugs are legitimately relied on by most people at some point in their life to cope with pain and fight infection and disease. Yet overuse of medication can result in severe problems, including exacerbating the very negative feelings and symptoms they are designed to lessen. Sometimes this overuse can lead to drug dependence and overdose.

As the same pharmaceuticals can be a friend or a foe, depending on the circumstances, it is vital that Australians have a clear understanding of the risks and benefits of using these medications.

Our interest, at the Alcohol and Drug Foundation, lies in promoting the safest use of pharmaceutical drugs in order to avoid preventable problems and harms.

That includes developing an understanding within the whole community that for many difficult conditions — including chronic pain, stress, anxiety and insomnia — there are alternatives to medication that don’t have negative side effects. These include counselling, relaxation and mindfulness techniques, exercise and changes in diet and lifestyle.

As a society we need to look at safe and effective ways people can manage and recover from health issues without creating further — and sometimes fatal — harms.

I trust this **Prevention Research** issue, ‘Is there a pill for that?’ will contribute to that end.

**John Rogerson,**  
 Alcohol and Drug Foundation CEO

**“Our interest, at the Alcohol and Drug Foundation, lies in promoting the safest use of pharmaceutical drugs in order to avoid preventable problems and harms.”**

# Introduction

Australians benefit from the availability of a wide range of pharmaceuticals, which can be effective in helping to manage a broad spectrum of health conditions.

However, opioids (both prescription and over-the-counter) and benzodiazepines (tranquilisers used to treat stress, anxiety and insomnia) are overused [6] and over prescribed [7]. This is connected to rapidly increasing rates of drug dependency [8], severe injury [9] and death [10].

The number of people dying from pharmaceutical opioid drug overdoses in Australia has risen significantly over the past 10 years and is now overtaking the national road toll. In Victoria alone, these drugs contributed to 330 people dying from a drug overdose. This is higher than the state's 2015 road toll [252] [11] and higher than overdoses from illegal drugs [217] and alcohol [97] [12] [2].

As an indicator of concern, Australia's Therapeutic Goods Administration (TGA) recently cited increasing levels of codeine dependence and recommended that all over-the-counter medicines containing codeine be rescheduled to become prescription-only medicines [13]. From 1 February 2018, medicines that contain low-dose codeine will no longer be available in pharmacies without a prescription. [14] [15].

This problem is not Australia's alone.

Other western countries, particularly the United States and Canada, report similar problems relating to pharmaceutical opioid and benzodiazepine use [16].

Governments, policymakers and researchers in Australia have been working to identify ways of addressing risks associated with the overuse and over-prescription of opioids and benzodiazepines in Australia before they escalate further. It's clear that a multifaceted response is required.

There is a range of evidence-based, alternative treatments for chronic pain, stress, anxiety and insomnia, and these don't have the negative side effects associated with pharmaceuticals. These treatments include counselling including cognitive behavioural therapy, relaxation and mindfulness techniques, as well as diet changes and exercise. However, the uptake of these treatments is low, underfunded and often not considered or prescribed.

Given the rising concern and evidence of high and increasing harms, this publication has been produced to help raise awareness of this issue, its complexities, and encourage conversation and action on how this issue can be addressed.



# Harmful use of pharmaceuticals

Opioids and benzodiazepines should only be used in the short term otherwise they can become harmful. Over time the drugs may stop working and extended use can increase the chances of negative side effects, including dependence [17] [18].

Many Australians may believe pharmaceuticals are safe because they are legal drugs, and that medical guidance can be followed loosely. As a result, Australians may not be aware they are engaging in potentially harmful behaviour, including:

- Taking more medication than prescribed or directed on the packet, either in one dose or over time.
- Taking medication in a different way to what's recommended, such as snorting or injecting a medication that is meant for oral use.
- Using medication without a prescription and ongoing medical supervision.
- Combining drugs, including alcohol, when it's not recommended.
- Continuing with activities that medication affects, for example driving, working, looking after children.
- Sharing prescription medication with friends, family or colleagues.

The responsibility sits with both the doctor/ pharmacist to provide information and the consumer/patient to make sure they are clear about the guidance and follow it as directed to ensure that no harm is experienced.

Some medication misuse is deliberate, for example when people take a pharmaceutical drug for a euphoric or other psychoactive effect. In 2013, over 200,000 adult Australians reported deliberately misusing over-the-counter codeine analgesics [19].

In these cases, people may source the codeine from a friend or family member, or via the Internet, in addition to a medical practitioner or a pharmacy.



# How big is the problem?

In 2013, the number of Australians who had misused pharmaceuticals increased to **11.4 per cent**.

Data from the Pharmaceutical Benefits Scheme (PBS), ambulance attendances, hospitalisations, coronial records and self-report surveys suggests pharmaceutical drug misuse is widespread and growing.

According to the National Drug Strategy Household Survey, pharmaceutical drug use rose significantly in 2013 [20]. In 2013, the number of Australians who had misused phar-

maceuticals increased to 11.4 per cent from 7.4 per cent in 2010 [20] [21]. Between 2010 and 2013, the greatest increases occurred among males in their 30s and females in their 40s [20]. The increase was larger for males than females across all pharmaceutical drug types [20].

Further statistics are given in the following section.



To initiate change,  
Australians first  
need to understand  
the problem and its  
associated harms.





# Pharmaceutical drugs causing the most harm



## Benzodiazepines

Despite being commonly prescribed, evidence suggests that benzodiazepines are not the best treatment for stress, anxiety or insomnia, especially if the problem is likely to be ongoing.

The risk of developing dependence on the drug is higher the longer it's used. It generally shouldn't be used for longer than two weeks [25].

Benzodiazepines, or minor tranquilisers (see Table 1 for common brand names), are prescribed for managing stress, anxiety, and insomnia [24]. Drug-use patterns in states and territories generally reflect national trends; in Victoria they contributed to over half of all pharmaceutical drug overdose deaths in 2015 [2].

As well as the risk of dependence, other side effects include drowsiness, depression, headaches, tiredness but difficulty sleeping, irritability, personality changes, impaired thinking, paranoia, reduced sex drive and fertility problems [17]. More effective treatments, which also don't have negative side effects, include counselling such as cognitive behavioural therapy, exercise and diet changes [25].

...

GENERIC NAME	BRAND NAME	TYPE OF BENZODIAZEPINE
Diazepam	Ducene®, Valium®	Long-acting
Oxazepam	Alepan®, Murelax®, Serepax®	Short-acting
Nitrazepam	Alodorm®, Mogadon®	Intermediate-acting
Temazepam	Euhypnos®, Normison®	Short-acting
Alprazolam	Xanax®, Kalma®, Alprax®	Short-acting

Table 1 Brand names adapted from Brands B, Sproule B, Marshman J, (1998) Drugs & Drug Abuse (3rd ed) Ontario Addiction Research Foundation



Opioid analgesics

Most painkillers, except paracetamol, are opioids similar to heroin.

Opioids help many Australians manage intense pain, for example after surgery or dental work, and are a key part of helping them to recover. However, they can have side effects including drowsiness, constipation, muscle tension, headaches, and dental and stomach problems [18]. They can also reduce sex drive and fertility, cause moodiness and fluid retention, decrease bone density and may cause dependence if used for extended periods of time [18].

The risk of experiencing these side effects is higher the longer they are used. Opioids may stop working on pain after they are used regularly for extended periods. Australians are increasingly using them for longer, even though the negative side effects generally outweigh the positive effects after an extended period of time.

Opioid-related hospitalisations increased from 605 in 1998 to 1,464 in 2009, outnumbering all hospitalisations due to heroin poisoning since 2001 [22]. According to a survey of people accessing needle and syringe program services in Australia, the proportion of respondents who reported last injecting pharmaceutical opioids has nearly doubled since 2001, peaking in 2010 at 16 per cent [26].

In 2012, more than two-thirds of the 564 accidental opioid deaths among Australians aged 15 to 54 were due to pharmaceutical opioids [27].

Codeine

Codeine is an opioid drug that is used to provide relief from a number of conditions including mild to moderate pain, severe pain (when combined with aspirin or paracetamol), dry irritating cough, diarrhoea and cold and flu (when combined with antihistamines and decongestants). (See Table 2 for common brand names.)

More codeine is consumed in Australia, the United Kingdom and Canada than any other opioid [1]. In Australia, this includes codeine-containing analgesics such as codeine with ibuprofen (e.g. Nurofen Plus®) that are available without a prescription, and those such as codeine with paracetamol (e.g. Panadeine Forte®) that are prescription only. The analgesics available only with a prescription tend to have greater amounts of codeine in them.

...

GENERIC NAME	BRAND NAME
Aspirin and codeine	Aspalgin®, Codral Cold & Flu Original®
Ibuprofen and codeine	Nurofen Plus®
Paracetamol and codeine	Panadeine Forte®, Panamax Co®
Paracetamol, codeine and doxylamine	Mersyndol® and Mersyndol Forte®, Panalgesic®

Table 2 Codeine, generic and brand names

Codeine-related deaths are increasing as the consumption of codeine-based products increases [2]. From 2000 to 2009, deaths where

Codeine (cont.)

codeine was determined to be an underlying cause more than doubled from 3.5 per million to 8.7 per million population [2] (see Figure 1). This is about half the number of deaths related to Schedule 8 drugs, which include heroin [2]. Schedule 8 drugs are drugs of dependence and are closely monitored.

Dependence on codeine is also increasing. Public alcohol and drug clinics reported a fourfold increase in the number of treatments where codeine was a drug of concern between 2003–04 to 2013–14 [23].

...

Rate of pharmaceutical opioid related mortality in Australia, 2002–12

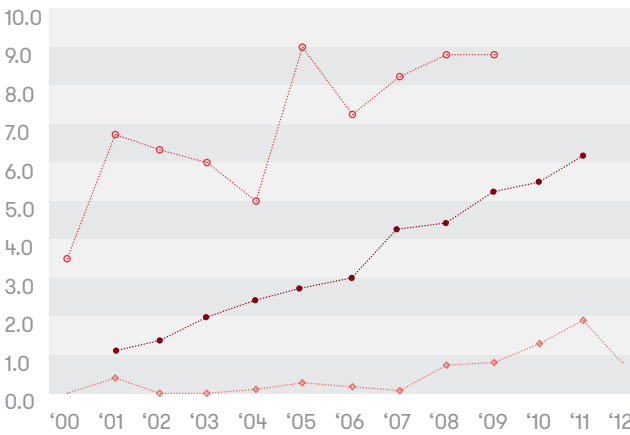


Figure 1 Rate of pharmaceutical opioid-related mortality in Australia, 2000–2012. Calculated from reporting on codeine [1], oxycodone [28] and fentanyl [4].

Key

- Codeine (calculated from data reported by Roxburgh et al. 2015)
- Oxycodone (calculated from data reported by Pilgrim et al. 2014)
- Fentanyl (calculated from data reported by Roxburgh et al. 2013)

Other opioids

Oxycodone and fentanyl are other pharmaceutical opioids commonly misused.

There were 806 oxycodone-related deaths between 2001 and 2011, including a seven-fold increase between 2001 to 2011 (see Figure 1) [28]. More than half of oxycodone deaths were caused by a combination of drugs, while a minority were due to oxycodone toxicity alone [28]. Fentanyl-related deaths also increased overall between 2000 and 2012 [4].

...

GENERIC NAME	BRAND NAME
Oxycodone	Oxynorm®, OxyContin®, Endone®, Proladone®, Targin®
Fentanyl transdermal patch	Durogesic®, generic brands
Fentanyl lozenge/lollipop	Actiq®
Fentanyl IV injection	Sublimaze®

Table 3 Oxycodone and fentanyl brand names



# Alternative treatments

For some people, medically supervised use of pharmaceutical drugs may be the most appropriate approach to support their health needs, particularly if their physical or mental pain is acute and likely to be short-lived.

However, there is growing acknowledgement that other strategies are viable options that should be explored when reviewing a person's need for support for chronic pain, stress, anxiety or insomnia.

A number of national strategies have been developed that seek to reduce the use of pharmaceuticals and promote options for alternative treatments, including the National Pain Strategy and the National Mental Health Strategy referred to on page 40.

These strategies work as multi-disciplinary models of care that take into account the physical, psychological, social and environmental factors that influence the condition, as well as how this care should be implemented.

The main alternatives for anxiety, insomnia, stress and chronic pain are:

- Counselling, especially cognitive behavioural therapy
- Relaxation and mindfulness techniques
- Exercise and physical therapy
- Changes to diet and lifestyle

## Cognitive behavioural therapy

Cognitive Behavioural Therapy (CBT) is particularly effective for managing anxiety and insomnia [29], and can also help with stress management. CBT helps change unhelpful habits of thinking, feeling and behaving [30], which in turn reduces negative thoughts and feelings, and restores a sense of control.

There are many different kinds of CBT, but it generally draws on learning, practical tools and training. CBT can be accessed through counselling, group education sessions, and self-help materials [29]. Online platforms are a promising strategy for reaching and supporting people with anxiety and depression who might not otherwise receive help [31].

CBT involves the following techniques:

- Structured problem solving
- Learning to change thinking (e.g. identifying incorrect beliefs)
- Practising new social behaviours (e.g. conversational skills)
- Deep breathing
- Muscle relaxation
- Mindfulness
- Emotional regulation

Chronic pain is identified as an issue of the central nervous system, but one that can be 'reprogrammed' [56]. There is evidence that CBT may therefore be useful for the practical management of chronic pain [32].

There is a specific type of CBT (CBT-I) that has been developed for insomnia, and consists of stimulus control, sleep restriction, relaxation techniques, cognitive therapy and sleep hygiene education [33].



# Case study 1

## Counselling, relaxation techniques and insomnia

### What's the issue?

A 28-year-old woman, on the advice of her general practitioner, reluctantly agreed to see a psychologist because of difficulty sleeping. Her insomnia had led to tiredness and irritability, and she had wanted the quick solution of a prescription for sleeping tablets.

### The solution

The psychologist took her through a number of strategies to deal with her insomnia. Beginning by explaining that bedtime thought patterns, such as worrying about what needed to be done the following day, can cause anxiety and frustration that prevent sleep.

Realising that she often worries at night about paying her bills and finding a job that suits her hours given she has a small child, she was more open-minded to addressing the root cause of her insomnia.

The psychologist taught her to use a sleep diary to record her worries and plans for the following day, as well as write down any concerns that

might arise during the night. The psychologist advised her to practise relaxation techniques including deep breathing and muscle relaxation throughout the day and early evening, as well as to remove television and computer screens from her bedroom.

The woman felt like she had the tools to start taking control of her insomnia, and that confidence made her feel calmer before bed.

### The impact

When returning to her general practitioner the woman reported doing well. Although she still struggles with sleeplessness occasionally, with practise she had trained herself to identify the thought patterns that resulted in insomnia. That recognition meant she especially focussed on her relaxation techniques during the day when she spotted those thought patterns returning. Overall, she reported lower levels of stress and a greater enjoyment of the time with her child, friends and family.

# Case study 2

## Online mental health tool for anxiety

### What's the issue?

21-year-old man felt like quitting his first job because he was finding it too stressful. He was afraid that he had developed a mental illness, but was ashamed that he might be 'crazy' and was also worried about the cost of seeing a specialist. His girlfriend encouraged him to see his GP who suggested he try an evidence-based mental health online tool.

### The solution

After completing an assessment and learning he was experiencing anxiety, he decided to complete one of the short online courses the site offers. The young man learnt to identify the deep-held beliefs that were causing his anxiety, including that he would make a big mistake at work and get fired. He was shown how to look at the evidence to help weigh up what the likelihood was that this would happen. Given he was receiving more positive than negative feedback from his manager and colleagues, the chances of him losing his job were low. He was also encouraged to think about what would happen if he did lose his job, and came to realise this would just mean he'd have to find another one, which wasn't a life or death situation.

The young man also learned to identify the bodily changes he experienced when he felt like resigning from his job, such as difficulty breathing and a rapid heartbeat, as the physical symptoms of anxiety. The course taught him simple relaxation techniques like tensing different bodily muscles for a count of 10, then slowly releasing them and allowing the muscles to relax (progressive muscle relaxation), and how to shift attention to the present moment to observe the thoughts and feelings that come to mind without reacting to them (mindfulness). He also downloaded the recommended mindfulness app.

### The impact

The young man practised the relaxation and mindfulness techniques whenever he had anxiety, and started to experience less severe symptoms. His sleep also improved. The techniques helped him deal with his anxiety when it did arise, allowing him to do well at work.



# Case study 3

## Preventing chronic pain through learning how to better manage stress and anxiety

### What’s the issue?

A 30-year-old elevator technician had repeatedly injured his knee playing basketball. After each injury he had taken codeine and seen a physiotherapist. However, he still felt pain a few months after his last injury and wanted it to stop so he could work more easily, so he visited his general practitioner. The doctor explained that painkillers are not successful at treating chronic pain. He wanted to refer the man to a psychologist. The man resisted, not understanding why he would see a psychologist for a problem with his leg.

### The solution

The general practitioner followed three steps to help convince the man to see a psychologist.

**Step 1. Ask ‘why?’**

The doctor asked the man why he felt so strongly about not seeing a psychologist. The man explained the he thought psychologists were for people with mental health issues. He was just concerned about completing a big upcoming project at work, and getting rid of the knee pain would help.

**Step 2. Motivational interviewing**

The doctor used motivational interviewing techniques and asked about the man’s stress levels to foster a discussion about the negative impacts that stress was having on his life. After discussing the frustration his pain was causing, and how this stress was affecting his relationship, the man was more open-minded to addressing stress as an element of managing his pain and more likely to see a psychologist.

**Step 3. Providing information and an option that helps**

The general practitioner explained that the brain plays a big role in the experience of pain. Pain comes not from a part of the body, say a broken wrist, but is the result of the brain evaluating information such as expectations and beliefs, including worry and stress. The doctor then explained that this was where counselling, especially cognitive behavioural therapy (CBT), could help because it provides practical tools and training on how to reduce worry and other sources of stress. This could make pain much more manageable.

“ He didn’t know that the brain influenced his pain, and wanted to learn more about how he could control it.”

The general practitioner then explained that while counselling is usually a private and reflective conversation with a professional, CBT is very specific in identifying thought patterns and ways to change them.

### The impact

Once the doctor explained that this treatment is subsidised and the patient could be referred to a nearby psychologist, the man agreed to at least give it a go. He didn’t know that the brain influenced his pain, and wanted to learn more about how he could control it.

At his psychologist visit, he learned that CBT is a mixture of education and practical exercises that are normally completed in a series of steps that build upon the previous lesson. This includes learning more about the symptoms of stress and anxiety, why they keep happening, and how to identify unhelpful thoughts that influence the mind and body.

The physical and mental component of CBT involves talking and thinking in a different way about sources of stress, as well as muscle relaxation techniques and deep breathing. The man took home a manual with a series of lessons, real stories about how others have managed stress and anxiety, and instructions on practicing mind and body exercises daily.

After his psychologist visit, the man practised these techniques and continued to see the psychologist. He better understood what happens to his body when stressed (feeling hot, upset stomach, muscle tension) and found two techniques particularly helpful. When stressed, the man would write down a list of what needs to get done at work and also use deep breathing when he felt hot, bothered, and stressed.

Although the knee pain is still there and fluctuates in severity, it’s not all the time. He believes he’s improving, and sleeping better as well.



“Thirty minutes of moderate to intense physical activity most, if not all, days is recommended.”

## Exercise and physical activity

Regular physical activity can assist in improving energy levels, sleep behaviour, and lift moods [34]. These benefits make exercise helpful in the management of anxiety and depression, and an important component of physical and mental health [35]. Thirty minutes of moderate to intense physical activity most, if not all, days is recommended. Although it can be especially difficult for those suffering from anxiety and depression to start exercising and stay motivated, **beyondblue** forums offer helpful suggestions.

Exercise is beneficial for anxiety because it reduces inflammation and oxidative and nitrogen stress, which can in turn positively affect the brain's ability to create new neural pathways [36]. The management of stress may similarly benefit from changes in the brain as a result of physical exercise, but there is a need for further research in this area [37].

Guided physical therapy restores physical and emotional functioning to better manage chronic pain, and does this through muscle strengthening, postural training and active self-management strategies [38].

# Case study 4

## Exercise and chronic pain

### What's the issue?

A 46-year-old woman, who had a motor vehicle accident as a teenager, was experiencing pain in her neck and shoulder. After a neurologist told her that it was chronic non-malignant pain, she became very worried that the pain might be causing more harm to her body. Keen to avoid using medication to treat it, she asked her general practitioner to explain what the ongoing pain meant and if it was causing more damage.

### The impact

At the follow-up appointment the woman told her doctor that she still felt some pain most days, she had been managing it with stretching, exercise and massage. Understanding that the pain was not putting her body at risk improved her confidence to proactively pursue these pain management strategies.

### The solution

Her doctor explained that this pain condition didn't mean that there was ongoing damage, or that she was at risk of neurological damage. Instead, the chronic pain is linked to the central nervous system. The woman felt reassured after the explanation because she understood that the pain didn't mean more damage was happening to her neck and shoulder as she moved.



# Case study 5

## How physical activity and a pain management clinic can help with chronic pain

### What's the issue?

A 55-year-old man underwent an operation for lower back pain and returned to work. He was prescribed Endone® to help with his initial return to work, but the prescription ran out and he's continued to experience some pain over the last couple of months that has been distracting him at work. He was unable to stop working, as he was on a short contract, so his wife suggested he ask their general practitioner for a referral to a pain management clinic.

### The solution

The doctor explained that pain management clinics work with patients to develop tailored treatment plans, ones that often involve physiotherapy, psychology and occupational therapy sessions with pain specialists. He also told him that guided physical therapy could improve muscle strength, posture and self-management. After being referred to a pain management clinic in a major hospital, the man participated in a group pain education program. Although he found the pain education helpful and wanted to go on to develop a treatment plan, wait times to do so were almost two years.

The man decided that he would pay to attend a private pain clinic, where he underwent treatment in group sessions (hydrotherapy), as well as individually. He also joined a local exercise group where he participates in a weekly walking session.

### The impact

Although the cost of treatment is a burden to him, he thinks it's worth it because it has improved his life in other ways, including his relationship with his wife. He also enjoys being social with the walking group. Sometimes he still experiences the pain, but over time and with practise has learned different ways to manage it.

### Dietary changes

Diet has a direct impact on the brain and the rest of the body. For example, amino acids are required for the body to construct neurotransmitters such as serotonin and dopamine, and omega-3 fatty acid has been linked to improved mental health [39] [34].

Increasing the consumption of certain foods and drinks, and reducing others, can relax the body and reduce stress. Generally, a balanced diet rich in vegetables, fruits, legumes, lean proteins like fish, and whole grains is recommended [40]. Reducing the intake of foods high in added sugar and salt, as well as those high in saturated fats, can also be beneficial [40]. Drinking water to stay hydrated throughout the day is important. Including probiotic foods such as kimchi, miso, sauerkraut, pickles and kombucha may potentially have a positive impact on mood and energy levels [41].

If magnesium (which relaxes muscles), vitamin B and calcium are at low levels in the body, then increasing these can help to reduce anxiety symptoms [42]. Reducing consumption of nicotine, caffeine and stimulant drugs also helps reduce stress as they trigger the adrenal gland in the body [42]. Dietary supplements, like multi-vitamins or fish oil, may help to achieve a balanced diet but a doctor should always be consulted [43].

Research is pointing to a link between poorer mental health and the modern 'western' diet high in refined grains, confectionery, and take-away foods [44] [45] [40]. Almost all serotonin present in the blood originates in the gastrointestinal (GI) tract [46] and a research review concludes that it is now known that microbiota (the bacteria that live in the human GI tract) have an influence on 'stress behaviours' such as anxiety and depression [47]. This emerging body of evidence indicates how crucial good nutrition and a well-rounded diet are to mental, as well as physical, health.

### Herbal supplements

There is some evidence that herbal remedies may help with elements of stress, anxiety and minor sleep disorders. For example, lemon balm works on receptors in the brain that trigger relaxation [48] and can reduce difficulty sleeping [49] and green tea — which contains the amino acid L-theanine — also reduces stress [50]. However, medical advice should support any decision to move from prescription to herbal remedies.



# Who is at risk of harm?

## Overdose and intentional misuse

People who are at greatest risk of intentional misuse and overdose are:

- People with complex health issues and mental health problems — because they often take a number of different medications and when certain drugs are combined (especially opioids with benzodiazepines) the chances of overdose increase. If alcohol is drunk with these drugs this risk increases further.
- Men in their 30s—there has been a recent jump in their self-reported misuse of pharmaceuticals [20]. Reasons for this have been identified as coping with problems such as depression, anxiety and rage through self-medication [51].
- Women in their 40s whose level of self-reported misuse has recently increased, although not as significantly as men [20]. Women are prescribed benzodiazepines at twice the rate as men [52]—mainly for sleeping problems.

- People who metabolise codeine to morphine ultra-rapidly, which is around five per cent of Australians [1]. These people can overdose after taking a small amount of codeine and may not be aware of the problem until after they have taken the drug. This is why it's important to only take a low dose the first time codeine is used [53].

## High use of dependency-causing medication

### People in rural and regional areas

Rural and regional areas in Australia have a higher consumption of over-the-counter and prescription drugs than in cities. This trend is supported by higher rates of treatment for dependence on pharmaceutical opioids in these areas [54]. This may be due to the lack of services and alternatives to medication in rural Australia.

## People suffering from chronic pain, stress, anxiety and insomnia

Anyone taking opioids or benzodiazepines is at risk of harm. Situations that may lead to people taking these drugs include accidents, other trauma, surgery, developing a chronic disease, and anxiety or insomnia as a result of chronic pain, financial problems or family breakdown.

In Australia, one in four people suffer from anxiety [55], one in three from insomnia [33], and one in five will experience chronic pain [56].

### Stress

The Australian Psychological Society describes stress 'as a feeling of being overloaded, wound-up tight, tense and worried' [57]. Different types of stress include acute stress (stemming from a particular situation like a deadline or traumatic experience), episodic acute stress (repeated acute stress due to circumstances, patterns of thinking, or both) and chronic stress (when the cause of stress is ongoing and doesn't look like it will end) [57]. Stress can come from various areas of a person's life depending on their individual circumstances, but the most common stressors for Australians are:

- 01 Personal finance issues such as redundancy, unemployment and debt
- 02 Family issues including separation from a partner or divorce
- 03 Personal health issues [55]

Other general forms of stress are:

- Work stress or job change
- Change in living arrangements
- Pregnancy and giving birth, postnatal depression
- Caring for parents or those with a disability or mental health condition

- Major emotional shock following a stressful or traumatic event
- Verbal, sexual, physical or emotional abuse or trauma
- Death or loss of a loved one [55]

### Anxiety

Anxiety is the most common mental health issue and differs from normal feelings of nervousness or anxiousness because it involves excessive fear or anxiety. Key features of anxiety disorders are their persistence, and they can centre on areas that a person may find difficult to control, such as work and school performance. Apart from anxiety and/or fear, individuals can experience ongoing physical symptoms including restlessness or being 'on edge', becoming easily fatigued, having low concentration, poor sleep, muscle tension and irritability [58].

### Link between pain, stress and anxiety

Stress and anxiety are also a major source of chronic pain including headaches and back problems. Around 15 per cent of Australians are taking pain relief for a headache at any given time [99]. One in four Australians who experience stress believe it has a moderate to very strong impact on their physical and mental health [55]. The combination of physical pain and mental health issues can lead people to take both opioids and benzodiazepines. This combination of drugs increases the risk of negative side effects including overdose, especially when combined with alcohol.

### Insomnia

There are many reasons why sleep patterns are disrupted including stress, anxiety, depression, pain, alcohol consumption and shift work. While there are a range of disorders associated with sleep, the most prevalent indicators of insomnia are the difficulty of falling asleep or maintaining sleep [58].



Insomnia can fall into two categories: acute or short term — usually lasting less than three months — and chronic. In the short term, disrupted sleep can lead to increased irritability, poor concentration and accidents, while chronic insomnia can lead to depressive disorders, illness and reduced productivity [58]. Insomnia appears to be more common among females than males and older people can find their sleep patterns are disrupted due to illness and/or medication [58].

People experiencing insomnia may be at risk of misusing pharmaceuticals if they are prescribed benzodiazepines as a treatment given this medication may cause dependence [59]. If a person continues to use benzodiazepines beyond the recommended short-term period of two to four weeks, they are at a greater risk of developing a dependence [25].

## Pain

Chronic pain is classified as pain that continues for more than three months [15]. This differs from acute pain, which occurs after surgery, trauma or other medical conditions and lasts a shorter time. Of course acute pain can become chronic pain.

People with chronic pain may be more likely to misuse pharmaceuticals, some of the reasons include:

- The longer opioids are taken the higher the chance of dependence
- The pain, or the medication they are taking for it, can cause depression and anxiety [28]
- They are more likely to develop a complex profile of physical and mental health problems, and take a range of medications for a long period of time
- They are more likely to either be experiencing social and economic disadvantage or become disadvantaged in this way due to their health condition over time [60]



**“Stress and anxiety is also a major source of chronic pain including headaches and back problems.”**



A photograph of three young women laughing and talking outdoors. The woman in the center is wearing a blue jacket and a black scarf, holding a red coffee cup. The woman on the left is partially visible, and the woman on the right is wearing a white top. The background is a blurred green park setting.

**With the right  
information, people  
are capable of  
changing their  
behaviours for  
the better.**



# What is causing the problem?

## Subsidy of opioids to treat chronic pain

The use of opioids exceeds the increase in reported pain prevalence over the past 25 years [61].

Nearly half of Australian general practitioner prescriptions for opioids are to treat chronic pain [61], but evidence suggests these drugs may not be effective at treating this condition [14] [62]. Trends in opioid consumption are directly linked to the subsidy of specific opioids by the Pharmaceuticals Benefit Scheme (PBS), as well as the expansion of that subsidy to include treatment for chronic pain [61].

Between 1992 and 2012, the number of times opioids were dispensed through the PBS increased 15-fold to 7.5 million, and the corresponding cost to the Australian government was 32 times higher at \$271 million [22].

## High rates of anxiety, stress and insomnia

According to an annual survey conducted by the Australian Psychological Society, many Australians report high levels of psychological problems. One-third report a significant level of distress in their lives, one-quarter report moderate to severe levels of symptoms of depression, while one-quarter report above normal levels of anxiety symptoms [55].

While benzodiazepine dispensing has slightly decreased, prescriptions still remain at high levels. The quantity per script dispensed has increased, which means benzodiazepine can be used for a longer period of time, increasing the risk of dependence and misuse.

## Lack of alternative treatments

Access to mental health and pain management services and professionals is extremely limited, especially in rural and remote areas. As general practitioners only have short consultation times, this makes it difficult to get to the root cause of the problem and convince patients to consider alternatives, as well as research how to access these alternatives [56].

## Doctor prescribing patterns

The National Pain Management Strategy indicates that many health professionals have limited training in pain management [63]. This lack of training may result in general practitioners and other primary care prescribers defaulting to the prescription of pharmaceuticals to deal with pain when there may be other less risky and more appropriate long-term options available.

## Patient expectations

Although Australians may see medication as a 'silver bullet' for their health conditions, their problems are often complex and drugs can have side effects.

Rather than seeking out a quick fix, patients need to persevere to get a correct diagnosis and be willing to try a variety of treatments and lifestyle changes.

While evidence shows the benefits of counseling, mindfulness and relaxation practices, there is still a certain stigma associated with these treatments, which could be preventing people from trying these options [64].

## Over promotion by pharmaceutical companies

Controlled drugs like Oxycontin (oxycodone) can be abused and diverted, and when 'over-promoted' and highly prescribed they create an increased public health risk [28]. In 2007, this became an issue for US company Purdue, manufacturers of Oxycontin, who pled guilty to misleading regulators and prescribers about the risks of the drug's dependence potential for misuse [28] [65].

While there has not been a similar court ruling in Australia, pharmaceutical company representatives do promote drug company information to general practitioners here [66], and this may shape prescribing practices.

There have been significant increases in prescribing and supply of oxycodone. The supply of oxycodone increased by 562 per cent between 2001 to 2011, and there was an increase in prescribing of oxycodone above any other prescription opioid [28]. This increase in prescribing led to increased misuse and diversion [28] [67].

# What is being done to address the issue?

...

## National Pharmaceutical Drug Misuse Framework for Action (2012–2015)

In 2010, the Ministerial Council of Drugs, through the Intergovernmental Committee on Drugs, agreed to develop a national strategic response to address pharmaceutical drug misuse. This work outlined the problem, its perspective in the broader policy context, and the potential responses governments could adopt [16].

Nine priority areas for action were identified and included in the National Pharmaceutical Drug Misuse Framework for Action (2012–2015) [68], driven by a focus on ‘quality use of prescription and non-prescription opioids and benzodiazepines’.



### Nine priority areas:

01 A coordinated medication management system	02 Supporting prescribers	03 Supporting pharmacists and other health professionals
04 Regulation and monitoring	05 Structural factors	06 Health information and other consumer responses
07 Treatment and harm reduction	08 Technological responses	09 Data, research and evaluation [69]



## MedsASSIST

A tool called MedsASSIST is a real-time recording and monitoring system for medicines containing codeine. Funded by the Pharmacy Guild of Australia, it is being rolled out nationally [70]. MedsASSIST was developed in response to concerns over patient safety relating to medicines containing codeine. It acts as an effective alternative to requiring patients to visit a general practitioner to get a prescription for these products [71].

## National program for real-time monitoring of prescriptions

The Commonwealth Government has funded the Electronic Recording and Reporting of Controlled Drugs (ERRCD) system, which is being developed with the Australian Digital Health Agency. Currently two states have decided to implement the program:

### Tasmania

Tasmania implemented the DAPIS Online Remote Access (DORA) system in 2011. DORA is a decision support tool for prescribers that provides secure, real-time access to objective information about:

- Supply of Schedule 8 medications by Tasmanian pharmacies for a particular patient
- Authorities issued to the general practitioner to prescribe Schedule 8 medications
- The patient's history of drug dependence or drug seeking
- The patient's past or current treatment for opioid dependence

### Victoria

In 2016 Victoria announced that real-time monitoring would be implemented in the state. The system will monitor all Schedule 8 medicines, such as oxycodone (brand names include OxyContin® and Endone®), morphine (brand names include Kapanol®), alprazolam (Xanax® and Kalma®), methylphenidate (Ritalin®) and dexamphetamine, because of their high risk of misuse. Further consultation with professional medical and pharmacy groups will determine how best to bring into the system other high-risk medicines, such as diazepam (Valium®) [72].

## Rescheduling

The rescheduling of the benzodiazepine alprazolam (brand names include Xanax® and Kalma®) to Schedule 8 was introduced in 2014, which means the prescribing of the drug is now more closely monitored.

## Reformulation

The reformulation of oxycodone tablets to an abuse-deterrent, sustained-release version in Australia in 2014 has led to a decline of OxyContin® pharmacy sales and a reduction in OxyContin® use [8]. This new formulation was found to successfully lower levels of misuse by making it harder to crush up the tablets and inject the medication [8].

## National Opioid Substitution Treatment OST project

This project has developed a paper that analyses and discusses the current listing, fee and remuneration arrangements of the delivery of the OST pharmacotherapies program. It consolidates issues and recommendations raised in previous reviews and work undertaken over recent years. This information is used to deter-

mine what changes, if any, will make the OST pharmacotherapy program more accessible, equitable, affordable, and effective.

A national opioid substitution treatment project has been completed in Tasmania and is a cross-government, shared funding model project.

## National Return of Unwanted Medicines

The National Return of Unwanted Medicines is a Federal Government project operating in every state. The national scheme provides for unwanted and out-of-date medicines to be collected by community pharmacies from consumers. The medicines are then suitably disposed of by high-temperature incineration [74].

## NPS/MedicineWise online learning and fact sheets for health professionals

NPS/MedicineWise has developed a suite of resources to raise awareness of the issues surrounding pharmaceutical misuse, as well as providing practical advice to pharmacists and other health professionals on how to identify and address drug misuse and abuse. To support this need, NPS/MedicineWise has launched a new online learning course, 'Drug misuse: implications for pharmacists' [75] and has developed a large range of factsheets.

## Marketing and promotion of pharmaceuticals

In 2009, a paper published on OxyContin® highlighted how Purdue Pharma's marketing campaign made OxyContin® the prescribed drug of choice for chronic pain. It was marketed

as 'less addictive and less subject to abuse and diversion than other opioids'. In 2007 Purdue Pharma was found guilty and fined millions of dollars for misbranding [65].

## Pharmaceutical company self-regulation

Pharmaceutical companies self-regulate their advertising to health professionals. In 2014 the Australian Competition and Consumer Commission (ACCC) requested the mandatory reporting of all payments to healthcare professionals. As a result, Medicines Australia has developed a code of conduct [76] for its members and the recent edition was approved by the ACCC.

Though only members of Medicines Australia are required to follow the code, it sets the standard for the ethical marketing and promotion of prescription medicines to health professionals, including general practitioners.

Recently, the code was amended to include the following additions:

*The new Code requires Medicines Australia member companies to publicly report when a company pays a healthcare professional for their service or provides financial support for a healthcare professional to engage in education, including airfares, accommodation and conference registration fees.*

*From October 2015, all member companies will be required to collect and report this information where they have the agreement of the healthcare professionals who are receiving payments or educational support. Following this 12-month period of adjustment, from 1 October 2016, the Code will require reporting of all these payments to healthcare professionals to be mandatory.*



Non-member pharmaceutical companies do not have to follow this code, though they must adhere to the Therapeutic Goods Association code for the advertising of over-the-counter medicine to consumers. Advertising prescription-only and certain pharmacist-only medicines to the general public is prohibited [77].

## ‘No advertising please’ campaign

In 2014 the ‘No advertising please’ campaign was launched worldwide, which was developed by Australian general practitioners and researchers. It was created to urge general practitioners to avoid using drug representatives as their ‘educational’ resource and to pledge not to see them at their practice for one year.

## Primary Health Networks

The service delivery for mental health and suicide prevention is undergoing a national change. Primary Health Networks (PHN) across the country are taking up the responsibility in their specific region for these services.

The 31 PHNs are expected to meet the needs of their region by first assessing what the existing services are, then determining what more can be done for their specific community [78].

A ‘stepped care’ approach is being adopted, which means that the service level will be matched to an individual’s needs.

For example, a person experiencing mental health issues might be directed to low intensity treatment, which could be online. On the other hand, someone experiencing a severe or complex mental health issue would be matched to a high intensity treatment [79].

As part of the Commonwealth Government’s PHN strategy, which includes priority areas of mental health and eHealth, a Digital Mental Health Gateway is being developed to assist users to navigate services and match treatment to their needs. Self-help and digital services are intended to assist people who are at-risk or living with mild mental health issues, in addition to the ‘well’ population [79].

This is also in line with the national E-mental health strategy, which identifies the importance of using technologies such as telephone and online treatments to assist in overcoming the obstacles of distance, stigma and cost. Treatment in this manner helps to reach people not currently accessing services. The strategy calls for E-mental health to be integrated into the primary healthcare sector, and including it in the toolbox of the PHN is a realisation of that goal [80].

## National Mental Health Strategy

The Commonwealth Government is developing an updated National Mental Health Strategy due to be completed in 2016 [81]. It will follow on from the fourth National Mental Health Strategy, which set the following goals:

- Reduce the stigma surrounding mental illness
- Improve links between mental health services and other programs such as education, housing and employment
- Adopt a ‘recovery philosophy’ that recognises that by managing a mental health problem, a person can reach their full potential [82].

## National Pain Strategy

The primary goals of the National Pain Strategy are:

- To destigmatise those with pain, especially non-cancer pain
- To have federal and state governments recognise chronic pain as a disease in and of itself, not just as a symptom
- To provide information and support for those with pain and their carers
- To train and support healthcare providers in best practice for pain management

The National Pain Strategy identifies pain as being influenced by physical, psychological and social factors. Because of these multiple influences, best practice in treatment is recognised by the strategy as multidisciplinary.

The strategy defines five types of pain: acute, recurrent (e.g. migraines), sub-acute (transitional period where pain can become chronic), chronic non-cancer and cancer pain. It also emphasises the importance of treating acute and sub-acute pain effectively, to prevent it developing into chronic pain. Chronic pain is identified as an issue of the central nervous system, but one that can be ‘reprogrammed’ through treatments such as cognitive behavioural therapy.

There has been some progress following the introduction of the strategy, such as the ACT recognising chronic pain as a disease and the opening of 14 pain clinics across New South Wales, Victoria, and Queensland [56].

## Suicide Prevention Strategy—the LIFE framework

The LIFE framework is the overarching, evidence-based framework for suicide prevention. It looks at such issues as risk and protective factors and how to influence them, as well as community and individual resilience in order to inform the provision of suicide prevention programs [83].

Primary Health Networks have been commissioned by the Commonwealth Government to provide regionally appropriate suicide prevention, with a specific focus on Aboriginal and Torres Strait Islander communities.

“Chronic pain is identified as an issue of the central nervous system, but one that can be ‘reprogrammed’ through treatments such as cognitive behavioral therapy.”



# What else can be done?

## Health literacy

There is an ongoing need to increase Australians' health literacy to help people take medication safely.

Health literacy is the ability of people to understand and apply information about health in their daily lives—as individuals, and in health system environments [84].

“In Australia, 60 per cent of adults have low individual health literacy, and low health literacy has been consistently associated with poor health outcomes [85].”

Low health literacy can make understanding information about medication difficult.



“Warning labels on medicine packs, such as ‘Don’t mix this medication with alcohol’, should be included.”

## Awareness raising

Pharmaceutical drugs are not a panacea for healthcare issues. We should all be aware of the side effects of our medication, so we can make good decisions based on this information. Seeing healthcare professionals who let you ask questions about your care is a crucial part of taking responsibility for your health, getting a correct diagnosis and receiving the best treatment.

To help people better understand and share their healthcare decisions [86] involving pharmaceutical drugs, the Alcohol and Drug Foundation recommends the following key messages for patients:

- Medication like Valium® should not be taken for longer than two weeks. It can cause dependence, reduced sex drive, fertility problems, depression, headaches, fatigue, difficulty sleeping, irritability, personality changes, impaired thinking, paranoia and clumsiness.
- Reduce your chances of negative side effects or overdose by never mixing medication such as Valium® with alcohol.
- Ask your doctor or pharmacist about the side effects of any medication you are taking to make sure you will still be fit to do activities like driving, working or looking after children.
- If you want to restart taking a medication, consult with your doctor first rather than using leftover drugs.
- Don’t share medication with family or friends. There is no safe level of drug use. It is important to be careful when taking any type of drug.
- The number of people overdosing on medication like codeine has increased significantly recently.
- When medications like codeine and Valium® are used regularly for a long time, the negative side effects can often outweigh any positive effects.
- Strong pain relief like codeine should only be used for a short period of time. They can stop working if they are used for too long and have serious side effects including dependence. Try to switch to paracetamol as soon as possible, but consult with your healthcare professional.
- The side effects of strong painkillers like codeine include drowsiness, constipation, reduced sex drive and fertility, dependence, muscle tension, headaches, dental and stomach problems, moodiness, fluid retention and decreased bone density.
- There are better treatments for stress, anxiety and insomnia than medications such as Valium®. Eating a well-balanced diet, exercising regularly and getting counselling (either online, over the telephone or in person) is not only proven to be more effective at treating these conditions, they also don’t have negative side effects.

Information about side effects should also be made consistently available on pharmaceutical packs or in them. Warning labels on medicine packs, such as ‘Don’t mix this medication with alcohol’, should be included. At the moment, it’s often up to doctors or pharmacists to communicate this information to patients. Information with medication packs would give doctors or pharmacists a readily available resource to use for these conversations and help patients remember what they have been told.



What can health professionals do?

There are practical steps that health professionals can take to prevent further harm from pharmaceutical drugs with the people they support and in their work for agencies.

Basic steps for health professionals to take include:

- 01
- Better understand drugs like opioids and benzodiazepines including appropriate and inappropriate use, and their side effects.
- 02
- To help identify patients suffering from the side effects of medication, ask them about their daily lives. For example, “Have you had trouble remembering things?”, “Do you ever feel dizzy or tired at work?”. Given the stigma attached to drug dependency asking a patient outright about their drug consumption may often not be a successful line of questioning.
- 03
- Check whether pharmaceutical drugs can be managed differently. For example, are the drugs part of a health plan that is reviewed periodically? Do the drugs need to be used at all?
- 04
- Understand alternative treatment and develop ways of explaining the benefits of them to patients.
- 05
- Refer to specialists where required, i.e. pain clinic, headache clinic, psychologist, dietician, and/or physiotherapist.

Early intervention

Healthcare professionals should attempt to intervene before pharmaceutical drugs become a problem. A patient might, for example, experience one or more of the following situations:

- They’re about to have surgery and experience acute pain.
- They recently had an accident or experienced another trauma.
- They’re experiencing troubles related to anxiety or difficulty sleeping.
- They might have a history of drug (including alcohol) dependency.
- They’re experiencing headaches, muscle soreness and/or other bodily pain.
- They experience work and/or family related issues that may increase risk of anxiety, trouble sleeping and/or physical pain.
- They may be less well-connected socially, be without strong social support networks, be facing employment challenges (including underemployment or casual/unstable employment), lack adequate housing and/or have low health literacy.

When they understand the patient’s situation, healthcare professionals can provide appropriate information on how to manage pain, stress, anxiety or insomnia without relying on medication long term. Where appropriate, they can provide information on the risks involved with using these drugs for extended periods of time, while still supporting those in their care.

Supporting better practice

Healthcare professionals can find the relevant contact for policy and practice guidelines on medicines at their agency (e.g. Policy Officer, Clinical Leader) and discuss how to adapt practice-wide policies on safe opioid and benzodiazepine prescribing. One option is to use a recommended prescribing template, such as ‘Prescribing drugs of dependence in general practice, Part A’ on the Royal Australian College of General Practitioners’ website.

Health professionals should also do supplementary training in pain management and addiction medicine, given the high use of these drugs in Australia. There is accredited online training available through institutions such as the Royal Australian College of General Practitioners.

Primary Health Networks

Primary Health Networks can facilitate education and training for general practitioners and allied health practitioners in their local area and also provide consumer education. They can also facilitate community support groups for consumers and provide access to online information.

Due to the high rates of medications with dependence potential being prescribed in rural and remote areas, there is a specific need to provide tele-health facilities, including multi-disciplinary pain management teams in primary care. Incentives for general practitioners and other health professionals to do training in pain management and to use tele-health is needed.

“ Health professionals should also do supplementary training in pain management and addiction medicine, given the high use of these drugs in Australia.”



## What can parents do?

Parents are a target audience of the Alcohol and Drug Foundation, given the key role that they can play in preventing alcohol and other drug problems. Parents are the first ‘drug educators’ their children know and parental use of drugs, including medication, is understood as a powerful model for their children’s behaviour. Research indicates that children grow up to imitate their parents’ attitudes and behaviours towards drugs [87].

### Safe use of medication

When children are in pain, it’s natural for parents to want to relieve their suffering. However, there is some important information that parents need to know:

- Children under the age of 12 should not be given over-the-counter codeine [88] or any product containing codeine.
- Aspirin should never be given to children under 16, because it’s associated with a rare but serious disease called Reye’s Syndrome, which can cause delirium and coma [89].
- Paracetamol is the most common over-the-counter medicine associated with unintentional overdose requiring hospitalisation in children less than five years of age [90].
- Parents should weigh their children to avoid overdosing them with medication [90].

- It’s important to read the label and medical information and find out what is in the medicine, especially the main ingredient.
- All medicines should be safely stored away from children.
- Pain relief medications mask pain, they don’t reveal the cause. So, it’s important to find out what is causing the pain.

### Dealing with pain

Parents need to consider whether pain medications really need to be used when their child is in pain. If medication is given, then parents should explain that they are using it as a last resort.

There are many different approaches parents can take instead of using a painkiller, unless their child experiences severe pain, in which case they should be taken to the doctor.

Some tactics to use instead of a painkiller are:

- Icepacks or heat treatments, depending on what’s causing the pain
- Exercising, and by not reaching for a pill at the first sign of discomfort
- Distraction through games
- Ask the child’s doctor for advice

### Coping strategies for stress and anxiety

Equipping a child with coping strategies and habits from a young age can benefit them for the rest of their life. For example, talking about feelings with a child can help them manage their emotions. By assisting them to label and describe the emotions they’re experiencing, parents can help them understand and control what they feel. Parents are also emotional role models, and can help by demonstrating positive behaviours such as admitting to their own mistakes, apologising, and showing their child how to reconcile with someone they’ve hurt [91].

Parents can also create emotional stability in their child’s life through being personally consistent and predictable, and following bedtime and mealtime routines [93].

Giving children emotional skills can help them deal with future problems successfully, like the stress of exams or bullying in school,

through being able to identify, manage, and speak about their emotions. Having a history of comfort with talking about their feelings may make it more likely that they will express when they are worried, anxious, or unhappy and ask for help.



## What can workplaces do?

Given work and finance troubles are listed among the top causes of stress and anxiety in Australia, workplaces need to recognise the opportunity they have to prevent their employees from suffering from these conditions.

Employers also need to know that the side effects of opioids and benzodiazepines, which are being widely taken in this country, can impact on the safety and culture of their workplace.

These side effects include reduced alertness and concentration, clumsiness, sleepiness, memory problems, irritability, moodiness and depression. The focus for workplaces should be on preventing employees from developing problems with these drugs, although there is also a need to address misuse.

### Create and promote a policy

The Alcohol and Drug Foundation advises all workplaces to have a formal alcohol and other drug policy that includes the use of over-the-counter and prescribed medications.

A comprehensive workplace policy enables an organisation to meet its duty of care obligations under the workplace health and safety legislation that requires employers to provide a working environment that protects the health and safety of its workers.

An effective policy provides strategies that will assist managers to prevent alcohol and drug problems from happening and provide guidance to help deal with difficult situations if and when they arise.

To be effective, policies also need to be known and understood by every employee throughout the workplace. This can be achieved through regular and ongoing education, including talking about the policy and the risks associated with alcohol and drug misuse.

Through the policy, employees who are taking medication should be encouraged to inform their manager of any limitations placed on them as a result of taking the drug, including getting a letter from their doctor to excuse them from their normal duties. Workplaces need to try and accommodate this person with alternative duties so they can follow their doctor's advice while also working safely. Employees need to understand that the responsibility sits with them to check with their doctor or pharmacist about the possible side effects of any medication they are taking and how it might impact on their work.

### Improve health and wellbeing

A key aspect of preventing pharmaceutical drug misuse is equipping employees with the knowledge and tools they need to maintain good mental health.



March 2017

Prevention Research


Workplaces can encourage their employees to:

- Use employee assistance programs and other free counselling options, and reduce the stigma that is attached to accessing these programs.
- Eat well-balanced meals, including making sure there are healthy lunch and snack options, and providing education about nutrition and its link to mental health.
- Do regular exercise through encouraging walking meetings, providing shower facilities and bike storage, organising exercise classes, and providing education on mental health.
- Establish good sleeping patterns, including discouraging excess overtime and providing education around how to maintain good sleep patterns.
- Reduce the use of alcohol and other drugs, by providing education about the harms of these substances and ensuring alcohol isn't the focus of workplace functions.

There are details of free and confidential services that can support people to improve their mental health, which workplaces can promote, in the 'Resources' section of this publication on page 58.

“Workplaces need to try and accommodate this person with alternative duties so they can follow their doctor's advice while also working safely.”



A group of young people are walking on a rooftop garden. In the foreground, a man with a beard and long hair wears a red and black plaid jacket over a white t-shirt. To his left, another man wears a green beanie and a white cable-knit sweater under a green jacket. In the background, a woman wears a dark jacket with a large white fur collar. They are walking on a paved path next to a metal railing. Beyond the railing is a rooftop garden with green plants. In the far background, a city skyline with several construction cranes is visible under a clear blue sky.

**Communities are in the ideal position to understand what the key issues are in their local areas that might be causing harms from pharmaceuticals.**



## What can communities do?

Community groups and organisation can play a vital role in preventing mental health and substance misuse problems, and are a key target audience of the Alcohol and Drug Foundation. While this publication has identified some Australian-wide trends, communities are in the ideal position to understand what the key issues are in their local area that might be causing harms from pharmaceuticals.

To help prevent these problems communities can:

- Create opportunities for people to connect to others and develop a purpose in life, which are two key ways to help prevent mental health and substance misuse problems.
- Organise and promote opportunities for people to relax, engage in mindful practices and exercise.
- Make sure there is a wide range of healthy foods available in the community, and help increase people's understanding of what a well-balanced diet looks like and how it can affect mental health.
- Raise awareness of the side effects of opioids and benzodiazepines and alternative treatments, through libraries, neighbourhood houses, sporting clubs, men's sheds, maternal and child health services and local media.
- Provide information in different community languages to target minority populations.

The Alcohol and Drug Foundation encourages communities to follow its 'Six steps to planning community alcohol and drug projects' whenever they are developing a program.

The guide encourages community groups to make sure they consider promoting existing resources (see page 58) and understand what work is already happening that they can link into. In this case, it would be especially important to talk with the local primary health network. The Pharmaceutical Society of Australia may also be interested in being involved in a local awareness raising campaign.

## Sporting clubs

Given there has been a significant increase in men in their 30s misusing pharmaceutical drugs, community sporting clubs provide a good place to promote harm reduction messages around the use of medication. People who play sport may use prescribed and over-the-counter medications, anti-inflammatories and other pharmaceuticals to help them recover from injuries.

Some players or athletes may take pain relieving medications to help them continue to play or work while injured.



Clubs have a duty of care to make sure they create a safe and healthy environment for their members. The side effects of some medications can affect this environment. Clubs can help prevent problems caused by pharmaceutical drugs by:

- Encouraging injury prevention through appropriate warm up and warm down exercises.
- Discouraging players or athletes from playing or competing when they are injured to avoid the risk of further injury and excessive use of medication.
- Encouraging players or athletes to get and follow medical advice when injured.
- Discouraging players or athletes from over and inappropriate use of opioids and benzodiazepines by promoting alternatives to pharmaceutical drugs for chronic pain, stress, anxiety and insomnia.

The Australian Institute of Sport recommends that sporting organisations have a written medication policy that is approved by a medical practitioner and governs the use of prescription and over-the-counter medications. While community sports clubs have less control over the use of medication by players and athletes than professional and elite sports bodies do, a community club's policy on medication should be aligned with the club's code of conduct and other health and wellbeing policies.

“...a community club's policy on medication should be aligned with the club's code of conduct and other health and wellbeing policies.”



# Conclusion

Pharmaceutical drug use in Australia demands urgent attention. Most people would be surprised to learn that pharmaceutical drug deaths are overtaking the national road toll.

Among the most serious issues is the evident overuse of opioids and benzodiazepines. This overuse is responsible for high rates of drug dependency and overdose. Unnecessary use of these drugs creates serious problems for individuals, their families, and the wider community, and places additional burdens on the health system.

Many Australians are unaware of how they may be misusing or overusing pharmaceuticals and of the risks involved.

To initiate change, Australians first need to understand the problem and its associated harms. No one takes a pharmaceutical drug to make matters worse, yet this is a too-common outcome. Social marketing campaigns, similar to the effective and successful road safety campaigns, are required to ensure safe pharmaceutical use becomes a top priority for the public.

A campaign theme should encourage adults to take a proactive interest in their health and ask questions of health professionals about the health impacts of medications and possible alternatives.

General practitioners and pharmacists alike can contribute by offering the alternative treatments and by ensuring patients are not unnecessarily prescribed medications for long periods.

Pharmaceutical companies have an obligation to market their products in a responsible way, without promising or offering exaggerated benefits to health professionals or consumers. All research and clinical trials should be made available for public viewing.

Prescribing guidelines, alternative pain management treatments, and other practical tools

and approaches can be employed to make a meaningful improvement to many people's lives. Real time monitoring of prescriptions has at least begun in some jurisdictions, but it needs to be a national approach.

Non-pharmacological solutions for chronic pain, stress, anxiety and insomnia deserve to be included in health benefit schemes and be regulated, based on the latest and best evidence. Particular emphasis needs to be on providing these options for people in rural and remote areas where prescription rates and harms for opioids and benzodiazepines are at the highest.

At a policy level, a national pharmaceutical strategy would help guide planned and comprehensive action on pharmaceutical drugs, and complement the National Drug Strategy alongside the specific plans for alcohol, tobacco and illicit drugs.

More research into pharmaceutical use is needed urgently. We need to better understand why the cohorts of males in their 30s and females in their 40s are increasingly misusing pharmaceuticals in order to ensure we can develop appropriate preventative programs for these groups.

With the right information, people are capable of changing their behaviours for the better. Australians have changed their road behaviours in response to a dedicated effort by various stakeholders. We can be confident that Australians will adopt a healthier use of pharmaceutical drugs when they are informed and fully-resourced, and when health system stakeholders work together to achieve that goal.







# Resources

## Understanding the safe use of pharmaceuticals

- Fact sheets on variety of drugs — Alcohol and Drug Foundation’s DrugInfo website
- Resources for workplaces — Alcohol and Drug Foundation’s website
- National Return of Unwanted Medicines —a Federal Government project operating in every state and territory
- Fact sheets for pharmacists —NPS/MedicineWise
- Online learning course: ‘Drug misuse: implications for pharmacists’ —NPS/MedicineWise
- Choosing Wisely: Five questions to ask your doctor or other healthcare provider —NPS/MedicineWise

## Pain

- New guidelines for pain assessment and management — Faculty of Pain Medicine
- Tools for pain assessment and management including reducing opioids —NSW Health
- Safer use of opioids, including for managing pain — Department of Health and Human Services and NPS/ MedicineWise
- Pain and the role of medications — Pain Management Network
- The Pain Toolkit —self-management techniques developed by someone suffering from chronic pain and supported by doctors
- Chronic headache and migraine diaries — Headache Australia
- Understanding Pain: What to do about it in less than five minutes — Brainman YouTube video

## Food and diet

- Healthy eating for people with depression, anxiety and related disorders —beyondblue

## Anxiety, insomnia and stress

### Guides and fact sheets:

- Fact sheets on insomnia — Sleep Health Foundation
- Benzodiazepines: Reasons to stop and stopping use — Drug and Alcohol Services South Australia
- Mediated treatment plan: reduction plan for your sleeping tablets —NPS/MedicineWise
- Better Sleep: How to overcome sleeping problems —Reconnexion
- About anxiety —Reconnexion
- A guide to what works for anxiety —beyondblue
- Man Therapy Mind Quiz —beyondblue

### Online support:

- ReachOut Breathe: helps reduce physical symptoms of stress and anxiety by slowing down heart rate with mobile phone or Apple Watch —ReachOut
- MindSpot Clinic: free online assessment tool and treatment course, referral to other services —run by 30 psychologists, based at Macquarie University, Sydney, and funded by the Australian Government.
- MoodGym: online learning of cognitive behaviour therapy skills —National Institute for Mental Health Research
- Life Flex: online and mobile program that pays equal attention to biology, emotions, thoughts, behaviours and wellness levels —Centre of Biopsychosocial and eHealth Research & Innovation
- Counselling Online —Turning Point, funded by the Australian Government’s Department of Health

Look out for new resources coming soon

adf.org.au

# References

1. Trends and characteristics of accidental and intentional codeine overdose deaths in Australia. Med J Aust, 2015. 203(7): p. 299. Roxburgh, A., Hall, W. D., Burns, L., Pilgrim, J., Saar, E., Nielsen, S. and Degenhardt, L. 7, 2015, Medical Journal of Australia, Vol. 203, p. 299.
2. Coroner’s Prevention Unit. Attachment C: Coroner’s Prevention Unit Data Summary, Finding Without Inquest into the Death of Frank Edward Frood . s.l. : Coroner’s Court of Victoria, 2016– Accessed Friday 8th April 2016.
3. Penington Institute. Australia’s annual overdose report 2016. Carlton : Penington Institute, 2016.
4. Trends in fentanyl prescriptions and fentanyl-related mortality in Australia. Roxburgh, A., Burns, L., Drummer, O. H., Pilgrim, J., Farrell, M. and Degenhardt, L. 3, 2013, Drug and alcohol review, Vol. 32, pp. 269–75.
5. Gao, C., Ogeil, R. P., and Lloyd, B. Alcohol’s burden of disease in Australia. Canberra : FARE and VicHealth, 2014.
6. Prescription drug misuse. Monheit, B. 8, 2010, Australian Family Physician, Vol. 39, pp. 540–6.
7. Opioids, ventilation and acute pain management. Macintyre, P. E., Loadsman, J. A. and Scott, D. A. 4, 2011, Anaesthesia and Intensive Care, Vol. 39, pp. 545–58.
8. The introduction of a potentially abuse deterrent oxycodone formulation: Early findings from the Australian National Opioid Medications Abuse Deterrence (NOMAD) study. Degenhardt, L., Bruno, R., Ali, R., Lintzeris, N., Farrell, M. and Larance, B. 2015, Drug and Alcohol Dependence, Vol. 151, pp. 56–67.
9. Over-the-counter codeine analgesic misuse and harm: characteristics of cases in Australia and New Zealand. McAvoy, B. R., Dobbin, M. D. and Tobin, C. L. 1346, 2011, New Zealand Medical journal, Vol. 124, pp. 29–33.
10. Fatal misuse of codeine-ibuprofen analgesics in Victoria, Australia. In reply. Pilgrim, J. L. and Drummer, O. H. 3, 2014, Medical Journal of Australia, Vol. 200, p. 151.
11. Transport Accident Commission. Lives lost—annual. Melbourne : Transport Accident Commission, 2016.
12. AOD Stats by Turning Point. Turning Point Alcohol and Drug Centre. 2016 [cited 2016 4th April].
13. Department of Health. Notice under subsections 42ZCZP of the Therapeutic Goods Regulations 1990 (the Regulations). Department of Health, Commonwealth of Australia. Canberra : Commonwealth of Australia, 2015.
14. The effectiveness and risks of long-term opioid therapy for chronic pain: a systematic review for a National Institutes of Health Pathways to Prevention Workshop. Chou, R., Turner, J.A., Devine, E.B., Hansen, R.N., Sullivan, S.D. and Blazina, I. 4, 2015, Annals of Internal Medicine, Vol. 162, pp. 276–86.
15. Australian Commission on Safety and Quality in Health Care. Australian Atlas of Healthcare Variation: Chapter 5 Opioid medicines. Sydney, NSW : Australian Commission on Safety and Quality in Health Care, 2015.
16. Nicholas, R., Lee, N. and Roche, A. Pharmaceutical drug misuse problems in Australia: complex issues, balanced responses. National Centre for Education and Training on Addiction (NCETA),, Flinders University. Adelaide : Flinders University, 2011.
17. Australian Drug Foundation. Benzodiazepine facts. s.l. : Australian Drug Foundation, 2016.
18. Misuse of Pharmaceutical Drugs: Fact Sheet. s.l. : Australian Drug Foundation, 2013.
19. Australian Institute of Health and Welfare. National Drug Strategy Household Survey 2013: Misuse of Pharmaceuticals Chapter — Online Data Tables, November 2014. Canberra: AIHW, 2014.
20. 2013 National Drug Strategy Household Survey report. Canberra: Australian Government, 2014.
21. 2010 National Drug Strategy Household Survey Report. Canberra: Australian Government, 2011
22. An overview of the patterns of prescription opioid use, costs and related harms in Australia. Blanch, B., Pearson, S. A. and Haber, P.S. 5, 2014, British journal of clinical pharmacology, Vol. 78, pp. 1159–66.
23. Australian Institute of Health and Welfare (AIHW). Alcohol and other drug treatment services in Australia 2013–14: Drug treatment series no. 25 Cat. no. HSE 158. Canberra: AIHW, 2015.
24. Benzodiazepines—Their role in aggression and why GPs should prescribe with caution. Jones, K.A., Nielsen, S., Bruno, R., Frei, M., Lubman, D. I. 11, 2011, Australian Family Physician, Vol. 40, pp. 862–5.
25. NPS Medicinewise. Benzodiazepine dependence: reduce the risk. NPS Medicinewise. [Online] 2015. [Cited: July 29, 2016.] http://www.nps.org.au/publications/health-professional/health-news-evidence/2015/reduce-benzodiazepine-dependence-risk.
26. Kirby Institute. Australian NSP Survey 20 Year National Data Report 1995–2014. Kirby Institute. New South Wales : Kirby Institute, 2015.
27. Roxburgh, A., and Breen, C. Accidental drug-induced deaths due to opioids in Australia, 2012. University of New South Wales. s.l. : National Drug and Alcohol Research Centre, 2016.
28. An update on oxycodone: lessons for death investigators in Australia. Pilgrim, J. L., Yafistham, S. P., Gaya, S., Saar, E. and Drummer, O. H. 1, 2015, Forensic Sci Med Pathol, Vol. 11, pp. 3–12.
29. The Efficacy of Cognitive Behavioral Therapy: A Review of Metaanalyses. Hofmann, S. G.,



- Asnaani, A., Vonk, I. J. J., Sawyer, A. T. and Fang, A. 2012, Cognitive Therapy Research, pp. 427–440.
30. Better Health Channel. Cognitive behaviour therapy. <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/cognitive-behaviour-therapy> : State Government of Victoria, 2016.
31. Internet-Delivered Psychotherapy for Anxiety Disorders and Depression. Titov, N., Dear, B. F., and Andersson, G. 2014, Focus, p. 10.1176/appi.focus.12.3.299.
32. eCentre Clinic. Chronic Pain. <https://ecentreclinic.org/?q=ChronicPain> : eCentreClinic, Macquarie University, 2015.
33. Insomnia: prevalence, consequences and effective treatment. Cunningham, D., Junge, M. F. and Fernando, A. T. 2013, The Medical Journal of Australia, p. S36.
34. beyond blue. Staying well: a guide to recovering from anxiety and depression.
35. Exercise and well-being: a review of mental and physical health benefits associated with physical activity. Penedo, Frank J and Dahn, Jason R. 2, 2005, Current Opinion in Psychiatry, Vol. 18.
36. Exercising the worry away: how inflammation, oxidative and nitrogen stress mediates the beneficial effect of physical activity on anxiety disorder symptoms and behaviours. Moylan, S., Eyre, H. A., Maes, M., Baune, B. T., Jacka, F. N. and Berk, M. 2013, Neurosci Biobehav Rev, pp. 573–84.
37. Effects of physical exercise on central nervous system functions: a review of brain region specific adaptations. Morgan, J. A., Corrigan, F. and Baune, B. T. 2015, J Mol Psychiatry, pp. doi: 10.1186/s40303-015-0010-8.
38. Pain Management Network. Chronic Pain Management Strategies. [http://www.aci.health.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0020/216308/Chronic\\_Pain\\_Management\\_Strategies.pdf](http://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0020/216308/Chronic_Pain_Management_Strategies.pdf) : NSW Agency for Clinical Innovation, 2014.
39. Nutritional therapies for mental disorders. Lakhan, Shaheen E and Vieira, Karen F. 2, January 21, 2008, Nutrition Journal, Vol. 7.
40. Nutritional medicine as mainstream in psychiatry. Sarris, Jerome, et al. 3, 2015, The Lancet Psychiatry, Vol. 2, pp. 271–274.
41. Selhub, Eva. Nutritional psychiatry: Your brain on food. Harvard Health Blog. [Online] November 17, 2015. [Cited: 10 21, 2016.] <http://www.health.harvard.edu/blog/nutritional-psychiatry-your-brain-on-food-201511168626>.
42. Better Health Channel. Managing and treating anxiety. <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/anxiety-treatment-options> : Department of Health & Human Services, State Government of Victoria, 2016.
43. beyond blue. Healthy eating for people with depression, anxiety and related disorders. 2010.
44. The association between dietary patterns and mental health in early adolescence. Oddy, Wendy H, et al. 1, 07 01, 2009, Preventative Medicine, Vol. 49, pp. 39–44.
45. Association of Western and Traditional Diets with Depression and Anxiety in Women. Jacka, Felice N, et al. 3, March 2010, American Journal of Psychiatry, Vol. 167, pp. 305–311.
46. Serotonin: A Mediator of the Brain-Gut Connection. Kim, Doe-Young and Camilleri, Michael. 10, October 2000, The American Journal of Gastroenterology, Vol. 95.
47. Gut brain axis: diet microbiota interactions and implications for modulation of anxiety and depression. Luna, Ruth Ann and Foster, Jane A. 2015, Current opinion in biotechnology, Vol. 32, pp. 35–41.
48. Quick relief from anxiety and stress without tranquilizer drugs. Johnson, T. D. 2007, Life Extension, pp. [http://www.lifeextension.com/magazine/2007/8/report\\_stress\\_anxiety/page-01](http://www.lifeextension.com/magazine/2007/8/report_stress_anxiety/page-01).
49. Pilot trial of Melissa officinalis L. leaf extract in the treatment of volunteers suffering from mild-to-moderate anxiety disorders and sleep disturbances. Cases, J., Ibarra, A., Feuillère, N., Roller, M. and Sukkar, S. 2011, Official Journal of the Italian Association for Dietetics and Clinical Nutrition (ADI) a member of the Italian Federation of Nutritional Societies (FeSIN), pp. 211–218.
50. Anti-Stress, Behavioural and Magnetoencephalography Effects of an L-Theanine-Based Nutrient Drink: A Randomised, Double-Blind, Placebo-Controlled, Crossover Trial. White, D. J., de Klerk, S., Woods, W., Gondalia, S., Noonan, C. and Scholey, A. B. 2016, Nutrients, p. doi: 10.3390/nu8010053.
51. Beyond Blue. Man Therapy: Guide to Mind Health. Man Therapy. [Online] <https://www.mantherapy.org.au/man-facts/guide-to-mind-health>.
52. Reconnexion. Benzodiazepines (tranquillisers and sleeping pills). Reconnexion. [Online] <http://www.reconnexion.org.au/benzodiazepines-tranquillisers-and-sleeping-pills/w1/i1023211/>.
53. Therapeutics Goods Association. Codeine use in children and ultra-rapid mobilisers: Pharmacovigilance and special access branch safety review. Canberra : Commonwealth of Australia, Octboer 2015.
54. Changes in non-opioid substitution treatment episodes for pharmaceutical opioids and heroin from 2002 to 2011. Nielsen, S., Roxburgh, A., Bruno, R., Lintzeris, N., Jefferson, A., and Degenhardt, L. 2015, Drug and Alcohol Dependence, Vol. 149, pp. 212-219.
55. Australian Psychological Society. Stress and wellbeing: how Ausstralians are coping with life, 2015.
56. Pain Australia. National Pain Strategy: Pain management for all Australians. Sydney: National Pain Sumit Initiative, 2010.
57. Australian Psychological Society. Understanding and managing stress. [Online] 2012. [Cited: 10 28, 2016.] <https://www.psychology.org.au/Assets/Files/StressTipSheet.pdf>.
58. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. [ed.] 5. Washington : American Psychiatric Publishing, 2013.
59. Royal Australian College of General Practitioners. Prescribing drugs of dependence in general practice, Part A: Clinical governance framework. Melbourne : Royal Australian College of General Practitioners, 2015.
60. Pharmaceutical Opioid Use and Dependence among People Living with Chronic Pain: Associations Observed within the Pain and Opioids in Treatment (POINT) Cohort. Campbell, G., Nielsen, S., Larance, B., Bruno, R., Mattick, R., Hall, W., Lintzeris, N., Cohen, M., Smith, K. and Degenhardt, L. 9, s.l. : Pain Medicine, 2015, Vol. 16.
61. Twenty-five years of prescription opioid use in Australia: a whole-of-population analysis using pharmaceutical claims. Karanges, E. A., Blanch, B., Buckley, N. A. and Pearson, S. A. 1, 2016, British Journal of Clinical Pharmacology, Vol. 82, pp. 255–267.
62. NPS Medicinewise. Chronic pain: limited evidence for opioids. [Online] 2015. <http://www.nps.org.au/conditions/nervous-system-problems/pain/for-individuals/pain-conditions/chronic-pain/for-health-professionals/opioid-medicines>.
63. Pain Australia. Pain Australia: working to prevent and manage pain . [Online] [Cited: June 15, 2016.] <http://www.painaustralia.org.au/>.
64. Psychological therapies for the management of chronic pain (excluding headache) in adults. Williams, A. C., Eccleston, C. and Morley, S. 2012, Cochrane Database Syst Rev.
65. The Promotion and Marketing of OxyContin: Commercial Triumph, Public Health Tragedy. Van Zee, Art. 2, February 2009, HEALTH POLICY AND ETHICS, Vol. 99, pp. 221–227.
66. G. Spurling and P. Mansfield, “General practitioners and pharmaceutical sales representatives: quality improvement research” Wal Saf Health Care. Vol.16, no.4, pp.266-270, 2007.
67. A. Roxburgh, R. Bruno, B. Larance and L. Burns, “Prescription of opioid analgesics and related harms in Australia,” Medical Journal of Australian, vol. 195, pp.280-284, 2011.
68. Commonwealth of Australia. National Pharmaceutical Drug Misuse Framework for Action 2012–2015. Canberra : Commonwealth of Australia, 2013.
69. Australia, Commonwealth of. National Drug Strategy 2010–2015. Canberra : Commonwealth of Australia, 2011.
70. McDonald, K. Pharmacy Guild to roll out real-time monitoring system for OTC codeine. Pulse+IT. 2016.
71. Pharmacy Guild of Australia. MedsASSIST. Pharmacy Guild of Australia. [Online] [Cited: July 15, 2016.] <https://www.guild.org.au/services-programs/medsassist>.
72. Victorian Department of Health and Human Services. Real-Time Prescription Monitoring Initiative: frequently asked questions. 2016.
73. The clinical efficacy and abuse potential of combination buprenorphine-naloxone in the treatment of opioid dependence. Mammen, K and Bell, J. 15, 2009, Expert Opin Pharmacother, Vol. 10, pp. 2537–44.
74. The National Return & Disposal of Unwanted Medicines. Return Unwanted Medicines [the RUM project]. [Online] 2011. [Cited: November 3, 2016.] <http://www.returnmed.com.au/>.
75. NPS Medicinewise. Drug misuse: implications for pharmacists. [Online] 2016. [Cited: November 3, 2016.] <http://www.nps.org.au/health-professionals/cpd/activities/online-courses/drug-misuse-implications-for-pharmacists>.
76. Medical Board of Australia. Good Medical Practice: A Code of Conduct for Doctors in Australia. s.l.: Medical Board of Australia, 2014. Code of Practice.
77. Therapeutic Goods Administration: Advertising therapeutic goods. . Australian government . [Online] [Cited: July 25, 2016.] <https://www.tga.gov.au/advertising-therapeutic-goods>.
78. The Hon Sussan Ley MP. A new blueprint for mental health services. [Online] 11 26, 2015. [Cited: 10 20, 2016.] <http://www.health.gov.au/internet/ministers/publishing.nsf/Content/health-mediarel-yr2015-ley151126.htm>.
79. Australian Government Department of Health. PHN primary mental health care flexible funding pool implementation guidance: stepped care. [Online] [Cited: 10 20, 2016.] [http://www.health.gov.au/internet/main/publishing.nsf/Content/2126B045A8DA90FDCA257F6500018260/\\$File/1PHN%20Guidance%20-%20Stepped%20Care.PDF](http://www.health.gov.au/internet/main/publishing.nsf/Content/2126B045A8DA90FDCA257F6500018260/$File/1PHN%20Guidance%20-%20Stepped%20Care.PDF).
80. Australian Government Department of Health and Ageing. E-Mental Health Strategy for Australia. 2012.
81. MHSa. National mental health policies and strategies. [Online] <https://mhsa.aihw.gov.au/national-policies/>.
82. Australian Government Department of Health. National mental health strategy. [Online] 04 17, 2014. [Cited: 10



20, 2016.] <http://www.health.gov.au/internet/main/publishing.nsf/Content/mental-strat>.

83. Australian Government Department of Health and Ageing. LIFE: a framework for prevention of suicide in Australia. s.l.: Commonwealth of Australia, 2007.

84. Australian Commission on Safety and Quality in Health Care. Health literacy: Taking action to improve safety and quality. Sydney : ACSQHC, 2014.

85. The impact of health literacy and life style risk factors on health-related quality of life of Australian patients. Jayasinghe, U.W., Harris, M.F., Parker, S.M., Litt, J., van Driel, M., Mazza D., Del Mar, C., Lloyd, J., Smith, J., Zwar, N. and Taylor, R. 68, 2016, Health and Quality of Life Outcomes, Vol. 14, pp. doi: 10.1186/s12955-016-0471-1.

86. Care, Australian Commission on Safety and Quality in Health. Health Literacy. [Online] 2016. [Cited: August 8, 2016.] <http://www.safetyandquality.gov.au/our-work/patient-and-consumer-centred-care/health-literacy/>.

87. Parenting strategies for reducing adolescent alcohol use: a Delphi consensus study. Ryan, S. M., Jorm, A. F., Kelly, C. M., Hart, L. M., Morgan, A. J., Lubman and Lubman, D. I. 13, s.l. : BMC Public Health, 2011, Vol. 11.

88. Codeine in children — deaths prompt new safety warnings. NPS Medicinewise. [Online] August 13, 2013. [Cited: October 3, 2016.] <http://www.nps.org.au/publications/health-professional/health-news-evidence/2013/codeine-children-safety-warning>.

89. Who can take aspirin. NPS Medicinewise. [Online] [Cited: October 3, 2016.] <http://www.nps.org.au/medicines/pain-relief/simple-pain-reliever-and-fever-medicines/aspirin/for-individuals/who-can-take-aspirin>.

90. Weigh kids to avoid overdosing. NPS Medicinewise. [Online] March 2, 2011. [Cited: October 3, 2016.] <http://www.nps.org.au/media-centre/media-releases/repository/weigh-kids-today-to-avoid-overdosing>.

91. beyond blue. Managing emotions. [Online] [Cited: 10 20, 2016.] <https://healthyfamilies.beyondblue.org.au/age-6-12/raising-resilient-children/managing-emotions>.

92. Why emotions matter. [Online] [Cited: 10 20, 2016.] <https://healthyfamilies.beyondblue.org.au/age-1-5/social-and-emotional-development/why-emotions-matter>.

93. The extent and correlates of community-based pharmaceutical opioid utilisation in Australia. Degenhardt, L., Gisev, N., Cama, E., Nielsen, S., Larance, B., and Bruno, R. 2016, Pharmacoepidemiol Drug Safety, Vol. 25, pp. 521-538.

94. Increasing deaths involving oxycodone, Victoria, Australia, 2000-09. Rintoul, A.C., Dobbin, M.D., Drummer, O.H., and Ozanne-Smith, J. 2011, Injury Prevention, pp. 254-259.

95. Delivering opioid maintenance treatment in rural and remote settings. Berends, L., Larner, A., and Lubman, D.I. 2015, Australian Journal of Rural Health, pp. 201-206.

96. The Pattern of Opioid Management by Australian General Practice Trainees. Holliday, S., Morgan, S., Tapley, A., Dunlop, A., Henderson, K., van Driel, M., Spike, N., McArthur, L., Ball, J., Oldmeadow, C., and Magin, P. 2015, Pain Medicine, pp. 1720-1731.

97. Systematic review and meta-analysis of transdiagnostic psychological. Newby, J. M., McKinnon, A., Kuyken, W., Gilbody, S., and Dalgleish, T. 2015, Clinical Psychology Review, pp. 91-110.

98. Harvey, A.G., Watkins, E., Mansell, W., & Shafran, R. (eds). Cognitive behavioural processes across psychological disorders: A transdiagnostic approach to research and treatment. Oxford : Oxford University Press, 2004.

99. Better Health Channel. Headache. <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/headache> : State Government of Victoria, 2015.





Any enquiries or comments on this publication  
should be directed to the Alcohol and Drug Foundation

PO Box 818, North Melbourne,  
Victoria 3051, Australia

T 1300 85 85 84  
[info@adf.org.au](mailto:info@adf.org.au)

This Prevention Research paper is  
supported by the Victorian Government.

