



MANAGEMENT OF PATIENTS EXPERIENCING CHRONIC NON-CANCER PAIN IN AUSTRALIAN PRIMARY CARE

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DECLARATIONS

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Ruth White reports no conflict of interest.

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13th March 2020

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Paper 1 White, R., Bruggink, L., Hayes, C. Boyes, A. W., Paul, C. L. (2019). Feasibility and acceptability of patient-focused behavioural interventions to support adults experiencing chronic non-cancer pain during opioid tapering: a systematic literature review (Under review with *Translational Behavioural Medicine*)

Paper 2 White, R., Hayes, C., Boyes, A. W., Chiu, S., & Paul, C. L. (2019). General practitioners and management of chronic non-cancer pain: a cross- sectional survey of influences on opioid deprescribing. *Journal of Pain Research*, 12, 467–475. <https://doi.org/10.2147/JPR.S168785>

Paper 3 White, R. A., Hayes, C., Boyes, A. W., Chiu, S., & Paul, C. L. (2018). Therapeutic alternatives for supporting general practitioners to deprescribe opioids: a cross-sectional survey. *BJGP Open*, 1–11. <https://doi.org/10.3399/bjgpopen18X101609>

Paper 4 White, R., Hayes, C., Boyes, A. W., Fitzgerald, S., Rajappa, H., & Paul, C. L. (2019). Training primary care providers in opioid deprescribing and chronic pain management based on local guidance: a pre – post study of attitude change. *Health Education in Practice: Journal of Research for Professional Learning*, 2(1), 1–17

Paper 5 White, R., Hayes, C., Boyes, A. W., & Paul, C. L. (2019) Acceptability of integrated primary healthcare opioid tapering: a mixed-methods study (Under review with *The International Journal of Integrated Care*)

OTHER PUBLICATIONS DURING CANDIDATURE

White, R., Hayes, C., White, S., & Hodson, F. J. (2016). Using social media to challenge unwarranted clinical variation in the treatment of chronic noncancer pain: the “Brainman” story. *Journal of Pain Research*, 9, 701–709. <https://doi.org/10.2147/JPR.S115814>

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<https://doi.org/10.1016/j.jphys.2018.03.001>

Rajappa, H., Wilson, M., **White, R.**, Blanchard, M., Tardif, H., & Hayes, C. (2019). Prioritizing a sequence of short-duration groups as the standardized pathway for chronic noncancer pain at an Australian tertiary multidisciplinary pain service. *PAIN Reports*, 4(5), e780.
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CONFERENCE PRESENTATIONS*

White, R., Bruggink, L., Hayes, C. Boyes, A. W., Paul, C. L. (2019). Feasibility and acceptability of patient-focused behavioural interventions to support adults experiencing chronic non-cancer pain during opioid tapering: a systematic literature review (poster submitted for presentation at IASP World Congress on Pain 4-8th August 2020, Amsterdam, Netherlands)

White, R. A., Hayes, C., Boyes, A. W., Chiu, S., & Paul, C. L. Therapeutic alternatives for supporting general practitioners to deprescribe opioids: a cross-sectional survey. Australian Pain Society 5-8th April 2020, Hobart, Australia (poster accepted for presentation)

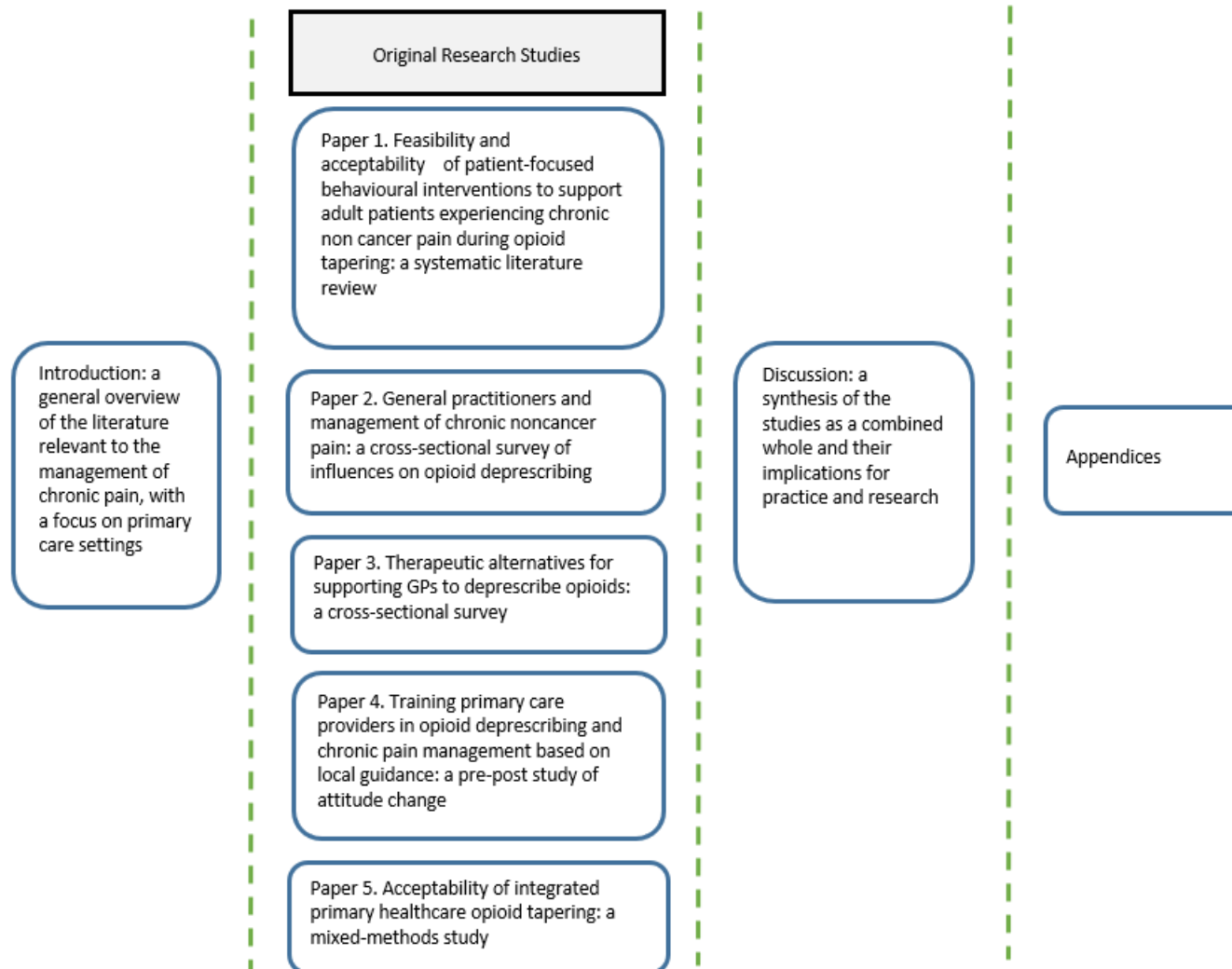
White, R., Hayes, C., Boyes, A.W., Fitzgerald, S., Rajappa, H., & Paul, C. L. Training primary care providers in opioid deprescribing and chronic pain management based on local guidance: a pre – post study of attitude change. Australian Pain Society 5-8th April 2020, Hobart, Australia (poster accepted for presentation)

White, R., Hayes, C., Boyes, A. W., Chiu, S., & Paul, C. L. General practitioners and management of chronic non-cancer pain: a cross- sectional survey of influences on opioid deprescribing. New Zealand Pain Society 19th-21st March 2020, Bay of Islands, New Zealand (poster accepted for presentation)

White, R., Hayes, C., Boyes, A. W., & Paul, C. L. (2019) Acceptability of integrated primary healthcare opioid tapering intervention: a mixed-methods study New Zealand Pain Society 19th-21st March 2020, Bay of Islands, New Zealand (poster accepted for presentation)

Note* Conference posters have been deferred to 2021 due to COVID-19

FIGURE A: FLOWCHART OUTLINING THE STRUCTURE OF THE THESIS



ABSTRACT

Chronic non-cancer pain (CNCP) is a widespread condition that places substantial burden on the person experiencing pain, health services and the economy more widely, particularly when people are treated with long-term prescription opioid analgesics. Despite the availability of effective tertiary-based treatments for this population, few patients access this mode of treatment, with many remaining on long-term opioids. In 2010, an Australian Pain Summit called for the development and evaluation of patient-centred service delivery and funding models for multidisciplinary assessment and support in primary care settings for people experiencing chronic pain [1].

The program of research reported in this thesis examines key issues related to the potential to deprescribe and switch to alternate behavioural interventions in primary care. The original research and systematic review in this thesis by publication comprises of five inter-related papers with the following overarching objectives:

- To systematically review the feasibility and acceptability of patient focused behavioural interventions to support adult patients experiencing chronic non-cancer pain during opioid tapering (**Paper 1**)
- To describe the influences on opioid prescribing for general practitioners (GPs) throughout the Hunter New England Central Coast Primary Health Network (**Paper 2**)
- To describe the availability of y on therapeutic alternatives to support GPs to deprescribe opioids for the treatment of chronic pain throughout the Hunter New England Central Coast Primary Health Network (**Paper 3**)
- To identify attitudinal change following a multi-faceted provider training package designed to align attitudes with a community based guideline promoting opioid deprescribing (**Paper 4**)
- To develop and assess the feasibility and acceptability of an integrated primary healthcare-based opioid tapering pilot intervention called Assess, Inform, Manage, Monitor (AIMM) (**Paper 5**)

RESULTS

The reviewed studies' findings (paper 1) were mixed and indicated that multidisciplinary behaviourally-focussed approaches to supporting opioid deprescribing are variable in terms of acceptability and feasibility. Data from the cross-sectional survey (paper 2 & 3) also suggested a

mixed picture, revealing that whilst the majority of GPs' attitudes agreed with local guidance that opioids are a non-superior treatment, a sizeable minority were at odds with that guidance. A lack of geographical access to multidisciplinary healthcare providers did not appear to be a major barrier to opioid deprescribing, however access to specialist support and alternate interventions were important influences on decision making. Paper 4 demonstrated that providers largely achieved guideline congruent attitudes following the training workshops implying attitudinal barriers to guideline uptake appear to be potentially modifiable. The pilot-test of a multidisciplinary pain management intervention in primary care (AIMM) (paper 5), whilst acceptable to the providers and patients who participated, faced feasibility challenges. Post-intervention surveys (Appendix 4) highlighted GP and practice nurse support was valued. The discussion describes the implications of these data for future practice and proposes an alternate approach for supporting deprescribing in primary care.

CONCLUSION

This research has delved into the complexity and challenge of providing CNCP management, incorporating deprescribing within an existing policy framework in Australian primary care. Important aspects of patient and provider behaviour have been uncovered including attitudinal barriers, patient recruitment and adherence issues suggesting the current form of the AIMM model is not ready for implementation. Future similarly detailed research underpinned by an evidence based behaviour theory is required into developing alternate multidisciplinary care interventions for patients experiencing CNCP in the primary care setting. By focusing on addressing the remaining problematic perceptions among GPs and patients, acceptable and feasible models can be tested and evaluated. By following this implementation pathway, an effective pain management intervention, including deprescribing, can ultimately be embedded into routine clinical practice and in turn, lead to improved outcomes for patients experiencing CNCP.

Reference

- [1] National Pain Summit initiative. Led by: Australian and New Zealand College of Anaesthetists Faculty of Pain Medicine Australian Pain Society Chronic Pain Australia, *National Pain Strategy: Pain Management for all Australians*. 2010

LIST OF ABBREVIATIONS

AIMM	Assess, Inform, Manage, Monitor
BCW	Behaviour Change Wheel
CBT	Cognitive Behavioural Therapy
CNCP	Chronic Non-Cancer Pain
COM-B	Capability Opportunity Motivation - Behaviour
GP	General Practitioner
IASP	International Association for the Study of Pain
MHCP	Multidisciplinary HealthCare Provider
PTSD	Post-Traumatic Stress Disorder
SPACE	Strategies for Prescribing Analgesics Comparative Effectiveness
UK	United Kingdom
US	United States
USA	United States of America
VA	Veterans Affairs

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INTRODUCTION

**A GENERAL OVERVIEW OF THE LITERATURE RELEVANT TO
THE MANAGEMENT OF CHRONIC PAIN, WITH A FOCUS ON
PRIMARY CARE SETTINGS**

CONTEXT

The primary subject of this thesis is one of a difficult problem identified as an Australian health priority, that is, how to effectively manage primary care patients experiencing chronic non-cancer pain (CNCP) who have been prescribed prescription opioid analgesics for lengthy periods of time [1,2].

The need for this research arose within the context of the author's professional experience of the limitations of the biomedical model which in the case of CNCP may perpetuate over-reliance on prescription opioids and thus fail to adequately address patients' complex needs [3,4].

This thesis does not examine in any depth the possible societal and health system causes for the problematic rise in opioid use, however it does recognise that contextual factors, both environmental and personal led to a cohort of patients around the globe for whom receiving ongoing opioids was normalised. This occurred particularly in the USA, Canada, Australia and New Zealand, as well as several European countries [5-7]. Whilst opioid maintenance treatment is recognised as one option for reducing harms where dependence is recognised, the addiction literature is beyond the scope of this thesis which is focused on CNCP [8]. Other options for harm reduction such as mandatory tapering models to redress this global problem have not led to satisfactory outcomes [9], thus finding a way forward through the middle ground is required [10].

Specifically, this thesis considers how patients experiencing CNCP and their healthcare providers can successfully move beyond the biomedical model and reduce reliance on prescription opioids [11]. It proposes that primary care fully embrace Engels' biopsychosocial framework allowing a whole-person approach to the problem to be adopted [3,12,13]. Five key components have been delineated as part of this 'whole-person' approach: biomedical, mind-body, connection, activity and nutrition; potentially allowing a range of behavioural treatment options to be adopted in primary care settings [14].

The thesis reports the results of five original research studies that contribute to knowledge in this field.

WHAT IS CHRONIC PAIN?

Pain was defined by the International Association for the Study of Pain as: “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” [15]. In order to bring greater emphasis to psychosocial aspects a recent proposal suggests that pain is redefined as a ‘distressing experience associated with actual or potential tissue damage with sensory, emotional, cognitive, and social components’ [16,17].

In 1953 the term ‘chronic pain’ was defined as pain that persisted beyond three to six months [18]. Later, the International Association for the Study of Pain Subcommittee on Taxonomy chose three months as the most convenient point of division between what is considered acute pain (duration of less than three months) and chronic pain where pain has persisted for three months or more. Further, it is now recognised that CNCP becomes enmeshed with significant emotional distress and or loss of functional capacity [19,20]. The term ‘chronic primary pain’ has recently been proposed to incorporate these aspects of length and complexity along with the caveat that the pain is not being better accounted for by another condition, (International Classification of Diseases 11th version (ICD-11) [21].

A fundamentally different concept from acute or chronic pain is that of nociception. Nociception is a neurophysiological event which occurs when noxious stimuli relaying information about tissue damage, or potential tissue damage, is encoded and transferred upwards to the brain by means of specialized nerves to the spinal cord and onwards to numerous locations in the somatosensory cortex [22]. Continuing to explain CNCP as a marker of nociception related to some yet-to-be detected tissue-based damage or structural imperfection is not only non-evidence based but it is likely to perpetuate the problem of over-reliance on biomedical treatment and opioid-based management [23,24].

Instead, CNCP can be conceptualized as a fundamental change in neuronal plasticity with a shift from nociceptive towards emotional circuits [25,26]. This review and thesis focus on CNCP. Although CNCP management has relevance for long-term cancer survivors, this group were excluded from our studies for simplicity. Given the mounting evidence of neuroplastic changes in both the peripheral and central nervous systems in association with CNCP, chronic pain is considered as a plastic and integrative phenomenon in this thesis [16,27,28].

PUBLIC HEALTH BURDEN OF CHRONIC PAIN

Pain is a common experience and for most people with a minor, acute or transient episode is rarely a reason to seek health care [29,30]. It is when pain gets 'stuck' that problems arise and increased prevalence of CNCP occurs [22].

Around the globe, the societal burden of CNCP includes lost productivity and increased health care costs [31-34]. In 2008, in the US alone, the estimated annual costs associated with lowered work productivity due to CNCP was \$560 billion to \$635 billion per year [35, 36]. Recent figures from Australia estimate the total financial cost to the nation to be \$73.2 billion per year including \$12.2 billion in health system costs; \$48.3 billion in productivity losses and \$12.7 billion in other financial costs, which equates to \$22,588 per person experiencing CNCP [37].

The burden of CNCP has been recognised in the Global Burden of Disease Study from 1990 through to 2017. The original study, and the recent update, highlight that back pain and headache disorders continue to represent the two leading causes of years lived with disability [38,39].

The global burden of pain is, however, not restricted to non-fatal health loss. Premature death also impacts society in terms of productivity losses.

Globally, in 2017, some 40.5 million people were dependent on opioids (95% uncertainty interval 34.3–47.9 million) and opioid overdose caused the death of 109 500 people (105 800–113 600) [8].

In Australia in 2017-18, 735 deaths were determined to be due to conventional opioids and 88 deaths due to atypical opioids, with the death rate being highest in the 35-44 years age group [37]. The important global public health challenge is therefore to more effectively manage all people who experience disabling CNCP [1,40,41].

Research suggests that in the UK CNCP affects 13-50% of adults [42] and in the USA prevalence estimates vary from 19 to 43%, or nearly 116 million American people [43]. In Australia, prevalence rates for CNCP and reoccurring pain (over a 6-month period) using 2011-12 data, are estimated to be 15.4% for adults aged ≥ 15 [2].

Using the same Australian data, Deloitte Access Economics determined that in 2018, there were 3.24 million Australians living with CNCP [37]. The most recent prevalence data from Australian general practice suggests that consultation-based prevalence of people experiencing CNCP is 19.2% and therefore, represents a substantial burden for primary care in this country [44].

Australia, recognising this burden on individuals and the healthcare system, became the first country in the world to develop a national framework for the treatment of people experiencing pain [45]. More recently, an updated National Strategic Action Plan for Pain Management was developed. This plan outlines 8 key goals, with a particular focus on primary care [46].

THE PERSONAL BURDEN OF CHRONIC PAIN

Experiencing ongoing pain is strongly associated with deficits in health related quality of life [47,48].

From the mind-body perspective, there is growing evidence of CNCP being coupled with mental health morbidity including depression, anxiety and post-traumatic stress disorder (PTSD) [49]. Depression rates are highly prevalent in the community and amongst CNCP populations with estimates ranging from 15-20% [50-52]. Anxiety prevalence of 14% is reported across Australian and New Zealand pain clinics [52]. Opioid induced depression is also being investigated [53-55]. For PTSD, data suggests prevalence of PTSD in patients experiencing CNCP is nearly four times that of the general population [56].

Another common burden faced by people experiencing CNCP in this domain is that of sleep disturbance. Currently epidemiological information suggests that around half the people experiencing CNCP also experience sleep disorders. It would also appear that the relationship is reciprocal [57].

For some, there is the additional burden of depressed mood. Current thinking suggests that low mood may render some people with particular brain adaptations unable to achieve analgesia from analgesic interventions [58]. There is also the risk of suicide. Pain is potentially an independent risk factor for suicide [59]. More recently Oquendo and Volkow reported that US data strongly suggest that suicide contributes significantly to opioid related deaths [60]. Taken together, these findings imply that supportive psychological care may be warranted for this population.

The experience of CNCP also has a strong bidirectional association with people's social connection. Studies highlight the increased distress that follows social exclusion and its potential impact on chronic pain [61].

Pain-related interference with the ability to undertake planned physical activity and performance of daily tasks is frequently reported [62]. For this group there is the dilemma of physical activity

appearing to exacerbate pain, despite population studies showing that exercise is protective for CNCP [63]. This can often lead to increased rates of sedentarism with negative health consequences [64].

A recent Cochrane review found exercise to be favorable in reducing pain severity and improving function, although there is some lack of clarity as to whether exercise is helpful for those with severe pain [65, 66]. Nonetheless, attempting to incorporate any planned exercise into a person's life who continues to hold firm beliefs that ongoing pain equates to ongoing harm remains problematic [67].

People who experience moderate to severe CNCP are often high users of health services, experience poorer health-related quality of life and suffer poor health outcomes [68-72].

THE 'RIGHT TO PAIN MANAGEMENT' AND RESULTING FOCUS OF TREATMENT ON PRESCRIPTION OPIOIDS

Despite the substantial burden, pain remains relatively under-prioritised and under-funded, impacting on the management options available to people experiencing CNCP [72,73].

Since the 2010 International Association for the Study of Pain 'Declaration of Montreal', access to pain management has been considered a fundamental human right [74]. This has been an important step forward, yet there remains a proliferation of ineffective, often biomedically focused, health services and a lack of evidence for many of the interventions currently provided for people who experience CNCP [75].

Increasingly, for many people experiencing CNCP, the right to treatment became synonymous with the right to long-term prescription opioids [76-78]. Population studies have documented global increases in the use of opioids, including the US, Canada, the UK and Australia [8, 79, 80].

Australians' consumption of prescription opioids has been rising for three decades and currently ranks between 8th-10th internationally for opioid consumption [79-82]. Data suggests most people using prescribed opioids do not have cancer [83]. The most recent Australian cost of pain economic report notes that 3.1 million Australians had 1 or more opioid prescriptions in 2016-17. Further, these economists determined that nationwide, medications were used to manage CNCP in an average of 68.4% of GP consultations with particularly high rates in rural (72%) and regional (68%) areas [37].

Whilst prescription opioids have been established as safe and effective for acute and cancer pain, their success rate in reducing people's experience of CNCP is limited. Some short term trials (<12 weeks) for CNCP show modest benefit when compared to placebo. However, extrapolating to long term use cannot be justified given potential tolerance and opioid induced hyperalgesia [84,85]. Almost 60% of opioid prescriptions in Australia are not written for palliative care (for which opioids are recommended) but for the management of 'musculoskeletal' pain [86-88].

Of particular concern are the long-term effects for those people who remain on opioids for episodes lasting longer than 90 days [89]. Most often, chronic opioid use is defined as 3 consecutive months (90 days), although there is no consensus on the definition [90-92]. It is this group whose pain is both complex and persisting and who are reliant on prescription opioids who suffer a downward spiral of declining well-being [93,94]. Over the last two decades of the twentieth century it became common for patients experiencing CNCP to be treated with prescription opioids [95,96]. Weak evidence from the 2010 Cochrane review suggested that a small, well-selected group of patients may benefit from opioid analgesia [97]. Despite this assurance, a randomised trial of two opioid prescription strategies demonstrated that even in carefully selected patients there was still a significant risk of problematic use [98]. The benefits of opioids remain uncertain for chronic pain and increasingly guidelines do not recommend them as a first-line therapy [99].

Today, in the context of the current global opioid epidemic, prescribers' attitudes are beginning to move away from an over reliance on opioids [100-102]. There is no longer any doubt as to the many potential adverse outcomes related to opioid use including: respiratory depression and death; falls and fractures; gastrointestinal effects; hormonal effects; cognitive effects; psychosocial effects; and others, such as tooth decay [8,80].

A recent 12-month randomised controlled trial comparing opioid to non-opioid medication for chronic back, hip or knee pain found that patients in the opioid group reported not only more adverse effects but also increased pain [103]. This worsening of pain intensity, known as opioid induced hyperalgesia, is a paradoxical outcome of long-term, high dose use of opioid analgesics [104].

The three decades of historically high levels of prescribing led to a group of 'legacy patients', that is, patients who were initiated on opioids for pain respite and who continued to receive prescription opioids years later despite the lack of supportive scientific evidence [82,105,106].

This continuation of prescription opioids is more common for some particular patient groups, for example in major depression [55]. Other studies suggest that in this patient group, opioids may be being used as a tool to help with emotional regulation [107].

Whilst not examined in any depth in this thesis, there are additional problems with the addictiveness of opioids. This risk, systematically downplayed by pharmaceutical companies [108], has been highlighted in the section titled **The 'Right To Pain Management' And Resulting Focus Of Treatment On Prescription Opioids** which outlined the rates of death, both around the globe and within Australia [82, 109]. Health risk behaviours such as smoking, high alcohol intake, poor nutrition and benzodiazepine use have also been associated with long term opioid use for CNCP [110]. There were early champions, who rallied against the opioid epidemic and raised the issue of iatrogenic harm and analgesic tolerance [111]. These pioneers and those that followed, questioned whether ongoing opioid prescriptions were worth the seemingly inevitable functional deterioration in patients receiving them [95,112]. Today, there is variation in guidelines. In some, a pre-prepared time-limited framework is suggested, stating when discontinuation of opioids should occur, and further detail the proposed rate of tapering the dose [113,114]. Others promote ongoing review of 'opioid responsiveness' (FPM ANZCA 2020 Position Statement) or not continuing to prescribe unless expected benefits outweigh expected harms (CDC). Perhaps in part because of a lack of clarity in available guidelines, some patients go on to become dependent on opioids. Together with 'legacy patients', this newer group of opioid dependent patients represent to providers the combined challenge of helping taper opioid medication and shift the treatment focus towards a broader strategy for care [48].

MODELS FOR MANAGING CHRONIC NON-CANCER PAIN IN TERTIARY SETTINGS

Helping people who are reliant on medications achieve opioid cessation, particularly via interdisciplinary pain programs offered in tertiary care has been occurring for decades [111,115-119]. This treatment is defined as 'multimodal treatment provided by a multidisciplinary team collaborating in assessment and treatment using a shared biopsychosocial model' p 14 [37]. In this mode of treatment, patients benefit from a whole-person treatment approach which promotes self-management and minimizes opioid use [120,121].

Typically, opioid minimization is achieved via a slow taper. Interdisciplinary programs frequently teach patients and their primary providers to consider the negative impact of tapering the dose too quickly, a situation which can lead to withdrawal induced pain enhancement [122].

In Australia, interdisciplinary care offers the 'gold standard' of treatment [123]. This high quality, tertiary-centred, resource intensive group mode of pain service delivery can, however, only reach around one percent of the high-risk population, which suggests a shift in health service delivery is required [124,125]. In order to provide widespread improvements in how people who experience CNCP are managed, this shift needs to be towards treatments which can be consistently implemented in the primary care setting, where most patients present [45,126,127].

These strategies would need to simultaneously address tapering off opioids and implementing alternative strategies to improve the physical and mental wellbeing of people experiencing CNCP. It has been proposed that similar to utilising multidisciplinary services for diabetes, an integrated team approach using standardised guidelines would be helpful in enhancing uptake of non-opioid, active pain management interventions [44,128].

Specifically, the 2010 Australian Pain Strategy called for the development and evaluation of patient-centred service delivery and funding models for pain management in the community which provide multidisciplinary assessment, care and support [45]. A recent national update reiterated these calls [46].

The nature of any specific multidisciplinary assessment, care and support offering interventions for opioid cessation for people who have been using medications for the long-term remains unclear [129]. A recently published update by the Cochrane Pain, Palliative and Supportive Care Group was unable to make any clear conclusions about the effectiveness of psychological, pharmacological, or other types of interventions for people experiencing CNCP due to a lack of high quality interventions [130]. Thus, there remains a need to trial comprehensive pain management interventions, outside of tertiary services [131].

THE NEED FOR A TRIAL OF A COMPREHENSIVE PAIN MANAGEMENT APPROACH IN AUSTRALIAN PRIMARY CARE (INCORPORATING DEPRESCRIBING)

Given the lack of Australian primary care initiatives for the management of CNCP, it is important to examine promising global initiatives to guide the development of Australian interventions.

Of the few early relevant studies available, one US study explored a treatment approach via a multidisciplinary team consisting of the opioid-treated CNCP patient's primary care physician, a clinical pharmacist, a program assistant with skills in health behaviour, and a psychiatrist. The intervention consisted of structured clinical assessments, monthly follow-up, pain contracts, medication titration, and psychiatric consultation [132]. The approach resulted in improved pain, depression, and disability scores at three month follow-up [132]. Another program delivered by a psychologist and physical therapist produced greater reductions in back pain-related fear, average pain and activity limitations in comparison to a usual care control group [133].

A more recent retrospective study, examining U.S. Department of Veterans Affairs (VA) administrative data, examined 551 patients who had ceased long-term opioids in primary care. For these patients, opioid taper had not resulted in worsening of pain intensity [134]. Similarly, in the UK, new service models are being tested to help patients transition from a biomedical opioid treatment focus towards offering patients a project worker to individually tailor pain management sessions [94].

Thus, early evidence suggests effective and safe behavioural alternatives to chronic opioid dosing may exist for people experiencing CNCP. Central to this is the need to examine the effectiveness of a chronic care model to enable a primary care based multidisciplinary team, who are working in close collaboration, to deliver an optimal behavioural intervention. Multidisciplinary treatment is defined as 'multimodal treatment provided by practitioners from different disciplines' [37].

Whilst based on tertiary care models, the optimal delivery system for multidisciplinary treatment in primary care is likely to include a patient-aligned clinical team who function as an interdisciplinary team, that is, they agree on diagnosis, therapeutic aims and plans for treatment and review [37]. Further, any providers would need to be accessible to patients under the Medicare Program ('Medicare') which provides free or subsidised access to medical services for all Australian residents and certain categories of visitors to Australia.

Advice from a local expert advisory panel* suggests the following skill mix may be optimal:
(*see Paper 4 for detail on advisory panel)

- i) a continuity of care clinician, to ensure serious pathologies (red flags) are eliminated; to broaden the patient's view of pain and initiate conceptual change; to educate patients on the long-term harms of opioids and initiate

tapering, and promote gradually increasing function over time. In an Australian context, the GP is the role most suited to undertake this task [14,119]

- ii) an educator, for example imparting knowledge to patients and helping to develop understanding on various lifestyle factors, to monitor treatment adherence and to provide sustained supportive care for behaviour change. This role is widely suitable for a practice nurse [126,135,136]
- iii) an independent medication review provider e.g. a pharmacist to support opioid cessation [126]
- iv) a mental health provider to address mental health issues, identify and manage negative thinking, inaccurate beliefs, and unhelpful behaviours, e.g. a psychologist [37]
- v) a movement-related health care provider to reinforce conceptual change around any beliefs that movement is harmful, address sedentarism (sitting, lying down, sleeping) and any specific activity limitations e.g. a physiotherapist or exercise physiologist may perform this role [37]
- vi) a clinician to support people to alter their dietary intake towards anti-inflammatory nutritional choices plus weight loss encouragement when indicated e.g. a dietitian [137]

Whilst the approach in theory is seen as promising, primary care based multidisciplinary team approaches to support self-management for people experiencing CNCP in Australian primary care settings have yet to be tested.

RATIONALE AND EVIDENCE FOR THE GP ROLE: ADVISOR, OPIOID RESTRICTOR AND MULTIDISCIPLINARY TEAM ENABLER

GPs, as advisors, are often tasked with providing optimal stewardship in medicine e.g. p E1 “don’t do imaging for low back pain within the first 6 weeks unless red flags are present” [138]. This optimal

stewardship now extends to considering the opioid epidemic and ensuring that for people experiencing CNCP, opioids are not used as a long-term monotherapy [91,139].

By treating the whole-person and not assuming a nociceptive source of pain from a perceived structural imperfection, the GP can promote potentially more effective interventions for the long-term [13]. Similar to reassuring patients that imaging is not required in acute low back pain, the whole-person approach requires the GP to engage the expectant, conditioned, patient with the concept that ongoing pain is not the result of a perceived 'structural imperfection' and help shift beliefs towards a new understanding of pain and its broader meaning [14,24].

Explaining pain is a biologically plausible approach to treatment and there is low level evidence that incorporating this approach may improve short term pain and function [140,141].

The second role for the GP is that of opioid restrictor or gatekeeper with a clear focus on reduction of harm as outlined in the section titled *The Need For A Trial Of A Comprehensive Pain Management Approach In Australian Primary Care (Incorporating Deprescribing)* as opposed to prevention of opioid use per se [99,142]. This new information places GPs in the position where the doctor-patient relationship can be renewed, without the patient's continued expectation of medical explanation and requests for comfort by providing scripts for opioids [143]. Australian guides to opioid cessation suggest clinicians deliver opioid tapering advice alongside the presentation of alternative multidisciplinary treatment approaches [144].

The literature demonstrates that GPs are well regarded as gatekeeper to the uptake of new evidence and enablers of quality multidisciplinary care, though they may benefit from skills training focusing on development of effective communication practices to help motivate patients towards adopting a broadly positive attitude towards more comprehensive models of whole-person care [48,135]. GPs are supported to perform this role for chronic conditions in Australia given reimbursement via the use of two Medicare items, namely General Practice Management Plans (GPMPs) and Team Care Arrangements (TCAs) [145]. Utilisation of these plans to facilitate integrated care for patients with chronic disease is increasing [145]. Current regulation requires that there must be at least two providers, aside from the GP involved in care to access a GPMP [46].

RATIONALE AND EVIDENCE FOR THE PRACTICE NURSE ROLE: TEAM ORGANISER AND PATIENT SUPPORTER

Practice nurse is a term that refers to a nurse working in a general practice context and providing a nursing service [146]. Australian data suggests that around 63% of Australian general practices employ a nurse [147]. Similar to the United Kingdom (UK) and elsewhere, it makes sense theoretically for Australian practice nurses to act as both team facilitator and service enricher for patients who experience CNCP and whose opioid use needs to be tapered or stopped [37,148-150]. A recent paper viewed nurse-led care as critical to successful transition to non-opioid regimes for people experiencing CNCP [136]. Whether this evidence would translate to the Australian setting is yet to be shown.

A 2005 literature review of nursing in Australian practice found that nurses were often considered as 'GP time savers' rather than key collaborators [151]. Nonetheless, whilst the extant literature on the role of the practice nurse in pain management in Australian settings yields little guidance, the wider practice nurse and complex patient literature hold promise [152-154]. In an era of multidisciplinary approaches, practice nurses are now considered key primary care staff. Organizing chronic disease management is widely considered a central element of the practice nurse role and potentially Australian practice nurses could similarly provide a key role in assisting effective tapering regimes [129,155].

In Australia, one of the first studies to investigate the better utilization of practice nurses was a feasibility and acceptability study looking into a chronic disease management approach for type 2 diabetes, hypertension or stable ischemic heart disease. The model was found to be both acceptable and feasible for GPs and patients alike [152].

Whilst promising, there are limitations in simply expanding the roles of nurses. A pilot study in the UK found that general practice was under-equipped to manage the multidimensional needs of patients presenting with acute back pain [156]. This suggests that nurses may require additional education (knowledge and understanding) and training (development of skills) [135], plus support of a wider team if they are to feel confident providing support for people with complex pain presentations [135,148,153]. A lack of appropriate communication skills training was also identified in the Australian study by Mahomed and colleagues in 2012. These authors concluded that practice nurses may need to adjust their style of communication to ensure patients are satisfied with their therapeutic interactions [155].

In sum, Australian practice nurses, with adequate support, education and training, are potentially ideally placed to support patients experiencing CNCP who may have difficulty

tapering opioids transition towards non pharmacological alternatives [157,158] (p. 11 National Strategic Action Plan For Pain Management) [46].

RATIONALE AND EVIDENCE FOR THE PHARMACIST ROLE: HOME MEDICATION REVIEW

Roles for pharmacists in pain management have gradually been emerging and the Australian Government supports the inclusion of a pharmacist in a multidisciplinary team (p. 11 National Strategic Action Plan For Pain Management) [46].

Patients also report high levels of satisfaction with personalized medication management, delivered by clinical pharmacists, in a recent primary care trial (Strategies for Prescribing Analgesics Comparative Effectiveness) known as SPACE [136]. This 12-month pragmatic randomised trial (SPACE) compared opioid to non-opioid medication for chronic back, hip or knee pain. Patient's met regularly with the study clinical pharmacist and a strong theme of satisfaction emerged for both arms of the SPACE trial [103,136,159].

An earlier Australian randomized controlled trial examining the effectiveness of medication reviews in the community via a home visit from a pharmacist found high levels of satisfaction amongst GPs and patients [160]. Subsequent widespread adoption of the home medication review has led to this intervention having been conducted by pharmacists for at least a decade in the UK, the USA and Australia [161]. This home visiting role can be thought of as 'non-traditional' and a 2006 systematic review of 43 studies found that generally pharmacists were well placed to offer patient counselling, education and advice, to improve care and clinical outcomes. Included in the review were the results from a trial evaluating the effectiveness of a UK community pharmacy intervention targeted towards patients which was found to be effective in reducing use of non-steroidal anti-inflammatory drugs [162]. Also included was data from a primary care opioid monitoring clinic in the US, run by a pharmacist and nurse, which was found to be effective for people with low risk opioid use [163].

As community based providers of health service, pharmacists are well placed to visit people at home and it is likely that accredited pharmacists, skilled at reducing polypharmacy would make a substantial contribution to a pain management intervention which is aiming to withdraw continuous long-term prescription of opioids whilst avoiding uptake or escalation of other medications [164,165].

A 2011 systematic review and meta-analysis of pharmacist educational interventions, however, was less clear on the exact mechanism from which the benefits arise [166]. In the UK, a more recent combined pain clinic, run by a nurse and pharmacist has shown promise in reducing patients' pain and improving function [167]. There are now calls to expand the role of pharmacists (and nurses) in the context of working closely with GPs in their practices [126].

Thus, with an increased focus on the low efficacy and high risk of opioids in treating CNCP, the inclusion of pharmacists in an opioid tapering intervention is likely to be useful, provided pharmacists are given the opportunity to increase their knowledge and confidence in the field [168,169].

RATIONALE AND EVIDENCE FOR PSYCHOLOGIST ROLE: MANAGEMENT OF MENTAL HEALTH

Current evidence presented in a Cochrane systematic review of psychological therapies for CNCP suggests cognitive behavioural therapy (CBT) has a weak to moderate effect [170].

Despite the limited evidence, multiple guidelines around the globe recommend psychological assessment and the inclusion of psychologists at a tertiary pain management level. Helping people re-frame their situation can help reduce the impact of pain and reduce the ongoing search pain relief [171]. This re-framing allows psychologists to focus their treatments on the normal psychology of pain, viewing pain and related behaviour from an evolutionary perspective [172]. Further, key intervention roles involving the targeting of prognostic variables for persistence such as co-morbid anxiety and depression [99,173].

The intersection of pain, opioid use, sleep disturbance and mental health is complex and the risks posed to persons who experience CNCP, poor sleep, poor mental health and ongoing opioid use, possibly for emotional regulation are substantial [107,122,174]. When specifically considering co-morbid depression, evidence from randomised controlled trials suggest that its treatment needs to precede any broader behavioural self-management approaches for pain [175].

Co-morbidities are common in people who experience CNCP and psychological treatment is central to quality care [42]. Several authors, recognising that the overall effect sizes of psychological treatments for adults across all CBT trials are modest believe newer methods of coping, focused on psychological flexibility and acceptance, hold the most promise [176]. Various options for offering

assistance are possible. A US telephone based trial conducted in primary care focused specifically on psychological factors in relation to reducing opioid use and provided positive evidence that supportive care does assist in reducing opioid dosage [177].

Notwithstanding the limitations noted, CBT is still an important treatment and the strongest (albeit limited) evidence from systematic reviews for reducing opioid consumption is to utilise this form of therapy with a focus on cognitive coping strategies plus behavioural rehearsal [129,178]. Options for delivering pain specific CBT online are promising [179], though may require a skilled pain psychologist attached to a tertiary clinic to provide personalised feedback [180]. To date, whether online treatment, with a specific opioid tapering component, can be successfully delivered is unknown.

A psychologist referral may not always be necessary. In Australian primary care settings, GPs are generally thought of as well placed to deal with patients' psychological distress, particularly depression [181,182]. GPs however, face an inherent problem in the fee-for-service model and often need to engage in non-billable time to provide whole-person care and counsel patients with complex social and psychological problems [183].

In Australia, a more sustainable model for providing complex supportive care can occur via accessing mental health practitioners, such as psychologists, through an initiative known as Better Access. This initiative makes the inclusion of psychological treatment, when accessible locally, a viable option when needed in uninsured people who experience CNCP and for whom opioid tapering has become a treatment priority (p. 11 National Strategic Action Plan For Pain Management) [46].

RATIONALE AND EVIDENCE FOR PHYSIOTHERAPIST ROLE OR EXERCISE PHYSIOLOGIST : SUPPORTING INCREASED PLANNED PHYSICAL ACTIVITY AND REDUCING SEDENTARISM

Cochrane reviews suggest that physical activity and exercise offers an acceptable intervention that may improve pain severity and physical function [65,66]. Exercise is safe, with few adverse events, although temporary muscle soreness following exercise sessions is common [184,185].

Whilst levels of aerobic fitness in patients experiencing CNCP are not necessarily less than the general population [186], current thinking suggests that supporting engagement in physical activity is favourable [67,187]. A focus on strengthening activities in particular may reverse some of the deconditioning and associated loss of muscle function associated with rest [188,189].

Further, the benefits of sitting less and standing more is gaining widespread recognition to reduce the harmful effects of prolonged sedentarism or inactivity, including immune system effects and chronic low-grade inflammation [190].

There are growing community moves towards rethinking recreational activity as medicine [63,191,192]. Walking, and in particular gradually walking faster, has gained attention as an effective intervention, although evidence regarding maintenance of long-term participation is uncertain [62, 193-195].

Current thinking also proposes that exercise be used as a clinical tool to reconceptualise pain-related fear such that exercise-induced muscle soreness be thought of as a normal process [67]. Current guidelines recommend structured, as opposed to unplanned, exercise programs, delivered by either physiotherapists or exercise physiologists [196].

In Australian primary care settings, physiotherapists [197] or exercise physiologists [198] are well placed to deliver an expanded, updated integrated conceptualisation of people's experience of pain and provide supportive care [46,199].

RATIONALE AND EVIDENCE SUPPORTING DIETITIAN ROLE: NUTRITIONAL GUIDANCE

A 2019 systematic review of nutritional studies for CNCP highlighted the importance and effectiveness of dietary interventions, although there was no clear pattern as to which particular type of nutritional intervention contributed to the results [200]. Further, global studies are now focusing on nutritional deficiencies and note that they become particularly prevalent in older females [39].

In general practice, dietary prescription to optimize nutrition is gaining popularity [201]. This allows healthy living interventions to be exploited and potentially reduce low grade chronic inflammation, oxidative stress, obesity and related pain and disability [202]. This low-grade chronic inflammation, termed 'metaflammation,' [203] may impact on a range of CNCP conditions [13,204].

In a recent descriptive study of 50 patients maintained on chronic opioid therapy, both obesity and deficient nutrient intake as well as poor eating habits were highly prevalent [205]. It appears to be the metabolic syndrome component of central obesity rather than the weight per se which shows the strongest independent association with pain [206]. There is moderate quality evidence that diets higher in protein probably lead to greater weight-loss and reduced waist circumference, thus would

be a preferable regime for people experiencing CNCP who need to reduce body fat and preserve lean body mass [207,208].

Next, deficiency in nutrients is particularly marked where the diet is low in fruits and vegetables and the nutrients they contain [209]. In contrast, a diet that is rich in fruit and vegetables, may result in a reduction of chronic systemic low-grade inflammation [210].

Extrapolating to CNCP, such a protective diet would be high in fibre-rich cereals, fruit, vegetables, fish, virgin olive oil and nuts, and low in saturated fats [211,212]. Where oily fish cannot be taken, dietary supplementation of fish oil (or equivalent) or multi-nutrient supplement seem to elicit similar beneficial effects of slowing and reducing inflammation, noting few dose finding studies have been performed to date [213,214].

Incorporating nutritional components of treatment into routine care is now considered a core component of adopting a biopsychosocial framework [14,39]. Assisting patients to change habits, however, is not simple especially when it comes to self-help efforts to reduce addictive dietary behaviours that lead to obesity and to increase positive behaviours such as increasing vegetable intake [110,215]. Nonetheless, dietary interventions are recommended [46], particularly those which focus on obesity.

ADDRESSING THE GAPS IN THE LITERATURE

The existing literature and the opinion of the expert panel suggest that one promising treatment option would involve utilising a primary care based multidisciplinary intervention (containing the elements discussed above) for people experiencing CNCP. From the provider perspective, potentially targeting knowledge, attitudes and intentions may influence health professional behaviour regarding reducing reliance on prescription opioids and adopting a multidisciplinary approach for managing CNCP. Further, whilst general practice holds considerable potential to engage patients in such a behavioural intervention it is important to first establish whether this particular, practical, approach is both acceptable to patients and providers in primary care, as well as feasible to deliver.

The behavioural theory underpinning the thesis is largely based on the 'COM-B' model incorporating three essential individual conditions at the central hub: Capability, Opportunity, and Motivation, which need to be met, for Behaviour change to occur. Around this central hub are nine intervention functions: education, persuasion, incentivisation, coercion, training, restriction, environmental restructuring, modelling and enablement which aim to address deficits in one or more of the three

conditions. Surrounding the intervention functions, an outer rim comprises seven policy options: communication/marketing, guidelines, fiscal measures, regulation, legislation, environmental/social planning and service provision which can be utilised to help deliver the intervention functions. Together the three layers comprise the Behaviour Change Wheel (BCW) [135].

AIMS OF THESIS

Together, the original studies in this thesis broadly aim to investigate the management of patients experiencing CNCP in primary care, with a focus on deprescribing opioids and transitioning to alternate, behaviourally based interventions.

The specific aims were to:

- Review and synthesise existing evidence investigating the feasibility and acceptability of patient focused behavioural interventions to support adult patients experiencing CNCP during opioid tapering (**Paper One**)
- To evaluate the attitudinal influences on GP opioid deprescribing (**Paper Two**) and to examine the opportunities for therapeutic alternatives for supporting GPs to deprescribe opioids in adult patients experiencing CNCP (**Paper Three**)
- Evaluate the impact of an opioid deprescribing and CNCP management education and training package on multidisciplinary providers' attitudes towards treatment of adult patients experiencing CNCP (**Paper Four**)
- Conduct a mixed methods study into the acceptability of an integrated primary healthcare opioid tapering intervention for patients experiencing CNCP (**Paper Five**)
- Synthesise and discuss the findings of the review and studies (**Discussion**)

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PAPER ONE

FEASIBILITY AND ACCEPTABILITY OF PATIENT FOCUSED BEHAVIOURAL INTERVENTIONS TO SUPPORT ADULTS EXPERIENCING CHRONIC NON-CANCER PAIN DURING OPIOID TAPERING: A SYSTEMATIC LITERATURE REVIEW

Research on opioid tapering for people experiencing chronic non-cancer pain is required. Determining a range of feasible and acceptable patient focused behavioural interventions to support patients undergoing opioid taper is needed. The knowledge may help practitioners guide patients towards greater psychological and physical capability, and enhance their recovery. If acceptable and feasible models can be determined, it will be possible for future trials to determine whether the desired outcome of reduced opioid dose and harm reduction can be achieved. This paper describes the feasibility and acceptability of the papers that met the criteria for inclusion in the systematic review amongst adult patients experiencing CNCP undergoing opioid taper.

The search strategy is included as **Appendix 1**

This paper is currently under editorial review at *Translational Behavioural Medicine*

White, R., Bruggink, L., Hayes, C. Boyes, A. W., Paul, C. L. (2019). Feasibility and acceptability of patient-focused behavioural interventions to support adults experiencing chronic non-cancer pain during opioid tapering: a systematic literature review

PAPER 1: STATEMENT OF CO-AUTHORSHIP

STATEMENT OF CO-AUTHORSHIP

I attest that Research Higher Degree candidate **Ruth White** has contributed substantially to the following manuscript:

Feasibility and acceptability of patient-focused behavioural interventions to support adults experiencing chronic non-cancer pain during opioid tapering: a systematic literature review

By:

- Developing the concept, research design and study methodology
- Execution of the study including overall responsibility for screening titles, abstracts and full texts for inclusion, data extraction, assembly of data, quality rating, analysis and interpretation of data
- Leading the writing of the first version of the manuscript

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12/3/2020

Feasibility and acceptability of patient-focused behavioural interventions to support adults experiencing chronic non-cancer pain during opioid tapering: a systematic literature review

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ABSTRACT

BACKGROUND

Guidelines for chronic non-cancer pain recommend negotiating a transition to non-medication treatments for patients taking long-term prescription opioids. Efforts to reduce opioid dose are not always tolerated. Feasible and acceptable interventions to support opioid tapering are needed, particularly in primary care.

OBJECTIVES

To review feasibility and acceptability (patient reported perspectives) of behavioural interventions to support opioid tapering.

METHODS

Electronic databases (MEDLINE, Embase, PsycINFO and CINAHL) were searched from inception to June 2019 to identify original studies reporting feasibility (consent rate and completion rate) and /or patient reported acceptability of non-opioid treatments for adults experiencing chronic non-cancer pain undergoing opioid taper. Google scholar and contents tables of key journals were also searched. Two authors independently extracted data and assessed methodological quality using The Quality Assessment Tool for Quantitative Studies [1].

RESULTS

11 publications met inclusion criteria, of which three were conducted in primary care. Consent rates ranged from 27-98% and completion rates from 6.6% to 100%. Four studies rated at least one component of patient acceptability: helpfulness from 50-81%; satisfaction 71-94% and 'recommend to others' 74-91%. Two studies reported adverse events related to the study. Quality assessment indicated all 11 studies were globally moderate or weak, primarily due to selection bias and lack of assessor blinding. There was also considerable heterogeneity in study design.

CONCLUSIONS

The limited available data suggest that attempts to translate opioid tapering interventions into practice are likely to encounter substantial feasibility problems. The data on patient acceptability and reporting of adverse events are minimal.

Introduction

Chronic non-cancer pain is a complex and burdensome problem to individuals and society. In Australia the financial cost of chronic pain has been estimated at AUD\$73 billion nationally [2]. Australian, Canadian, German and US guidelines do not support opioids as a first-line treatment for patients experiencing chronic non-cancer pain [3]. The evidence is clear, for most people with chronic non-cancer pain, the long-term harms of opioids outweigh any benefits [4]. In the United States it was estimated that five lives were lost per hour to an opioid overdose [5]. In addition, many individual patients taking opioids have reported unwanted side effects commonly including nausea, constipation, drowsiness and headache [6].

Internationally guidelines are encouraging prescribers to consider negotiating an opioid taper with patients experiencing chronic non-cancer pain on high dose opioids [7]. In Australia, the timeframe for commencing weaning is when prescribed opioid use exceeds three months [8].

Whilst opioid reduction may be the agreed goal, there is currently little advice on alternate nonpharmacological interventions which are feasible to deliver and acceptable to patients [9-11]. Thus, clinicians, cognisant that switching to behavioural treatments may be the recommended alternative, have little published evidence to guide treatment choices.

Before examining these adjunctive behavioural interventions to assist opioid tapering, it is worth considering that for many people, discontinuing opioids does not represent a significant challenge. This phenomena was described in 1974 in the context of returned U.S. servicemen from Vietnam who were able to abruptly cease opioid use with little risk of relapse [12]. Further, a 2010 Cochrane review found that many people are able to simply discontinue long-term opioids citing side effects or insufficient pain relief. Importantly, the review also found that for those remaining on opioids there was little conclusive evidence suggesting any improvement in quality of life or functional capacity [13].

Current treatment options in Australia allow primary care physicians to refer to tertiary settings for formal clinical programs, especially for those people who are more resistant to an opioid taper, for example in those with hazardous opioid use or mental health issues [14,15]. A recently updated Cochrane systematic review [16] found a total of five randomised controlled studies for reducing prescribed opioid use in chronic pain. These interventions included cognitive behavioural therapy, mindfulness and acupuncture. It was concluded that while these interventions could be discussed as options for adjunctive treatments when considering an opioid taper; no firm conclusions could be

drawn about effectiveness, given that patients in the control arms also frequently reduced opioid use.

In addition to effectiveness, research translation frameworks such as Re-AIM [17] indicate the importance of factors such as the feasibility and acceptability of interventions to achieve population-level impact. Feasibility (e.g. the proportion of eligible patients who will engage in and commit to non-opioid alternative treatments) is likely to be particularly critical given the highly addictive nature of opioids. The study setting is also central to understanding the implications for translation, as patient and provider characteristics at pain-specific clinics are likely to differ from generalist settings such as primary care. Similarly, in keeping with guidance recommending that tapering efforts are individualised and consider patients preferences and values it is important to determine acceptability [7]. Acceptability of treatments from the patient perspective is likely to be critical to whether a transition to non-opioid treatment for chronic pain can be achieved on a large scale.

This systematic review aims to assess the feasibility (consent rate and completion rate) and acceptability (patient reported perspectives) of behavioural intervention strategies that support reducing or discontinuing long-term prescription opioids for adult patients who experience chronic non-cancer pain .

Method

Search methodology

In consultation with an experienced medical librarian, a literature search was conducted using electronic databases: CINAHL, Ovid MEDLINE, Embase and PsycINFO from inception to June 2019. We used a combination of MeSH terms and keywords, which were independently checked by authors RW, CP and AB. Search strategies of related systematic reviews were also examined [18]. All MeSH terms were mapped to subject headings and checked for other contexts to ensure inclusion of all appropriate terms. A separate strategy was developed for each database to account for variations in appropriate terms (see Appendix 1). Search results were uploaded to Covidence for analysis. In October 2019, the terms which were found to be most efficient for retrieving key articles from the electronic databases (taper or wean AND pain) were entered into Google Scholar and the first 127 records examined to identify any additional articles. The tables of contents for key journals in the pain field (Clinical Journal of Pain, Pain, European Journal of Pain, Scandinavian Journal of Pain, Pain

Medicine) for the last 2 years were also hand-searched to identify any potentially relevant studies. Finally, we examined a related 2017 Cochrane review to identify any further studies [16]. Figure 1.1 illustrates the article identification and selection process.

Inclusion criteria

We included English-language original studies of adults experiencing chronic non-cancer pain who were undertaking reduction or cessation of prescribed opioids. Articles needed to report the feasibility (% of eligible patients who will engage) or acceptability of the non-opioid alternate treatments on offer in any setting. Articles could include patient, provider or medical staff perspectives; could be evaluation or feasibility studies, and could use either qualitative or quantitative methods; and could be conducted in any setting.

Exclusion criteria

Papers which did not report new data e.g. reviews, protocols and opinion pieces were excluded. We excluded interventions which were surgical or otherwise invasive as well as mechanism-based papers (efficacy of analgesics) or papers solely describing on models of care. We excluded papers which provided no patient outcome data e.g. solely provider behaviour focused or system-level initiatives, or solely reported on patient knowledge change. Finally, we excluded the following populations: papers focused on substance abuse or substance use disorder or mandatory dose reduction as well as studies of children, the terminally ill or pregnant subjects.

Article selection and data extraction

Using Covidence Software, two reviewers (RW and LB) independently screened all 1,191 titles and abstracts identified by the search. Differences were resolved by discussion. A total of 1127 articles were deemed irrelevant based on either title or abstract review. We used the same process to independently assess the full text of 64 potentially eligible studies of which 53 were excluded. The same reviewers independently read the full-text of the 11 eligible articles and recorded information on the authors, year of publication, country, study design, sample characteristics, setting and intervention content during the opioid taper. Data on feasibility or patient reported acceptability, health provider reported acceptability and harms or adverse events were also recorded. A third author (CH) was consulted to independently review the feasibility and acceptability data. All three authors then met to discuss discrepancies and achieve consensus.

Quality assessment

We used a modified version of The Quality Assessment Tool for Quantitative Studies [1] to assess methodological strength (strong/ moderate/ weak). One author (LB) conducted the quality assessment of all studies. Each study was assessed by a second author (RW or CH) as a quality control check. Any discrepancies in assessments were discussed until consensus was reached for all studies.

Data analysis

A narrative analysis was conducted as the extracted data were not appropriate for a meta-analysis.

Results

Eleven articles published between 2010- 2019 met the inclusion criteria and were included in the analysis (Table 1.1) [19-29]. All 11 studies reported on feasibility; four studies reported on some aspect of patient acceptability data e.g. helpfulness, satisfied; would recommend to others [20,23,24,28], and three [22,23,26] reported on provider aspects e.g. willingness to provide the intervention or impact on wait times or cost [22,23,26]. A severe medication related adverse events was reported in one study [24] and a mild event in one other study [28]. Study settings included tertiary care-based interventions (n=7) [19-22,24,28]; a primary care clinic (n=3) [25-27]; and a self-directed approach (telephone based) (n=1) [23]. The methodological quality of included studies is displayed in Figure 1.2. The strength of three studies were rated globally as moderate [19,23,28]. All other studies were rated globally as weak [20-27,29].

Feasibility of interventions

Tertiary care-based interventions: Of the seven interventions offered in tertiary care settings, six were group-based [19-21,26,29] one offered individualized treatment [28] and two interventions were a mix of group and individual sessions [22,24].

Six of the seven studies in tertiary care settings reported consent rates. These ranged from 24% [24] to 98% [19]. Completion rates for group-based interventions were greater than 60% except for one study reporting completion rates 6.6% [21]. Only one study concluded that the intervention was not feasible [21] due to the high rate of attrition.

Primary care-based interventions Three studies [25-27] offered interventions in primary care settings. Two offered group educational and medical visits [26,27] and the second involved individualized treatment planning and then a small group intervention with a multidisciplinary team [25]. Two studies reported consent rates of 40% [26] and 84% [25]. All reported completion rates ranging from 35% [27] to 100% [25].

Telephone-based intervention: One study offered an individual-level telephone support intervention [23]. The consent rate was 100% of those willing to pursue treatment and the completion rate was 69%.

Acceptability: patient perspectives

Four studies reported on patient perspectives of the acceptability of the interventions. Two studies were multidisciplinary group interventions offered in tertiary settings [20,24], one was an educational group visit in primary care [27] one was a self-directed intervention offered over the telephone [23].

Among the multidisciplinary group interventions in tertiary settings, a Canadian study based at a University clinic used an intervention which aimed to improve patient knowledge and self-care skills among migraine patients awaiting an initial appointment. 94% of participants completed a satisfaction survey with the majority (86%) of these patients reporting the intervention as helpful [20]. Further, 91% of participants who completed the survey stated they would recommend the intervention to other patients.

A US-based prescription taper tertiary support group was rated helpful by 81% of participants at the 22 week review [24]. Satisfaction data from a US primary care taper support educational group study [27] reported that 71% (n=25) of responses rated the intervention helpful and 74% (n=26) of responses would recommend the group to others. The consent rate to chart review in this cohort [27] was 14/35 = 40% and completion was 5/14 = 36% (excluding non-consenters). If non-consenters included, completion rates were 5/35 = 14%. The reported reasons for non-attendance included: timing of the group visits, health problems, lack of transportation, not seeing the benefit of attending, and forgetting to attend.

The fourth study to report patient acceptability was the 'Therapeutic Interactive Voice Response' (TIVR), automated maintenance enhancement program [23]. Follow up interviews enquired about patient experience post intervention. 50% or more of participants who utilised the intervention felt it was helpful "TIVR gave me new lease on life without dependency on pain medication. I can think clearly again"

Acceptability: provider perspectives

Two studies reported provider perspectives. The first, a primary-care based study discussed their perspective on providing the intervention commenting that the group structure was financially viable. Further these authors noted that the physician (co-leader, alongside a nurse and a

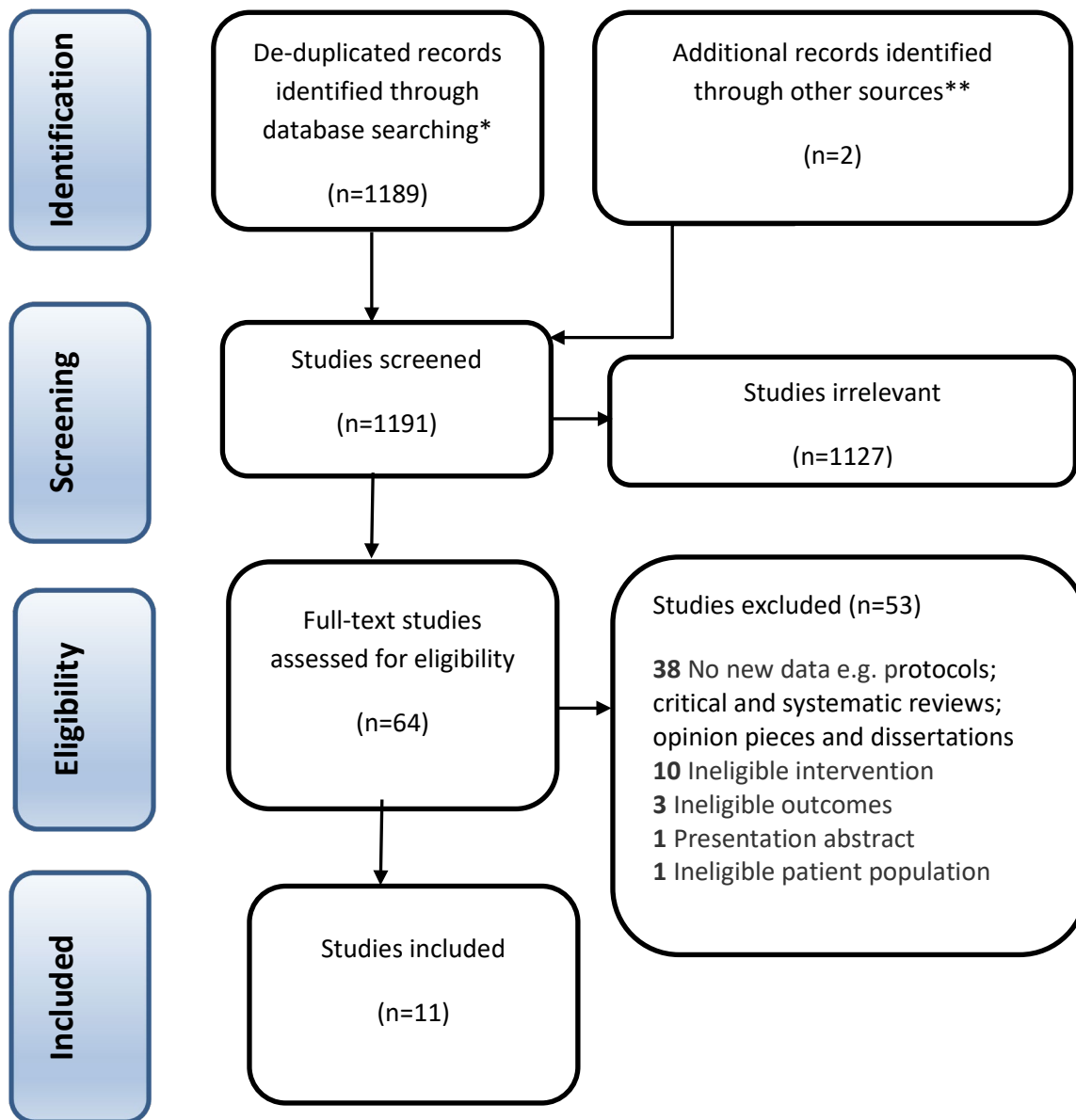
behavioural health specialist) reported enjoying seeing patients in a 2 hour group medical visit format as opposed to individual 15 minute appointments, adding that it was possible to deliver content more effectively and persuasively. [26].

The other study to report provider perspectives was the interactive voice response intervention which noted that the individually tailored message component of the intervention was time consuming and expensive [23]

Harms

Two studies reported adverse events related to the intervention. One severe study-related adverse event was reported in the taper support group in a US-based study [24]. The event related to an allergic reaction to a prescribed medication, nortriptyline which was prescribed by the study psychiatrist during the initial psychiatric evaluation. The other study to report harms noted minor adverse events related to electroacupuncture [28]. A further two studies discussed harms in terms of their respective interventions being likely to reduce potential adverse events associated with long term opioid treatment [23,27].

Figure 1.1. Study flow diagram (PRISMA) for search



(*June 2019/ **October 2019)

Table 1.1: Included studies

Authors, Year of Publication, Country	Study design	Sample characteristics of adults taking opioids	Setting	Intervention offered during opioid taper	Feasibility	Patient reported acceptability	Healthcare provider reported acceptability	Harms
[19] Gilliam et al 2018 USA	Observational cohort study. Prospective, single center, 2 group: (opioid use, no opioid use) × 2 (period: pretreatment, post-treatment) and 2 (group: opioid use, no opioid use) × 2 (period: pretreatment, 6 months post-treatment)	Female 62.9%, Mean age 53.03 years (SD =13.76) Mean years education 15.14 (SD 2.68) Referred for pain rehabilitation with opioid weaning and expressed willingness to pursue treatment approach. Mean OMMED 66.2mg, median dose 40.0mg	Mayo Clinic Pain Rehabilitation Centre. Interdisciplinary pain rehabilitation outpatient program	Duration 15 days Hours- 8 per day Delivered by physiotherapists, occupational therapists, psychologists, physician Content included physical and occupational therapy and individual and group-based cognitive-behavioural therapy sessions	Consent rate 346/353 = 98% Completion rate 142/165= 86%	Not reported	Not reported	Not reported
[21] Kurita et al 2018 Denmark	Prospective Single centre open label. Parallel- group randomized controlled	Female 56%. Taper off group 40%. Mean age 50.9 years (SD = 11.4). Taper off	Multidisciplinary pain centre treatment	Duration 6 months Delivered by three pain specialist physicians and four experienced	Consent rate 75/141= 53% Completion rate for taper arm 1/15 = 6.7%	Not reported	Not reported	Not reported

	trial. Group1-control, Group 2- opioid taper	group mean 56.3 (SD 9.2) Mean years education 11.5 (SD 3.6) Taper off group 10.9 (SD 4.4) Patients on oral opioids >3 months with daily dose ≥ 60 mg oral morphine equivalent Taper off group mean OMMED 367.4 (SD 369.8)		clinical nurses. A psychologist, social worker and physiotherapist included if needed. Included regular physician assessments and nursing encouragement to continue opioid dose reductions	Completion rate for both arms combined 13/75 = 17% Completion rate for both arms combined (including non-consenters) 13/141 = 9%			
[20] Lagman-Bartolome et al 2018 Canada	Prospective pre- and post-intervention study.	Female 86% Mean age 42.5 years (SD 11.9). College/university education 84%. Opioid use 22%	Center for Headache at the University of Toronto for headache consultation	90-minute didactic presentation delivered by advanced practice nurse plus education and opportunity to share experiences/ask questions. It was required attendance prior to their initial consultation.	Consent rate 177/248= 71% Completion rate (152/177 =86% Completion rate (including non-consenters) 152/248 = 61%	Satisfaction survey completion rate 167/177= 94% 144/167= 81%reported intervention helped them 144/167 = 86% reported	Not reported.	Not reported

						they were satisfied 152/167= 91% would recommend to other patients		
[26] Mehl-Madrona et al 2016 USA	Prospective two group comparison. Intervention and matched controls. Patients were matched according to age decile, major diagnoses, sex, and dose within 25% in morphine equivalents. Two comparison groups were generated, one to compare to the 42 who attended	Female 60% Mean age 45.7 (SD 18.1) College education 41.5% Patients receiving opioids for more than six months	A primary care clinic in a rural area	6+ months twice monthly group medical visit for 2 hours with max group size of 12 Group was run by a family doctor, a nurse and behavioral health specialist. Content included an implicit philosophy that opiate reduction was important and a culture that encouraged reduction or cessation plus commitment to physical activity and complementary and alternative medicine	Consent rate 84/207 =41% Completion rate 42/84 = 50% Completion rate (including non-consenters) 42/207 = 20%	Not reported	The physician co-leader reported enjoying seeing the patients in the 2 h group appointments more than the same number of separate 15 min appointments	Not reported

	group medical visits for 6 months, and one to compare to the 207 patients who made initial consultations and were offered to join group medical visits							
[22] Meineche-Schmidt et al 2012 Denmark	Prospective cohort study with 15 months follow up	Female 66% Mean age 51 (range 21-79) Education status not reported Weak opioids 36% Strong opioids 26%	Private multidisciplinary pain clinic	Individualized treatments (6-12 sessions) of pharmacological pain management, psychological advice, physiotherapy, relaxation therapy or socio-economic counselling. Or group therapy (30 hours over 5 weeks or 3hrs x 3weekly for 13 weeks): education; Cognitive Behavioural Therapy or	Consent rate not reported Completion rate as measured by questionnaire return 189/306 = 62% Completion rate (including non-consenters) unable to calculate	Not reported	Setting allowed for low wait times. (within one month from referral)	Not reported

				Rehabilitation Program: education and psychotherapy, physiotherapeutic sessions, relaxation sessions and socio-economic counselling by a pain physician, a psychologist, a physiotherapist and a social worker.				
[23] Naylor et al 2010 USA See also [30] Naylor et al 2008 USA	Two group prospective randomized trial	Female 23/26 88% Age 47 (SD 10.42) Education higher than secondary school 12% Baseline opioid utilisation at for both arms 29/51 =57% taking opioids at baseline	Self-directed telephone/ computer based therapeutic interactive voice response following a CBT group program	4 components including self-monitoring; didactic skills review, guided behavioral rehearsal of pain coping skills, monthly therapist feedback message	Consent rate. 55/67 = 82%. Completion rate for both arms combined 51/55 = 93% Completion rate for both arms combined (including non-consenters) 51/67 = 76%	13 ⁺ /26 =50% reported the intervention helped them.	The individual tailored monthly message was time consuming and expensive	

		Baseline opioid utilisation for intervention arm 14/26=54%			Completion rate for taper arm 26/29 = 90%			
					Completion rate for taper arm (including non-consenters) unable to calculate			
[25] Stein et al 2013 Sweden	Prospective controlled pragmatic trial	Female 86% Age 48 (SD 7.8) Education higher than secondary school 20% Use of opioids <40mg oral morphine equivalents/day	Outpatient setting in a primary care health care unit	Group sessions with 6–8 members each. Total of 90 hours over 6 weeks. 3 x 5hour days per week for 6 weeks Delivered by a general practitioner, two physiotherapists two psychologists and one occupational therapist, and included cognitive-behavioural treatment, education on pain physiology, ergonomics, physical exercises	Consent rate 59/70= 84% Completion rate 59/59 = 100% Completion rate (including non-consenters) 59/70 = 84%	Not reported	Not reported	Not reported

				and relaxation techniques				
[24] Sullivan et al 2017 USA	Nonblinded RCT Taper support intervention versus usual care. Measurements at baseline and 22 and 34 weeks after randomization	Female 66% Age <50 (22.2) 50–64 (38.9) ≥65 (38.9) College graduate or professional school 44.5% Opioid dose in taper support arm <50 mg (27.8) 50–<200 mg 7 (38.9) 200–<500 mg (22.2) 500–<1,000 mg (5.6) ≥1,000 mg 1 (5.6)	Outpatient setting at the University of Washington (UW) Medicine Center for Pain Relief	18 x weekly 30-minute individual or group sessions Delivered by an experienced pain physician Content included viewing videos of other patients coping with opioid taper challenges and sessions on goal setting, pain neuroscience education, rationale for managing negative thoughts, activity pacing	Consent rate 35/111 = 31% (N.B. Of the 144 referrals 33 were ineligible hence denominator of 111) Completion rate both arms combined 31/35 = 89% Completion rate both arms combined (including non-consenters) 31/111 = 28% Completion rate group intervention arm 16/18 = 89% The study authors stated “taper support intervention is feasible and shows promise in reducing opioid	13/ 16= 81% rated the intervention as very or extremely helpful	Not reported	One adverse event was reported in the taper support group and was classified as severe and study- related. A patient prescribed nortriptyline by the study psychiatrist/PI during the patient’s initial psychiatric evaluation developed an allergic reaction (difficulty breathing, a swollen uvula, redness in neck, and flushed face) 2 days later. The patient saw his primary care physician and discontinued the medication, and his symptoms resolved

					dose while not increasing pain severity or interference”			
[29] Van Hooff et al 2012 The Netherlands See data reported in [31] Van Hoof et al 2010 The Netherlands	Prospective cohort study Pre-post and 2-year interview	Female 59% Age 42.9 (±8.4, 23–60) Education status not reported Opioid status at referral 15% weak opioid and 10% strong opioid	A residential facility outside the Sint Maartenskliniek Nijmegen clinic	100 hours of of participant contact time delivered in a 2-week group orientated setting Delivered by the trainers of the multidisciplinary team Cognitive behavioural principles	Consent rate 107/136 = 79% Completion rate 103/107 = 96% Completion rate (including non-consenters) 103/136 = 76%	Not reported	Not reported	Not reported
[27] Vogler et al 2017 USA	Prospective cohort pilot study	Female 77% Age 58 (±11) years Education status not reported The median amount of morphine equivalents for patients was 17.5mg (range 0–120 mg) at the first study visit.	An academic primary care clinic	4 x 90-minute group visits with up to 15 participants Each group visit was facilitated by one member of a rotating core of two primary care physicians, a nurse educator, and a pharmacist. Each session included an education video and group	Consent rate (to chart review) 14/35 = 40% Completion rate 5/14 = 36% Completion rate (including non-consenters 5/35 =14%	25/35= 71% found the intervention helpful 26/35= 74% would recommend to others	Not reported.	Not reported

				discussion + goal setting				
[28] Zheng et al 2019 Australia 2019	Multicenter 3 arm Controlled clinical trial	Electroacupuncture arm Female 58% Age 55.9 (11.3) years University or higher education 20.8% Opioid status at referral: had taken opioids regularly for more than two months without dose limitation and who were willing to reduce opioids were included. Opioid dose Weekly (mg) 463.3 (438.6 SD) Exclusion criteria: unwilling to reduce opioids	Treatment delivered at the Pain Services Unit of the Royal Melbourne Hospital, the Caulfield Pain Management and Research Centre of the Caulfield Hospital, the Sunshine Hospital, RMIT Clinical Trial Laboratory, and one site in Geelong	12 individual sessions delivered within 10 weeks Delivered by experienced and registered acupuncturists Electroacupuncture and pain education provided once by pain specialist, and weekly phone calls to remind them of their tapering schedule	Consent rate 108/556 = 19% Completion rate combined 90/108 = 83% Completion rate combined (including non-consenters) 90/556 = 16% Completion rate in electro-acupuncture arm 36/48 = 75% Completion in electro-acupuncture + sham 63/77 = 82%	Not reported	Not reported	Adverse events incidence of 17% and 21% respectively for electroacupuncture and sham electroacupuncture. All were minor.

Figure 1.2: Quality Assessment Tool

STRONG 

MODERATE 

WEAK 

Study	Component Ratings						GLOBAL RATING
	Selection bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals and dropouts	
Gilliam [19]							
Kurita [21]							
Lagman-Bartolome [20]							
Mehl-Madrona [26]							
Meineche-Schmidt [22]							
Naylor [23]							
Stein [25]							
Sullivan [24]							
Van Hoof [29]							
Vogler [27]							
Zheng [28]							

Global rating

Strong = no weak ratings

Moderate =one weak rating

Weak =two or more weak ratings

Discussion

This study reports on the feasibility and acceptability data from 11 studies examining behavioral interventions for assisting with opioid tapering in adults experiencing chronic non-cancer pain. The small number of included studies from our search strategy (11 articles) highlights the limited evidence available regarding the feasibility and acceptability of these interventions.

Sullivan and colleagues in the US reported on ‘feasibility’ as a distinct concept [24]. However, most papers reported consent rates and / or completion rates as constructs of feasibility. No papers specifically used the term ‘acceptability’; however, four papers did report data on helpfulness or satisfaction or whether patients would recommend the intervention to other patients as markers of

intervention acceptability. It is possible that this lack of data on processes and patient perspectives reflects the field's focus on assessing treatment efficacy predominantly via the end-point of opioid reduction.

A majority of the papers included in this review were not randomized; were set in multidisciplinary clinics at Universities and major hospitals and the patients were referred specifically for pain treatment alongside opioid taper making the samples highly selected e.g. [19,22]. Further selection bias occurred e.g. subjects had to have already completed cognitive behavioural therapy [23]; or pass through a selection criterion of being 'highly motivated' [29], or had capability for example to practice mindfulness sessions on a daily basis [22]. This selection bias limits the generalisability of their consent and completion rates.

The providers delivered the interventions in a variety of combinations of specialist trained multidisciplinary teams including: physiotherapists, occupational therapists, psychologists, pain specialist physicians, clinical nurses, social workers, behavioral health specialists, pharmacists, or acupuncturists. This availability of healthcare providers again reflects the tertiary settings of most of the included studies, making generalizability to primary care limited.

Two studies specifically stated that their interventions were feasible to deliver [19,24] and one study stated the opposite [21], citing a completion rate for taper arm of 6.7%. These authors stated dropout rates were much higher than expected citing patients' reasons as: unstable health condition, refusal/ unwillingness to continue in the study. No-show was a broader problem in this review, although reasons were not always clear e.g. "drop out was not related to either the treatment program or the study itself" [29]. One study found that women were less likely to drop out of the groups than men [23]. Zheng stated that the relatively high level of 'drop-outs' was due to people changing their mind regarding consent or finding the treatment allocation ineffective [28].

Acceptability was rarely reported, particularly provider perspectives. Future research could take into account factors which impact on the acceptability of the intervention from patient and provider participant perspectives.

Limitations

This systematic review has limitations, in part due to the developing status of this particular field of research. A publication bias may exist such that studies reporting low completion rates may be unpublished, despite such data on feasibility or acceptability being useful for intervention development. Also, methodological limitations of the included studies, including lack of randomization in several studies leading to selection bias e.g. [19,20,22,25]. One study [26]

attempted randomization, however patients almost uniformly preferred treatment as usual rather than tapering. To overcome this limitation future analyses with larger samples and using a randomized control study design are planned for one of the study groups [20]. Several studies cited their small sample sizes as a factor limiting the generalizability of the findings [23,26-28]. Further, as stated earlier, the highly selected samples limits the generalisability of reported consent and completion rates to the general population. We also did not include studies in languages other than English. Finally consent and completion rates were highly variable. One author [24] specifically suggesting enhanced engagement strategies in future trials.

Conclusion

This review found low-quality evidence to suggest variable feasibility and acceptability for opioid tapering interventions designed for people experiencing chronic non cancer pain, at least in tertiary settings. Primary care evidence is limited. Enhanced engagement strategies will need to be considered. The field needs well- designed opioid-taper-intervention studies which incorporate measures of feasibility and examine acceptability from patient and provider perspectives, particularly in primary care settings where the vast majority of patients being managed with long term opioids receive care.

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PAPER TWO

GENERAL PRACTITIONERS AND MANAGEMENT OF CHRONIC NON-CANCER PAIN: A CROSS-SECTIONAL SURVEY OF INFLUENCES ON OPIOID DEPRESCRIBING

Paper 1 identified the need for well-designed opioid-taper interventions which are feasible and acceptable to both patients and providers in primary care settings. Alongside the limited data which provided some understanding of interventions that patients find acceptable (paper1), it is important to understand the other principal partner in the therapeutic relationship, the GP. Paper 2 reports on the attitudes of GPs' regarding opioid deprescribing. This is significant because currently little is known about factors impacting on GP tapering decisions. Paper 2 describes a cross-sectional survey of GPs in one Australian primary health network where a local opioid guideline was in place

The Postal GP Survey is included as **Appendix 2**

Paper 2 is a published paper

White, R., Hayes, C., Boyes, A. W., Chiu, S., & Paul, C. L. (2019). General practitioners and management of chronic non-cancer pain: a cross-sectional survey of influences on opioid deprescribing. *Journal of Pain Research*, 12, 467–475.

PAPER 2: STATEMENT OF CO-AUTHORSHIP

STATEMENT OF CO-AUTHORSHIP

I attest that Research Higher Degree candidate **Ruth White** has contributed substantially to the following manuscript:

General practitioners and management of chronic noncancer pain: a cross-sectional survey of influences on opioid deprescribing *Journal of Pain Research*, 12, 467–75

By:

- Concept and research design of the study
- Execution of the study including overall responsibility for collection and assembly of data, analysis and interpretation of data
- Leading the writing of the manuscript

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12/3/2020

General practitioners and management of chronic non-cancer pain: a cross-sectional survey of influences on opioid deprescribing

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ABSTRACT

BACKGROUND General practitioners' (GPs) views about deprescribing prescription opioid analgesics (POAs) may influence the care provided for patients experiencing chronic non-cancer pain (CNCN). There are limited data addressing GPs' beliefs about deprescribing, including their decisions to deprescribe different types of POAs.

AIM To determine the proportion of GPs who hold attitudes congruent with local pain stewardship, describe their deprescribing decisions, and determine whether type of POA influences deprescribing.

DESIGN & SETTING In 2016, a cross-sectional survey of all GPs (n= 1570) in one mixed urban and regional primary health network (PHN) in Australia was undertaken.

METHOD A mailed self-report questionnaire assessed agreement with local guidelines for treating CNCN; influences on deprescribing POAs and likelihood of deprescribing in a hypothetical case involving either oral codeine or oxycodone.

RESULTS A response rate of 46% was achieved. Only half (54%) of GPs agreed POAs should be reserved for people with acute, cancer pain or palliative care and a third (32%) did not agree that a medication focus has limited benefits for peoples' long-term quality of life and function. Most (77%) GPs were less likely to deprescribe when effective alternate treatments were lacking, while various patient factors (e.g. fear of weaning) were reported to decrease the likelihood of deprescribing for 25% of GPs. A significantly higher proportion of GPs reported being very likely to deprescribe codeine compared to the equivalent opioid dose of oxycodone for a hypothetical patient.

CONCLUSIONS Many GPs in the PHN have not adjusted their views to follow local guidance that opioids are a non-superior treatment for CNCN. Attitudinal barriers to deprescribing include: lack of differentiation between various types of opioids; perceived lack of effective treatment alternatives and patient fear of deprescribing. Therefore, the next step in this target population is to train GPs regarding how to apply the evidence in practice and how to support patients appropriately.

Introduction

In Australia, between 1990 and 2014 there was an almost fourfold rise in the dispensing of prescription opioid analgesics (POAs). This increase was driven largely by government subsidies for long-acting formulations used to manage pain for people experiencing CNCP, that is, pain lasting longer than 3 months [1–3]. Almost 13% of the total Australian population are dispensed at least one government-subsidized POA each year [4]

Although there is some evidence worldwide that opioid harms have reached a plateau [5], a substantial rise is evident in Australia in prescription opioid-related harms such as hospitalizations and accidental poisoning deaths [6–8]. The available data do not distinguish whether use of illicit opioids or other substances may have contributed, however, the studies do link the rise in harms to an escalation in the use of prescription opioids made available under the government-subsidized system [8].

Beyond hospitalization and death, aberrant behaviour and dependence are also problematic, particularly when people are younger and on higher prescribed doses [9]. Further, there is concern globally when people are co-prescribed opioids in combination with benzodiazepines [10,11].

Currently, there is evidence that opioids may provide modest short-term (less than 3 months) pain reduction along with minor improvement in physical function when compared with placebo [12,13]. Over the longer term the current lack of robust evidence means that, from a clinical ethics perspective, prescribers need to balance a patient-centred approach with population based data that suggest increased harms when opioids are chronically prescribed [14,15].

It is now accepted that POAs should not be a first-line treatment for people experiencing CNCP [16]. A recent pragmatic randomized controlled trial for chronic back and osteoarthritis-associated pain found that over 12 months treatment the reduction in pain scores was significantly less with opioids than nonopioid treatment. The study found that there were greater adverse events in the opioid arm and opioids brought no improvement in pain interference. Interestingly, the trial also found almost double the use of illicit drugs in the nonopioid arm. Furthermore, it is possible that study outcomes were affected by the limited options for individually titrated dosage in the opioid treatment arm [17]. If POAs are initiated in carefully selected patients, that is, those with

no substance addiction history, an argument could be made in favour of limiting opioid therapy to a maximum of 3 months as opioid use beyond this time is likely to continue long term [18,19].

Across the pain spectrum, widespread clinical variation in opioid prescribing exists [20,21]. This variation continues with regard to opioid deprescribing in clinical practice and consensus guidelines. Currently, quality evidence for interventions aiming to reduce prescribed opioids is lacking, though nonrandomised studies indicate that switching to broader treatment approaches, including addressing mental health and physical functioning, may bring about reduction in opioid use [22,23].

In practice, consideration of deprescribing after 3 months presents substantial challenges for patients experiencing CNCP and their prescribers [24]. Patients may hold concerns regarding opioid withdrawal [25] and some prescribers may believe that continuation of POAs poses minimal risk of harm [26]. Indeed, targeting early career GPs with teaching of current localized guidelines appears to have had little impact on their actual deprescribing decisions for this patient group [27,28]. Currently, although Australian GPs are being urged to consider tapering regimes,[29] there is limited evidence about GP perceptions and practices that could be used to guide efforts to improve GPs' deprescription rates. The available data suggest that GPs regularly face difficulties with patient requests or demands for ongoing opioid treatment [20,30]. Further, perceived environmental barriers such as a lack of healthcare providers offering effective treatment alternatives are likely to have an impact on treatment choices [31].

In exploring GP perceptions about opioids for CNCP, it is important to consider the various types of opioids available. Low dose codeine (≤ 30 mg) has consistently been the most widely dispensed formulation in Australia [3,32,33]. Codeine is typically classed as a weak opioid or prodrug with its analgesic properties almost entirely attributed to its principal metabolite, morphine [3,34,35]. There is risk associated with the drug, however, relating largely to genetic variations which affect the rate at which people convert the prodrug to morphine, plus drug-drug interactions [35,36]. This risk was recognized by the Australian Government Therapeutic Goods Administration when legislation passed in Feb 2018 for codeine to be up-scheduled from over-the-counter to prescription only [35,37,38]. Oxycodone, classed as a strong opioid, is the second most highly dispensed POA in Australia with a substantial portion involving the long-acting formulation [3,4,39]. This shift toward a greater reliance on strong and long-acting

opioids is relatively recent and has coincided with increased government subsidization [40].

It is important to know whether type of POA influences GPs deprescribing decisions, such that peer norms can be shifted via education, training and enablement interventions [41].

This study aimed to examine the perceptions and self-reported usual practice regarding POAs among a large urban and regional sample of Australian GPs. Specifically, the study aimed to identify:

1. The proportion of GPs who agreed with statements congruent with locally available guidelines [27] and optimal stewardship for CNCP management, i.e. POAs should be reserved for people experiencing acute pain, cancer pain, or palliative care; focusing on medication to reduce pain has limited benefits for people's quality of life and function over the longer term; people who experience CNCP should be screened for depression or anxiety; and addressing sleep problems helps people cope better with their pain.
2. The proportion of GPs who report that particular factors (patient prefers to remain on opioids; patient expresses fear of weaning; patient has low score on quality of life measure or functional outcome measure; patient has poor psychological health; lack of availability of effective alternate treatment; lack of availability of access to or support from specialist care) influence their likelihood of deprescribing POAs.
3. Whether type of POA influenced GPs' decision to deprescribe.

Method

Study Design and Population

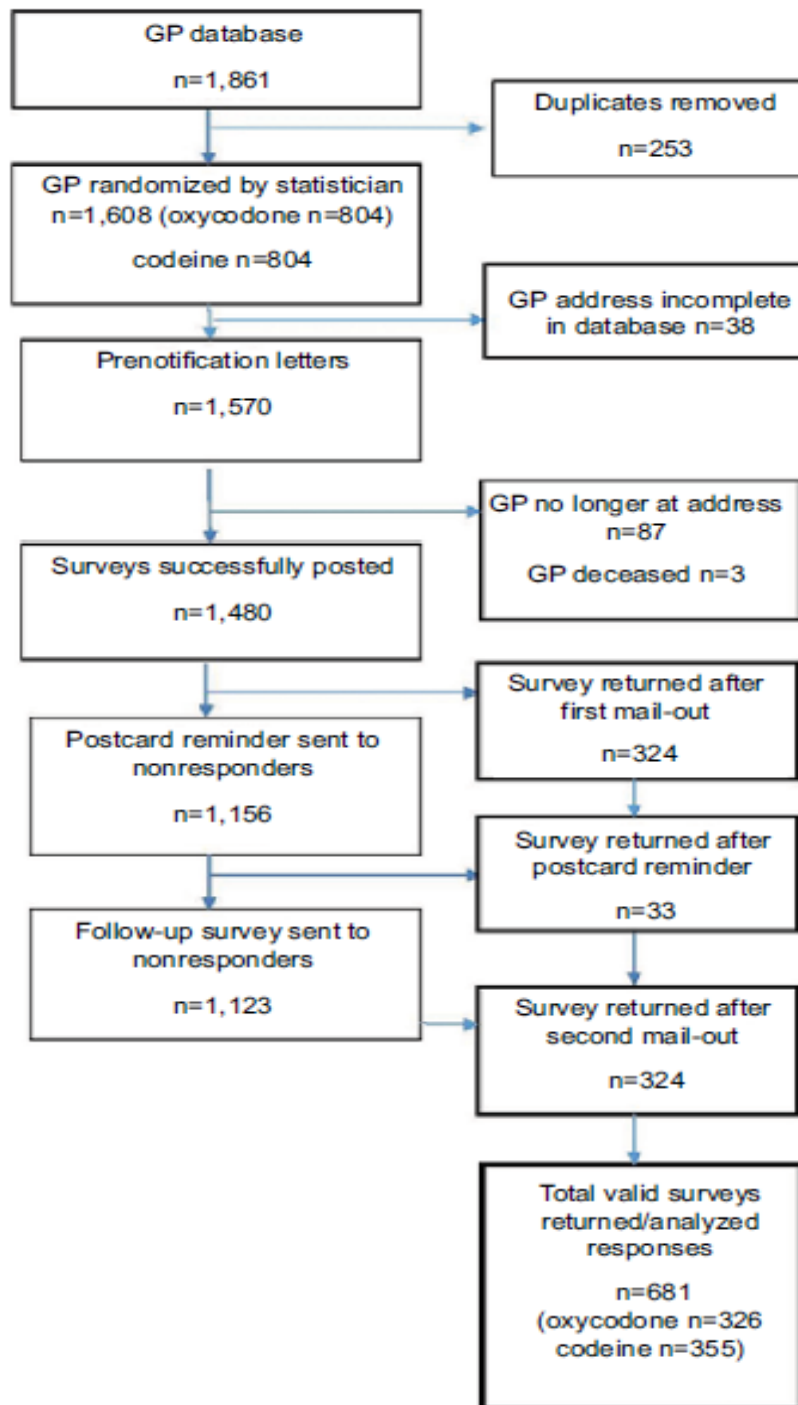
Between February and April 2016, we conducted a cross-sectional survey of GPs in one Australian primary health network (PHN) in the Hunter Central Coast region of NSW. This PHN is the second largest in NSW and 18.3% of the population is aged 65 years and over compared with 14.4% nationally. There are socioeconomically disadvantaged areas within the PHN with 30% of households experiencing rental stress (compared to 25% nationally). 14.4% experience mental and behavioural problems which is similar to the national average (13.6%) [42].

Study participants were GPs listed on the PHN register as at February 2016 with correct addresses.

Procedure

We recruited using a multi-step procedure as shown in Figure 2.1 [43]. After screening the PHN database for duplicates, remaining GPs were randomised. A further 38 duplicates were detected. A personalised pre-notification letter introducing the survey and summarising current best practice in pain management was sent in February 2016 to all GPs. The PHN produced a newsletter simultaneously with the pre-notification mail-out. In March 2016, the first survey (n=1570) pack was mailed and personally addressed to each individual GP. The pack contained a personalised cover letter, a paper copy of the questionnaire and details of the chance to win an AU\$500 value sports watch plus a reply-paid envelope. The sender was identified as the University of Newcastle and a respondent-friendly questionnaire design was used [34,44]. A professionally-designed postcard reminder was mailed to non-responders two weeks after the initial mailing [43,45]. A final mail out of the survey pack was sent to all non-responders four weeks after the pre-notification letter. We considered return of the completed survey to imply consent to participate. The University of Newcastle Human Research Ethics Committee approved the study.

Figure 2.1: Survey flowchart



Study Measures

A short study-specific questionnaire was developed by the authors and expert clinicians using current best evidence and key elements from locally available guidelines [27]. The

guidelines were developed in 2014 and promoted via a portal available to local GPs known as HealthPathways [46] with links to key messaging videos on YouTube [47]. The pool of mutually exclusive attitudinal items described good stewardship in relation to opioid prescribing for CNCP and included four personal attitudes towards CNCP and seven attitudinal statements towards deprescribing, [27] plus a hypothetical case study. The survey was pilot-tested with three GPs prior to administration to ensure accuracy and face validity with the target group and feasibility of questionnaire completion within 10 minutes. Only the items relevant to the study aims are described here.

GPs medical focus and willingness to prescribe POA was assessed by response to two statements: 'opioid therapy should be reserved for people experiencing acute pain, cancer pain, or palliative care' and 'focusing on medication to reduce pain has limited benefits for peoples' quality of life and function over the long-term.'

GPs willingness to screen for underlying mental health comorbidity was assessed by response to two statements: 'when caring for people who experience CNCP, screening for depression or anxiety is always important' and 'addressing sleep problems help people cope better with their pain experience'.

Five response options for the four attitude statements were strongly disagree, disagree, neither agree nor disagree, agree, strongly agree [48]. Due to Low responses in the 'strongly agree' category the responses were collapsed into a three-point Likert scale with, 'agree' and 'strongly agree' responses aggregated into one category and 'strongly disagree' and 'disagree' categories were also aggregated. Neither agree nor disagree was maintained for symmetry in the response scale.

Deprescribing attitudes were assessed by response to seven attitudinal statements. These statements focused on patient factors (four statements) and health system factors (two statements). Response options for these six statements were in the form of a 3 point Likert scale (less likely to initiate wean, no influence on decision, more likely to initiate wean). We then asked respondents to choose which of the following options would encourage them most to deprescribe (lack of therapeutic response, ongoing request for opioids without accepting a broader based approach, other).

Hypothetical patient scenario

Each of the GPs was randomized to receive a case study involving either a weak (codeine) or a strong (oxycodone) opioid of an equivalent oral morphine daily dose of 30mg. The case study questioned respondents regarding their likelihood to deprescribe opioids to cessation (after twelve months) for a 32-year-old male with the following clinical and psychosocial background: unemployed labourer; chronic shoulder pain; all potentially relevant medical interventions ruled out; attending early for repeat script of opioids; describing his current week as 'really tough' e.g. medications 'taking edge off' only and not reaching his physical or functional treatment goals. Responses were given on a 5 point Likert scale (very unlikely; unlikely; neither likely nor unlikely; likely; very likely)

Sample size

A priori power analysis was conducted to determine a sufficient sample size for the study. It was calculated that a total sample size of 500 GP was required to estimate proportions with a margin of error of 4% and maintain a type I error rate of 5% and a type II error rate of 20% (80% power).

Statistical analysis

Data were entered and analysed using STATA Version 14. A sample of 30 surveys was randomly selected to check data quality. There were 4 errors detected from 720 questions representing a 0.6% data entry error rate (3 skipped entry and 1 incorrect entry) which is below the benchmark of 1%.

We used descriptive statistics (frequencies and percentages with 95% CI) to report the attitudes of the GPs. Chi-squared test were used to compare the observed and expected number of responses to the case study and the type of opioid used in the case study.

Results

Sample

Of 1570 questionnaires that were mailed, 1480 were delivered successfully and 681 were returned completed. There were 90 undeliverable surveys, 87 were due to the GP no longer working at or having retired from the practice with three returned due to the GP being deceased. The total valid adjusted response rate was thus 46%. No significant gender differences between responders and non-responders was found.

Of those that responded, 57% were male and 58% had graduated prior to 1995. The majority of the responders' practices had practice nurses (92%) and worked in practices with between five and ten full time equivalent GP's (44 %). Half of the GPs indicated they have 5% to 10% of their case work involving CNCP and only 3% indicated they had never referred a patient to a tertiary pain service.

Optimal pain stewardship

Proportions are reported for each item (Table 2.1). Approximately half (54%) of GPs agreed POAS should be reserved for people with acute pain, cancer pain or needing palliative care as per local guidelines. Approximately one-third (32%) did not agree that a medication focus has limited benefits for peoples' long-term quality of life and function.

Table 2.1 GPs agreement with managing patients experiencing CNCP (n=681)

Attitudes towards CNCP	Strongly disagree/ disagree			Neither agree nor disagree			Agree/strongly agree		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Opioid therapy should be reserved for people experiencing acute pain, cancer pain, or palliative care	219	33	29–36	84	13	10–15	368	55	51–59
Focusing on medication to reduce pain has limited benefits for peoples' quality of life and function over the long term	144	21	18–25	91	14	11–16	438	65	61–69
When caring for people who experience CNCP, screening for depression or anxiety is always important	21	3.1	2–4.7	7	1	2–4.7	647	96	94–97
Addressing sleep problems help people cope better with their pain experience	16	2.4	1.5–3.8	14	2.1	1.2–3.5	645	96	94–97

Notes: Totals may not add to 681 (or 100%) due to missing data.

Abbreviations: CNCP, chronic noncancer pain; GPs, general practitioners.

Deprescribing decisions

Table 2 describes the reported likelihood of GPs' deprescribing opioids for patients with CNCP under various circumstances. More than three-quarters (77%) of GPs reported

that a lack of effective alternate treatment would make them less likely to initiate a weaning regime. Over one third of GPs would be more likely to deprescribe if the patient had poor psychological health. An ongoing request for opioids was the biggest factor influencing GPs decision to wean the patient off opioids(44%), followed by a lack of therapeutic response 40% (data not shown).

Table 2.2 Reported likelihood to deprescribe opioid dose to cessation in relation to various patient and resource factors (n=681)

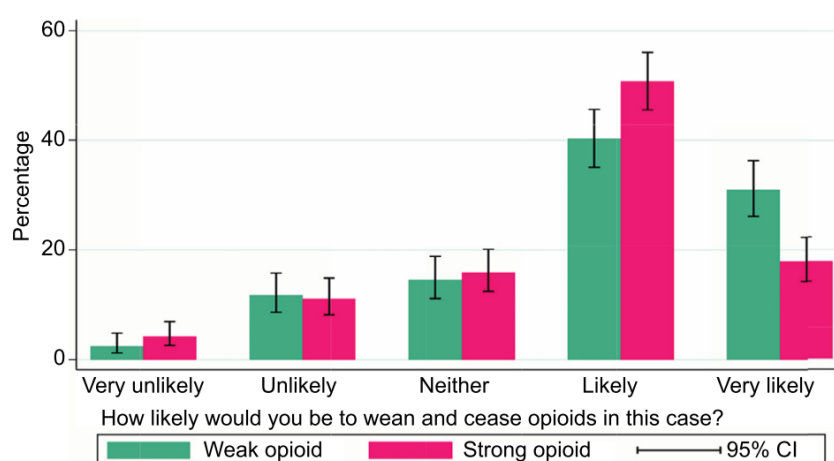
Influences on GP decision about opioid weaning	Less likely to initiate wean			No influence on decision			More likely to initiate wean		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Patient prefers to remain on opioids	250	37	34–41	276	41	38–45	144	21	19–25
Patient expresses fear of weaning (the process or the outcome)	173	25	23–29	388	57	54–62	107	16	13–19
Patient has low score on quality of life measure or functional outcome measure	242	36	33–40	221	32	29–37	208	31	28–35
Patient has poor psychological health	227	33	30–38	201	30	26–34	242	36	33–40
Lack of availability of effective alternate treatment	526	77	75–81	129	19	16–22	19	2.8	1.8–4.4
Lack of availability of access to or support from specialist care	351	52	49–56	294	43	40–48	26	3.8	2.7–5.6

Notes: Totals may not add to 681 (or 100%) due to missing data.

Opioid type

As shown in Figure 2.2, there was a significant difference in GPs responses between case studies received. (Chi-square= 17.87, df= 4, p=0.001). A higher proportion of GPs who received the codeine case study indicated they were “very likely” to wean the patient off opioids (31%) compared to GPs who received a case study involving oxycodone (18%).

Figure 2.2 Oxycodone (strong) versus codeine (weak)



Discussion

Summary of main findings

Australian GPs have been tasked with initiating opioid deprescribing for patients experiencing CNCP after 3 months, avoiding the creation of a future generation of long-term opioid users. We found that only half the GPs surveyed endorsed the idea of reserving opioid use for acute and cancer pain; and a third did not agree that a medication focus had limited benefits [27,28]. Our findings are consistent with those from overseas showing that prescribers' attitudes and prescribing habits vary widely [49]. This wide clinical variation in the pain field relates in part at least to provider factors.⁵⁰ Further education, training and enablement for providers may assist GPs to restructure their practice and modify their prescribing behaviours in line with local guidance, thereby reducing variations in clinical care [41,51,52].

There was strong agreement with the idea of promoting quality sleep and screening for depression. The wider literature is clear on the value of addressing sleep problems [53]. Although the link between POAs and depression is well supported, [54,55] the specific risk associated with codeine prescriptions has only recently been highlighted [56]. In contrast, a recent trial in the UK has cast doubt on the usefulness of screening for depression and anxiety, at least in patients presenting to their GP with osteoarthritis [57]. It is possible that screening, in the context of more holistic care is effective, this is an area to be explored.

This study showed that patient preference to stay on opioids or patient fear of the process or outcome of weaning impacts heavily on GPs decision to deprescribe. With Australian data suggesting that two out of three people attempting suicide have chronic pain, this risk may contribute further to a reluctance to deprescribe [58]. Current evidence suggests guiding suicidal patients toward nonaddictive alternatives and linking patients with mental health support ⁵⁹ to reduce risk and attain clinical improvement [59,60].

Our data showed that GPs' attitudes vary widely on whether low quality of life measures or poor psychological health influence their decisions to initiate weaning. Practitioners have been urged to examine effects on psychosocial functioning of the select group of

patients remaining on long-term opioids [61]. While opioid deprescribing may seem logical when patients have poor function and unremitting pain, a rise in aberrant behaviour and misuse while tapering is a complex area with little current guidance available [62]. We did not explore whether GPs had different attitudes for an older patient requiring “comfort care” compared to a younger person with potential for functional recovery and return to work, though this may have been a factor [63].

Arguably, the biggest barrier identified to initiating deprescribing was a perceived lack of effective alternate treatment. While tertiary specialist pain centres are capable of delivering high-quality psychosocial pain care, GPs clearly want access to more accessible evidence based options in primary care [51]. Conversely, we showed that a patient actively requesting more opioids was a key factor influencing the GPs’ decision to initiate deprescribing. This may reflect that GPs are aware of guidance to routinely screen for signs of aberrant behaviour and are more confident in deprescribing in this patient cohort [27,64].

Australian GPs continue to prescribe multiple types of POAs in primary care settings [65]. Our data suggest that the majority of GPs favoured cessation of opioids in a hypothetical case. While this is good news, management of a hypothetical case does not necessarily correlate with deprescribing in actual practice [66].

Study limitations

The response rate to our survey, while low, compares favourably to other surveys of primary care practitioners [67,68]. The sample size may result in reduced precision in the study data. Study findings may not be generalizable to non-GP prescribers or GPs in more rural and remote areas [69].

Respondents may differ from non-respondents (response bias) such that GPs more interested in pain management may be more likely to return the survey questionnaire than other GPs. Response bias may result in the data providing a more favourable picture of GPs’ perceptions and practices than is actually the case. While such testing is rare for this type of survey, it is possible that survey responses may not provide a precise estimate of participants’ true views. However, given the dearth of evidence available on this topic and the lack of a strong alternative methodology for obtaining this information the data gathered represent a significant advance on what is currently available for the purposes of service planning and delivery. We did not examine the attitudes of GPs

regarding substance use disorder, where the attitudes of GPs toward initiation of deprescribing are less ambiguous [70]. Finally, we did not examine the influence of patient characteristics or satisfaction levels on prescribing patterns [71,72].

Implications for clinical practice and future research

GPs in the surveyed region have been widely encouraged to deprescribe POAs whenever a patient is encountered who has been taking POAs for longer than 3 months [24]. The results of this survey suggest that a large proportion of GPs are not following the evidence base about POAs and locally promoted opioid stewardship [73]. This finding lends weight to the view that this complex problem would be better managed from a coordinated regulatory and broad societal perspective [74,75].

One option to counter decades of often-misleading pharmaceutical company marketing promotion could be a strong education campaign similar to the Victorian (Australia) back pain campaign in the late 1990s [76]. Such a population-based campaign would target both patients and providers and promote key messages around the harms and lack of efficacy of long-term opioid use.

Conclusion

In the short term however, there is a clear need to train and support GPs by assisting them to shift towards potentially more effective psychological or behavioural treatments for patients experiencing CNCP. Competent and compassionate GPs who have learnt to view less liberal opioid prescribing as the new norm will require ready access to these viable alternatives in order to confidently proceed with the transition to broader treatments. Training GPs in how to support patients who express fear of the deprescribing process is also likely to be an important element of effective training programs.

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PAPER THREE

THERAPEUTIC ALTERNATIVES FOR SUPPORTING GENERAL PRACTITIONERS TO DEPRESCRIBE OPIOIDS: A CROSS-SECTIONAL SURVEY

Paper 3 established that in one Primary Health Network, the availability of multi-disciplinary health care providers did not appear to present a major barrier to the provision of team-based care for CNCP. This paved the way for developing an intervention using primary-care-based multi-disciplinary team which could be tested within that same primary health network

The Postal GP Survey is included as **Appendix 2**

Paper 3 is a published paper

White, R. A., Hayes, C., Boyes, A. W., Chiu, S., & Paul, C. L. (2018). Therapeutic alternatives for supporting general practitioners to deprescribe opioids: a cross-sectional survey. *BJGP Open*, 1–11. <https://doi.org/10.3399/bjgpopen18X101609>

PAPER 3: STATEMENT OF CO-AUTHORSHIP

Statement of co-authorship

I attest that Research Higher Degree candidate **Ruth White** has contributed substantially to the following manuscript:

Therapeutic alternatives for supporting general practitioners to deprescribe opioids: a cross-sectional survey

By:

- Concept and research design of the study
- Execution of the study including overall responsibility for collection and assembly of data, analysis and interpretation of data
- Leading the writing of the manuscript

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Therapeutic alternatives for supporting general practitioners to deprescribe opioids: a cross-sectional survey

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ABSTRACT

BACKGROUND General practitioners (GPs) are central to opioid strategy in chronic non-cancer pain (CNCP). Lack of treatment alternatives and providers, are common reasons cited for not deprescribing opioids. There are limited data about availability of multidisciplinary healthcare providers (MHCPs), such as psychologists, physiotherapists or dietitians, who can provide broader treatments. .

AIM To explore availability of (MHCPs) and the association with GP opioid deprescribing and transition to therapeutic alternatives for CNCP.

DESIGN & SETTING Cross-sectional survey of all practising GPs (n= 1480) in one mixed urban and regional Australian primary health network (PHN).

METHOD A self-report mailed questionnaire assessed availability of MHCPs and management of their most recent patient on long-term opioids for CNCP.

RESULTS Six hundred and eighty one (46%) valid responses were received. Most (71%) GPs had access to a pain specialist and MHCPs within 50km. GPs' previous referral for specialist support was significantly associated with access to a greater number of MHCPs ($p=.001$). Employment of a nurse increased the rate ratio of available MHCPs by 12.5% (IRR 1.125, 95%CI: 1.001, 1.264). Only one-third (32%) of GPs reported willingness to deprescribe and shift to broader CNCP treatments. Availability of MHCPs was not significantly associated with deprescribing decisions.

CONCLUSION Lack of geographical access to known MHCPs does not appear to be a major barrier to opioid deprescribing and shifting toward non-pharmacological treatments for CNCP. Considerable opportunity remains to encourage GPs decision to deprescribe, with employment of a practice nurse appearing to play an important role.

Introduction

Across Australian and British general practice, the reported prevalence of people experiencing chronic non-cancer pain (CNCP) is 19% and 33-50% respectively, representing a substantial health burden [1-2].

Developed countries have focused on pharmacological treatments and prescribing rates have increased [3]. Although opioid treatment is established as safe and effective for acute and cancer pain,[4] it has been shown to be no better than placebo in reducing CNCP [5]. A recent RCT for chronic back and osteoarthritis-associated pain found that pain intensity at 12 months was worse in the opioid group compared to the non-opioid treatment arm [6].

Australian Pharmaceutical Benefits Scheme data identified that opioid prescribing rates exhibit substantial geographic variation, resulting in the proposition that “differences in access to alternative pain management options may be a factor” p 23 [7].

In the USA, the Troup study [13] identified 90-days as important when shifting towards potentially more effective treatments in primary care and reducing opioid reliance [8-12]. Large US healthcare groups have been working toward optimal opioid stewardship with one group achieving a 30% reduction in high dose prescriptions by utilising multidisciplinary healthcare providers (MHCPs) to provide exercise and cognitive behavioral therapy [14,15] British guidance recognises the role of the patient and trained non-specialist MHCPs to implement behavioural interventions [16]. In Australia, general practitioners (GPs) are able to create various primary-care- teams using government-funded general practice management plans (GPMPs). This funding supports consultations with a range of MHCPs including psychologists, physiotherapists; pharmacists; occupational therapists; exercise physiologists; social workers and dietitians. Given GPs can create various combinations of providers, it is important to examine the availability of such teams.

This study aimed to identify each of the following among a large mixed urban, and regional sample of Australian GPs: firstly, the proportion of GPs with access to various MHCPs required to potentially implement broader treatments for people experiencing CNCP. Secondly whether demographic (sex, year of graduation, qualifications, interest in CNCP, past referral to a tertiary pain service) and practice characteristics (number of GPs in practice; whether

practice nurse is employed; % of caseload with CNCP; and co-location of MHCP services) are associated with access to MHCPs for treating CNCP and thirdly whether greater access to MHCPs is associated with increased likelihood of initiating opioid de-prescribing for their most recent CNCP utilising long-term opioids.

Method

Study Design and Population

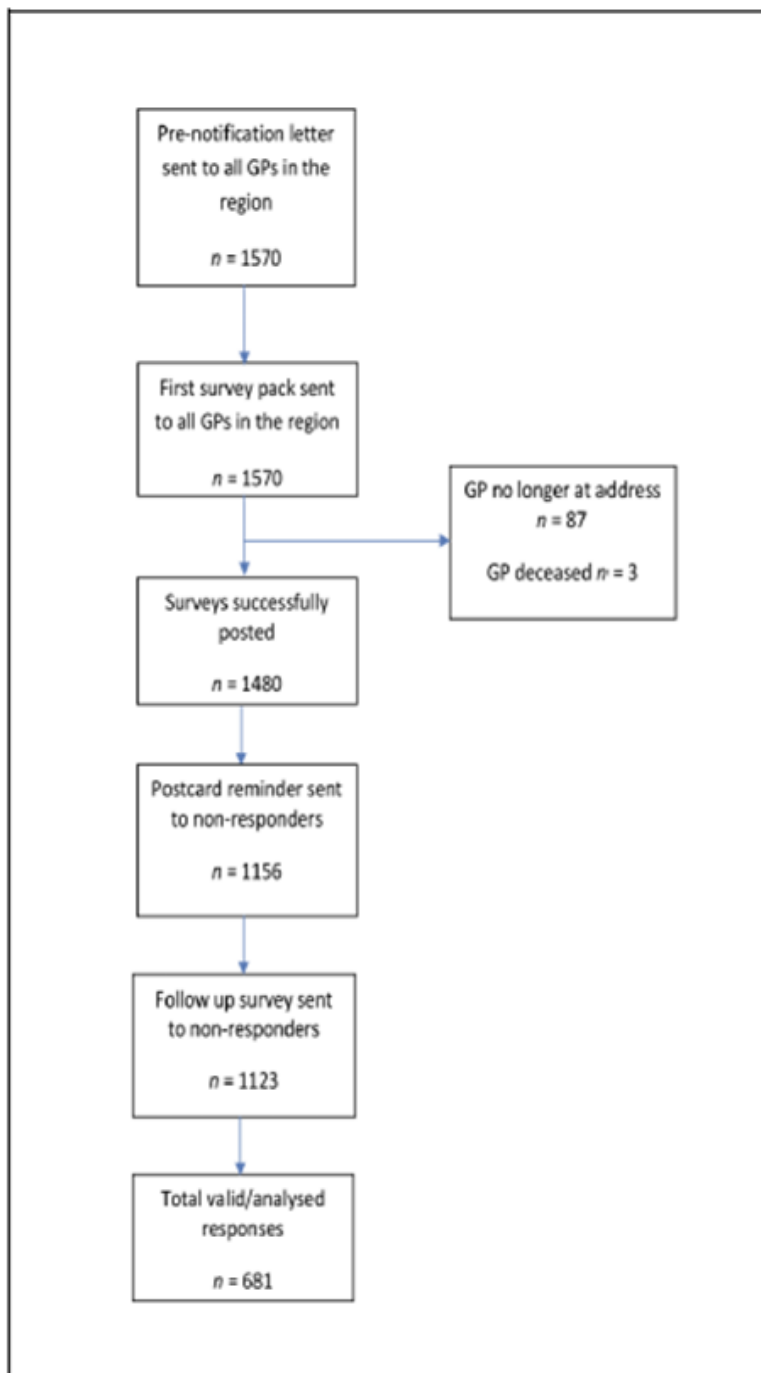
A cross-sectional survey of GPs in one Australian primary health network - 'Hunter New England Central Coast Primary Health Network' (HNECCPHN) was conducted between February and April 2016. The HNECCPHN spans a socioeconomically disadvantaged area with 30% of households experiencing rental stress (compared to 25% nationally), 5% of people receiving unemployment benefits long-term (4% nationally), and 4.2% of people identifying as Aboriginal and Torres Strait Islander (2.5% nationally) [17].

Participants were GPs listed on the HNECCPHN register as at February 2016. GPs with incorrect addresses were excluded.

Procedure

A multi-step recruitment procedure (see Figure 3.1) was used [18]. A personalised pre-notification letter was mailed in February 2016 to introduce the survey and summarise current best practice at the same time as an HNECCPHN newsletter item. The first survey (n=1570) pack, mailed in March 2016, was personally addressed to each GP and contained a copy of the questionnaire, personalised cover letter, details of the chance to win a sports watch valued at AU\$500, and a reply-paid envelope. The University of Newcastle was identified as the sender and the paper survey had a respondent-friendly design [19-22]. Returns-to-sender were tracked [23-26]. Two weeks after the initial mail-out a professionally-designed postcard reminder was mailed to non-responders [18,27]. A final mailing of the survey package was sent to non-responders 4 weeks after the pre-notification letter. The study was approved by the University of Newcastle Human Research Ethics Committee.

Figure 3.1. Survey recruitment flowchart



Study Measures

A 24-item study-specific questionnaire was developed by the authors using current best evidence and expert clinician input. The questionnaire was pilot-tested with three GP prescribers to ensure accuracy, face validity and completion within 10 minutes. Only items relevant to the study aims are described here.

Sample size

A sample of 500 GPs was sufficient to estimate $\pm 4\%$ for the variables of interest with 80% power.

Variables of interest

Demographic and practice variables

The survey items were: gender (male/female); year of graduation; qualifications higher than foundation degree (yes/no); special interest working with CNCP (yes/no); previous referral of patient to tertiary pain service (Hunter Integrated Pain Service (HIPS) or Tamworth Integrated Pain Service (TIPS); HIPS/TIPS and Other; Other; Never); full-time-equivalent staff (1/2-4/5-10/> 10); practice nurse (yes/no); current clinical caseload for CNCP (none, <5%, 5-10%, >10%).

The survey asked GPs to indicate which MHCPs were available within 50km of their main practice to form a potential team for care. Response options were; pain specialist (PS)/pharmacist (PH)/physical therapist (PT)/occupational therapist (OT)/social worker (SW)/exercise physiologist (EP)/dietitian (DT)/none/other. Respondents were asked if any of the MHCPs were co-located (yes/no/partially)

Utilisation of MHCPs in most recent patient with CNCP who had been utilising opioids for 90-days or more

The item asked which approach was taken with the most recent CNCP patient taking prescribed opioids for 90-days or more. Response options were derived from review of local clinical guidelines which promoted 90-days as the time-point to consider deprescribing [28]: not applicable, I do not prescribe opioids for this patient group; continued opioid prescription with dose adjustment to maintain pain relief; rotated to another opioid to maintain pain relief and contain dose escalation; initiated gradual opioid weaning to cessation program; initiated broader primary team care without weaning; or initiated switch to broader team care with specific therapeutic goal to wean opioids to cessation; other. Responses were dichotomized as either unlikely to initiate weaning (i.e. 'continued opioid prescription with dose adjustment to maintain pain relief'; 'rotated to another opioid to maintain pain relief and contain dose escalation' or 'initiated broader primary team care without weaning') or likely to initiate weaning (i.e. 'not applicable, I do not prescribe opioids for this patient group'; 'initiated

gradual opioid weaning to cessation program’ or ‘initiated broader primary team care with specific therapeutic goal to wean opioids to cessation’).

Statistical Analysis

Data were analysed using STATA Version 14. Percentages with 95% confidence intervals (95% CI) are reported for categorical outcomes. Additional outcome variables were created based on a priori hypotheses:

1. The total number of available MHCPs by summation of all available MHCPs.
2. Whether a GP had a particular combination of available MHCPs: high MHCP access availability (access to a pain specialist), moderate MHCP availability (access to two or more MHCPs, but not a pain specialist), and poor access (no access to a pain specialist and access to one or less MHCPs).

Crude and adjusted Poisson regressions were used to examine which socio-demographic factors were associated with i) a greater total number of MHCPs; ii) high versus moderate/poor access to MHCPs; and iii) likelihood of the GP to wean their most recent CNCP patient off prescribed opioids. The regression analysis of likelihood to wean also included the access to MHCPs variable. The relatively high number of total MHCPs and low variance indicated that the distribution was under dispersed, robust variance estimators were used to estimate the coefficient standard error to protect against biases. Logistic regression was used to measure associations between access to MHCPs and demographic, practice characteristics as well as the GPs likelihood to initiate broader care. Each of the covariates were modelled separately then collectively in an adjusted model. The reference category for the logistic regression was set as ‘poor/moderate access’ to measure the odds of ‘high access’.

Results

Sample

Of the 1570 mailed postal questionnaires, 1480 were delivered and 681 were completed. Of the 90 undeliverable surveys, 3 were due to ‘GP deceased’ and 87 due to ‘GP no longer working’ at the practice or retired. The total valid adjusted response rate was 46%. There were no significant gender differences between responders and non-responders.

Table 3.1 Demographics of HNECCPHN GPs

	n = 681	%	95% CIs
Individual GP characteristics			
Sex			
Male	390	57.3	54.6 to 61.0
Female	290	42.6	39.0 to 46.4
Year of graduation			
Before 1995	396	58.1	56.9 to 64.4
1995–2005	183	26.8	24.7 to 31.7
2006–2010	60	8.8	7.2 to 11.7
2011–2014	13	1.9	1.2 to 3.4
Higher qualification			
Yes	472	69.3	66.7 to 73.6
No	200	29.3	26
Special interest in pain			
Yes	174	25.6	22.7 to 29.3
No	499	73.3	70.7 to 77.3
Past referral to a pain clinic?			
HIPS/TIPS	346	50.8	47.9 to 55.5
HIPS/TIPS + Other	236	34.7	31.7 to 39.0
Other	69	10.1	8.2 to 12.9
Never	18	2.6	1.7 to 4.2
Current caseload CNCP, %			
0	4	0.6	0.2 to 1.6
<5	200	29.4	26.5 to 33.5
5–10	339	49.8	46.9 to 54.5
>10	126	18.5	16.0 to 22.0
Practice characteristics			
FTE GPs at practice			
1	64	9.4	7.5 to 12.0
2–4	255	37.4	34.3 to 41.6
5–10	297	43.6	40.4 to 47.9
>11	57	8.4	6.6 to 10.8
Practice nurse			
Yes	627	92.1	90.8 to 94.7
No	47	6.9	5.3 to 9.2

Table 3.1 Explanatory legend: CI=confidence interval; *HIPS Hunter Integrated Pain Service, Newcastle NSW/ TIPS- Tamworth Integrated Pain Service, Tamworth NSW; FTE= full-time-equivalent; GPs= general practitioners, CNCP=chronic non-cancer pain. Totals may not add to 681 (or 100%) due to missing data.

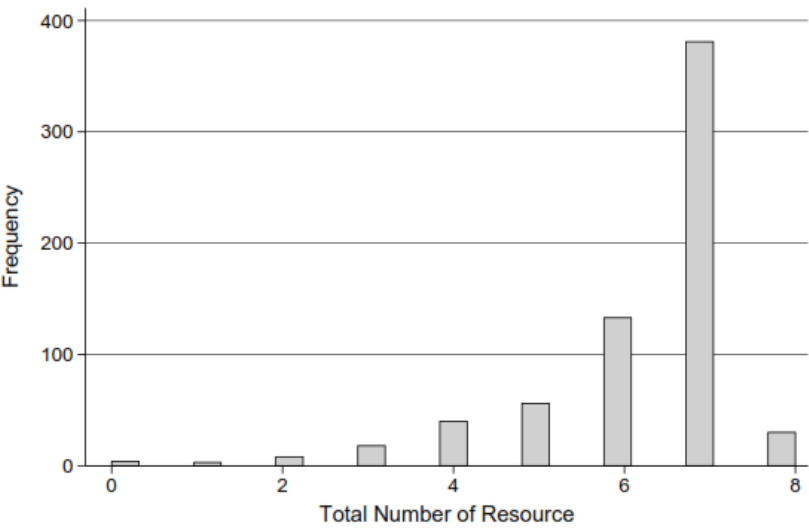
Demographic characteristics of the sample are shown in Table 1. Female GPs accounted for 43% of respondents which is consistent with national figures (not tabled).(29) Most practices (n=627, 92%) employed a practice nurse which is higher than a 2012 finding of 63% [23].

Compared to national data from Bettering the Evaluation and Care of Health (BEACH) which estimated 15% (95% CI: 14–17) of patients attending general practice experience CNCP [1] 19% (95% CI: 16-22) of our sample indicated a similar caseload.

GP access to MHCPs

Figure 3.2 shows the distribution of the total number of available MHCPs for each respondent. The majority of GPs reported access to 7 MHCPs (mean=6.27, SD=1.32).

Figure 3.2: Histogram showing total number of MHCPs available to GP



Availability of MHCPs is reported in Table 3.2. Access to a physical therapist was the most commonly selected MHCP (n=663, 97%). The subgroup combination of physical therapist, pharmacist and dietitian was available to most GPs (n=620, 91%).

TABLE 3. 2 Availability of MHCPs within 50km of main practice (for a GPMP*/TCA*)

	n = 681	%	95% CIs
Access to multidisciplinary resources			
Pain Specialist			
No	157	23.1	20.3 to 26.7
Yes	516	75.8	73.3 to 79.7
Pharmacist			
No	31	4.6	3.3 to 6.5
Yes	642	94.3	93.5 to 96.7
Physical therapist			
No	10	1.5	0.8 to 2.7
Yes	663	97.4	97.3 to 99.2
Occupational therapist			
No	87	12.8	10.6 to 15.7
Yes	586	86.0	84.3 to 89.4
Exercise physiologist			
No	69	10.1	8.2 to 12.8
Yes	604	88.7	87.2 to 91.8
Dietitian			
No	32	4.7	3.4 to 6.7
Yes	641	94.1	93.3 to 96.6
None			
No	666	97.8	97.8 to 99.5
Yes	7	1.0	0.5 to 2.2
Access to combinations			
Combination PS/PH/DT/PT			
No	188	27.6	24.7 to 31.5
Yes	485	71.2	68.5 to 75.3
Combination OT/EP			
No	111	16.3	13.9 to 19.5
Yes	562	82.5	80.5 to 86.1
Combination PS/SW			
No	257	37.7	34.6 to 41.9
Yes	416	61.1	58.1 to 65.4
Combination DT/PT			
No	36	5.3	3.9 to 7.3
Yes	637	93.5	92.7 to 96.1
Combination PT/PH			
No	34	5.0	3.6 to 7.0
Yes	639	93.8	93.0 to 96.4
Missing	8	1.2	
Combination PT/PH/DT			
No	53	7.8	6.1 to 10.2
Yes	620	91.0	89.8 to 93.9
Combination PS/PT/SW			
No	257	37.7	34.6 to 41.9

Yes	416	61.1	58.1 to 65.4
All providers			
No	275	40.4	37.2 to 44.6
Yes	398	58.4	55.4 to 62.8
Co-location of providers			
All selected	19	2.8	1.8 to 4.4
Some selected	253	37.2	34.4 to 41.8
None selected	393	57.7	55.3 to 62.8

DT = dietitian. EP = exercise physiologist. GPMP = general practice management plan. TCA = team care arrangement. PH = pharmacist. PS = pain specialist. PT = physical therapist. SSW = social worker. Totals may not add to 681 (or 100%) due to missing data.

Table 3.2 Explanatory legend: GPMP= General Practice Management Plan; TCA= Team Care Arrangement; PS= Pain Specialist; PH= Pharmacist; DT= Dietitian; PT= Physical Therapist OT= Occupational Therapist; EP= Exercise Physiologist; SW=Social worker. Totals may not add to 681 (or 100%) due to missing data

Factors associated with GPs access to MHCPs

The crude modelling suggested that graduating recently, having referred to tertiary pain services in addition to the specified local tertiary pain services, being in a practice with 5-10 GPs rather than a solo practice and employment of a nurse were significantly associated with high availability of MHCPs for pain management ($p=.047$). After adjusting for all covariates, employment of a nurse and prior referral to 'other' tertiary pain services were statistically significantly associated with the number of available MHCPs. The adjusted model however is the most important result as it accounts for differences within sample demographics. It is estimated that for a GP whose main practice employed a nurse there was an increased rate ratio of the number of MHCPs available by 12.5% (IRR 1.125, 95% CI: 1.001, 1.264). According to the adjusted model, previous referral to both local and 'other' tertiary pain services was significantly associated with 7% higher access to MHCPs compared to GPs who had only referred to local tertiary pain services (IRR=1.07, 95%CI=1.033=1.108, $p=001$). (Further information is available from the authors on request).

Greater access to MHCPs and deprescribing

Table 3.3 shows the treatment choices made by GPs for their most recent CNCP patient who had been utilising opioids for 90-days or more.

Table 3.3 Most recent approach with CNCP patient on long-term opioids

	<i>n</i> = 681	%	95% CIs
Not applicable, Do not prescribe	27	4.0	2.9 to 6.0
Continued opioid prescription	98	14.4	13 to 18
Rotated to another opioid	38	5.6	4.30 to 8.0
Initiated gradual wean	131	19.2	17 to 24
Team care, no wean	67	9.8	8.3 to 13
Team care with opioid wean	217	31.9	30 to 37
Other	68	10.0	8.4 to 13

The crude models are presented to highlight the effects before and after adjusting for potential confounding factors, however, none of the factors (socio demographic or access to MHCPs) included in either the crude and adjusted logistic regression models were significantly associated with reported opioid deprescribing of a CNCP patient (with or without team care) within the last 90-days.

Discussion

Our survey was the first of a large sample of urban and regional Australian GPs to examine the geographic availability of known MHCPs required to potentially form a local team to deliver behaviour change treatments for people experiencing CNCP and utilising long-term opioids. The data suggested it is possible to access appropriate MHCPs even in a regional area.

The findings did not support the hypothesis that lack of availability of known MHCPs is a strong driver of current liberal opioid prescribing. Most GPs had at least moderate access (within 50km) to form a team of MHCPs capable of providing broader care. It is possible that MHCP availability may influence GP confidence in negotiating treatment alternatives [30]. However, the view that opioid prescribing is a surrogate for inadequate access to MHCPs was not supported [31].

Pain services located within Australian tertiary public hospitals actively promote deprescribing of long-term opioids [32-34]. Respondents who had previously referred to these services reported access to a greater number of local MHCPs than those who referred locally only. Willingness to explore MHCP treatment options is considered likely to be a necessary

component for improving outcomes for this patient group [1]. and our findings indicate that referral habits are important.

Employment of a practice nurse was positively associated with the number of available MHCPs. It is likely these practitioners are co-ordinating the shift toward broader care, [35-37]. which is congruent with the literature.

The data failed to show any association between MHCP accessibility and likelihood of opioid deprescribing. Only about a third took the recommended approach of shifting toward broader treatments plus deprescribing. These findings suggest that Australian GPs are beginning to exercise good stewardship via referrals for specialist support to assist with weaning. Pain specialists are a relatively 'expensive' resource, however allocating more funding for medical specialist input could be helpful if integrated with primary care. The extent of uptake of GPMPs for initiating a rehabilitation approach for CNCP is not known [38]. Reasons why GPs do not initiate opioid deprescribing are not well known, however a recent study of early career GPs identified potential barriers, including gaps in undergraduate training [39].

Study limitations

Recall bias by GPs asked about MHCP availability may have limited the accuracy of study findings. However, there is no accurate and accessible database to objectively assess availability of MHCPs. The survey response rate while low, compares favourably to other surveys of GPs [40-42]. The response rate may result in a lack of precision in the study data. Information on distribution of MHCPs collected in this survey may not be generalizable to other rural and remote areas [43]. Our definition of access fails to capture other facets such as affordability and appropriateness and therefore provides an overestimate of 'true' access. Other non-MHCP resource related influences on GPs' willingness to initiate deprescribing such as patient pressure and pharmaceutical marketing were not explored [44,45]. Asking GPs about their most recent patient has limitations as this patient may not be typical.

Conclusions

The results of this survey among Australian GPs suggest that availability of known MHCPs is not likely to be a major barrier in shifting towards non-pharmacological treatment for CNCP, at least in urban and regional primary care settings. Socio-demographic and practice characteristics provide very little further explanation of GPs' decision to continue rather than

wean opioids. Globally, there is a need to identify and test whether standard practice can be shifted towards treatments which promote behaviour change. Such care, delivered by experienced and appropriately trained MHCPs may be a viable non-pharmacological alternative for people with CNCP.

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PAPER FOUR

TRAINING PRIMARY CARE PROVIDERS IN OPIOID DEPRESCRIBING AND CHRONIC PAIN MANAGEMENT BASED ON LOCAL GUIDANCE: A PRE-POST STUDY OF ATTITUDE CHANGE

Paper 4 describes the development and short-term effects of a training package for healthcare providers. The training package was designed to support the delivery of a patient centred de-prescribing intervention. The training aimed to achieve attitude alignment with local pain stewardship. This paper is significant because currently there are few published training packages for primary care promoting opioid de-prescribing.

The training materials are included as **Appendix 3**

Paper Four is a published paper

White, R., Hayes, C., Boyes, A. W., Fitzgerald, S., Rajappa, H., & Paul, C. L. (2019). Training primary care providers in opioid deprescribing and chronic pain management based on local guidance: a pre – post study of attitude change. *Health Education in Practice: Journal of Research for Professional Learning*, 2(1), 1–17

PAPER 4: STATEMENT OF CO-AUTHORSHIP

STATEMENT OF CO-AUTHORSHIP

I attest that Research Higher Degree candidate **Ruth White** has contributed substantially to the following manuscript:

Training primary care providers in opioid deprescribing and chronic pain management based on local guidance: a pre-post study of attitude change

By:

- Developing the concept, research design and study methodology
- Developing and delivering the training package
- Execution of the study including overall responsibility for collection and assembly of data, analysis and interpretation of data
- Leading the writing of the manuscript

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12/3/2020

Training primary care providers in opioid deprescribing and chronic pain management based on local guidance: a pre-post study of attitude change

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ABSTRACT

BACKGROUND Local chronic non-cancer pain (CNCP) guidance recommends that general practitioners (GPs) should consider opioid deprescribing and referral to multidisciplinary healthcare providers (MHCPs) for behaviourally-based treatments. We designed a training package called AIMM (Assess, Inform, Manage and Monitor) to reinforce this stewardship.

AIM To identify whether participation in AIMM training effectively aligned clinicians' attitudes with local guidance for treating CNCP.

DESIGN AND SETTING In 2014/15 the AIMM training was tested using a pre-post-test non-randomised design at two sites in NSW, Australia. The primary outcome measure was an 11-item, study specific, pain-attitude questionnaire (PAQ).

METHOD Step one of AIMM training involved online completion of the PAQ and review of a specialist pain website. Step two involved attendance at two face-to-face, two-hour interactive workshops led by pain experts who addressed opioid deprescribing and switching to broader care. A repeat PAQ survey was completed at the conclusion of the second workshop.

RESULTS Nineteen participants attended the workshops including: GPs (n= 7); nurses (n=5); exercise physiologists (n=2); a dietitian (n=1); community pharmacists (n=2) and psychologists (n=2). Significant shifts in six attitudes occurred including prescribing less pain medication, greater emphasis on social reconnection, increasing planned activity and adopting anti-inflammatory nutrition ($P<.05$). Responses to the item regarding expectations of a positive recovery was not aligned with local guidance and no significant attitudinal change was found. Four other attitudes were aligned with local guidance at baseline and did not change during the study.

CONCLUSIONS Online information and face-to-face training can achieve a change in health care provider attitudes towards non-pharmacological treatment of CNCP. Further work is needed to assess whether attitudinal changes are maintained and translate into behavioural change.

Introduction

Non-cancer pain is currently considered as 'chronic' when it has persisted for more than 3 months, is associated with significant emotional distress and/or functional disability (Merskey and Bogduk (Eds), 1994). Recent proposals are to use the term 'chronic primary pain' when the pain is not better accounted for by another condition (Nicholas *et al.*, 2019). Classification aside, people who experience chronic pain globally are most frequently managed in primary care (Becker *et al.*, 2018). Australian data from 2013 suggests that of the 20% of patients presenting to primary care with chronic pain, 56% are managed by medication alone with many people being treated with prescription opioid analgesia (POA) (Harrison *et al.* 2012; Henderson *et al.* 2013).

In the past, the practice of treating people experiencing chronic non-cancer pain with long-term POAs was considered a viable option in well-selected cases. Careful selection excluded people with a history of substance abuse or addiction (Noble *et al.*, 2010); (Nielsen *et al.*, 2015). The view that long term POAs are clinically viable has been challenged by a recent pragmatic randomised clinical trial (RCT) which examined the comparative effectiveness of prescription analgesics versus non-opioid medications for people experiencing chronic back, hip or knee pain. There was no difference between groups in pain interference (Krebs *et al.*, 2018); while pain intensity and adverse effects were significantly worse in the opioid, compared to the non-opioid, group. Another pivotal recent study found that after discontinuation of long term POAs pain intensity either did not change or improved slightly (McPherson *et al.*, 2018). Many studies have noted the substantial harms and poor functional outcomes related to taking opioids long-term (Blanch, Pearson and Haber, 2014) (Chou *et al.*, 2015) (Rivat and Ballantyne, 2016) ; Ballantyne 2017 ; Jamison *et al.* 2017). Further, for those people who report benefit in reducing pain intensity, almost half stated they would like to reduce the dose or cease their POAs completely due to adverse effects (Howe *et al.*, 2012). This accumulation of evidence highlights the need to consider dose reduction or cessation of POAs as a health priority for people with chronic non-cancer pain (Von Korff & Franklin 2016 ; Hunter Integrated Pain Service 2014,;(Hayes, 2017) Wyse *et al.* 2018).

However, there is a lack of information outlining effective strategies for deprescribing opioids and a recent Cochrane systematic review determined that there was insufficient evidence to draw conclusions on the effectiveness of any regimes for opioid withdrawal for people experiencing CNCP (Eccleston *et al.*, 2017). Nonetheless, recent non-RCT studies suggested that a positive outcome may result from offering a broad approach to care including a combination of: support during an opioid taper; psychological elements to target anxiety; and functional components (Frank *et al.* 2017 ; Huffman *et al.* 2017 ; Gilliam *et al.* 2018 ; McPherson *et al.* 2018). The most commonly-studied way

to apply broader behaviourally based care is via 'interdisciplinary' (or fully integrated) approaches where disciplines work together in the same location (Gatchel et al. 2014 ; Sullivan et al. 2017 ; Gilliam et al. 2018). In an Australian context, this level of service delivery is accessed by referral to tertiary pain clinics, however waiting times for access to tertiary pain clinics have historically been prolonged (Hogg *et al.*, 2012).

Therefore, the challenge remains to organize and deliver integrated interventions in primary care where most ongoing management of complex and chronic conditions occurs. In order to deliver integrated interventions in primary care it is necessary to enhance the capacity of GPs and affiliated teams of multidisciplinary health care providers (MHCPs) to deliver regimes similar to specialist units (Foster & Mitchell 2013 ; Hegney et al. 2013 ; Seal et al. 2017). To address this gap, we developed a Medicare funded primary care pilot intervention called Assess, Inform, Manage and Monitor (AIMM). Under Australian Medicare rebates, people with chronic pain can access rebates for a range of allied health services using a GP written plan called a GP Management Plan. AIMM was based on a theoretical behaviour change framework called 'COM-B' (Michie et al. 2011 ; McKillop et al. 2011). The COM-B model explains patients' behaviour change from three fundamental aspects: capability, opportunity and motivation. AIMM utilises GPs to work closely with a team of MHCPs (practice nurses, psychologists, dietitians, physiotherapists, exercise physiologists or other geographically available health professionals such as occupational therapists or social workers) to provide whole person assessment, consistent information, non-pharmacological management and monitoring. Further, AIMM supports people to enhance their self-management capability whilst undertaking an individualised opioid tapering regime.

In order to test AIMM, a real-world pain training package was designed with a particular emphasis on training GPs in deprescribing opioids and influencing MHCPs' attitudes that improved function was possible. Such training prior to pilot interventions has successfully been implemented elsewhere (Slater et al. 2012 ; Sowden et al. 2012 ; Chelimsky et al. 2013). The AIMM training package was developed with the input of an expert panel of clinicians including general practitioners (GP), a practice nurse, clinical psychologist, community pharmacist, pain trained physiotherapist, exercise physiologist, dietitian and a specialist pain medicine physician. AIMM was based on evidence regarding optimising non-pharmacological treatment of CNCP outlined in local health district pain management guidance (Hunter Integrated Pain Service 2014).

The aim of this study was to test the impact of the AIMM training package on GPs and primary care based MHCPs by whether it resulted in attitudes more closely aligned with local guidance for deprescribing and managing people experiencing CNCP. We hypothesised that the training would

significantly increase the alignment of MCHPs attitudes' with the broader whole person recommendations provided in the training.

Methods

Setting and participants

The two participating AIMM pilot general practices, located in low socio-economic areas in regional NSW Australia both provided an on-site training space.

Each practice estimated they had more than 50 patients experiencing CNCP and utilising POAs for more than 90 days and were willing to engage with the AIMM opioid deprescribing intervention.

Health provider participants included GPs, practice nurses and other MHCPs (n=19) who had agreed and consented to participate in the AIMM pilot including GPs (n= 7), nurses (n=5), exercise physiologist (n=2), a dietitian (n=1), community pharmacists (n=2) and psychologists (n=2).

Data collection

One week prior to their first face-to-face workshop, participants were invited by email to access an online pain attitude questionnaire (PAQ) (see Figure 4.1) to obtain their baseline attitudes. At the conclusion of the web-based questionnaire, participants were redirected to the HIPS website (HIPS 2013) on which they were asked to spend 30 minutes familiarising themselves with the available resources. At the conclusion of the second face-to-face workshop, participants completed a paper-based post-test PAQ.

Figure 4.1: Pain attitude questionnaire

		Where 1 = Completely disagree and 5 = Completely agree				
	Questions					
1	Opioid therapy should be reserved for people experiencing acute pain, cancer pain, for palliative care and for those with opioid dependency or addiction	1	2	3	4	5
2	Only after pain is significantly reduced can people address their other life issues	1	2	3	4	5
3	In managing people who are experiencing chronic pain it is important to understand the social and psychological factors surrounding the onset and persistence of pain	1	2	3	4	5
4	People experiencing pain need relief before other health providers can be of any assistance	1	2	3	4	5
5	Focusing on medication to reduce pain has limited benefit on people's quality of life and function over the long term	1	2	3	4	5
6	Once someone has experienced pain for three months it is likely to be an enduring problem	1	2	3	4	5
7	Assessing people who are experiencing chronic pain for depression or anxiety is always important	1	2	3	4	5
8	Helping people with social reconnection may help with pain management	1	2	3	4	5
9	Planned regular physical activity does not help reduce the pain experience for most people	1	2	3	4	5
10	Addressing sleep problems helps people cope better with their pain experience	1	2	3	4	5
11	Helping people adopt a healthy lifestyle to reduce widespread inflammation may help with pain management (Scoring 2,4,6,9 are reverse scored)	1	2	3	4	5

Intervention

Pre-workshop online training involved clinicians accessing HIPS website (HIPS, 2013) to view various clinical resources. Firstly, clinicians were directed to view the clinical sections of the website including a local pain stewardship document titled 'reconsidering opioid therapy' (Hunter Integrated Pain Service 2014) based on current international evidence and professional consensus regarding opioid deprescribing for people experiencing CNCP. Clinicians were also directed to view two brief videos developed by HIPS. These YouTube videos were created to emphasise the key messages in pain treatment (Hunter Integrated Pain Service et al. 2014a; Hunter Integrated Pain Service et al. 2014b).

A week after the pre-workshop link was sent, clinicians met face-to-face at the first of two non-reimbursed workshop sessions. The two workshops were scheduled a week apart and titled 'AIMM to change the practice of pain medicine in primary care.' Each two hour session utilised well accepted training strategies, such as interactive format in addition to having the content delivered by clinician-trainers who were recognised as competent community opinion leaders (Hecht, Buhse and Meyer, 2016). The first session highlighted current evidence relating to CNCP and the importance of behaviour change. A key message was for GPs to initiate a conversation on gradual opioid deprescribing and promote to their patients the potential benefits of switching to effective self- management strategies, guided by a local team of MHCPs. An interactive discussion was facilitated regarding specific roles for each MHCP to achieve a range of behavioural targets including increased physical activity levels and increased supportive connections. The second session focussed on consolidating pain management skills using role plays. One role play scenario used was that of working with a person who is convinced that they require a higher medication dose as they perceive the opioids are no longer working (Alford 2013 ; Ballantyne et al. 2012). The clinicians observed the therapeutic communication style used by the trainers and discussed and analysed role plays as time permitted (Jensen et al. 2010 ; Swinglehurst et al. 2012).

Accredited hard copy AIMM intervention training manuals were provided at the workshops, including role play scripts. Copies of the web-site resources were also provided on a USB stick at the first face-to-face workshop (Giguère *et al.*, 2012). The manuals provided were not intended as a rigid set of treatment directives, but rather a more flexible guide to the application of the components necessary to enable behaviour change (Michie, 2005). The entire training package was accredited continuing education for GPs' and nurses. The face-to-face workshops for each of the practices were led by expert pain clinicians (CH & HR) and took place between November 2014 and May 2015.

Outcome measures

The primary outcome measure was change in score on the pain attitude questionnaire (PAQ) (Table 4.1).

Pain Attitude Questionnaire: An 11-item, English language study-specific PAQ (Figure 4.1) was developed by the research team using the relevant literature to examine attitudes towards the treatment of people experiencing CNCP in a manner that was applicable to GPs and a range of MHCPs. All items were tested for face validity with clinicians and behavioural researchers and refined accordingly. PAQ addressed a range of concepts covered in evidence-informed local opioid stewardship documents (Hunter Integrated Pain Service 2014). Items measured biomedical

orientation e.g. 'people experiencing pain need relief from medications before other health providers can be of any assistance' and broader whole-person orientation e.g. 'addressing sleep problems helps people cope better with the pain experience' to managing chronic pain. For each item, participants gave their responses on a 5 point Likert scale (completely agree, agree, neither agree or disagree, disagree, completely disagree). Questions were presented in the survey using a balance of positive (pro-evidence) and negative (anti-evidence) framing. The negative questions (2, 4, 6 and 9) were re-coded to be unidirectional at analysis.

Statistical analysis

The quantitative data from the PAQ were analysed using Stata/IC 13.1. Descriptive statistics and subsequent analysis using the Wilcoxon rank sum test were used to test the null hypothesis of no mean difference of responses on each of the PAQ items over the two time periods. The level of significance was set at $P < 0.05$ for all tests.

Results

Of the nineteen invited participants, all 22 attended both workshops and completed both PAQs. As shown in Table 4.1, participants' attitudes demonstrated statistically significant shifts towards local pain stewardship in the following six items 'only after pain is significantly reduced can people address their other life issues'; 'people experiencing pain need relief before other health providers can be of any assistance'; 'focusing on medication to reduce pain has limited benefit on people's quality of life and function over the long term'; 'helping people with social reconnection may help with pain management'; 'planned regular physical activity does not help reduce the pain experience for most people'; 'helping people adopt a healthy lifestyle to reduce widespread inflammation may help with pain management'.

The attitude 'Once someone has experienced pain for three months it is likely to be an enduring problem' was not aligned with local guidance at baseline and failed to demonstrate a statistically significant shift in attitude. The four remaining attitudes, already aligned with guidance, did not achieve statistically significant attitude shifts.

Table 4.1: AIMM workshop attitudes at baseline and post- test, expressed as mean (standard deviation), n = 19

Variable	Baseline Mean (SD)	Post-workshop Mean (SD)	z score and p value*
Opioid therapy should be reserved for people experiencing acute pain, cancer pain, for palliative care and for those with opioid dependency or addiction	3.84 (0.83)	4.05 (1.17)	$z = -0.939$, $p = .3476$
Only after pain is significantly reduced can people address their other life issues	3.79 (1.18)	1.78 (.97)	$z = 3.321$, $p = .0009^{**}$
In managing people who are experiencing chronic pain it is important to understand the social and psychological factors surrounding the onset and persistence of pain	4.84 (0.37)	4.89 (0.31)	$z = -0.577$, $p = .5637$
People experiencing pain need relief before other health providers can be of any assistance	3.73 (1.28)	1.68 (0.94)	$z = -3.317$, $p = .0009^{**}$
Focusing on medication to reduce pain has limited benefit on people's quality of life and function over the long term	4.36 (0.68)	4.84 (0.37)	$z = -2.714$, $p = .0067^{**}$
Once someone has experienced pain for three months it is likely to be an enduring problem	2.89 (0.93)	3.21 (1.35)	$z = 0.804$, $p = .4213$
Assessing people who are experiencing chronic pain for depression or anxiety is always important	4.68 (0.47)	4.78 (0.41)	$z = -0.816$, $p = .4142$
Helping people with social reconnection may help with pain management	4.47 (.61)	4.89 (.31)	$z = -2.638$, $p = .0083^{**}$
Planned regular physical activity does not help reduce the pain experience for most people	4.05 (1.07)	1.36 (0.49)	$z = -3.801$, $p = .0001^{**}$
Addressing sleep problems helps people cope better with their pain experience	4.42 (0.69)	4.73 (0.56)	$z = 1.704$, $p = .0885$
Helping people adopt a healthy lifestyle to reduce widespread inflammation may help with pain management	4.21 (.97)	4.73 (0.45)	$z = -2.153$, $p = .0313^{**}$

Notes: Levels 1–5 (1 = completely disagree to 5 = completely agree)

* p values for differences between pre- and post-workshop scores using Wilcoxon signed ranks test

** Significant

Discussion

The primary aim of this study was to test whether a training package for GPs and MHCPs in primary care settings aligned perceptions regarding the nature and treatment of people who experience CNCP with treatment approaches outlined in available local pain stewardship documents (Hunter Integrated Pain Service 2014). Whilst pain is a complex experience, the results of this study suggest that brief targeted training is useful in influencing clinicians' attitudes towards evidence-informed treatment for CNCP.

The shift away from a focus on medications to reduce pain suggests that the clinicians' attitudes can successfully align with the knowledge that long-term opioids are likely to hinder functional improvement for most patients. This move away from assessing effectiveness of interventions by a reduction in pain scores towards patient-centred aspects is particularly important for the delivery of behaviourally-based care to proceed, particularly where restoration of role function is the goal (Loeser & Cahana 2013; Parchman et al. 2017).

A ceiling effect most likely explains why some attitudes e.g. 'in managing people who are experiencing chronic pain it is important to understand the social and psychological factors surrounding the onset and persistence of pain' and 'assessing people who are experiencing chronic pain for depression or anxiety is always important' failed to change.

The attitude 'once someone has experienced pain for three months it is likely to be an enduring problem' failed to shift in the workshop, this was despite content in the workshop emphasising that improvements in physical and emotional functioning are possible when patients adhere to active treatments, despite opioid tapering (Butow & Sharpe 2013). It is possible that this was a deeply engrained attitude or that the participants felt that generic messages about expected recovery may constitute false reassurance (Hasenbring and Pincus, 2015). It is also possible that this item may have been challenging for participants, given the imprecise wording might evoke a very wide variety of patient circumstances, beyond the intended patient group.

The results of this simple pre-test-post-test study with a small sample need to be interpreted with caution. Whilst it appears that the training program was effective in partly changing clinicians' attitudes it does not provide robust evidence that actual behaviour will change, nor that any attitudinal change will be enduring. In Australian settings, other researchers have shown that training provided to early career GPs regarding deprescribing behaviour, has done little to change deprescribing decisions (Holliday *et al.*, 2017). Overseas researchers have found similar positive attitude reported at guideline training workshops with little actual use reported in actual practice

(Chang *et al.*, 2016). This contrasts with the US experience where the rise of prescription opioids and related harms may have been exacerbated by an insurance system which severely limits the accessibility of interdisciplinary care programs and more expensive non-opioid analgesic medications (Webster, 2016). The epidemic proportions of opioid use in the US has required a range of risk mitigation strategies (Webster, 2016). One US initiative has shown that a multifaceted training intervention can be effective in assisting primary care providers to help patients achieve opioid dose reduction, at least when patients are on higher morphine equivalent doses (Von Korff 2011; Von Korff 2012).

Limitation

We used a non-validated outcome measure, the PAQ in our study. There are very few tools available to measure MHCPs attitudes and beliefs about CNCP (Bishop, Thomas and Foster, 2007). One potential option - the validated pain attitudes and beliefs scale (Ostelo *et al.*, 2003) was not used as it specifically examines attitudes regarding low back pain. We may also have encountered a ceiling effect with some of the questions in the PAQ. Further, our instructions did not explicitly state that the PAQ related to people experiencing CNCP for whom functional recovery was the therapeutic goal. Along with imprecision around PAQ item wording this may have impacted on MHCPs responses.

Conclusion

Online information and face-to-face training emphasising key messages about the nature of CNCP was partially successful in achieving its' aim of attitudinal alignment with local guidance for treating CNCP, including deprescribing. Further refinement of the program may identify strategies for changing the remaining attitudes. Future research needs to determine whether attitudinal changes were maintained or whether they were related to changes in clinician behaviour, particularly prescriber behaviour which is an area for future research (Johnson & May 2015 ; Wightman & Nelson 2016). Further work would be required prior to obtain broader professional endorsement and dissemination of the resources.

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PAPER FIVE

INTEGRATED PRIMARY HEALTHCARE OPIOID TAPERING INTERVENTIONS A MIXED-METHODS STUDY IN TWO GENERAL PRACTICES IN NEW SOUTH WALES, AUSTRALIA

Paper 4 demonstrated that the training package was partially successful in achieving alignment between local pain management guidelines and the attitudes of a group of primary health care providers who were interested in de-prescribing opioids for CNCP. To support patients undergoing opioid taper, the same group of trained healthcare providers (as described in paper 4) delivered an intervention in primary care. Paper 5 reports the acceptability of the intervention from the provider and patient perspective, using mixed methods.

The Baseline and 3 month surveys are included as **Appendix 4**

Paper 5 has been accepted for publication at *The International Journal of Integrated Care*

White, R., Hayes, C., Boyes, A. W., & Paul, C. L. (2020)

Integrated primary healthcare opioid tapering interventions: a mixed-methods study of feasibility and acceptability in two general practices in New South Wales, Australia

PAPER FIVE: STATEMENT OF CO-AUTHORSHIP

STATEMENT OF CO-AUTHORSHIP

I attest that Research Higher Degree candidate **Ruth White** has contributed substantially to the following manuscript:

Acceptability of integrated primary healthcare opioid tapering intervention: a mixed-methods study

By:

- Developing the concept, research design and study methodology
- Execution of the study including acting as external facilitator
- Overall responsibility for collection, assembly of, analysis and interpretation of data
- Leading the writing of the manuscript

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Note: Title of final published paper differs to Statement of Co-authorship

Integrated primary healthcare opioid tapering interventions: a mixed-methods study of feasibility and acceptability in two general practices in New South Wales, Australia

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ABSTRACT

INTRODUCTION Integrated team-based primary healthcare can support opioid tapering for patients experiencing chronic pain. This paper describes the development, implementation and acceptability of a primary healthcare opioid tapering intervention ‘Assess Inform Manage Monitor’ (AIMM) at two sites.

METHODS AIMM involved GP advice; nurse monitoring and potential engagement with: community pharmacist; psychologist; dietitian and exercise physiologist. Individuals receiving 90 days or more of prescription opioids were eligible. Patient and provider surveys and qualitative interviews were completed.

RESULTS Of 140 eligible patients, 37 attended during the study period and were invited to participate, and 18 enrolled. Patient post-intervention surveys (n=8) and interviews (n=6) indicated the intervention was acceptable, although the perceived value of some members of the integrated team was low. GP and practice nurse support was valued. Providers (n=4) valued team integration. Low weaning readiness was a reported barrier to engagement by patients and providers.

CONCLUSIONS The intervention was conceptually acceptable, although engagement was low. Future efforts to transition patients towards integrated care should retain the practice nurse and place

more focus on understanding patients' readiness to wean. Greater inter-professional collaboration may also be needed. Such refinements may better address the challenge of primary-healthcare-based opioid reduction.

Introduction

Primary care plays a central role in responding to patients who experience chronic pain, including both primary and secondary musculoskeletal pain [1-2]. Providing comprehensive and co-ordinated care for people reporting significant emotional distress and, or functional disability is however not simple to achieve. In these time-limited settings, treatment is often focussed on the prescription of opioids [3,6,7]. However, long-term opioid medication is not effective for improving chronic pain or reducing functional disability and is associated with many harms [8-11].

Referral to tertiary care offers pathways for some patients to decrease reliance on opioid medication [3,4]. Further, delivery of interdisciplinary cohesive care in tertiary settings has been shown to simultaneously improve outcomes such as physical functioning, sleep and pain- coping strategies [5, 14-16]. There has been little research outside tertiary clinic settings into integrated interventions specifically targeting opioid reduction coupled with non-pharmacological management designed to enhance emotional well-being and reduce functional disability [17-19].

In Australia, it has been recognised that integrated care strategies that are non-medication focused are needed at a primary care level to address the extensive healthcare and societal burden for people experiencing chronic pain [8]. Despite this recognition, Australian Medicare items offer limited scope in a primary care context for uninsured people experiencing chronic pain to receive the multiple active treatment components offered in tertiary pain clinics [9,10]. Therefore, there is a specific need to develop and test approaches to creating access to a primary-care multidisciplinary team [24]. To our knowledge there has been no previous attempt in primary care in Australia to study the use of the national universal health insurance scheme (Medicare) to approximate a team-based approach for people experiencing chronic pain. There has however, been a trend in relation to the management of chronic conditions toward increasing (albeit limited) use of two Medicare items, namely General Practice Management Plans (GPMPs) and Team Care Arrangements (TCAs) to facilitate integrated care [12]. This has been associated with increased regular GP attendance for supportive care [13]. Non-Australian data support the potential of primary-care-based multidisciplinary treatment to offer non-pharmacological alternative strategies to treat chronic pain.

Given this context, in collaboration with the critical guidance and assistance of a clinical reference group we developed an integrated care strategy for primary care named the 'Assess, Inform,

Manage and Monitor' intervention. Modelled on tertiary multidisciplinary team approaches, the intervention uses an evidence-informed whole-person approach to assist people experiencing chronic pain and reliant on opioids to achieve opioid reduction by switching to non-medication behavioural alternatives. It is grounded in a robust theoretical background and a new community guideline designed to reduce opioid dose [14]. The theoretical behavioural framework used is the Behaviour Change Wheel (BCW) and incorporates the COM-B model [23]. The framework allows behavioural interventions to be explained from three fundamental aspects: opportunity, capability and motivation. This means that for any behaviour to occur, the person has to have physical and psychological capability; have opportunity, both socially and physically; and be motivated. It is also important for every behaviour to be understood in its context.

The AIMM model of care engages a geographically available and supportive multidisciplinary team who receive joint training in a pro-recovery, whole-person approach focusing on 5 key areas: biomedical, mind-body, connection, physical activity and nutrition [14, 16-18]. Patients are **assessed** by their GP to ensure serious pathologies (red flags) are eliminated, their beliefs regarding ongoing pain and its meaning are explored and the messaging that pain is not a symptom of damage is reinforced. Patients are **informed** of findings and the rationale for tapering opioids in line with community guidelines is explained [15,19,20]. The practice nurse role is to discuss relevant behavioural change **management options** including team-based planned care (via Medicare-subsidised visits with a dietitian, exercise physiologist, an accredited practicing pharmacist medication review and a psychologist when indicated) plus encourage and undertake regular **monitoring** [17].

Problem Statement and Goal

Despite the promise of an integrated primary care approach, it was unknown whether this patient group would actively participate in such an intervention. Therefore, a pilot-study was undertaken to establish the acceptability of an individually tailored combination of non-opioid treatment choices, from the perspective of patients and healthcare providers to assist in refining the model prior to an efficacy trial.

The goal of this paper is to describe the development and implementation of the multicomponent, integrated primary healthcare opioid tapering intervention 'Assess Inform Manage Monitor' (AIMM) in the context of two NSW, Australia sites; describe its acceptability from both the patient and provider perspectives; and present key lessons for future intervention iterations.

Methods

Design

A mixed-method approach was used to evaluate patient and provider perspectives regarding the opioid tapering intervention Assess, Inform, Manage and Monitor.

Setting

The research was carried out at two general practices in low socioeconomic areas in one Australian state, New South Wales. Principal GPs at the two practices had an interest in opioid deprescribing and were estimated to be caring for more than 50 patients experiencing chronic pain and currently utilising long-term prescription opioid analgesics.

Description of AIMM Program

A schematic diagram of the AIMM schedule is provided as Table 5.1. This schedule represented the maximum self-management support available under current Medicare benefit scheduling. Eligibility screening and flagging of the medical record were followed by an invitation to participate. The components of the intervention were then implemented as per the schedule. The final phase involved completion of a three-month review.

Table 5.1: Schematic Diagram Of Timeline For The 12 Weeks Of A Study Participant Receiving The Maximum Self-Management Support In AIMM + Review

	Medical record screen	Invite d to study	Week										
	2 weeks prior	1-2 week prior	1	2	3	4	5	6	7	8	9	10	12 weeks + 1 day after completion of GPMP /TCA
Eligibility screening occurs -including opioid dose from patient medical record. Record flagged	Participant attendance not required												
Patient invited, consented and completes initial AIMM baseline survey. (Survey received by researchers and summary forwarded to GP- prior to Study week1)		✓											
Intervention-Medical -AIMM survey assessment broader discussion ¹ -Complete planning phase GPMP/TCA ² -Regular monitor ³			✓ ¹	✓ ²		✓ ³		✓ ³		✓ ³		✓ ³	✓ ⁴

-Review GPMP/TCA ⁴													
Intervention-Nursing				✓ ²		✓ ³		✓ ³		✓ ³		✓ ³	✓ ⁴
-Co-complete GPMP/TCA ²													
-Regular supportive care/monitor ³													
-Review GPMP/TCA ⁴													
Intervention- Psychology*					✓	✓	✓	✓	✓	✓	✓	✓	
If required up to 10 x sessions													
Intervention-Accredited Pharmacist Home Medication Review					✓								
Intervention-5 x Psychologically informed accredited exercise physiologist or physiotherapist sessions & accredited practicing dietitian sessions						✓	✓		✓		✓	✓	
Complete-AIMM 3/12 survey													✓

*If patient has elevated psychological distress at initial screening, this element of the intervention may be commenced *prior* to the remainder of the intervention (Up to 10 x Psychology sessions)

Participants

Patients

Eligible patients were English speaking adults attending a follow-up consultation at the practice who were experiencing chronic pain and had accrued ≥ 90 days of prescription opioid medication use. We defined these patients as long-term opioid users. Patients with any of the following criteria were not enrolled: presence of red flags [18] indicating possible serious underlying pathology (such as bowel obstruction, perforated viscous, intra-abdominal sepsis, fracture, malignancy, cauda-equina, haemorrhage, thrombosis and meningitis); pregnant; in receipt of workers compensation benefits; had engaged a lawyer regarding pain status; awaiting a pain-related surgical procedure; receiving radiotherapy or chemotherapy for cancer and/or are receiving palliative treatment or care; living in an aged-care facility; physically or mentally unable to complete survey; current abuse of illicit substances; unable to use a telephone due to cognitive or hearing impairment or had plans to move or be away for 6 weeks or more during the study period.

Providers

Eligible providers were a group of healthcare professionals associated with the two general practices including: GPs, chronic disease practice nurses, accredited practicing dietitians, accredited exercise physiologists, accredited practicing pharmacists and clinical psychologists. Providers needed to be willing to provide their respective healthcare services, that is, the intervention components, using GPMPs and TCAs without charging additional fees. One practice nurse acted as an internal clinical facilitator at each site.

Procedure

Patient recruitment and follow up

The electronic medical records of the study sites were interrogated by the practice manager to identify and generate a list of potentially eligible patients. These records were then screened by the practice GPs to identify any for whom there were safety concerns or contraindications for study participation. Those considered eligible to participate had their medical record electronically 'flagged' by the practice manager. When a patient with a flagged medical record attended the practice, the GP followed a prepared script to provide verbal information and invite participation in the AIMM pilot study. Interested patients were invited to sit with the practice nurse, who was trained to explain the study and provide a Participant Information Statement and Informed Consent Form. Two initial study appointments with the practice nurse were made for consenting patients;

firstly, to complete the baseline electronic questionnaires and secondly to complete the GPMPs and TCAs using the summary results received from the researchers in the following week. The practice nurse or a research assistant electronically collected the post intervention survey 3 months following baseline questionnaire completion.

Provider recruitment, training and follow up

The practice managers identified multidisciplinary providers linked to the practice and currently providing GPMPs and TCAs based chronic disease care. All providers received a two-step intervention training package. Step one was responding to a web link and completing an online pain attitude questionnaire plus spending 30 minutes reviewing a specialist pain website in the week prior to the next step. The second step was attendance at two face-to-face, two-hour interactive workshops led by pain experts. The workshops included: completion of a website engagement survey; discussion of the rationale and benefits of opioid reduction and switch to broader behavioural treatments plus in-depth consideration of clearly defined roles.

Implementation of AIMM required each health care provider to build confidence in their new roles as stewards of behaviour change in pain management. The intervention training package included sessions on understanding changing roles for each of the health care providers including GP; practice nurse; psychologist; accredited pharmacist; dietitian; physiotherapist or accredited exercise physiologist.

Following exploration of roles using role plays, a post-workshop pain attitude questionnaire concluded the training. A subset of providers was asked to participate in a brief 10-minute semi-structured telephone interview at completion of the intervention period. The training package has been described in detail elsewhere [19].

Evaluation Measures

The mixed-methods evaluation of the intervention involved completion of (1) a pre- and a post-intervention survey of patients and (2) a post-intervention semi-structured telephone interview with patients and their multidisciplinary healthcare providers (Appendix 4). Interviews were conducted by one author (RW). The length of the interview varied with degree of participant engagement. Patient participants received a \$40 supermarket voucher for completing the telephone interview.

Pre-intervention patient survey

Demographic characteristics included gender, age, indigenous status, educational level, internet access, income source, employment and housing status.

Clinical characteristics included duration of pain experience; pain severity and interference (using the 4-item Brief Pain Inventory) [20]; previous exposure to ‘talking treatments’; prescribed opioid intake (using a visually-aided checklist of medication names, dosage strengths and number of daily doses); and confidence to wean off opioids.

Post-intervention patient survey

A 10-item study-specific survey was developed by the authors to assess acceptability of the key components of the intervention. Patients were asked to indicate:

Helpfulness of the support provided (6 items) by each of the following healthcare providers: GP regular review and support to wean off opioids, practice nurse supportive care, Home Medication Review with accredited pharmacist, accredited practicing dietitian sessions for planned dietary changes, accredited exercise physiologist sessions for planned physical activity component and additional psychologist consults for pain management psychology skills. Response categories ranged from 0= completely unhelpful to 4= completely helpful and 5= not applicable.

Satisfaction with the healthcare sessions (3 items). The overall number of healthcare provider sessions; the different mix (types) of sessions and the duration of the sessions from 0= completely unsatisfied to 4= completely satisfied.

Global impression of change (1 item) was based on the Patient Global Impression of Change scale and asked participants to indicate their impression of overall change with AIMM. Responses ranged from 0= very much worse to 6= very much improved [21].

Post-intervention patient interview

The authors developed a semi-structured telephone interview to explore patients’ experiences with each of the intervention components. Seven open-ended questions asked participants to reflect on

how each component of the intervention and the overall experience influenced their understanding of and approach to living with the experience of ongoing pain. Concern about weaning off opioids was specifically prompted during the interview. Other aspects included travel to appointment, time involved and costs incurred (e.g. petrol, taxis). Interviews, were audio recorded with participant's consent, and independently transcribed.

Post-intervention healthcare provider interview

Key informant interviews explored the providers' views about the feasibility of implementing the multidisciplinary approach and particularly the opioid weaning component; as well as questions regarding acceptability, that is, what worked well and what could be changed or improved. Interviews were audio recorded with consent and transcribed.

Data analysis

Descriptive statistics were used to summarise the survey data. Means and standard deviation, or frequency were calculated using Stata/IC 13.1. Interview transcripts were independently coded by one author (RW) and reviewed by another author (CH). The researchers reviewed and discussed discrepancies until agreement was reached. N-Vivo software was used for the coding. Procedures were informed by modified grounded theory utilising an iterative analysis process throughout the data collection period [22]. We applied descriptive phrases to each concept that emerged from both patient and healthcare provider participants.

Results

Patients

Of the 140 patients identified as eligible to participate, 37 attended the practice and were invited by the practice nurse to participate in the study. From these 37 patients, 18 attended a practice nurse consultation, representing an enrolment rate of 48%. All 18 patients completed the baseline survey, had a medication review and developed a GPMP and TCA. Of these 18 patients, 8 completed follow-up acceptability questionnaires and 6 were able to be contacted and completed a telephone interview. 10 patients were lost to follow-up.

Participant characteristics are described in Table 5.2. More than half were women (n=14); most were in receipt of a Government Pension or benefit (n=17) and most had been experiencing pain for 5

years or more (n=13). Readiness to wean off opioids was low with only one patient reporting being ready to wean in the 'next 30 days.

Table 5.2 Baseline characteristics of the patient study sample (n= 18)

Baseline characteristics of the patient study sample (n= 18)	
	Mean (SD)
Average age (years)	52.77 (11.41)
Pain Intensity (measured on Brief Pain Inventory *)	5.90 (1.53)
Pain Interference (measured on Brief Pain Inventory*)	6.51 (2.14)
Average daily morphine equivalent (mg)	133.27 (154.61)
	N
Female	14
Indigenous status	
Aboriginal or Torres Strait Islander	2
Highest level of education	
Primary School	4
School Certificate	7
Higher School Certificate	1
TAFE certificate or Diploma	5
University or other Tertiary Qualification	1
Access to internet	
No	7

Yes	11
Income source	
Government Pension or benefit	17
Employment status	
Employed (full or part time)	0
Unemployed	11
Retired	3
Other	4
Housing Status	
Property Owner	7
Renting	9
Living with friends/ family	1
Other	1
Experienced pain >5years	13
Previously received talking treatments	13
Readiness to wean	
Ready in next 30 days	1
Ready in next 6 months	5
May be ready in the future	10
Never expect to wean off	2

*Higher score (range 0-10) represents higher level of pain intensity and interference with functioning [20]

Acceptability of AIMM: patient perspectives

Patients' perceptions regarding the helpfulness of the support provided by each member of the multidisciplinary team are displayed in Table 5.3. Half of the respondents reported that working with the practice nurse was a helpful component of the intervention. Despite all patients developing a management plan, most reported the support provided by the pharmacist, exercise physiologist, dietitian and psychologist as either unhelpful or not applicable.

Table 5.3 Acceptability of healthcare provider support

	Acceptability of healthcare provider support n= 8					
	n					
	Completely unhelpful	Unhelpful	Neither unhelpful or helpful	Helpful	Completely helpful	Not applicable
Attending general practitioner for regular review and support sessions to improve confidence and motivation to wean off long term opioid therapy and understand pain	1		2	3		2
Working with the practice nurse to develop a management plan and attending regular support sessions to improve confidence and motivation to self-manage pain		1	2	2	2	1
Having a home pharmacist visit to improve confidence and	1	1	1	1	1	3

motivation to wean off opioids						
Attending the dietitian sessions to improve confidence and motivation to make planned dietary changes	2	1	1	2		2
Attending the exercise sessions to improve confidence and motivation to make planned physical activity changes	1	1	1	1	1	3
Additional psychologist support to improve capability and confidence in applying psychological skills	1		1	1	1	4

In terms of satisfaction, most patients (n=5) reported being either satisfied or completely satisfied with the number and mix of sessions offered. The remaining three patients were neither satisfied, nor unsatisfied. Half the patients reported positive global change, 3 patients reported no change and 1 reported being somewhat worse.

Qualitative analysis of patient interviews identified two major salient themes.

The first theme was labelled 'lack of readiness for opioid reduction and problems with weaning'. Patients used strong language to express why they had not attempted weaning during the intervention and expressed fear surrounding past weaning attempts

'Yeah. I can hardly move, and then when I start taking it again because we tried weaning it before ... I couldn't move for three days. I was in bed. I could not move because of the pain'
(Female age 43)

‘No way because I know on a day where I, because I tried that a few months ago, and on just one day of missing out I just couldn't get out of bed. Sorry, yeah I'm still on the same medication, the pain, not much better, I've still got the pain and everything’. (Male age 59)

Only one patient was ‘ready to wean’ and they stated during their interview that they were ‘focused’ and had a reason or goal for why they wanted to taper their opioids to cessation.

‘Yeah, so I just had that determination in me so, because I’ve got a cruise in February, so I’m like, right, I’ve got a cruise and I’m sick of being on this medication, so I was just like, bang.’
(Female age 39)

Another patient who tapered slightly stated she

‘Came down a bump because she did not want to become addicted to them’ (Female age 55)

The second theme to emerge surrounded the support being offered by the healthcare providers and was labelled ‘supportive contact’.

Most of the interviewees spoke favourably of their regular encounters with the practice nurse.

‘Yeah, extra bit of support and plus knowledge too of different medications, and then getting me into, like I said, the dietitian and different people in the organization just to sort of help me get to relieve this pain, make this pain easier to deal with’.
(Female age 43)

‘The nurse that did it, was really good talking to me about coming down off the morphine, and the other meds’ (Female age 57)

Referrals for non-medication behavioural treatments were also found to be acceptable for short term treatment intervention when the patient could see the value in the referral.

‘yeah, they've actually given me a referral to see their dietitian and because my arthritis is ... I've put on a little bit of weight so it's hurt my knees’.
(Female age 47)

'I've seen a dietitian and all that, and the exercise place, I went and joined the gym and all that...and just do light exercises' (Male age 59)

However, some patients expressed negative experiences in relation to the support provided

'I saw her twice, then I actually stopped going because she (the psychologist) wasn't dealing with any of the different things I could do for the pain' (Female age 53)

And

'I think it would be better if the appointments were closer together...it'd be good if more things could happen' (Female age 39)

Healthcare providers

Nineteen multidisciplinary healthcare providers participated in the pilot study. This included GPs (n=7, of which 5 were male); practice nurses (n=5, of which 1 was male); exercise physiologists (n=2 both male), dietitian (n=1, female), community pharmacists (n=2, 1 male) and psychologists (n=2, both female). Of these, four providers including GP (n=1), practice nurse (n=1), dietitian (n=1), pharmacist (n=1) agreed to a telephone interview.

Acceptability of AIMM: provider perspectives

Two themes emerged from the provider interviews. The first theme was labelled 'collaborative care' and explored providers' views of the feasibility of being involved in a collaborative care primary based team.

'I think that any collaboration between the different healthcare professionals is always going to benefit the patient' (Pharmacist, female)

'Well, I think it makes sense, seeing as though the whole idea of a General Practice Management Plan is to address chronic disease. And certainly, you know, pain plays a major part in a lot of people's, you know, health and wellbeing, so, yeah, I think it makes sense'.
(Dietician, female)

We also asked providers whether they had any other comments about any aspect of the pilot study. One GP indicated that future iterations of integrated care should include enhanced primary-tertiary team linkage:

‘I think the concept of devolving pain management out into primary care probably means that there need to be maybe stronger, more regular interactions between all the people involved’ (GP, male)

The second theme was labelled ‘opioid weaning concerns and maintaining the status quo’. Providers were in agreement that providing primary healthcare team-based pain management was acceptable to them, however patient compliance was challenging. Clinicians noted that few patients were actually ready to take action to wean their prescribed opioids. One practice nurse noted that whilst patients may have considered alternatives they remained ‘petrified’ of the weaning process as they felt that only another medication could be substituted for the reduced opioid. Examples of quotes include:

‘I think they were just too scared of what would happen to their pain management without the drugs’ (GP, male)

‘Well, I think they’re probably naturally sometimes a harder group to motivate from step one but yeah, certainly I would say as a whole, they’re probably quite hard to motivate’ (Dietitian, female).

‘I like just too lightly broach the subject...I don’t like to get people off side too much if I can help it ...I mean to be perfectly honest of all the people I saw I had one person who was really intent on getting off opioids and really wanted to do it and, I think, did.....Looking at alternatives, I think maybe in some cases initially they went, "Oh, yeah, that sounds all right ..and maybe thought about it for a couple of days and went, "Oh my God, no". That was probably a difficulty... people just went, "Oh, no, I don’t think I can do that"' (Practice Nurse, male).

Discussion

This study focused on patient participants who were accessing their primary care physician to receive prescription opioids to manage chronic pain; and their primary care providers. The current work was the pilot phase of a primary-care-based multidisciplinary intervention targeting long-term opioid use and aiming to taper use and transition to non-pharmacological modalities of care. We developed a fuller understanding from patient and provider views, of the usefulness of the different intervention components and suggestions from both patients and healthcare providers working in primary care of how to better address this complex problem.

We planned originally for this pilot study to involve recruitment of approximately 100 patients enrolled from two different primary care practice settings, following the same procedures. We were unsuccessful in recruiting the desired number of patient participants.

Analysis of the interviews revealed a number of potential themes on which future iterations of the intervention could focus to improve uptake.

Firstly, we identified 'lack of readiness' to wean amongst those patients who did enrol in the study. The patients in our study mostly reported their past experiences with tapering as 'not going well'. Patients expressed fear of the impact of reduced opioids and this was recognised by their GPs. The nursing role on the team was particularly conscious of remaining 'on-side' with the patient during tapering conversations. Given this status quo it is perhaps not surprising that weaning did not readily occur. Our protocol did not clarify specific tapering goals or have agreements in place to specifically supervise reduction of opioid dose and this could be viewed as failure at the 'intervention function' level to ensure effective tapering.

The second theme to emerge involved therapeutic support and opportunity to access integrated care. While patients and providers like the idea of team care, there were significant barriers to patients actually using it. In our study, practice nurses were integral for supporting patients and linking them with broader supportive care. This role for nurses as care co-ordinators has been reviewed, though to date there is no direct evidence that clinical outcomes are impacted by such a role. [24] Providers considered integrated care as helpful, however this case demonstrated that many patients placed less value on switching to alternative approaches as a long-term pain self-management strategy compared with the status quo of remaining on prescription opioids.

An important strength of the intervention development was the use of a strong theoretical framework to guide the development of our complex intervention for people experiencing chronic primary pain.[23] Yet, despite targeting all three components of behaviour change according to the

BCW, that is, opportunity, capability and motivation, we found it difficult to engage patients in the behaviour change intervention. Despite uptake of the intervention being low, we were able to test the feasibility and acceptability of the AIMM approach across two practices operating in a low socioeconomic environment with access to a wider health team and gather valuable feedback for future iterations of the intervention.

Given that these findings suggest the intervention requires refinement, future iterations of the intervention would benefit from both better support for patients and providers around their readiness or motivation to wean as well as better preparation of the patients and multidisciplinary team such that they are fully integrated and working together, possibly including a stronger connection with the tertiary pain service for the providers.

Conclusion

AIMM was the first iteration of an integrated approach to implementing whole-person care for people experiencing chronic pain, intended to reduce reliance on long-term prescription opioids and transition to non-pharmacologic treatment modalities. Several aspects of the intervention were not implemented as planned. Patients' level of readiness to taper is important. An engaged and supportive practice nurse is one element that facilitates a range of healthcare providers to engage. Providers value team-based care and desire greater inter-professional links with their colleagues.

Although only a first step, these preliminary results may assist in developing a future more effective primary-care-based opioid tapering intervention.

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DISCUSSION

**A SYNTHESIS OF THE STUDIES AS A COMBINED WHOLE
AND THEIR IMPLICATIONS FOR PRACTICE AND RESEARCH**

OVERVIEW OF FINDINGS

This research was borne out of the need to respond to a major issue which was evident in the candidate's clinical work: the over-prescribing of pharmaceutical opioids which caused harm to people experiencing chronic non-cancer pain (CNCP). The problem was increasingly apparent among patients being referred for specialist tertiary care by general practitioners (GPs). GPs were requesting support to transition their patients towards finding viable alternatives to the current over-reliance on opioids.

A subsequent critical review of the literature supported the clinical observation that within Australian primary care there was a focus on treating CNCP within a biomedical paradigm [1]. These findings were at odds with the body of literature calling for pain to be considered as a broader biopsychosocial phenomenon [2-4]. Several knowledge gaps were identified which centred on the limitations of the current widespread practice of focusing treatment of CNCP within the limited scope of the biomedical model in Australian primary care.

The findings of the critical review, together with the candidate's clinical observation and the global focus to reduce over-reliance on opioids [5], prompted the question of whether it was feasible and acceptable for primary care teams to support patients experiencing CNCP, who were reliant on opioids, transition toward safer and potentially less harmful non-medication treatments.

To answer this question, a program of research comprising three novel research studies was undertaken. The resulting five original papers form the basis of this thesis. Together, this research has contributed substantially to knowledge in the pain management field by clarifying the feasibility challenges and the opportunities for reducing reliance on opioids for CNCP in the primary care setting.

The first study, a systematic review (paper 1), assessed the evidence regarding the feasibility and acceptability of non-pharmacological interventions to support CNCP patients taper off opioids.

The second study was a cross-sectional survey that examined the attitudinal factors influencing GPs opioid deprescribing practices (paper 2) and the multidisciplinary healthcare provider resources available to support patients to taper (paper 3)

The third study involved developing and pilot-testing a primary care based pain management intervention for patients experiencing CNCP who were utilising long-term opioids (papers 4 & 5).

This discussion will:

- Provide an integrated summary of the key findings of the program of research, including the limitations of the research methods used;
- Identify the implications of the new knowledge arising from the research for advancing understanding of how to reduce reliance on opioids, including future research directions;
- Provide overall conclusions

KEY FINDING 1

General practitioners' attitudes regarding the role of opioid medication in reducing CNCP were mixed and potentially modifiable. The availability of alternate interventions and the accessibility of specialist support were important influences on GPs' opioid tapering decisions.

To examine attitudes, motivation and other drivers of behaviour throughout this thesis, the 'behaviour change wheel' (BCW) has been adopted as an overarching framework [6]. The innermost layer of the BCW is a behavioural hub comprised of three essential behavioural change conditions: *Capability*, (both physical and psychological), *Opportunity*, (both physical and social) and *Motivation*, (both automatic and reflective). This central *Behaviour* system, termed the 'COM-B' system impacts at the individual level with the focus of this thesis being the provider and patient perspectives. Around the hub, nine intervention functions, including education and training, aim to overcome individual deficits, with an outer ring containing seven policy-level categories which may help support interventions. This program of research focused on both the central behavioural hub as well as the surrounding intervention functions. Using the model, attitudes are considered as influencing 'reflective motivation' and include beliefs that energize and direct behaviour, goals, as well as conscious and analytical decision-making.

In order to examine the key findings in this thesis it is logical to begin with gaining a better understanding of the attitudes held by GPs. Given that the GPs' role in Australian primary care is central to health care delivery, understanding what motivates their decision-making in day-to-day practice is important. Paper 2 reported on the findings of a cross-sectional survey of 681 GPs from one primary health network who returned completed surveys. GPs expressed mixed views regarding a non-medication focus for managing CNCP. Whilst just over half (55%) of the GP respondents were in agreement with local clinical guidance recommending that opioids be prescribed only for people experiencing acute pain, cancer pain or people in need of palliative care; one third indicated that they believed the opposite. Further, approximately one fifth (21%) of the GP respondents believed that a focus on medication helps quality of life and function for people experiencing CNCP. This clinical view is in stark contrast to a number of observational studies published between 2000 and 2015 which collectively indicate that no opioid dose is without risk of serious adverse health outcomes [7]. Further, the findings from a well-designed recent trial showed that opioid treatment is not superior to non-opioid medication in improving pain-related function over a year [8]. This finding reinforced the

importance of exploring opportunities for changing the views of GPs about opioid use and the management of CNCP.

In response to these mixed views of GPs, paper 4 described the outcome of an attempt to upskill healthcare providers regarding pain management with a focus on community prescribing guidelines. Whilst not the subject of this thesis, recent state-level policies such as dose guidelines both overseas and here in Australia have changed. Clinicians have been informed that opioids are no longer a first-line treatment for patients experiencing CNCP, which may in turn shift both clinician and patient attitudes alike [9-11]. The training content (Appendix 3), developed using the BCW [6], tasked GPs to consider intervention functions, such as persuasion and restriction, which can function to enhance reflective motivation (beliefs) of patients towards the benefits of opioid tapering [12-14]. The data presented in paper 4 provided some insight as to whether this intervention could offer a viable method for improving provider psychological capability and increasing the motivation of providers for recommending non-medication treatments. In particular, the post workshop data suggested that the training was adequate to change GPs' motivation sufficiently for them to shift away from a medication focus towards guideline concordant care. This shift suggests that GPs' psychological thought processes and reasoning, that is, their capability (i.e. skills and knowledge) could be modified by the intervention, allowing behaviour change to occur [6].

Content in the training included online education and a brief workshop including elements of education (imparting knowledge and distributing educational resources); modelling (training provided by a specialist to aspire or imitate) as well as training in communication skills (e.g. role play in deprescribing) [6] (Appendix 3). The most notable shifts were in terms of recommending alternatives, such as planned physical activity and anti-inflammatory nutritional approaches. However, these short term outcomes amongst a small sample of volunteer GPs need to be interpreted with caution as we do not know if changes in prescribing behaviour actually occurred.

Sustained provider behaviour change is known to support the principles of chronic disease self-management [15]. Whether such education, modelling and skills training (paper 4) would necessarily translate into actual sustained changes in beliefs and behaviour over time therefore needs to be considered [16]. A recent pragmatic trial in Australia [17] examined a 90 minute face-to-face workshop for GP registrars with an emphasis on opioid deprescribing.

The intervention involved an educational presentation and training via viewing and discussion of vignettes, allowing for reflection on registrars' own clinical experience. The intervention failed to increase overall opioid cessation and concluded that to change 'actual' rather than 'hypothetical' prescribing behaviour would require more than changing knowledge and attitudes. Lack of provider confidence appears to be an important factor, yet to be fully investigated, with respect to failure to adhere to clinical practice guidelines [18,19].

It is difficult therefore to draw firm conclusions about how best to produce a sustained influence on GP beliefs and subsequent treatment decisions based on these research findings alone. Further research which prospectively tracks GP behaviour over time is required to assess the value of educational or training interventions on subsequent prescribing decisions for people requiring opioid taper. Whilst not within the scope of this thesis to explore fully, data from studies of other health care practices such as addiction and hand washing [20,21] suggest that sustained change in provider behaviour is likely to require additional intervention strategies, including ongoing feedback and external reinforcement. In the chronic pain field, ongoing feedback alongside reinforcement have also been recognised as important aspects in supporting providers make change [22].

The BCW factor of 'Opportunity' also appears to interact with motivation and influence GPs' deprescribing decisions. As reported in paper 2, most GPs (77%) were less likely to taper patients off opioids when they perceived a lack of effective alternate treatments, that is, a lack of physical opportunity to refer in the local environment. Around half (52%) of the GPs in the survey sample reported being less likely to taper opioids if there was no access to, or support available from, specialist care. Furthermore, various patient factors (e.g. patient prefers to remain on opioids) were reported to decrease the likelihood of GPs tapering opioids in just over a third (37%) of respondents.

GPs may require access to effective, alternate interventions to co-ordinate care for people experiencing CNCP in the primary care environment e.g. [23-25]. The literature continues to report that there is a lack of appropriately skilled health professionals available to meet GPs' demand for supportive services capable of providing effective alternate treatments [26,27]. Faced with a real or perceived lack of accessible specialist support across large parts of Australia, it is likely that busy GPs will continue to report that co-ordinating behavioural treatments for people experiencing CNCP and undergoing opioid taper represents a challenge

[28]. Therefore, if GPs' perceptions include 'resource scarcity', then is unlikely that GPs will begin tapering patients off opioids and this view is echoed around the globe [29,30].

In contrast to the 'scarcity' view described above, GPs in the region studied (paper 3) clearly identified having adequate numbers of multidisciplinary healthcare providers (MHCPs) available to resource a face-to-face primary care based pain team under Australian Medicare arrangements. Specifically, with regard to specialist support, a high proportion of GPs (71%) had access to a pain specialist and MHCPs within a 50 km radius. Access to alternate treatment options appeared to be one factor which suggested that GPs, if given a choice of readily available therapeutic alternatives, may be more willing to taper patients off opioids. This finding was reported in paper 2. Specifically, paper 2 examined the attitudes of the same sample of GPs and found that having non-pharmacological behavioural alternatives was an important consideration for tapering.

Thus, on the one hand GPs' appear to hold many attitudes congruent with local guidance to consider accessing broader multidisciplinary treatment, yet divergence occurs in implementation. This divergence from guideline concordant care, presented in paper 3, reported that 20% of the GPs surveyed continued to prescribe an opioid to their most recent patient presenting with CNCP on long-term opioids. Given that the GPs were operating in a relatively resource-rich environment, the health care resource data alone fails to explain the decision making of the GPs in this sample.

A limitation of the research methodology reported in paper 2 & 3 was that the participants for the GP survey were recruited from regional NSW. There are likely to be some important differences in the availability of multidisciplinary providers when comparing regional settings with either metropolitan or remote primary care. For example, workforce shortages present a challenge for managing people with many chronic diseases across Australia [27,31,32]. Therefore, further study would need to confirm how well the survey findings would generalise to other regions across Australia. It is of course possible that the 50km radius deemed to indicate accessibility in our study did not align with the GPs' perceptions of high accessibility. It may be that these resources would need to be co-located with the GP, or that specialist waiting lists would need to be greatly reduced in order for GPs to initiate deprescribing for all relevant patients. Nonetheless, access to guideline concordant healthcare resources remains an important consideration, noting the results presented may not be generalizable to other low resource geographic regions across Australia [33].

Using the BCW as a model to summarise this key finding, GPs' motivation, particularly automatic motivation, including habits and beliefs resulting from previous learning and resulting in current attitudes were identified as needing change as explored in some depth in paper 2. The healthcare provider training package was designed to provide the physical and social opportunity for reflective motivation to occur (modifying professional role and identity) and psychological capability (knowledge and cognitions) to expand. Paper 4, showed that healthcare provider attitudes did shift somewhat with training, at least in the short-term. Further, paper 3 revealed that access to multidisciplinary expertise (adequate physical opportunity) did not represent an obvious barrier for non-opioid management, at least in the region studied.

Collectively, these findings suggest that further intervention which goes beyond education and training is required to influence reflective motivation, as in itself education and training are inadequate to change prescriber behaviour. Future interventions will need to further develop understanding and use training to target reflective skills which may help with motivation, and possibly psychological capability as well [6]. However, the COM-B model suggests that these interventions on their own are unlikely to be enough to change the mixed views held by GPs regarding the most effective treatment for patients experiencing CNCP utilising long-term opioids. Busy GPs are likely to require other intervention options to be identified and tested. In this way potentially high value interventions can be adopted and gradually the practice of long-term prescribing of opioids for CNCP can be reduced. These issues are addressed in more detail in the implications section.

KEY FINDING 2

Whilst primary healthcare opioid tapering interventions may be acceptable to some patients and providers, future research and implementation in this field faces significant challenges including: patient recruitment; adherence; generalisability and credibility

The systematic review (paper 1), indicated that patient-focused behavioural interventions for people experiencing CNCP face significant implementation challenges when the primary treatment goal is to achieve reduced reliance on opioid medication. In particular, recruitment difficulties and dropouts were a major concern across a wide range of different treatment interventions e.g. [34]. Other

research has also found that patients are hesitant to be recruited to non-opioid alternate treatment options [35,36].

In line with the systematic review, the AIMM study (study 3) originally intended to recruit approximately 100 patients to pilot-test a multidisciplinary primary care opioid tapering intervention (paper 5). Given the findings of the systematic review, a range of strategies were implemented in an effort to maximise patient recruitment and retention to the study (including flagging 140 potentially eligible medical records; regular site visits to meet practice clinical staff and to follow-up potential patient participants; provision of a monthly recruitment progress report to study sites; re-imbursement gift cards to patient participants who completed the study; laminated 'recruitment' prompt cards for GPs and use of a research assistant to facilitate data collection at one of the study sites, only 18 patients enrolled during the study period and of these only 8 completed. It must be acknowledged that while the low patient recruitment rates by GPs to AIMM may be partly due to a reluctance among patients to reduce opioid use, it is possible that reasons for reluctance to engage with AIMM were more complex. Possibilities include a reluctance to engage with research, or a reluctance of GPs to change practice, both options are possible though remain speculative and represent a degree of complexity which this study was not designed to clarify [37,39].

Despite these limitations, paper 5 has made an important contribution to the field. The AIMM study was the first published Australian primary care intervention which illustrated the reality of offering behavioural support for CNCP patients undergoing opioid taper. While similar approaches to AIMM may have been attempted by many individual primary clinicians, very few empirical studies have been published about attempts to implement multidisciplinary care for CNCP in the Australian primary care setting.

In addition to low recruitment, the pilot study (paper 5) had difficulties with low levels of adherence to the GP-written team care plan. It is possible that the low level of adherence reflects low perceived value of the approach for some members of the integrated team or for the patients themselves. For example, paper 5 reported that patient participants stated the support provided by the dietitian, pharmacist, exercise physiologist and psychologist was either unhelpful or not applicable to them. Lack of patient adherence was also noted in the systematic review (paper 1). One of the included papers [38] reported a no-show rate of 41% for attending group educational visits, even with reminder phone calls. The patients in that study identified reasons for non-adherence including timing of the visits, health problems, lack of transportation, not seeing the benefits of attending and forgetting to attend. Lack of treatment adherence is a known

problem in this patient group, though often poorly reported, making interpretation of the broader literature difficult [39,42].

Although the problem of poor adherence is known, strategies to improve adherence to non-opioid treatment have not been well-studied. Ending the multifaceted opioid problem will require more than strategies to engage patients. The underlying drivers of prolonged opioid prescribing are complex and compounded by aggressive marketing by the pharmaceutical industry to primary care physicians [29,40]. It is likely that strategies to improve adherence to non-opioid treatments for CNCP will need to consider the broader context for patients and healthcare providers; including hospitals, the pharmaceutical industry, and government agencies [41].

Although the data from the AIMM pilot study can only be considered exploratory, the patient post-intervention surveys (n=8) (Appendix 4) and interviews (n=6) (Appendix 5) indicated the intervention was acceptable to those who chose to engage with it. One interpretation of the lack of engagement by some is the possibility of selective non-participation by patients in a voluntary opioid tapering intervention. In behavioural terms, opioids are known to impact on motivation and reward, with a likely automatic motivational impulse to resist an opioid taper [42]. In order to be more reflective, patients are likely to need time to manifest a conscious intention to change their behaviour. This concept was illustrated in paper 5 whereby a patient who did enrol in AIMM identified in the baseline survey (Appendix 4) as being 'ready to wean' and went on to successfully do so. The corollary of this is that being pushed to wean when not 'ready' to reduce opioid use can rupture the therapeutic relationship [43]. Thus, readiness is emerging as an important determinant of the likelihood of change in this patient population [44,45]. There is the possibility of better outcomes and acceptability when healthcare providers consider the patient is as ready as possible to engage in all facets of an intervention, including reducing medication use [49-51]. In sum, it is likely that motivation to change needs to be explored in more depth, particularly regarding the concept of 'readiness' from both the patient and provider perspectives [43].

In paper 5, the limited data were presented as a case series and therefore only a small number of tentative conclusions can be made about the acceptability of the intervention. Firstly, patients' level of readiness to taper may be important and there is a hypothesis in the broader literature that motivational interviewing may improve adherence [46]. Secondly, a supportive practice nurse was identified as an important element in engaging healthcare providers in the management plan. A recent cross-sectional survey suggested that this element could be enhanced [47]. Finally, the data suggested that the healthcare providers valued team-based

care and desired greater professional links with colleagues, in line with frameworks promoting interprofessional learning [48].

The approach used in the pilot study, whilst acceptable to some patients, was not feasible for widespread implementation, particularly in terms of recruitment. Coupled with the lack of adherence to the various treatment components no firm conclusions regarding next steps can be drawn. However, the data do suggest some potential avenues for further exploration. In order to obtain a more comprehensive understanding, further work would need to consider and integrate GP, patient and other healthcare provider perspectives on acceptability. As reported in paper 5, most patients who actually engaged with the process reported being either 'satisfied' or 'completely satisfied' with the number and mix of sessions. Providers spoke favourably of working collaboratively, and wanting enhanced primary-tertiary linkage.

Taken together, these findings suggest there may be merit in future face-to-face primary care models including these elements as innovative team-based care emerges [49]. Ladden and colleagues [49], undertook a number of primary care practice site visits and studied creative population-oriented use of the health workforce in some depth. By sharing responsibility for patients, innovative primary care teams including nurses acting as complex care managers and co-located behavioural health providers are moving away from traditional roles to improve the care of patients. In contrast, across primary healthcare in Australia, multidisciplinary models are still emerging [50-52]. To date, uptake of collaborative models has been low [53-57]. Potential new multidisciplinary team models, capable of delivering pain care in Australian health settings will be explored in more detail in the implications section.

The generalisability of available data is also worthy of consideration. For the systematic review (paper 1), data were mainly derived from tertiary clinics and similar settings, limiting the ability to generalise the findings to the primary care settings where most patients experiencing CNCP are treated. This is a particularly relevant finding in keeping with the Cochrane review which similarly found a lack of quality studies of models of care outside tertiary settings which incorporate aspects of multidisciplinary care alongside an opioid tapering regime [58].

Other data, not included in paper 1, suggests that outreach, or virtual outreach models may be able to address geographical barriers [59]. Further, where non face-to-face treatments are being considered and where internet access is viable, online pain programs are an option [60]. The 'Pain Course' program delivered to motivated patients has been shown to provide effective

pain management with good outcomes and minimal direct clinical contact. Globally, other centres are also investigating the use of the internet to support patients in primary care [61]. Whilst not the subject of this thesis, these internet-delivered programs may have significant public health potential and are worthy of consideration.

Paper 5 adds to other literature [62] suggesting that when patients do engage in opioid tapering, it can be acceptable to patients in primary care. The feasibility problems encountered however, suggests that patients may not initially be motivated to choose to engage in a tapering regime and that 'more choice' may be preferred [63]. Therefore, it is necessary to find ways to support both providers and patients to engage with a refined approach and then test the new approach.

To date, the overall quality of the existing evidence reported in the systematic review (paper 1) is poor to moderate, limiting the credibility of the research findings. Whilst feasibility and acceptability are being established, selection bias is not simple to overcome, particularly in this cohort for whom treatment as usual (remaining on opioids) may be the preferred status quo as identified in the TROUP study [64]. Attention to improving recruitment and reducing drop outs however may be a particularly useful focus to enhance the quality of further research efforts aimed at determining if acceptable models of brief psychosocial interventions in primary care produce the desired engagement with reductions in opioid dose. The newest models to emerge are offering patient choice around taper goals and speed e.g. [63] and directly influencing provider practice via peer-to-peer support [65]. Taken together, these findings suggest that for Australia, a tertiary outreach model may provide a way forward, although evidence specific to GPs is lacking [66,67].

IMPLICATIONS OF FINDINGS AND PROPOSED DIRECTIONS FOR FUTURE RESEARCH

Throughout the thesis the BCW and COM-B model have been adopted as an overarching framework. Using this framework, it is likely that each of the key elements from the model, that is, Capability, Opportunity and Motivation [6] will need to be targeted to increase the likelihood of GPs' initiating tapering of opioids in collaboration with a patient who is ready to attempt to change to acceptable non-opioid alternatives within an environment which optimises supportive care [68,69].

The implications of the thesis can therefore be examined as three linked themes. These are: addressing the format and content of provider focused interventions (Capability and Motivation); addressing the format and content of patient focused interventions (Capability and Motivation) and offering GPs more environmental support (Opportunity). These implications and proposed directions will now be examined in turn followed by a model which contains a summary figure of the overall conclusions.

IMPLICATION 1 Provider perspectives of drivers of behaviour including capability and motivation need to be fully understood and systematically targeted so that non-opioid interventions can be developed and trialled

This research demonstrated that the knowledge, skills and reflective motivation of GPs could benefit from education and training, including modelling [6]. Therefore, one key avenue for future research is to systematically address the deficits in capability, and motivation of providers, particularly GPs, so that guideline congruent care becomes acceptable. The outcome of an effective intervention would be that GPs routinely and consistently consider opioid harms and potentially, sustainably, change their prescribing behaviours for patients experiencing CNCP.

Provider Capability and Motivation

In this thesis, the format we trialled was a face-to-face workshop delivered by tertiary care clinicians on-site in primary care premises (paper 4). An initial online self-directed activity was followed by the on-site educational outreach. This was effective in shifting at least some attitudes of the GPs and primary care providers' attitudes (psychological capability and

motivation) in our study, at least in the short-term. However, the challenge remains of converting short term attitudinal change into long-term change in prescribing and referral patterns such that guideline congruence is achieved.

Similar academic detailing and educational outreach has been shown in one RCT to change GPs' prescribing practices [70]. This contrasts with the previously mentioned GP registrar training that changed only hypothetical but not actual prescribing [71]. More recently a multifaceted educational outreach, which included reminder letters or audit and feedback, was found to show promise in changing attitudes, although evidence specific to GPs is lacking [67]. It is possible that future research could examine the use of an outreach team to assist in maintaining opioid prescribing boundaries and assist in the specifics of enacting an agreed taper regime at a rate of taper that is agreed between GP and patient. This specialist support is an example of 'modelling' and could be used as an adjunct or alternate to 'role play' in a provider focused intervention [72]. Together, these training suggestions, delivered during regular outreach visits may enhance the uptake of effective treatments by GPs [5,28].

One attitude, a negative expectation of recovery, failed to shift with training, which has implications for future research. Future intervention iterations may benefit from educating trainees that reduction or recovery in terms of reduced pain intensity is a known outcome of tertiary pain interventions. In Australia, tertiary pain clinics report clinically significant improvements in average pain intensity between 24-29% [73]. Further, 'recovery' could be framed in functional terms or recovery of quality of life as well as 'recovery' from dependence on opioids [74,75].

Recently published protocols and exploratory studies around the globe offer some promise for alternate provider focused interventions. In the USA, efforts to increase awareness of the Center for Diseases Control and Prevention (CDC) guideline are currently being studied, particularly around increasing clinician confidence to reduce risky opioid prescribing and increasing the uptake of non-pharmacological treatments [76,77]. Similarly, in Canada research is looking at ways to support interventions aiming to optimise opioid prescribing practices as well as helping providers choose the most appropriate treatment for each individual patient [19]. Another Canadian intervention has studied a weekly tele-mentoring program intervention which involved teaching and mentoring family physicians on the management of CNCP [78].

Similarly, the UK is also embarking on primary care based research offering a range of supportive interventions. One mixed-methods study reports the acceptability of a new, primary care-based service, aimed at helping patients who experience CNCP reduce use of opioids and switch to non-pharmacological pain management strategies [81,82]. Another UK study underway is the process evaluation protocol for the I-WOTCH study, again an opioid tapering support programme for people experiencing CNCP [69,83].

In Australia there are also a range of responses aimed at reducing opioid use, noting the lack of National benchmarks for quality and access to multidisciplinary care for patients who experience CNCP [28,79,80]. The POPPY study is currently underway [84] examining the harms associated with ongoing opioid use in Australia as well as a qualitative evidence synthesis using a behaviour change framework which is examining barriers and enablers to tapering opioids from both clinician and patient perspectives [68].

The implication of GPs, and other providers, holding unhelpful beliefs could also be addressed at the societal level. Although not the primary target of this thesis, societal interventions could use mass media to influence belief and motivation to change. One mass media campaign conducted in Victoria, Australia, targeted treatment beliefs of the general public, clinicians, patients, employers and workers regarding the management of back pain [85]. The approach involved targeting both educational and persuasive functions en-masse and serves as an exemplary instance of a successful societal approach targeting the motivational aspects of behaviour change including beliefs, habits and emotions around avoiding excessive rest [6]. Further, the study showed sustained improvements over time in physicians' beliefs around back pain and in their stated clinical behaviour [86]. To the writers' knowledge, no opioid-reduction related mass media campaign is in the pipeline, however social media could be used to help disseminate relevant educational articles to healthcare providers, potentially enhancing their knowledge and psychological capability [87].

Options for future research to influence GPs' beliefs and influence their motivations towards non-opioid management will be addressed alongside patient perspectives and environmental considerations for co-ordinating optimal pain care prior to the concluding statement.

IMPLICATION 2 Perspectives of capability and motivation also need to be fully understood and systematically targeted from the patient perspective so that acceptable, non-opioid, interventions can be developed and trialled

Another important implication of this research is the difficulty encountered with patients' current levels of motivation to change to non-opioid alternatives. Therefore, future research will also need to explore behaviour change interventions which are particularly focused on increasing patient reflective motivation, towards the non-opioid message.

Paper 5 described a pilot trial of a new model of care to address patients experiencing CNCP for whom utilising long-term opioids was normalised. The results of this case-series suggested patients' readiness to reduce opioids was low and coupled with providers who preferred to only 'lightly broach' the subject of tapering, there was a failure to taper opioid dose. This revealing glimpse into the difficulties faced during a face-to-face primary care based Australian opioid tapering intervention suggests more in-depth research needs to continue. The lack of patient readiness and reluctance of clinicians to deliver opioid tapering advice has recently been explored by Australian researchers who looked at simulated advice. In the simulation study patients seem to have responded positively to the prospect of a 'change' in their treatment approach, as opposed to a complete 'cessation' of treatment [88]. This focus on 'changing' treatment may represent an interesting avenue for further research. Recently, the pragmatic Pain Program for Active Coping and Training (PPACT) study interviewed 97 patients during their transition phase and also highlighted the importance of patient-centred, shared decision making including the importance of broadening treatment by utilising alternate pain treatments [89]. Together, it would appear that motivation to cease treatment may be low, perhaps because ceasing treatment triggers a sense of punishment and the automatic motivation to work against the behaviour, however motivation to continue regular treatment (more reflective motivation), even non-opioid treatments, may be acceptable [6].

Further patient-focused work presented in the systematic review (paper 1) also has implications for future practice, in particular in challenging the belief that patient's motivation to change cannot be shifted. Included in paper 1 was a moderate quality US study by Sullivan and colleagues [90]. This group found prescription opioid taper support for outpatients experiencing CNCP to be effective. Mehl-Madrona and colleagues [91] demonstrated that patients who increased their knowledge about non-pharmacologic methods of pain treatment

and who remained engaged in supportive care sessions were able to achieve the desired behaviour change and significantly reduce or ceased opioid use. Other interventions noted in the review were patient-centred educational workbooks [90] and educational videos [38]. Both represent examples of psychological capability building, achieved by an intervention targeting a better understanding of the benefits of opioid cessation.

There are other novel models for reducing high opioid levels coming from the US. In that country, Darnall and colleagues are currently embarked on the 'EMPOWER' study, which seeks to address multiple unmet needs of patients experiencing CNCP who desire to reduce long-term opioid use [63,92]. Another US based pilot trial is examining Acceptance and Commitment Therapy for CNCP and Mindfulness Based Relapse Prevention for opioid misuse [36]. Canada is also undertaking the "Trial Applying Policy to Eliminate or Reduce Inappropriate Narcotics in the General-population" (TAPERING) trial [93], combining social leverage and patient focused interventions. This randomised trial is aiming to empower patients through direct-to-patient education via a government-led mail-out of educational information to adults experiencing CNCP utilising long-term opioids regarding tapering of opioids compared to usual care.

Together, the implication of these findings is that it is possible to influence patients' beliefs (reflective motivation), if providers are trained to view these aspects as potentially malleable concepts, where joint decisions and plans can be modified when new information is provided on which to base new, recovery focused beliefs.

Whether providers and patients hold congruent beliefs and find the motivation to engage in acceptable alternatives however, are only part of the picture. In order to gain a clearer understanding of future possibilities for research, there is a need to examine the feasibility challenges, particularly the opportunities afforded by the healthcare environment.

Options for future research to influence the wider physical and social environment and how these factors impact on GPs ability to co-ordinate optimal pain care will be examined in the next section.

IMPLICATION 3 Future research must also focus on overcoming feasibility challenges and investigate opportunities to support GPs to co-ordinate alternate behavioural treatments for patients experiencing CNCP who are tapering long-term opioids

The third important implication of this research is to optimise the 'Opportunity' for behaviour change to occur at the provider level and thereby overcome feasibility challenges. Opportunity, is defined in the COM-B model as factors that lie outside the individual and support the behaviour change [6]. The findings presented in papers 1 and 5 provided a brief insight into the difficulties faced in reducing reliance on opioid medication in primary care. Specifically, future research needs to overcome feasibility challenges such as recruitment, adherence, transferability and credibility and investigate methods to support a change in organisational culture (social) and provision of environmental resources (physical) for an optimal intervention to occur.

A supportive, collaborative, environment is viewed in the broader literature as a critical element in advancing models of care to deliver high-quality CNCP treatment in primary care [94,95]. Without doubt, time constraints e.g. the time to prepare General Practice Management Plans (GPMPs) and Team Care Arrangements (TCAs) to facilitate integrated care [96] is an example of limited provider opportunity impacting on the ability for behaviour change to occur in primary care settings. Paper 1 highlighted the comparatively vast resource available in tertiary care settings for helping patients taper from their opioid dose. Primary care practitioners on the other hand frequently report being most challenged by this segment of their workload [97]. To overcome the problem of restricted time, eminent pain researchers are calling for further support at the point of care for GPs to easily access multifaceted support options [25,88,98]. One option for support are nurse led clinics. Nurses are in a unique position to act as care co-ordinators [99] and clinical facilitators and if appropriately trained are then positioned to provide patients with the opportunity to access pain related support [69,100]. Other researchers have also identified the nurse as key to feasibly providing successful pain management, particularly with respect to helping individual patients determine the best treatments, holding those patients accountable for their own self-management as well as providing motivation and support [62].

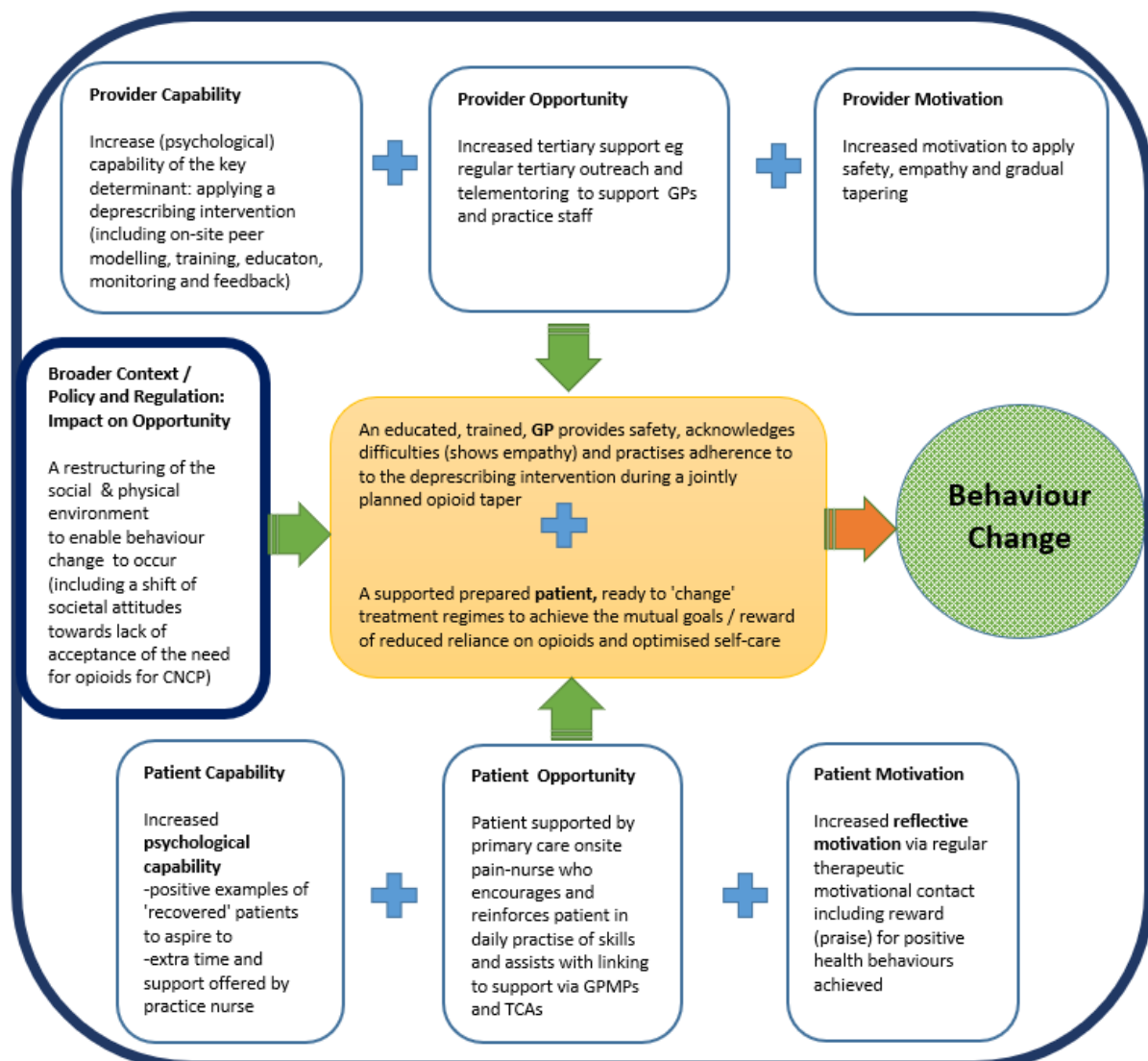
Paper 3 reported the finding that the employment of a practice nurse appeared to be an important factor in encouraging GPs to access multidisciplinary healthcare providers (MHCPs) and was highly valued by patients. GP practices would therefore need to improve the social

opportunity, that is, optimise the work environment to become a supportive organisational culture as well as optimise the physical opportunity for practice change e.g. by providing a dedicated workspace for nurses to facilitate routine completion and regular monitoring of GPMPs and TCAs. The Australian Government provides incentives for eligible general practices who employ a practice nurse under the “practice incentives program”.

There is no doubt that tertiary clinics are able to support a small proportion of patients experiencing CNCP who engage with this mode of treatment successfully reduce their use of opioid medications [101]. Considering this skilled resource, another option for providing GPs with environmental support lies in fostering stronger primary-tertiary co-ordination. Once such model is tertiary outreach, as explored earlier. Outreach from tertiary centres holds significant promise, and could be utilised in a future iteration of the training (paper 4) to provide ongoing support on holding therapeutic boundaries whilst also modelling an empathetic ‘holding’ relationship. Other possible options include tele-mentoring, particularly for increasing primary care providers’ knowledge when distance presents a barrier to attending in-person educational and training opportunities [102,103].

Thus, a strong need remains to focus research efforts on supporting GPs find better options to manage patients with non-pharmacological treatments for CNCP which are both feasible and acceptable. Figure B shows a diagram of a potential new model to be implemented in primary care for adults experiencing CNCP and for whom opioid tapering is appropriate. In the model, the central behaviour change outcome relies on a strong therapeutic alliance being maintained (using empathy) between the GP and the patient undergoing a prescribing (tapering) intervention with support within the context of a broader supportive social environment.

FIGURE B: APPLYING THE COM-B MODEL TO FURTHER DEVELOP A PAIN MANAGEMENT MODEL IN PRIMARY CARE (FOR ADULTS EXPERIENCING CNCP READY TO TAPER PRESCRIPTION OPIOIDS)



This complex, potential intervention would require further planning (pre-implementation) to systematically, flexibly co-develop the model using behaviour change intervention techniques [104].

From a policy perspective, integrated higher level policy changes would help support and enable the interventions of providers. For example, providers could be persuaded to deprescribe opioids if they were incentivised to do so.

From the provider perspective, this proposed model includes regular tertiary outreach and tele-mentoring as theory guided elements to providing the opportunity for the change to occur. A stronger focus supported by the growing literature involves GPs engaging patients in regular preparatory tapering conversations, thereby slowly modifying their reflective motivation (beliefs about consequences) as they come to believe that opioids are harmful in the long-term. The GP behaviour change, enacting tapering, can therefore initially occur alongside a pain specialist on out-reach (modelling).

From the patient perspective, fears of future functional decline and loss of hope regarding functional recovery would be considered by a core GP and practice nurse pain team as a malleable concept. Other pain team members would be utilised when clinically relevant e.g. presence of significant depression, trauma or anxiety. For the most part, practice nurse involvement regularly allaying fears regarding the impact of opioid reduction on peoples' daily lives will be an important aspect to incorporate as the central ongoing support.

OVERALL CONCLUSIONS

The thesis has explored whether and how healthcare providers in Australian primary care could feasibly offer a novel, acceptable intervention to patients which supported them to reduce reliance on opioids and transition towards self-management of their pain.

This research has examined attitudinal perspectives, healthcare resource availability; the provision of education and skills training workshops to providers as well as the broader literature surrounding feasibility and acceptability of tapering interventions. Without doubt, attitudinal barriers remain and the methodological difficulties which arose provide a reason to be circumspect about progressing towards the implementation phase of research. Nonetheless, researchers in tertiary settings have consistently shown that reducing opioid use in the context of a supportive environment results in substantial and consistent reductions in pain intensity, depression severity, pain interference, pain related disability and pain cognitions [101].

Whilst the preliminary evidence presented in the thesis does not provide a definitive single pathway for the next steps in tackling this vast and complex problem, it clearly demonstrates important limitations which the field faces in implementing future measures in an Australian

context. However, given that CNCP treatment focused on ongoing opioid medications is often ineffective [68,105] and harms outweigh benefits [80], it is imperative that future enquiry casts a wide net to examine a range of potentially effective treatment approaches.

Globally, novel integrated biopsychosocial primary care models are in development [106].

Australians similarly deserve equally thorough research in the pain management field, despite the known and emerging challenges. This research must use an evidence-based behaviour change theory, such as the BCW [6], to underpin any proposed behaviour change intervention and specify the observable, replicable, irreducible components of the intervention.

Understanding patient and provider behaviour as a result of capabilities, opportunities and motivation and considering broader policy dimensions allows a range of potentially effective intervention functions to be explored. A preliminary model has been proposed (Figure B).

Finally, by thoroughly describing and evaluating these options and undertaking the necessary preliminary work to address barriers, including remaining attitudinal barriers, recruitment and adherence difficulties, we can be confident that, if positive results are produced, the results will genuinely represent a practical, acceptable and feasible Australian primary care based pain management solution for patients experiencing CNCP.

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APPENDICES

APPENDIX 1

SEARCH STRATEGY

PAPER 1

FEASIBILITY AND ACCEPTABILITY OF PATIENT FOCUSED BEHAVIOURAL INTERVENTIONS TO SUPPORT ADULTS
EXPERIENCING CHRONIC NON-CANCER PAIN DURING OPIOID TAPERING: A SYSTEMATIC LITERATURE REVIEW

SEARCH STRATEGY (PAPER 1)

Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily <1946 to June 18, 2019>

- 1 Chronic Pain/ (12112)
- 2 Pain, Intractable/ (6115)
- 3 Back pain/ or Low back pain/ or Headache/ or Musculoskeletal pain/ or Neck pain/ or Neuralgia/ or Pelvic pain/ (87364)
- 4 Arthritis/ or Arthritis, rheumatoid/ or Osteoarthritis/ (148908)
- 5 Sciatica/ (4896)
- 6 Fibromyalgia/ (8007)
- 7 ((chronic or persistent or intractable or noncancer or non-cancer) adj3 pain*).ti,ab,kw,kf. (70790)
- 8 1 or 2 or 3 or 4 or 5 or 6 or 7 (303603)
- 9 exp Analgesics, Opioid/ (110469)
- 10 (opiod* or opiate* or papaver).ti,ab,kw,kf. (101091)
- 11 (morphine or meperidine or methadone or buprenorphine or fetanyl or hydrocodone or oxycodone or codeine or clonidine).ti,ab,kw,kf. (85174)
- 12 9 or 10 or 11 (192488)
- 13 exp Psychotherapy/ (187438)
- 14 ((psychotherap* or cogniti* or behavio?r* or family or psychosocial* or psycho-social*) adj5 (therap* or intervention*)).ti,ab,kw,kf. (87151)
- 15 (counsel* or cope or coping).ti,ab,kw,kf. (176440)
- 16 exp Physical Therapy Modalities/ (144052)
- 17 exp Complementary therapies/ or exp Exercise/ (394605)
- 18 ((physical adj therap*) or physiotherap*).ti,ab,kw,kf. (45825)
- 19 (multidisciplinary or multi-disciplinary or interdisciplinary or inter-disciplinary).ti,ab,kw,kf. (113072)

- 20 (biofeedback* or massage or acupuncture or electroacupuncture or "therapeutic interactive voice response").ti,ab,kw,kf. (38533)
- 21 (effluerage or anma or aquatic bodywork or bowen technique or craniosacral therapy or lomilomi or manual lymphatic drainage or myofascial release or postural integration or reflexology or shiatsu or structural integration or tui na or watsu).ti,ab,kw,kf. (1385)
- 22 (tai chi or taichi or tai ji or taiji or taijiquan or shadow boxing).ti,ab,kw,kf. (1703)
- 23 yoga.ti,ab,kw,kf. (4261)
- 24 Pastoral care/ or Spirituality/ (9818)
- 25 Adaptation, Psychological/ (90483)
- 26 (wellbeing or well-being or relax* or accept* or meditat* or spiritual*).ti,ab,kw,kf. (676686)
- 27 exp Rehabilitation/ (288103)
- 28 (wean* or cessation or cease* or taper* or reduc* or stop* or abstain* or abstinen* or withdraw* or discontinue* or detox* or terminat* or remove* or substit*).ti,ab,kw,kf. (4073148)
- 29 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 (5486800)
- 30 Physicians, Primary Care/ or Primary Care Nursing/ or Primary Health Care/ or Primary Prevention/ or primary.ti,ab,kw,kf. (1449275)
- 31 exp General Practice/ (73298)
- 32 (general practi* or family practi*).ti,ab,kw,kf. (87749)
- 33 30 or 31 or 32 (1543929)
- 34 8 and 12 and 29 and 33 (986)
- 35 exp animals/ not humans.sh. (4590541)
- 36 34 not 35 (924)
- 37 limit 36 to (english language and yr="2008 -Current") (734)

Database: Embase (Ovid) <1947 to present>

-
- 1 Chronic pain/ (56451)

- 2 Intractable pain/ (5162)
- 3 exp Musculoskeletal pain/ (142557)
- 4 Pelvic pain/ (5785)
- 5 Headache/ (211518)
- 6 Neuralgia/ (9754)
- 7 Sciatica/ (1900)
- 8 Arthritis/ or Arthritis, rheumatoid/ or Osteoarthritis/ (186854)
- 9 Fibromyalgia/ (19131)
- 10 ((chronic or persistent or intractable or noncancer or non-cancer) adj3 pain*).ti,ab,kw. (106755)
- 11 1 or 2 or 3 or 5 or 6 or 7 or 8 or 9 or 10 (625085)
- 12 exp Narcotic analgesic agent/ (332026)
- 13 (opioid* or opiate* or papaver).ti,ab,kw. (140904)
- 14 (morphine or meperidine or methadone or buprenorphine or fetanyl or hydrocodone or oxycodone or codeine or clonidine).ti,ab,kw. (117306)
- 15 12 or 13 or 14 (398099)
- 16 exp Psychotherapy/ (260614)
- 17 ((psychotherap* or cogniti* or behavio?r* or family or psychosocial* or psycho-social*) adj5 (therap* or intervention*)).ti,ab,kw. (124620)
- 18 (counsel* or cope or coping).ti,ab,kw. (246643)
- 19 Physiotherapy/ (88838)
- 20 ((physical adj therap*) or physiotherap*).ti,ab,kw. (79102)
- 21 Alternative medicine/ or exp exercise/ (382545)
- 22 (biofeedback* or massage or acupuncture or electroacupuncture or "therapeutic interactive voice response").ti,ab,kw. (56655)
- 23 (effluerage or anma or aquatic bodywork or bowen technique or craniosacral therapy or lomilomi or manual lymphatic drainage or myofascial release or postural integration or reflexology or shiatsu or structural integration or tui na or watsu).ti,ab,kw. (1991)
- 24 (tai chi or taichi or tai ji or taiji or taijiquan or shadow boxing).ti,ab,kw. (2474)
- 25 yoga.ti,ab,kw. (6203)

- 26 (multidisciplinary or multi-disciplinary or interdisciplinary or inter-disciplinary).ti,ab,kw. (179134)
- 27 Pastoral care/ (252)
- 28 Spirituality/ (65780)
- 29 Adaptive behavior/ (54026)
- 30 exp Rehabilitation/ (388179)
- 31 (wellbeing or well-being or relax* or accept* or meditat* or spiritual*).ti,ab,kw. (888613)
- 32 (wean* or cessation or cease* or taper* or reduc* or stop* or abstain* or abstinen* or withdraw* or discontinue* or detox* or terminat* or remove* or substit*).ti,ab,kw. (5487254)
- 33 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 (7353592)
- 34 general practitioner/ (96856)
- 35 exp primary health care/ (158217)
- 36 primary prevention/ (38631)
- 37 (primary adj2 (care or prevention)).ti,ab,kw. (198408)
- 38 (general practi* or family practi*).ti,ab,kw. (114244)
- 39 34 or 35 or 36 or 37 or 38 (392723)
- 40 11 and 15 and 33 and 39 (1150)
- 41 (animal/ or nonhuman/) not human/ (5842318)
- 42 40 not 41 (1147)
- 43 limit 42 to (english language and yr="2008 -Current") (916)
- 44 limit 43 to (books or chapter or conference abstract or conference paper or "conference review") (302)
- 45 43 not 44 (614)

Database: PsycINFO <1806 to June Week 2 2019>

-
- 1 chronic pain/ (12672)
 - 2 back pain/ (3698)

- 3 headache/ (6265)
- 4 exp neuralgia/ (910)
- 5 exp arthritis/ (3996)
- 6 fibromyalgia/ (1873)
- 7 ((chronic or persistent or intractable or noncancer or non-cancer) adj3 pain*).ti,ab,id. (20673)
- 8 1 or 2 or 3 or 4 or 5 or 6 or 7 (34447)
- 9 exp analgesic drugs/ (18634)
- 10 exp opiates/ (24122)
- 11 (opioid* or opiate* or papaver).ti,ab,id. (28769)
- 12 (morphine or meperidine or methadone or buprenorphine or fentanyl or hydrocodone or oxycodone or codeine or clonidine).ti,ab,id. (21225)
- 13 9 or 10 or 11 or 12 (47287)
- 14 exp psychotherapy/ (196850)
- 15 ((psychotherap* or cogniti* or behavio?r* or family or psychosocial* or psycho-social*) adj5 (therap* or intervention*)).ti,ab,id. (133244)
- 16 (counsel* or cope or coping).ti,ab,id. (196257)
- 17 exp rehabilitation/ (45899)
- 18 exp alternative medicine/ (8299)
- 19 exp exercise/ (24771)
- 20 ((physical adj therap*) or physiotherap*).ti,ab,id. (6342)
- 21 (multidisciplinary or multi-disciplinary or interdisciplinary or inter-disciplinary).ti,ab,id. (41333)
- 22 (biofeedback* or massage or acupuncture or electroacupuncture or "therapeutic interactive voice response").ti,ab,id. (8636)
- 23 (tai chi or taichi or tai ji or taiji or taijiquan or shadow boxing).ti,ab,id. (569)
- 24 pastoral counseling/ or spiritual care/ (2662)
- 25 adaptation/ (8247)
- 26 (wellbeing or well-being or relax* or accept* or meditat* or spiritual*).ti,ab,id. (269016)
- 27 (wean* or cessation or cease* or taper* or reduc* or stop* or abstain* or abstin* or withdraw* or discontinue* or detox* or terminat* or remove* or substit*).ti,ab,id. (541977)

28 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 (1216999)

29 primary health care/ (17324)

30 general practitioners/ or family medicine/ or family physicians/ (8170)

31 primary mental health prevention/ (2349)

32 primary.ti,ab,id. (217219)

33 (general practi* or family practi*).ti,ab,id. (15519)

34 29 or 30 or 31 or 32 or 33 (232643)

35 8 and 13 and 28 and 34 (265)

36 limit 35 to (english language and yr="2008 -Current") (186)

CINAHL-(Ebsco) 20th June 2019

S8 AND S12 AND S30 AND S35 Limiters- Published Date 20080101- 20191231 (115)

S8 AND S12 AND S30 AND S35 (128)

S31 OR S32 or S33 OR S34 (97944)

TI (("general practi*")) or "family practice*") OR AB (("general practi*" or "family practi*")) (28092)

(MH "Family Practice") (22337)

(MH "Primary Health Care") (55 100)

(MH "Physicians, Family") (16872)

S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S 29 (1325217)

(MH "Rehabilitation+") (255743)

TI ((wellbeing or well-being or relax* or accept* or meditate* or spiritual*)) OR AB ((wellbeing or well-being or relax* or accept* or meditat* or spiritual*)) (161122)

(MH "Adaptation, Psychological") (27530)

(MH "Spiritual Care") (3997)

TI (("Tai chi" or taichi or "tai ji" taiji or taijiquan or "shadow boxing")) (1401)

TI yoga OR AB yoga (4977)

TI ((effleurage or anma or "aquatic bodywork" or "bowen technique" or "craniosacral therapy" or lomilomi or "manual lymphatic drainage" or "myofascial release" or "postural integration" or

reflexology or shiatsu or “structural integration” or “tui na” or watsu)) OR AB ((effleurage or anma or “aquatic bodywork” or “bowen technique” or “craniosacral therapy” or lomilomi or “manual lymphatic drainage” or “myofascial release” or “postural integration” or reflexology or shiatsu or “structural integration” or “tui na” or watsu)) (1484)

TI ((biofeedback* or massage or acupuncture or electroacupuncture or “therapeutic interactive voice response”)) OR AB ((biofeedback* or massage or acupuncture or electroacupuncture or “therapeutic interactive voice response”)) (21221)

TI ((multidisciplinary or multi-disciplinary or interdisciplinary or inter-disciplinary)) OR AB ((multidisciplinary or multi-disciplinary or interdisciplinary or inter-disciplinary)) (44608)

TI (((physical n1 therap* or physiotherapy*)) OR AB (((physical n1 therap* or physiotherapy*)) (35418)

(MH “exercise+”) (99967)

(MH “Alternate Therapies+”) (204973)

(MH “Physical Therapy+”) (126248)

TI ((counsel* or cope or coping)) OR AB ((counsel* or cope or coping)) (85986)

TI (((psychotherapy* or cogniti* or behaviour* or behaviour* or family or psychosocial* or psycho-social*) N5 (therap* or intervention*)) OR AB (((psychotherapy* or cogniti* or behaviour* or behaviour* or family or psychosocial* or psycho-social*) N5 (therap* or intervention*)) (49468)

(MH “Psychotherapy+”) (166577)

TI ((wean* or cessation* or ceas* or taper* or reduc* or stop* or abstain* or abstinen* or withdraw* or discontinue* or detox* or terminat* or remove* or substitu*)) or AB ((wean* or cessation* or ceas* or taper* or reduc* or stop* or abstain* or abstinen* or withdraw* or discontinue* or detox* or terminat* or remove* or substitu*)) (573134)

S9 OR S10 OR S11 (42614)

TI ((Morphine or meperidine or methadone or buprenorphine or fentanyl or hydrocodone or oxycodone or codeine or clonidine)) OR AB ((Morphine or meperidine or methadone or buprenorphine or fentanyl or hydrocodone or oxycodone or codeine or clonidine)) (16082)

TI ((opioid* or opiate* or papaver)) OR AB ((opioid* or opiate* or papaver)) (28657)

(MH “Analgesics, opioid”) (14725)

S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 (106891)

TI (((chronic or persistent or intractable or noncancer or non-cancer) N3 pain*)) OR AB (((chronic or persistent or intractable or noncancer or non-cancer) N3 pain*)) (31615)

(MH “Fibromyalgia”) (5142)

(MH "Arthritis") or (MH "Arthritis, Rheumatoid") or (MH "Osteoarthritis") (38 143

(MH "Sciatica") (1446)

(MH "Pelvic pain") (2484)

(MH "neuralgia") or (MH "Back pain") or (MH "Headache") or (MH "Neck pain") (29946

(MH "Chronic pain") (19035)

APPENDIX 2

POSTAL GP SURVEY

PAPER 2

**GENERAL PRACTITIONERS AND MANAGEMENT OF CHRONIC NONCANCER PAIN: A CROSS-SECTIONAL SURVEY
OF INFLUENCES ON OPIOID DEPRESCRIBING**

& PAPER 3

**THERAPEUTIC ALTERNATIVES FOR SUPPORTING GENERAL PRACTITIONERS TO DEPRESCRIBE OPIOIDS: A CROSS-
SECTIONAL SURVEY**

GP OPIOID SURVEY: OXYCONTIN VERSION (PAPER 2 &3)

V2: Office use only	 THE UNIVERSITY OF NEWCASTLE AUSTRALIA	 NSW GOVERNMENT	 Health Hunter New England Local Health District	 phn HUNTER NEW ENGLAND AND CENTRAL COAST
Hunter New England Central Coast Primary Health Network GP Opioid Survey				

SURVEY INSTRUCTIONS

- ◆ Your answers are completely confidential
- ◆ Answer each section by marking the appropriate box or boxes with a tick (✓)
- ◆ Other questions will ask you to write your answer in the box provided
- ◆ If you are unsure, please give the best answer you can
- ◆ Please return the completed survey in the reply-paid envelope provided, thank you

You may notice a number on the survey. This number is used to let us know if you returned your survey so we don't have to send you reminders

SECTION A: DEMOGRAPHICS

A1. Are you male or female?

- ¹ ☐ Male
² ☐ Female

A2. What year did you graduate as a medical doctor?

A3. Do you have qualifications higher than foundational medical degree?

- ¹ ☐ No
² ☐ Yes→If yes, please list

A4. Do you have a special interest in working with patients experiencing chronic pain?

- ¹ ☐ No
² ☐ Yes

A5. Have you ever referred a patient to a tertiary pain service? Tick all that apply

- ¹ ☐ Hunter Integrated Pain Service or
Tamworth Integrated Pain Service
² ☐ Other, please name

- ³ ☐ Never

SECTION B: CHARACTERISTICS

B1. How many GPs (full-time equivalent FTE) currently work in your main practice, including yourself?

- ¹ ☐ Only me
² ☐ 2-4 FTE
³ ☐ 5-10 FTE
⁴ ☐ 10 or more FTE

B3. Does your main practice employ a practice nurse/or nurses?

- ¹ ☐ No
² ☐ Yes

B4. What percentage of your current caseload involves people experiencing chronic non-cancer pain (CNCP) in an average week?

- ¹ ☐ None
² ☐ Less than 5%
³ ☐ 5-10%
⁴ ☐ More than 10%

B5. What team care resources/options are available within 50km of your main practice (eg for a General Practice Management Plan/ Team Care Arrangement (GPMP/TCA))?
Please tick all that apply

- ¹ ☐ Pain Specialist
² ☐ Pharmacist
³ ☐ Physiotherapist
⁴ ☐ Occupational Therapist
⁵ ☐ Social worker
⁶ ☐ Exercise physiologist
⁷ ☐ Dietitian
⁸ ☐ None → If none, go to C1
⁹ ☐ Other → If other, please specify

B6. Are any of the above located within your main practice?

- ¹ ☐ Yes, all I selected above
² ☐ Yes, some I selected
³ ☐ No, none I selected

SECTION C: YOUR ATTITUDES TO CNCP

◆ **Please read each statement and tick (✓) the box next to your level of agreement**

C1. Opioid therapy should be reserved for people experiencing acute pain, cancer pain, or palliative care

- ¹ ☐ Strongly disagree
² ☐ Disagree
³ ☐ Neither agree nor disagree
⁴ ☐ Agree
⁵ ☐ Strongly agree

C2. Focusing on medication to reduce pain has limited benefits for peoples' quality of life and function over the long-term

- ¹ ☐ Strongly disagree
² ☐ Disagree
³ ☐ Neither agree nor disagree
⁴ ☐ Agree
⁵ ☐ Strongly agree

C3. When caring for people who experience CNCP, screening people for depression or anxiety is always important

- ¹ ☐ Strongly disagree
² ☐ Disagree
³ ☐ Neither agree nor disagree
⁴ ☐ Agree
⁵ ☐ Strongly agree

C4. Addressing sleep problems helps people cope better with their pain experience

- ¹ ☐ Strongly disagree
² ☐ Disagree
³ ☐ Neither agree nor disagree
⁴ ☐ Agree
⁵ ☐ Strongly agree

SECTION D: WEANING

◆ The following questions refer to your decision to initiate gradual weaning of the opioid dose to cessation

◆ Consider you have a patient with chronic non-cancer pain (CNCP) who has been prescribed opioids for 90 days or more

◆ Please read each statement. Tick the answer (✓) which best indicates the influence on your decision about opioid weaning

D1. Patient prefers to remain on opioids

- ¹ ☐ Less likely to initiate wean
² ☐ No influence on decision
³ ☐ More likely to initiate wean

D2. Patient expresses fear of weaning (the process or the outcome)

- ¹ ☐ Less likely to initiate wean
² ☐ No influence on decision
³ ☐ More likely to initiate wean

D3. Patient has low score on quality of life measure or functional outcome measure

- ¹ ☐ Less likely to initiate wean
² ☐ No influence on decision
³ ☐ More likely to initiate wean

D4. Patient has poor psychological health

- ¹ ☐ Less likely to initiate wean
² ☐ No influence on decision
³ ☐ More likely to initiate wean

D5. Lack of availability of effective alternate treatment

- ¹ ☐ Less likely to initiate wean
² ☐ No influence on decision
³ ☐ More likely to initiate wean

D6. Lack of availability of access to or support from specialist care

- ¹ ☐ Less likely to initiate wean
² ☐ No influence on decision
³ ☐ More likely to initiate wean

D7. Of the following options, what would encourage you *most* to wean and cease opioids?

- ¹ ☐ Lack of therapeutic response
² ☐ Ongoing request for opioids without accepting a broader based approach
³ ☐ Other → If other, please specify



There are only two items left

SECTION E: CASE STUDY

◆ This section describes a hypothetical patient. We understand that many factors contribute to a clinician's decisions. We are interested in determining how likely you would be to wean and cease opioids in this case, given the current circumstances at your practice

A 32 year old male unemployed labourer consults regularly regarding his chronic shoulder pain which has been present for 2 years. All potentially relevant medical interventions have been explored and ruled out. He has attended for a repeat script a week early, and describes the past week as 'really tough'. You suspect he is depressed and have recommended he consult a psychologist in the past regarding his low mood, though he has not attended to date. This patient has been using 10mg OxyContin 2x per day for over 12 months and says the medication 'takes the edge off.' He has not reached his physical or functional treatment goals

E1. How likely would you be to wean and cease opioids in this case?

- ☐ ¹ Very unlikely
- ☐ ² Unlikely
- ☐ ³ Neither likely nor unlikely
- ☐ ⁴ Likely
- ☐ ⁵ Very likely

E2. Write any comments you would like to add about caring for this person

SECTION F: MOST RECENT APPROACH

◆ Think about your most recent patient with chronic non cancer pain who has been taking prescribed opioid analgesics for 90 days or more

F1. Which response (please tick ✓) most *closely* resembles the approach you took?

- ☐ ¹ Not applicable. I do not prescribe opioids for this patient group
- ☐ ² Continued opioid prescription with dose adjustment to maintain pain relief
- ☐ ³ Rotated to another opioid to maintain pain relief and contain dose escalation
- ☐ ⁴ Initiated gradual opioid weaning to cessation program
- ☐ ⁵ Initiated broader primary team care eg utilising GPMP/TCA without weaning
- ☐ ⁶ Initiated switch to broader team care eg utilising GPMP/TCA with specific therapeutic goal to wean opioids to cessation
- ☐ ⁷ Other → If other, please specify

Thank you

Please return your completed survey in the reply-paid envelope provided

GP OPIOID SURVEY: PANADEINE FORTE VERSION (PAPER 2 &3)

SECTION E: CASE STUDY

◆ This section describes a hypothetical patient. We understand that many factors contribute to a clinician's decisions. We are interested in determining how likely you would be to wean and cease opioids in this case, given the current circumstances at your practice

A 32 year old male unemployed labourer consults regularly regarding his chronic shoulder pain which has been present for 2 years. All potentially relevant medical interventions have been explored and ruled out. He has attended for a repeat script a week early, and describes the past week as 'really tough'. You suspect he is depressed and have recommended he consult a psychologist in the past regarding his low mood, though he has not attended to date. This patient has been using 2 Panadeine Forte tablets 4 x per day for over 12 months and says the medication 'takes the edge off.' He has not reached his physical or functional treatment goals

E1. How likely would you be to wean and cease opioids in this case?

- ☐ 1 Very unlikely
- ☐ 2 Unlikely
- ☐ 3 Neither likely nor unlikely
- ☐ 4 Likely
- ☐ 5 Very likely

E2. Write any comments you would like to add about caring for this person

SECTION F: MOST RECENT APPROACH

◆ Think about your most recent patient with chronic non cancer pain who has been taking prescribed opioid analgesics for 90 days or more

F1. Which response (please tick ✓) most closely resembles the approach you took?

- ☐ 1 Not applicable. I do not prescribe opioids for this patient group
- ☐ 2 Continued opioid prescription with dose adjustment to maintain pain relief
- ☐ 3 Rotated to another opioid to maintain pain relief and contain dose escalation
- ☐ 4 Initiated gradual opioid weaning to cessation program
- ☐ 5 Initiated broader primary team care eg utilising GPMP/TCA without weaning
- ☐ 6 Initiated switch to broader team care eg utilising GPMP/TCA with specific therapeutic goal to wean opioids to cessation
- ☐ 7 Other → If other, please specify

Thank you

Please return your completed survey in the reply-paid envelope provided

APPENDIX 3

WORKSHOP MANUALS

PAPER 4

TRAINING PRIMARY CARE PROVIDERS IN OPIOID DEPRESCRIBING AND CHRONIC PAIN MANAGEMENT BASED ON
LOCAL GUIDANCE: A PRE-POST STUDY OF ATTITUDE CHANGE

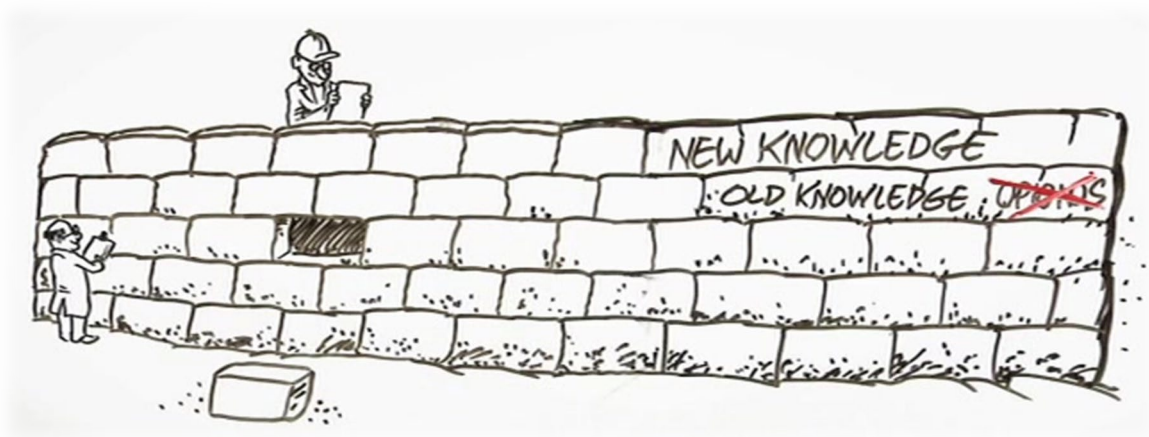
WORKSHOP MANUAL #1 (PAPER 4)

AIMM TO CHANGE THE PRACTICE OF PAIN MEDICINE IN PRIMARY CARE

WORKSHOP #1

RACGP Activity ID 12103/ACRRM code E1501UNWC/APNA Application ID: C14150

V140415



This document is confidential. It contains unpublished work of the researchers. The information contained herein is for the purpose of reviewing or performing this study.

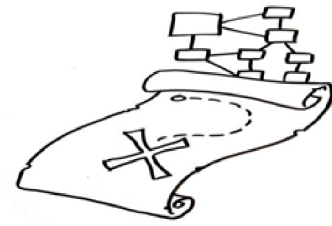
RACGP Activity ID for AIMM Workshop is 12103. This activity has been allocated 40 Category 1 points in the RACGP QI & CPD Program for the 2014-2016 triennium. Hunter Medicare Local is an authorised provider of accredited activities under the RACGP QI & CPD Program.

This activity has been accredited by ACRRM Code: E1501UNWC 30 PRPDP Points + MOPS

This activity has been endorsed by APNA according to approved quality standards criteria.

Application ID: C14150. Upon successful completion of this activity eligible participants may claim a total of up to 8 CPD hours.

AIMM Workshop



Presenters:

Dr Andrew Powell & Dr Hema Rajappa— Specialist Pain Medicine

Physicians, Hunter Integrated Pain Service (HIPS) at Hunter New England

Local Health District

Sandra Fitzgerald - Pharmacist & HealthPathways Liaison Officer, Hunter

Medicare Local (HML)

Ruth White – Physiotherapist (HIPS) & PhD candidate, Priority Research

Centre for Health Behaviour, School of Medicine and Public Health,

University of Newcastle

A three-part evidence informed process improvement strategy designed to influence work systems, enhance interdisciplinary communication skills and improve outcomes for patients experiencing chronic non-cancer pain whose use of opioids has exceeded 90 days.

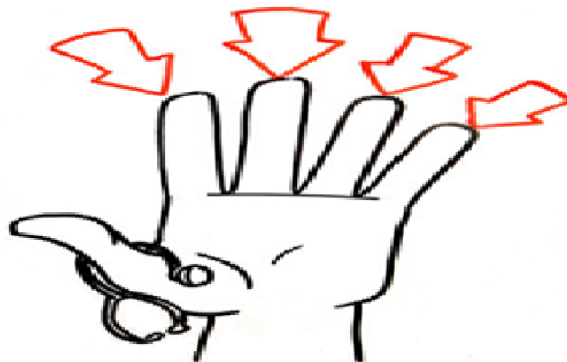
Section 1 **Prepare** for learning activity with a 30 minutes pre-disposing activity designed to familiarise learners with relevant practice resources

Section 2 **Learn, practice & read & reflect** 2 x 2 hour group interactive learning sessions & read and reflection on communication skills

Section 3 **Reinforce & review** with 2 hours of pain medicine mentorship via telephone and/or email used plus an individual interview

Section 1: Learning Objectives

- Demonstrate organisational support for patients experiencing chronic non-cancer pain whose opioid use exceeds 90 days
- Demonstrate knowledge of professional role and confidence in managing and monitoring patients who are experiencing chronic pain whose opioid use exceeds 90 days
- Demonstrate use of optimal communication skills in every pain medicine encounter
- Demonstrate good stewardship in the field of pain medicine



Background

Globally, management of people who experience chronic non-cancer pain is moving away from specialist tertiary centres and into primary care. In line with this, the Australian Pain Strategy [1] has called for the development and evaluation of patient-centred service delivery and funding models for pain management in the community which provide interdisciplinary assessment, care and support.

To date, there is currently a relative lack of rigorous evidence regarding best practice in primary care settings [2,3]. A US study explored a multidisciplinary approach to managing opioid-treated patients experiencing chronic non-cancer pain via a multidisciplinary team consisting of the patient's primary care physician, a clinical pharmacist, a program assistant with training in health behaviour, and a psychiatrist [4]. The intervention consisted of structured clinical assessments, monthly follow-up, pain contracts, medication titration, and psychiatric consultation. The approach resulted in improved pain, depression, and disability scores at 3- month follow-up [4]. Another primary-care-based program delivered by a psychologist and physical therapists produced greater reductions in back pain-related fear, average pain and activity limitations in comparison to a usual care control group [5].

Emerging evidence suggests effective and safe alternatives to chronic opioid dosing exist for people who are experiencing chronic non-cancer pain. Central to this is using consistent whole-person language in a co-ordinated multidisciplinary team approach to deliver an optimal behavioural intervention. To design and implement the optimal behavioural intervention requires a strong theoretical framework. One such framework uses the comprehensive three layered 'behaviour change wheel' [6].

Given the promising evidence for a multidisciplinary approach, the need to increase community access to timely good practice care for people experiencing chronic non-cancer pain and the evident challenges associated with opioid use beyond 90 days, the research team has developed a primary care model for managing chronic non-cancer pain called the Assess, Inform, Manage and Monitor (AIMM) approach.

The approach involves engaging the participant in the rationale for weaning and ceasing opioid use in line with new practice guidelines [7] and using the skills of a primary based multidisciplinary pain team. The team includes a general practitioner to oversee the supportive interventions and guide the weaning process; the chronic-disease practice nurse to co-ordinate care and support health changes; [8] a community pharmacist to educate and develop a medication reduction plan; [9] a psychologist to target the prognostic variables for persistence such as

co-morbid anxiety [10] and depression [11] if present; a physiotherapist or an exercise physiologist to tailor a function-based planned activity approach in concordance with each patient's needs and preferences of activity goals [12] and a dietitian to assist the patient in achieving optimal nutrition [13].

What is our target behaviour to change?

Practice staff are to be trained in evidence based approaches to pain and behaviour change. The theoretical framework in behavioural terms that the AIMM intervention is based on is called the COM-B model [6]. This model lets us explain any behaviour from three fundamental aspects: opportunity and capability and motivation. This means that for any behaviour to occur, the person has to have physical and psychological capability, they have to have opportunity, both socially and physically and they also need to be motivated. It is also important for every behaviour to be understood in its context.

When it comes to pain, helping patients feel better, whilst worthwhile, is not the goal of treatment. Instead the goal is for the patient to be able to do things[14]. Similarly, it is not a simple matter for people to switch from a passive approach of managing pain with no expectation of recovery to a pro-recovery, active approach. Many elements influence whether the behaviour will occur. People may have problems with their physical and

psychological capability, as well as in the areas of opportunity and motivation. The AIMM approach will target all three of these behavioural components.

From an opportunity perspective, the target population will be managed by a prepared, pro-recovery, primary care pain team with each professional sharing a common 'complex systems' language and optimising every opportunity to repeat the key, evidence informed pain messages. In terms of capability, people experiencing pain will be supported with assessment, informing, management and monitoring by a team of professionals who are in turn being supported and mentored in a pro-recovery, active and complex pain approach. For motivation, AIMM will utilise brief behavioural change motivational videos [15,16] and related content on Hunter Integrated Pain Service website.

The research team believes that by targeting all three components of behaviour change: opportunity; capability and motivation that the likelihood of reducing passive behaviours and increasing the use of active behaviours will occur.

The research team is also tapping in to a broader comprehensive strategy to support this behaviour change. Hunter Integrated Pain Service has developed a practice guideline 'Reconsidering opioids'

As the information in the guideline gradually disseminates, it is hoped to in time to

influence the 'opioid-genic' environment in which many people who experience chronic non-cancer pain have existed for a decade or more. Further Hunter Medicare Local has supported the dissemination of the weaning and stopping opioids message via their involvement with the Understanding Pain videos [15,16]. These basic education and persuasion initiatives are targeting clinicians and patients with the key message that remaining on opioids is no longer an evidence informed strategy and that a better focus is to work on supporting people learn ways to behave that will help them psychologically and physically recover.

Of course, for behaviour to 'stick' will require close monitoring. Patients will need support to regulate their behaviour and not relapse to passive strategies. Having a supportive environment with professional help available is therefore the key to success.

Clinical Protocol Synopsis

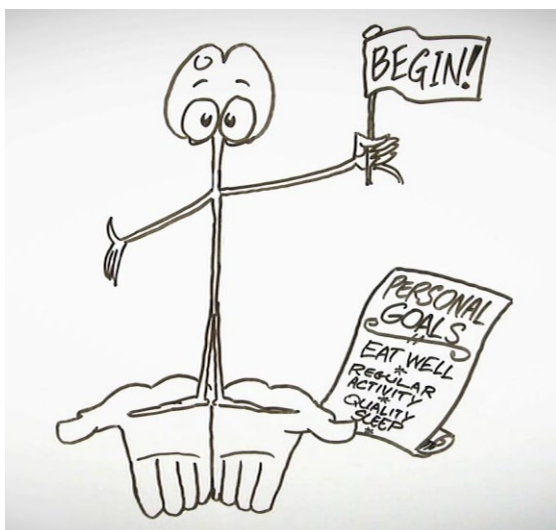
National chronic non-cancer pain management guidelines have not been established in Australia. Existing evidence does not support the long-term efficacy and safety of opioid therapy for chronic non-cancer pain. Limited overseas evidence shows shifting care toward primary care and weaning of opioids is linked to improved outcomes for people who experience chronic non-cancer pain.

The Assess, Inform, Manage and Monitor (AIMM) approach is primary care based and designed to reflect evidence-based management of people who are currently experiencing chronic non-cancer pain and who have been using opioids for 90 days or more. The pilot project aims to examine the following in a final sample of 100 adults with chronic non-cancer pain: a) the feasibility and acceptability of AIMM from the patient perspective b) health care provider perspectives of AIMM in terms of feasibility, acceptability and fidelity to the model during care delivery.

A group of health care providers associated with two general practices (general practitioners, chronic disease practice nurses, dietitians, accredited exercise physiologists, physiotherapists, pharmacists and clinical psychologists) will be trained to deliver AIMM. AIMM training involves i) a brief preparatory activity ii) two face-to-face x 2hour interactive training sessions and iii) participation in mentorship and individual reflective practice.

Patients aged 18 or older with chronic non-cancer pain and opioid use >90 days will be identified via an electronic search of practice records. They will be invited by their general practitioner (GP) to participate. Consenting participants will complete an electronic health assessment or equivalent pen-and-paper questionnaire, which will screen for pain intensity, pain interference, depression, post-traumatic stress disorder, self-efficacy and

other factors. A tailored General Practice Management Plan (GPMP) for each participant will be coordinated by the chronic disease practice nurse using Team Care Arrangements (TCAs). Depending on need and availability, the plan will include a pharmacist home medication review, GP and nurse support to reduce opioid use, psychologist support to manage depression, anxiety or stress, dietitian assistance to improve nutrition and target body weight reduction and a physiotherapist or accredited exercise physiologist for assistance to address activity levels and sedentarism. The plan components have been developed following an evidence review by an expert advisory panel (pain specialist, GP, chronic disease practice nurse, psychologist, behavioural scientists, physiotherapists, exercise physiologist, pharmacist).



Session 1: Resources

AIMM TRAINING ACTIVITY

1. View & discuss electronic media “Understanding Pain: Brainman stops his opioids” [15]
2. View & discuss electronic media “Understanding Pain: Brainman chooses” [16]
3. GPMP/TCA
4. Summary data sheet
5. Electronic media (on USB)

Key pain management messages contained in scripts from the Understanding Pain: videos [15,16]

Electronic media provided

-  5MB Understanding Pain Brainman stops his opioids
-  7MB Understanding Pin Brainman chooses
-  Chapter I Risk of Addiction, Opioids for Chronic Non-Cancer Pain
-  Chapter II High Dose Opioids for Chronic Non-Cancer Pain
-  Chapter III Discontinuing Opioid Therapy
-  Effectiveness of Opioids for Chronic Pain
-  High Dose Opioid Therapy
-  Opioids for Chronic Pain Addiction is NOT Rare
-  Opioids for Chronic Pain Understanding Physical Dependence
-  Rethink SugaryDrink
-  Understanding Pain What to do about it in less...

Session 2: Changing behaviour: Changing roles in pain medicine

AIMM TRAINING ACTIVITY: Behaviour Change

Discuss the Behaviour Change Wheel

Michie, S., van Stralen, M. M. & West, R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. Implement. Sci. 6, 1–11 (2011)

The framework that AIMM will be utilising is a 'behaviour system' which involves three essential conditions: capability, opportunity, and motivation. The authors term this the 'COM-B system'.

This COM-B system forms the hub of a 'behaviour change wheel' (BCW).

Around this are positioned the nine intervention functions aimed at addressing deficits in one or more of these conditions; around this are placed seven categories of policy that could enable those interventions to occur [6].

AIMM TRAINING ACTIVITY: Changing roles

Read through your role and discuss

Agent: GP

Intervention agent, role summary, behavioural target and process

Role summary

The GP uses optimal communication in their role as educator; persuader; incentive giver; enabler, restrictor and modeller. The GP is no longer cast in limited role of 'pain reliever'[17] and instead routinely uses a whole-person approach to explain the broader meaning of the ongoing pain experience and shift towards a diagnosis of central sensitivity; the importance of working towards life goals; the harms of long term opioid use and redirects towards broader care in an optimal healing environment.

Primary behavioural target

↓opioid use/dose

↓opioid related health care visits

↓other medication use related to chronic non-cancer pain (eg NSAIDS/benzodiazepines)

↓smoking

↓body weight if applicable (kg)

Initial process

When an eligible participant with a flagged medical record attends the practice, the GP will engage the patient with the study goals, provide verbal information and invite participation in the AIMM study. Interested participants will be invited to pick up information statement and consent form from practice administrative staff or the chronic disease practice nurse who will act as a research assistant. Patients who give consent (either on day or at later date) will be given the option of making two appointments at the practice. The first to complete the baseline electronic questionnaires & the second a week later to complete a GPMP/TCA long appointment using the summary results received from the researchers. Alternately, patients can take the Participant Information Statement with Informed Consent Form with an equivalent conventional pencil-and-paper questionnaire home to complete and forward by fax or mail to the researchers who will forward a summary of results to the practice who will then book an appointment to complete a study specific GPMP and TCA. This may be an initial GPMP/TCA (or a review if the patient already has a current plan).

A referral for psychological support will be recommended if baseline survey results indicate psychological distress. A total of five allied health sessions may be available to be allocated to the physiotherapist/accredited exercise physiologist and dietitian. The GP will ask permission from the patient to organise and participate in a case conference with the clinicians involved in delivering the GPMP/TCA to which the patient may or may not attend. A record of the conference will be kept in the patient's medical record.

Additionally, explain to patient the GPMP and TCA will outline all the necessary activities that need to be done to ensure optimal management of chronic non-cancer pain including referral for accredited practicing pharmacist to be put in contact with the person to set up a Home Medication Review.

Later processes

Once the results of the Home Medication Review have been received, GP will attend the participants' next appointment with the chronic disease practice nurse to advise the person of the outcome of the Home Medication Review and required medication changes in agreement with the person in pain and signs off on recommendations [9] for medication management plan. Copies to be provided to the patient and accredited pharmacist.

- Fortnightly reviews and check of self-monitoring
- Support wean off medications utilised in context of chronic non-cancer pain (NSAIDS/opioids/sedative, anxiolytics)
- Discuss progress with GPMP/TCA
- Discuss emotional distress/mental health issues with patient
- GP checks after chronic disease practice nurse and patient co-complete review of all matters set out in the plan
- Amend plan as required

Agent: GP

Evidence for precise details of active intervention functions classified using the 'COM-B' model of behaviour from the behaviour change wheel[6] framework

Education

- Reinforce key messages and themes from the Understanding pain videos[15,16]
- Address beliefs and expectations [18-20]
- Acknowledge new models for the treatment of pain.[21]
- There is now an integrated approach to health [22] with less focus on tissue inputs and more on the nervous system [23] and broader whole-person frameworks for managing pain [24, 25]
- Reinforce reconceptualization of pain, cortical reorganization [26-30]
- Deliver cessation of opioid focus message [31,32] due to recent shifts in knowledge regarding safety, efficacy and misuse [33,34] prompting a shift to align each patient's GPMP with new practice guidelines which recommend gradually stopping opioids beyond 90 days [7]

- Distribute relevant community educational materials [35-37]

Persuasion

- Semi-directive communication skills required to persuade the unwilling patient who may expect the GP to passively provide them with opioid based temporary pain relief [38, 39]
- Autonomy supportive persuasion e.g 'smoking is a matter of choice, but there are important health related reasons e.g. sensitized nervous system [40] for refraining '[41]
- Long term use of medication for chronic non-cancer pain does not resolve pain problems [17]
- 'These drugs have not proved helpful in improving your pain or your function'[42]

Incentivisation

- Reward effort with verbal praise and encouragement, contingent with progress on eg reduced dependence on nicotine; opioids [43,44]

Enablement

- Support behaviour change [45] by arranging referrals to wider primary health pain management care team.
- Promote self-monitoring for its influence on establishing new habits [45,46]
- Later-ongoing support for behaviour change via team care [45]

Restriction

- Initially boundaries set re opioid medication opioid usage, ongoing medication use is an undesired behaviour [34]
- Reinforce newer restrictions being placed around opioid given evidence now coming forth demonstrating continuation of chronic opioid therapy is more common in some groups, for example in those with nicotine dependence or with major depression [43,44,47-52]
- Following Home Medication Review, new medication plans are put in place, preferably a jointly agreed rate of reduction will be determined [42]

- State a nationally recognised best practice strategy of weaning off medications over a period of days or up to two weeks [53] will be promoted, acknowledging that some people, perhaps those with ongoing stressors, [54] may be left with persistent opioid craving for some months after the weaning process [55]
- Acknowledge possibility that a small proportion of people will strongly decline the potential cessation of opioids [56] These people may be considered suitable for referral to tertiary pain management services or for maintenance therapy due to prescription opioid dependence [57,58] and this would be considered a shift to a provider-centred approach for safety reasons [7,59-61]

Modelling

Use examples of other patients who have become drug-free e.g. 68% of people in this pain program remain drug free at six months [62]

Agent: Chronic Disease Practice Nurse

Intervention agent, role summary, behavioural target and process

Role summary

The chronic disease practice nurse co-develops the GPMP/TCA for the person with chronic non-cancer pain and provides a case management role. The chronic disease practice nurse is a team organiser and service enricher who utilises an optimal communication in their role as educator; incentive giver; trainer; enabler; persuader; trainer and environmental restructurer. The chronic disease practice nurse routinely uses a whole-person approach to co-set goals, and reinforces the broader meaning of the pain experience. The chronic disease practice nurse reinforces broader practice change including offering assistance with opioid wean and cease support to enable recovery. The chronic disease practice nurse keeps general study log sheets and dates and initials attendance on each patient participants log sheet when intervention component actually occurs.

Primary behavioural targets

↓opioid use/dose

↓smoking

↑fruit and vegetable intake

↓alcohol intake if exceeding Australian guidelines

↑minutes engaged in moderate physical activity

↓minutes engaged in sedendary activity (sitting, reclining, lying down)

↑or↓body weight (kg) as necessary

↑social supportive contacts

↓use of (passive) health resources

Early process

Patient attends planning session at practice. The chronic disease practice nurse has a summary print out of baseline AIMM survey responses, flagging potential issues to guide the consultation. The chronic disease practice nurse and patient utilise clinical management software (most commonly Best Practice or Medical Director in Australian settings) with pre-filled AIMM study chronic non-cancer pain GPMP/TCA template to co-complete which GP checks and signs. The chronic disease practice nurse gains patient agreement for information to be provided to allied health care providers. Agree to review plan in 3 months. TCA requests and plan are faxed to providers, including Better Mental Health Scheme plan referral completed and faxed when indicated by AIMM outcomes and Home Medication Review referral is completed and emailed/faxed. The chronic disease practice nurse provides a copy of completed GPMP to patient. The chronic disease practice nurse completes study log sheets.

Later processes

- Discuss outcome of the Home Medication Review and required medication changes in agreement with the person in pain.
- Fortnightly reviews and check of self-monitoring
- Support wean off medications utilised in context of chronic non-cancer pain (NSAIDS/opioids/sedative, anxiolytics)
- Discuss progress with all matters set out in GPMP/TCA plan
- Discuss emotional distress/ mental health issues with patient

Agent: Chronic Disease Practice Nurse

Evidence for precise details of active intervention functions classified using the ‘COM-B’ model of behaviour from the behaviour change wheel [6] framework

Education

- Show Understanding Pain videos [15,16]
- Reinforce key messages.

Incentivisation

- Provide reinforcement or reward contingent on efforts to undertake the new behaviour e.g. daily walk.[63]

Training

- Goal setting, targeting reactivation will be undertaken [64,65] as part of recovery process, based on positive expectations of a change in perceived trajectory subsequent to accepting that experiencing chronic non-cancer pain does not mean a threat to ongoing well-being [66]
- Reinforce that having a value based goal is important factor in self-determination and the rewards are there for the patients taking if they work on their skills [67] Teach person who is experiencing chronic non-cancer pain to self-monitor adherence to active strategies.
- The focus is function and gradual increase in planned physical activity.

Enablement

- Offer a broader conceptual change messages and recommends viewing of Hunter Integrated Pain Service website [68]
- Facilitate referrals to psychology and others enhance self-efficacy [69] and reinforce healthy choices [70,71]
- Welcome participants spouse or significant other involvement [70]

Environmental restructuring

- Strengthen the therapeutic alliance around practice expectations to wean and cease long term opioid therapy with offer of enhanced supportive care [72]
- Completion of GPMP/TCA pre-populated chronic non-cancer pain and opioid use template [73] in collaboration with the person who is experiencing pain [74]
- Encourage a shift toward a new interaction within the practice, focus on wellbeing and a changed social environment [75-79]
- Reinforce that the practice systems have been adjusted to ensure commonly seen co-morbid [80,81] mental health disorders such as anxiety, [10] depression, [82,83] or post- traumatic stress, [84] are no longer going unrecognized [85] for people who experience chronic non-cancer pain.
- All pain 'behaviour' or verbal reports are ignored, thus providing an optimal environment to facilitate pain behaviour being extinguished [17, 86,87]

Agent: Clinical Psychologist/Psychologist

Intervention agent, role summary, behavioural target and process

Role summary

The psychologist utilises optimal communication in their sessions for those people with chronic non-cancer pain and higher distress scores on K10 and who are amenable to an offer of a supportive intervention

The psychologist gathers history of predisposing, precipitating factors and provides formulation to the person using a predominant though not exclusive cognitive-behavioural perspective geared toward fostering self-management and reducing the persistent interruption of pain.[88,89] Roles include using education, persuasion, verbal incentives, training in active coping strategies and enablement, particularly via support and encouragement of regular adherence to self-management strategies. The psychologist will facilitate change in behaviour and thinking which may provide opportunity to motivate the person in pain to develop insight and regulate emotions more effectively.

Primary behavioural targets

- ↑monitoring of beliefs (↓number catastrophic/negative beliefs)
- ↑conversations that do not commence with pain complaint
- ↑use of active coping skills e.g. relaxation
- ↑use of optimal sleep skills e.g. sleep hygiene
- ↓unhelpful/passive strategies including opioid dose
- ↑social supportive contacts

Process

Referral received under Better Access scheme which is an Australian Government initiative to improve the treatment and management of mental illness within the community. The psychologist will be provided with a copy of the participant responses to the AIMM baseline surveys to assist in identifying key psychological issues which are amenable to intervention including distress, anxiety, depression and beliefs surrounding perceived disability.[90] Patient attends psychologist who conducts initial assessment and sends report to GP. Up to 10 sessions may be accessed in Australian settings under the Better Mental Health Scheme for people with depressed mood and other prognostic psychosocial problems.

Agent: Clinical Psychologist/Psychologist

Evidence for precise details of active intervention functions classified using the 'COM-B' model of behaviour from the behaviour change wheel [6] framework

Education

- Reinforce key messages and themes from the Understanding Pain videos [15,16]
- Explain AIMM assessment findings. Can use timeline and identify exposure to life event/s which may add to the allostatic load [91] the person experiencing chronic non-cancer pain carries [92]
- Engage patient with acceptance-based approaches [93,94] whilst still promoting that people are capable of moving from suffering [95] with shift and persist strategies [96]
- Explain importance of not suppressing the emotional aspects of pain [97]
- Explain that pain, depression and catastrophizing are linked [98]
- Reinforce that a mind-body approach allows healing to emerge [75,76,99]
- Strategies to change reaction to anxiety and problem-solving help [100]
- Explain importance of commencing more conversations without a complaint of pain [101]
- Discuss prognostic variables for persistence such as co-morbid anxiety [10] and depression [102-108] and reinforce that an intervention can change the outcome trajectory.
- Our timeline [109] gets biologically embedded under our skin, for example between hostility, pain and inflammation [110,111]
- Pain can have deeper meaning and symbolism can be important [77,78]
- Pain is an opportunity to re-examine life, ongoing difficulties with pain will be viewed as normal psychology, not pathology [89,112]
- Explain links between post-traumatic stress disorder and pain [113]
- Discuss that if the patient receives something 'satisfying' i.e. opioids then the behaviour will continue because it is reinforced [70]. This quickly becomes a habit of how to manage and care for oneself when in pain. From Fordyce, [114] we can view 'pain behaviours' in some respects as learned and apply operant principles to help extinguish them.

Persuasion

- Actively attempt to change the person's attitudes beliefs and emotions regarding the pain experience. Use of examples from the pain field such as Henry Beecher who had studied

wounded men in battle and taught that the pain experience had more to do with the relationship of the significance of the wound than the wound itself [115,116]

- Explain the tendency for people to over use medication in times of stress, [32]even though passive or chemical coping [32] is not helpful in the long term.
- Verbal persuasion can be used to encourage patients in their capability regarding goal achievement [117]
- Explore issues around the futility of becoming trapped in a desperate seeking of the reward of temporary pain relief [32,60,118] and attempt to reach a new agreement on active behavioural strategies and intent [119]

Incentivisation

- To increase a favourable attitude towards achieving functional goals via use of new skills, provide contingent verbal reward e.g. praise for activity gains or relaxation practice and withdraw positive reinforcement for any withdrawal of activity initially and fade (the praise) as treatment progresses [42, 120-122]

Training

- Relaxation skills to shift attention away from being distressed by pain sensations to be used during day and evening [42,123]
- Skills that reinforce new learning around selective attention to threat not helping the pain experience [124]
- Work on non-pharmacological sleep interventions e.g. stimulus control, sleep-restriction therapy, relaxation techniques, cognitive therapy and sleep hygiene education [125]
- Adaptive coping such as mindfulness meditation [37] or relaxation skills where people have a psychophysiological response to pain i.e. muscle tension [126]
- Training in more assertive communication and coping skills [122]
- Guide person with chronic non-cancer pain to self-monitor adherence to active strategies
- Guide person in relapse prevention [42]

Enablement

- Support person is welcomed to some or all sessions [17,42]

The therapy will encourage home tasks as they are important for self-efficacy and to becoming competent in self-managing [67]

Agent: Accredited Pharmacist

Intervention agent, role summary, behavioural target and process

Role summary

The Accredited Practicing Pharmacist uses optimal communication during the undertaking of the Home Medication Review. Roles include using education, enablement and restriction. The accredited pharmacist will review each patient's medications, including complementary and alternative medicines, to achieve safe, effective and appropriate use of medicines by detecting and addressing medicine-related problems that interfere with desired patient outcomes. The pharmacist will look particularly at opioid use and support the team in educating the patient around the role of opioids in chronic non-cancer pain and advise the GP and support the patient with any opioid weaning plans. The pharmacist will also look at the impact of this on other medications (e.g. reduction in laxatives), encourage the patient to engage with his/her pain action and recovery plan and make recommendations to optimise pain outcomes.

Primary behavioural targets

↓opioid use

↓all other pain and related medications e.g. benzodiazepines (if applicable)

Process

Notification to conduct a Home Medication Review is received and approval sought from Medicare to conduct a home based session as part of the GPMP. The Home Medication Review is conducted at the person's preferred address and time, preferably in the person's home where possible. The interview takes 60 minutes. The accredited pharmacist will review the information from the Home Medication Review and develop a written suggested management strategy in a GP-friendly template report which will be given to the GP and discussed. The report will detail recommendations regarding any advisable changes to medications, whole person health advice discussed and education given.

Agent: Accredited Pharmacist

Evidence for precise details of active intervention functions classified using the 'COM-B' model of behaviour from the behaviour change wheel[6] framework

Education

- Reinforce key weaning and stopping medication for chronic non-cancer pain message from the Understanding Pain videos [15,16]

- Wean and cease message will be reinforced with recognition of poor evidence of prescription of chronic opioid therapy beyond 90 days [45]
- Utilise Hunter Integrated Pain Service practice documents as appropriate [68]

Enablement

- The accredited pharmacist will recommend viewing of Hunter Integrated Pain Service website [127] and will promote the practice guideline 'Reconsidering opioid therapy- a Hunter New England perspective'[7]
- A support person will be welcomed to attend the Home Medication Review.

Restriction

- Reinforce safe use of medicines, emphasizing the dangerous assumption that opioids which were previously assumed safe was based on unsound science and widespread misinformation [128]



Agent: Dietitian

Intervention agent, role summary, behavioural target and process

Role summary

The dietitian uses optimal communication in their role as educator, persuader, incentive giver, trainer and enabler and will be allocated either two or three sessions with the person with chronic non-cancer pain according to need by the chronic disease practice nurse and GP. The dietitian will assess the person who is experiencing chronic non-cancer pain about their current typical 24-hour nutritional intake, acknowledge helpful current dietary habits and negotiate changes and monitoring strategies to assist person progress toward an optimal lifelong anti-inflammatory dietary approach to reduce sensitivity.

Primary behavioural target

↑fruit and vegetable intake if not meeting or preferably exceeding the Australian guidelines

↑fibre intake if insufficient

↑protein intake if insufficient

↓alcohol intake if exceeding Australian guidelines

↓↑weight if not in healthy weight range

Process

Depending on individual need, the patient will attend 2-3 allied health sessions with the accredited practicing dietitian as part of GPMP developed in conjunction with the chronic disease practice nurse and GP. The dietitian will clarify aspects of the baseline AIMM assessment. The dietitian will assess the typical 24 hour nutritional intake of the person who is experiencing chronic non-cancer pain current and their self-management strategies and will specifically address planning for long term diet and choices as it relates to good health and pain in conjunction with dietary approaches relevant for possible co-morbidities. A report will be provided to the GP.

Agent: Dietitian

Evidence for precise details of active intervention functions classified using the 'COM-B' model of behaviour from the behaviour change wheel [6] framework

Education

- Reinforce all key messages with focus on key messages from the Understanding Pain videos [15,16]
- Explain AIMM assessment findings and reinforce key change messages
- Explore the consequences of diet induced pro-inflammatory state [129] and other risk factors [130]
- Explore food and nutrition and newer understanding of chronic non-cancer pain emphasizing personal choices and how this might link with dietary management of co-morbidities [25,131]
- Work toward shift to sustainable anti-inflammatory [132,133] high fibre, antioxidant rich [134], dietary program to combat potential low-grade inflammation, known as metaflammation [135,136]
- Educate regarding protein requirements for muscle building and good health [137]
- Educate regarding healthy gut bacteria and the two-way communication influencing the stress response [138]
- When current diet is lacking, the anti-inflammatory effects of supplements such as up to 4 grams of omega-3 polyunsaturated fatty acids [13] and relevant vitamins will be discussed as a short-term intervention.

Persuasion

- When relevant, goals will be made and plans will be developed to promote and encourage gradual weight loss of no more than 0.5kg per week, increase fruit and vegetable consumption and decrease alcohol intake if exceeding Australian guidelines [139]
- Explain that opioids, benzodiazepines, nicotine, alcohol, cannabis and compulsive overeating may involve the same reward centre [140]

Incentivisation

- Work together on creating expectation of non-food rewards (e.g. extra social engagement for engaging in optimal eating behaviours) [141]

Training

- Encourage person with chronic non-cancer pain to self-monitor.
- Encourage goals to be achieved in wider social context [122]

Enablement

- Offer regular assistance and offer positive reinforcement of healthy choices made [70]
- Support person welcomed to sessions.
- Offer access to community information on nutrition available on Hunter Integrated Pain Service website [68]

Agent: Physiotherapist or Accredited Exercise Physiologist

Intervention agent, role summary, behavioural target and process

Role summary

The physiotherapist or accredited exercise physiologist uses optimal communication in their allocated two or three sessions. Roles include using education, persuasion, incentivisation, training in active strategies, modeling of optimal behaviour and enablement, particularly via activity support and encouragement of regular adherence to self-management strategies.

Primary behavioural target

↑physical activity levels to meet Australian guidelines

↑function

↑use of optimal sleep skills e.g. sleep restriction if insomnia present

↓sedentary behaviours

↓avoidance behaviours

Process

Depending on individual need, the patient will attend 2-3 allied health sessions with the physiotherapist or accredited exercise physiologist as part of GPMP developed in conjunction with chronic disease practice nurse and GP. The health care professional will clarify physical and functional aspects of the baseline AIMM assessment and collect any additional activity data e.g. strength tests. Based on this information, plans will be made to develop a long term self-directed activity plan. A report will be provided to the GP.

Agent: Physiotherapist or Accredited Exercise Physiologist

Evidence for precise details of active intervention functions classified using the 'COM-B' model of behaviour from the behaviour change wheel [6] framework

Education

- Reinforce all key messages with focus on key messages from the Understanding Pain videos [15,16]
- Any negative or fatalistic beliefs about activity and pain or prognosis will be examined and a broader mind-body approach will be engaged where planned physical activity is viewed as essential 'medicine'[99,142-144]

Persuasion

- Persuasive language will reinforce physical inactivity as a contributor to long term widespread pain
- Reinforce inactivity over a week has similar health costs to smoking a packet of cigarettes as well as being a risk factor for medication overuse headache [145-147]
- Undertaking activity, starting at low levels is to be linked to valued life goals and is able to be sustained and slowly upgraded until goals are achieved.[148] Discuss importance of behavioural experiments to disconfirm beliefs that activity=harm [101]
- If insomnia exists, use persuasive language to encourage exercise participation, optimal sleep hygiene and limit time in bed to average calculated sleep time [149-151]

Incentivisation

- Set behavioural experiments and goal attainment with a rate of activity progress that will have 80-90% rate of success, use praise or engage family in praise when exercise quota e.g. 200m walk without rest is met [14,101]
- Reinforce healthy behaviours e.g. optimal protein intake for muscle building [152]

Training

- The physiotherapist or accredited exercise physiologist will assess the typical 24 hour activity pattern that the person with chronic non-cancer pain is currently undertaking. Some physical activity is better than none and a focus on strengthening activities in particular may reverse some of the loss of lower extremity muscle function associated with rest [153,154]
- A psychologically informed graded approach to resuming normal activity and function will be utilized [152,155-161]
- Set baselines at realistic starting levels, working to tolerance then stopping does not work if it means excessive rest, instead, work to quota [148] is emphasized [34] The preferred approach will be to undertake planned physical activity in a non-flaring manner at low intensity which is more likely to have a pain relieving effect [162]
- Ensure sleep restriction is incorporated if insomnia is a target behaviour

Enablement

- Guide person with ongoing pain to self-monitor adherence to physical and functional action plan
- Specific non-resting, non-opioid use flare-up plans will be taught and discussed identifying the possibility that additional planned activity may lead to temporary increase in usual pain levels. Welcome support person to sessions. Revise goals when necessary [101]

Modelling

- Use examples of others who have reduced sedentarism/developed regular strength/daily walking routines

Script: Understanding Pain: Brainman stops his opioids

We all accept medicine advances as knowledge grows. In treating complex persisting pain, there's been too much focus on opioid medication and not enough on the *most* effective ways to improve pain and wellbeing.

Most people taking opioids experience early gains but it doesn't last. Taking more may seem to help at first, but in fact it makes matters worse. Along with well-known side effects, scientists have also discovered that people taking opioids have other problems. They are more likely to fall, have lower sex drive, lower immune function and poorer quality sleep. There's also an increased risk of accidental overdose and death. We now know that opioids can quickly sensitize the nervous system and actually *increase* pain. For some people addiction develops. This makes it difficult to stop opioids, despite the harms. Other people use opioids to cope and say it gives them 'a little bit of comfort' BUT that's not a reason to remain on them.

Knowledge changes. Opioids are no longer recommended for complex chronic pain.

So, get support,

Get an active management plan

And get started.



Script: Understanding Pain: Brainman chooses

Many people with long term pain don't feel believed and get trapped in a never ending loop of suffering. Changing direction brings hope. New ideas have revolutionised pain thinking and care. The focus is more on the WHOLE person and less on the body structures. Chronic pain *can* change; it's not always an enduring disease or problem.

First, getting assessed and ruling out anything dangerous *is* important, then, it's time to 'shift focus,' get informed, and manage pain from a broad, active perspective.

Next, everyone can benefit from making the mind-body link. Drawing a timeline helps make sense of the emotional impact of life events, before, during and after the onset of pain. Addressing underlying depression or anxiety *early* is critical to reducing pain over time.

People also say they feel isolated. Re-connecting to life makes a real difference. Finding new purpose and positive ongoing support benefits the recovery process.

Sleep, rest and physical activity habits all impact on function. Taking practical steps toward improving sleep, limiting rest, *and* establishing regular exercise helps. In time, confidence builds, and trusting that the body's rhythms and limits *can* change brings a renewed sense of well-being.

Last, good nutrition can't be ignored. Optimizing our diets with plenty of natural food lets healthy gut bacteria thrive and brings less inflammation and pain.

This is *not* just new age thinking. These *discoveries* have *shifted* the world's understanding of how *best* to treat pain.

Decreasing pain starts with *knowing about pain* and choosing to work on sustainable strategies.

Knowledge about pain *now* and less pain in the *future*?

Now *that's* a reward worth working for.



GP MANAGEMENT PLAN (GPMP) MBS ITEM No. 721 (CHRONIC PAIN & OPIOID USE >90 DAYS)

Date of last GPMP/TCA:

PATIENT DETAILS:	CARER DETAILS (if applicable)	GP DETAILS:
Patients Name: <PtFullName> Date of Birth: <PtDoB> Address:<PtAddress> Phone:<PtPhoneH><PtPhoneH> mob: <PtPhoneMob> Does patient identify as Aboriginal or Torres Strait Islander: <u><Aboriginal or Torres Strait Islander?></u> Language at home if other than English: Medicare No: <PtMCNo> Line: <PtMCLine> Exp: <PtMCEpiry> Pension No: <PtPensionNo> Health Insurance : <PtInsFund> Veterans Affairs Number: <PtDVANo>	Details of Patient's Carer /Next of Kin Name: <NOKName> Relationship: <NOKRelation> Contact details: <NOKContact>	Details of Patient's Usual GP: <DrDetails>

PAIN ASSESSMENT SURVEY RESULTS

Waist measurement <waist measurement>

Smoking status: <SmkStatus>

Alcohol intake AUDIT-C Score: <Audit C Score>

Fruit and Vegetable intake: <Fruit and vegetable dietary intake>

Sedentary behaviour: <Sedentary behaviour>

Physical activity: <Physical Activity>

Co-morbidities : <number co-morbidities /20>/20

K10-Psychological Distress: K10 Score = <K10 score /50> , K10 Range /50=<K10 Range /50>

BPI Pain Intensity: <Intensity of Pain /10> /10

BPI Pain Interference: <Interference with Function /10> /10

Primary Care PTSD screen: <PTSD Screen y/n>

Confidence to function: <confidence to Function Score /60> /60 (Where a high score = higher level of confidence)

MAIN FUNCTIONAL PROBLEM IDENTIFIED & 3 MONTH ACTIVITY GOAL SET

Patient identified impact of pain: <Functional Limitations>

Patient identified 3/12 functional goal: <Functional Goals>

Other: <Functional problems identified>

PAST MEDICAL /SURGICAL HISTORY

<PMHActive>

FAMILY/ SOCIAL HISTORY

<FamilyHx>

<SocialHx>

ALL CURRENT MEDICATIONS

<CurrentRx>

Over the counter analgesia: <Using over the counter analgesia?>

Daily oral morphine equivalent: <Morphine dose (number Mg daily)>

Number of analgesic drug groups: <Number of pain related medications /5>

ALLERGIES<Reactions>

GPMP & TCA (MBS ITEMS 721 & 72) CHRONIC PAIN & OPIOID USE >90 DAYS

Pain management issue identified	Assessment findings & goals to be achieved	Treatment and services to achieve goals	Actions to be taken by the patient to achieve goals
Understanding/beliefs and expectations regarding confidence to self-manage			
More passive approaches being used to manage chronic pain	GOAL: To have clear understanding of complex persistent pain and role of active strategies	GP/practice nurse to provide ongoing pain management education, videos and literature.	Patient to ask questions, watch video, read information on Hunter Integrated Pain Service website? http://www.hnehealth.nsw.gov.au/pain
1. Shifting focus			
Opioid use has reached 90 days.	GOAL: To wean and cease chronic opioid dose	GP to discuss 'Reconsidering opioid therapy- a Hunter New England perspective' Inform that <Dr: Name> will supervise step down of medications following guidance from home medicine review, regular review and check for understanding GP/nurse to monitor	Patient to wean off opioids as per plan provided. Read information on Hunter Integrated Pain Service website http://www.hnehealth.nsw.gov.au/pain
Current smoker	GOAL: To achieve complete cessation and avoidance of second-hand smoke.	To implement smoking cessation strategy GP/nurse to monitor	Patient to cease smoking Call Quitline 137848
Alcohol use exceeds guidelines	GOAL: To reduce alcohol consumption to Australian guidelines for men and women	To support alcohol reduction strategy GP/nurse to monitor adherence to no more than 2 standard drink per day	Patient to reduce alcohol to no more than 2 standard drinks per day. Check website http://www.alcohol.gov.au/
2. Making the mind-body link			
Current psychosocial/ mental health distress, and/ or PTSD	GOAL: To optimise mental well-being/reduce distress	To provide mental health care / arrange additional psychosocial support if required via completion of a GP Mental Health plan (MBS 2700) and faxed to health provider	Patient to monitor mood/ attend psychology appointments if required
Existing co-morbidities	GOAL: To optimise wellbeing & manage co-morbidities	GP to monitor co-morbidities	Patient to self-manage co-morbidities
3. Re-connecting			
Less social connections	GOAL: Patient to optimise community connections and	To monitor options to support low level of social	Patient to develop community

	reduce impact of pain	support	connections
4. Regular planned physical activity			
Physical activity below Australian guidelines / Pain interfering with functional activity	GOAL: To meet Australian guidelines for regular physical activity which helps reduce inflammation, stress, depression and increases social support, strength and cardiovascular fitness GOAL; Maintain physical fitness level required to support independence in activities of daily living and domestic tasks	GP to monitor Physiotherapist/Exercise physiologist: to provide brief pain appropriate written activity advice to progress over time to 150-300 minutes moderate intensity physical activity	Patient to build up regular planned physical activity on most if not all days of the week
5. Optimise nutrition			
1.Nutritional intake not meeting fruit and vegetable guidelines 2. Waist measurement at >94 cm (males) or >80 cm (females)	GOAL: To meet Australian nutritional guidelines GOAL: To progress toward healthy waist measurement Health goal: Waist measurement $\leq$ 94 cm (males) or $\leq$ 80 cm (females)	GP to monitor. Dietitian to provide brief appropriate written dietary advice to progress over time to optimal dietary intake. Consider other nutritional choices, eg Fish oil to 4000mg per day, Vit C supplementation. Consider other healthy eating patterns eg reduced saturated and trans fatty acid intake	Patient to adhere to nutritional guidelines

Copy of GP Management Plan offered to patient? <Copy of GPMP offered to patient>

Copy / relevant parts of the GP Management Plan supplied to other providers <Copy of GPMP supplied to other providers with consent>

GP Management Plan added to the patient's records.

Proposed Review Date: <Proposed review date (recommended 6 months)>

I have explained the steps and any costs involved, and the patient has agreed to proceed with the plan.

<Steps and costs explained, patient agreed>

Signature: _____

GP Signature

<UsrDetails>

This completes the GP Management plan. The next section is Team Care Arrangements.

Patient agreement to proceed with team care arrangements (TCA):

I have explained the steps involved in the team care arrangements below and the patient has agreed to proceed and to share clinical information with other members of the clinical team.

Dr. <DrName>

Date: <TodaysDate>

TEAM MEMBERS:

Name and contact details of Service Providers	Type of Service	Required treatment and services including patient actions	Discussion and agreement of goals with provider
Pharmacist <CntDetails>	Pain management approach to Accredited Pharmacist Home Medicine Review (HMR) (MBS Item 900)	Support to wean and cease chronic opioid therapy	Yes
Clinical Psychologist <CntDetails>	Pain management Counselling	Support to make the mind-body link, improved coping mechanisms for depression and/or anxiety. Improved symptom management	Yes
Physiotherapist or EP: <CntDetails>	Pain management approach to achieve planned physical activity at Australian guideline level	Support to achieve between 150 - 300 minutes of moderate intensity physical activity on most, if not all days- gradually progress to goal over time- take breaks as required	Yes
Dietitian: <CntDetails>	Pain management approach to planned optimising nutritional intake	Support to achieve optimal dietary intake e.g. fruit and vegetable intake	Yes

SUGGESTED REVIEW DATE: 3 months and 1 day from today,

Date:<Review date>

Summary Data (for GPMP)

PARTICIPANT _____

Baseline data to be provided to practice in summary table form to assist with completion of chronic pain and opioid use GPMP/TCA in Study week 1

Item	AIMM baseline measurement	Additional information (see software template drop down boxes)
Waist	_____cm	Option for 'within healthy range' in drop down boxes Increased risk where waist measurement is >94 cm (males) or >80 cm (females). Greatly increased risk where waist measurement is >102cm (males) or >88 cm (females)
Smoking status	Smoker or Non smoker	
Alcohol intake	AUDIT-C Score is _____	Option for 'normal' in drop down boxes. Men, a score of 4 or more is positive hazardous drinker / active alcohol abuse. Women, a score of 3 or more is positive hazardous drinker/ active alcohol abuse.
Daily fruit and vegetable intake	Fruit= vegetables=	Inadequate consumption will be defined as <2 serves of fruit or <5 serves of vegetables per day
Daily sedentary behaviour	Prolonged sitting likely	Needs prompts to stand up from sitting/break up long periods of sitting as often as possible.
Co-morbidities	Number/20=	From a list of 20 co-morbidities provided
Psychological distress	K10 score=	Scores 0-15= low, 16-21= moderate; 22-29=high, 30-50=very high. In AIMM, scores $\geq 20/50$ significant
Pain Intensity	Score= /10	
Pain Interference	Score= /10	Higher ratings indicating high levels of interference. Patient has indicated that interference with walking is high level
PTSD Screen	Negative screen Positive screen	Positive' if a patient answers 'yes' to any 3 items Positive or negative screen
Pain self-efficacy	Score = ./60	Scores on the PSEQ may range from 0 to 60, with higher scores indicating stronger self-efficacy beliefs Low<20 /Mod 20-39/ High 40+
Over the counter analgesia	Current daily or near daily usage	Patient has indicated use of over the counter analgesics
Daily oral morphine equivalent dose	mg	This is the morphine equivalent dose calculated using the survey information available which may differ from medical record
Number of classes of other pain-related medications taken	Number 0 or 1or 2 or3 or 4	Self-reported use of (1)over the counter simple analgesics (2) over the counter weak opioid analgesics (3) non-steroidal anti-inflammatory agent s (4) minor tranquilisers (benzodiazapines)

PART ONE OF THE AIMM TRAINING ACTIVITY IS NOW COMPLETE

PART TWO OF THE AIMM TRAINING ACTIVITY

Over the next week please spend 1 hour of self-directed learning reviewing **4 HABITS OF OPTIMAL COMMUNICATION** [163,164] (summary, checklist and expanded evidence table). The habits have been validated in a primary care setting [179] and used previously in the pain literature [332]

Summary

1. Invest in the beginning of the visit. Set the agenda; assess and understand the whole person [165] who is experiencing chronic non-cancer pain, deliver the change message, build a relationship, the rapport and trust by acknowledging uncertainties, empathize with patient frustrations and set realistic expectations for treatments [163,166,167] Skills: Take time to build rapport; elicit the chief complaint and explore all the patient's concerns. Shift focus, expand the story -reframe the problem and allow new chapters to emerge [18,168] Plan the visit with the patient [163]
2. Elicit the patient's perspective. Listen [169] and draw out each patient's physical and personal and emotional story [168,170] Focus on the person and their agenda, [169] not the condition. What does the patient think the problem is? Avoid premature statements [163,166] Skills: Focus on assessing the whole person. Ask [169,171] permission before you inform the patient that we now know the risks of opioids outweigh the benefits [72] Then ask the patient for their ideas regarding the implications. Elicit specific requests. Explore the impact on the patient's life [163]. Acknowledge other life problems
3. Demonstrate empathy [172-174] Empathize with patient difficulties and desire for pain relief. Recognize that their current situation is unacceptable. Expect resistance, demonstrate caring, concern and avoid arguments [163,166] Skills: Be open to the patient's emotions. Make at least one empathic statement. Acknowledge effort. Convey empathy non-verbally. Be aware of own reactions
4. Communication continues till the end of the visit. Provide closure to the consultation [18,175]. Commit to working <u>with</u> the patient on jointly negotiated care plan for commencing change now and maintaining for the future [73] using the GPMP/TCA. Remove the focus from obtaining reward of pain relief [171]. Instead, the focus shifts to achieving short term health goals [176] as a step toward longer term goal [177] improved function and quality of life. Patients will be grateful for your efforts even if you disagree about opioid safety or benefits [163,166] Skills: Ask first and then deliver information. Provide education to assist informed making. Involve patient in making informed decisions (e.g. slow or more rapid weaning). Role of short term vs. long term reward. Commit to care and complete the visit

Checklist

Habit 1 INVEST IN THE BEGINNING		
Clinician indicates clear familiarity with patient's history/chart	Yes	No
Patient is greeted in manner that is personal and warm	Yes	No
Clinician makes non-medical/conversational comments to put the patient at ease and help them relax	Yes	No
Clinician tries to identify the problem(s) using primarily open-ended questions	Yes	No
Clinician broadens the agenda/brings weaning into conversation	Yes	No
Clinician explores broader conceptualization of pain and encourages the patient to use own words and expand agenda in discussing all of his/her concerns	Yes	No
Habit 2. ELICIT THE PATIENT PERSPECTIVE		
Clinician shows great interest in exploring the patient's thoughts about the problem and nudges expanded explanation	Yes	No
Clinician asks (or responds with interest to) what the patient hopes to get out of the visit/what problem is happening in daily life	Yes	No
Clinician shows interest in the patient's psychosocial status and may verbalise mind-body links	Yes	No
Habit 3. DEMONSTRATE EMPATHY		
Clinician encourages the patient to express emotion and/or is openly receptive to patient's expression of concern	Yes	No
Clinician makes comments clearly indicating acceptance/validation of patient's feelings whilst countering structural explanatory models	Yes	No
Clinician makes a clear attempt to explore the patient's feelings by labeling them	Yes	No
Clinician displays nonverbal behaviour that expresses great interest, concern and connection throughout the visit, broadening the agenda	Yes	No
Habit 4 INVEST IN THE END		
Clinician frames information in ways that reflect the patient's presentation of concerns and broadens to a whole person perspective	Yes	No
Clinician gives the patient time and opportunity to react to and absorb information	Yes	No

Information is stated clearly and with little or no use of jargon	Yes	No
Clinician fully/clearly explains the rationale for a broader nervous system approach and may use metaphors to assist in understanding	Yes	No
Clinician effectively tests for comprehension of information by asking for patient's way of explaining this new understanding of pain	Yes	No
Clinician clearly encourages the patient's input into the decision-making process	Yes	No
Clinician explores the acceptability of treatment plan, expressing willingness to negotiate who will provide support during the weaning process	Yes	No
Clinician fully explores barriers [178] to implementation of the treatment, letting the patient have input into the rate of opioid weaning	Yes	No
Clinician openly encourages and asks for additional questions from the patient	Yes	No
Clinician makes clear and specific plans for regular follow-up visits	Yes	No

Communication/evidence table

Communication habit: Set the stage by investing in the beginning of the visit. Set the agenda, assess and understand the whole-person [165] who is experiencing CNCP, deliver change message, build a relationship, the rapport and trust by acknowledging uncertainties, empathize with patient frustrations and set realistic expectations for treatments[163,166,167]
Skills: I: Take time to build rapport II; Elicit the chief complaint and explore all the patient's concerns; III: Shift focus, expand the story, reframe the problem and allow new chapters to emerge [18,168] IV: Plan the visit with the patient [163]
Techniques and examples for each skill are listed
I. Be familiar with patient's history, prior to visit [179] I. Begin with a non-medical comment designed to make patient feel safe and at ease [163, 170,180-183] and in control and establish/maintain a personal connection [175,184] or therapeutic bond [185,186] Focus on the patient [187-194] and build the patient-clinician relationship [175,195-198] Create a sense of a positive therapeutic alliance with its foundation of trust, respect and good rapport [172,173,199-205] to promote strength and emotional resilience [88,206-211] I. If possible, select a light filled room, view of natural landscape, [212] that is private[168,213,214] and quiet [215] I. Adopt an appropriate orientation with an open, direct posture [18,172,216] I. Open with a friendly inviting welcome [168,217] of the whole patient, including their opinions [217-223] by greeting the person warmly [167,174,179,224] elicit and use patient's preferred name [167,168] I. Acknowledge the presence of significant other [167,215,225-227], clarify reasons for their presence, [167] state that their observations and opinions will be sought [167] throughout the consultation I. Introduce self to everyone in the room [228] and identify specific role [168,215] I. Acknowledge that patient may have been waiting some time for a different treatment approach [229] and acknowledge time available for the consult [168] I. Attend to patients' comfort, [163,168] give explicit permission to move around as needed to keep pain experience as comfortable as possible I. Ask [169] what will help them remember key points and acknowledge attention, decision making, memory and learning are affected by pain [230,231] Provide pen and paper if they would like to take notes [232-234]

I. Open the discussion ‘as your doctor, I need to know a great deal about your body and your health and your life. Please tell me what you think I should know about your current situation’,[235] then listen carefully to the patient’s opening statement [174-175] without interruption [167,215]. Listen to the pain complaint [236] and to the person’s explanatory model. Make note of their beliefs which may be maladaptive, [18,167,237] their desperation for pain relief [238]. Listen for any talk of searching for interventions. Give opportunity to express fears, particularly around fear of discontinuation of opioids [170,238]. Be sensitive to the needs and circumstances of the patient (beliefs, values, fears, social and cultural background) [215] around pain being their primary problem and medication helping ‘a bit’. Remain cognizant that the patient comes to the consultation with a level of health literacy defined as the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health

I. To elicit a full set of concerns and expand the discussion to gather all information needed [175] and clarify the patients objectives,[18] using primarily open-ended rather than closed-ended questions, [163,175,179,239] need to understand why is the patient there ‘I understand you are here about your pain, could you tell me how things have been going for you?’

I. Actively listen to the communication being used by the patient and others present, the symbolic terms used by the patient in pain [240]. Listen for the linguistic models or neuromyths surrounding the pain experience [241]. Legitimize the patient’s feelings [167]’ this is clearly worrying for you’ and acknowledge the complexity of the patient’s experience [165] ‘you have an awful lot to cope with’ and convey knowledge of patient history [163]. Validate that patient is experiencing real pain

I. Adapt own language, pace, and posture in response to the patient, [163] speak slowly [242] and focus on what the patient needs to know [170,242-244]

II. Clarify presenting complaint [167] and check to ensure that all expectations of the visit have been elicited and eliminate possibility of unmet concerns by inquiring if the patient has something else they would like to discuss [20,215,245]

III. **Change strategy** broaden the focus, introduce concept that practice policy has changed, opioids are now a restricted intervention [6] in line with a community guideline [7]of ‘time-limited opioids’[246]. Deliver the broader change message, ask permission to share (inform) [169,175] broader important health messages about pain [171]’our practice is switching to team-based care for people who are experiencing CNCP [247,248]’/’our practice policy [247] is taper and cease opioids after 90 days’/’our practice policy is to use simple, active treatments and a planned approach for the future.’ This practice decision has been made because it is not clear that using a treatment such as long-term opioids as a means of reducing the burden of CNCP (compared with

using it as a humane and necessary intervention for individuals) is either safe [249] or effective [250,251]. Holistic confrontation occurs [252] as new boundaries are set around opioid medication. Other life problems are identified [253] and recognised as contributors. Changing strategy away from acute pain focus with the motivation of pain relief as central towards focusing on which behaviours need to change to actively treat pain [14]. There will be a move towards local community attitudes towards opioid prescribing and adherence to guidelines [7,254]

III. In order to work towards a shared understanding or agenda [167,169-171,255] reframe towards rehabilitation [18]. Emphasize shift in focus, shift and persist approach [96] to raising expectations of a positive, hopeful outcome [206,218] and support [172,256] for a better life, even with some pain. People experiencing CNCP need a patient or relationship centred approach pain (a guiding communication style, nondirective [169,194] and not threatening) and accept (loss) and the need to broaden the enquiry to identify and manage psychosocial aspects [257]

III. Less about trying to identify cause, [258] more about accepting past approach is now obsolete and attempts to externally control pain with opioids and other medicines has limits [238] whereas there is much value in optimising internal control i.e. how they respond when they hurt, 'it is time to get your life off hold, it is unrealistic to continue with diagnosis, treatment, cure pathway' [259]

IV. To start the treatment planning, repeat back key points, [215] make use of summarizing and repetition [167,239] to help develop a shared understanding of the whole problem. Remember to ask before telling what the implications of this new information means to them. Ask first (what person wants to know), then inform (what person needs to know). Then importantly, ask [169] the patient to repeat back or teach back [260] the information. Think whether the patient has actually identified or recognised the health message. What has their comprehension or understanding been [171,175] This step is frequently missed by health care providers [261]

IV. Let the patient know what to expect i.e. orient them [172] by saying 'how about we start with talking more about X then it's important that we consider all the other factors, a whole-person perspective if you like, and then we'll plan possible treatment's and future management....sound OK?' [163,167] The patient needs to feel completely assessed (not just physically but psychosocial aspects) although note adding more assessment is not better

IV. Negotiate and prioritize when necessary [167,262] 'let's make sure we talk about X and Y. It sounds like you also want to make sure we cover Z. If we can't get to the other concerns, let's...' [163]

Communication Habit: Elicit the patient's perspective. Listen [169] and draw out the patient physical and personal and emotional story [168,170] Focus on the patient and their agenda, [169]

not the condition. What does the patient think the problem is? Avoid premature statements [163,166]

Skills: I: Focus on assessing the whole-person: Ask [169,171] permission before you inform the patient that the risks outweigh the benefits [72] Then ask the patient for their ideas regarding the implications II: Elicit specific requests III: Explore the impact on the patient's life [163] IV: Acknowledge other life problems

Techniques and examples for each skill are listed

I. Use active listening [169] to draw out the patient story, [217] facilitate emotional expression self-disclosure, [18,170] perhaps by using sensitive metaphors such as 'it is helpful to off load these feelings' and construct new meaning [263]. Hear the person's narrative around this unwelcome pain [264,265] 'tell me about yourself' [266]

I. Assess disabling beliefs [267] surrounding need to gain control over pain before activity or maladaptive beliefs regarding the consequences of pain meaning harm or more harm. Assess current knowledge, [268] understanding [222] and expectations for recovery [269] around pain and readiness for change by assessment of patient point of view using open-ended questions [215] 'what do you think is causing your symptoms?' 'what worries you most about this problem?' '[163]'what do you make of this chaos?' [270]

I. Ask [169,171] about ideas from significant others, [163] 'how have you (support person) reacted to the pain?' 'what ideas have you had for rehabilitation?'

II. Attend to verbal patient cues [215,271] by stating your observation [167] 'you say that you are not coping well with your medications?'; repeating the patient's own words [167] 'not a moment without pain since the accident' and by seeking clarification [167] 'what do you mean when you say you rest all day?'

II. Attend to patient non-verbal cues [167,272] by commenting on your observation [167] 'I can hear how upset that makes you' or by asking a question [167] 'I wonder if your story has had a bigger impact than you like to admit?'

III. Think family [167,273]. Ask [169] how family members view the problem [167] family 'which activities are difficult but still pursued?'

III. Explore the impact on the patient's life [163] by checking contextual factors [175] 'how has the pain impacted on your daily activities "what activities are being avoided or no longer pursued?"/'how has work been affected?'

III. Listen [169] to how much the patient attributes life's problems to pain

III. Discuss with empathy [172,173] the benefits, if any, of remaining the same e.g. disability pension/carers pensions/extra family support? Does pain provide an 'explanation' as to why life is not going well?

IV. Also acknowledge that as a person, they also have other problems and make the link between emotions and physical symptoms and use of opioid medications with impact on opioid-related reward mechanisms [274]

Communication Habit: Demonstrate empathy [172-174] Empathize with patient difficulties and desire for pain relief. Recognize that their current situation is unacceptable. Expect resistance, demonstrate caring, concern and avoid arguments[163,166]

Skills: I Be open to patients' emotions II Make at least one empathic statement III Convey empathy non verbally IV Be aware of your own reactions

Techniques and examples for each skill are listed

I. Detect and respond to emotional issues.[167] Recognise that patients often have limited language to express their emotions [263]. Look for opportunities to use brief empathic, non-judgemental comments [184] 'this treatment is now only being offered to patients for a maximum of 90 days', use silence or neutral utterances [168] minimal expression but conveys emotion such as 'hmm' and 'uh-huh'[216] or gestures [163] 'that must be distressing for you,' acknowledge distress though do not rush to reassure [216]

I. Expect resistance 'I can't because of pain' and elaborate explanations as to helplessness to change and strong belief in pain relief first indicating a medical treatment/ pain relief focus or motivation

I. Expect some difficulties, [39] particularly around negotiating opioid reduction 'we know that pain affects your whole life, we can't make it much better just using pills'; 'no opioids, does not mean no treatment'. Offer to stand with the patient through the glare of this new treatment relationship [265]. Turn the tables if necessary 'I'm feeling pushed by you to write a prescription that I've already told you is not medically indicated. This is concerning me and we need to talk about your use of this medication'.

I. Be open by assessing own body gestures, postures, mannerisms, and other motor movements [275] arms and legs uncrossed, symmetrical [172] changes in body language and voice tone [163]

I. Make good eye contact early [167] in the interview and maintain appropriate eye-contact (less mutual gaze) [172] with patient throughout consultation [215]

II. Name a likely emotion [163]'sounds like that's really frustrating for you' [216]. Use of metaphor may be helpful 'sounds like you've been feeling pretty blue' [263]

II. Normalize (but don't 'psychologize') their experience 'I want to make sure I really understand what you're telling me. I am hearing that....'[216]

II. Acknowledge patient's efforts 'you've done your best to get this far'

III. Use a framing or signposting statement 'I don't want us to go further until I'm sure I've gotten it right', 'when I'm done, if I've gone astray, I'd appreciate it if you would correct me, OK?' [216]

III. Use facilitation[167] both verbal 'go-on' and non-verbal e.g. affirmative head nodding, [167, 172,276] eye gaze, [276] smiling [276,277] forward leaning, [276,277] hand gestures and touch [170, 276] Allow pauses of several seconds [216, 278] and refrain from filling them with words [279]. Only log onto computer after taking a few moments to create rapport [280] and offer the patient the option of watching 'feel free to watch if you like, to make sure I'm typing it correctly' [170]

IV. Understand and explain [172] pain from neurobiology perspective, [268] use multiple analogies [281] and metaphors [282] to immerse [283] the patient in the new schema [284] include the normalcy of the mind-body paradigm 'we know that pain affects the mind and body so we have to work on awareness of both' [99,167]

IV. New ways to solve old problems, new role for providers as well. New knowledge regarding these medications' poor safety record [285,286]'extended-release opioids have not been proven to be safer or more effective than short-acting opioids for managing CNCP' and lack of studies showing efficacy of opioids over the longer term [287,288] means less prescribing. Ask before communicating information around significant safety issues or risk and limited benefits[7]. Also, less repeated evaluations and treatments. Need to ask [169] patient about the role they prefer to have, [289] the role they want doctor to play in decision-making [256,289-291] 'change takes time, over what timeframe would you like to take this? It could take three weeks or three months' [292] 'that's OK, this is not easy, the timing is flexible, we will work together, as a partnership [174,222] on this'

Communication Habit: Invest in the end of the visit, provide closure to the consultation [18,175]

Commit to working with the patient on jointly negotiated care plan for commencing change now and maintaining for the future [73] using the General Practice Management Plan template.

Remove the focus from obtaining reward of pain relief [171]. Instead now the focus shifts to focus on achieving short term health goals [176] as a step toward longer term reward or life goal, [177] improved function and quality of life. Patients will be grateful for your efforts even if you disagree about opioid safety or benefits [163,166]

Skills I Ask first and then deliver information II Provide education to assist informed making III Involve patient in making informed decisions IV Role of short term vs. long term reward V Complete the visit

Techniques and examples for each skill are listed

I. Frame reconceptualised pain experience in terms of patients' original concerns [163,293]

I. Ask for permission before providing any pain specific information [167] in clear, familiar understandable language [171,271,272,294] that is designed to heal. Healing is whole-person care, a process, a journey requiring balance and acceptance [295-297] Use simple jargon-free language or easily listenable discourse to accommodate people with cultural and linguistic diversity [1,261,272,295,298-305]

I. Provide any information in chunks, [203,306] or schemas that can be recalled as a group [294]

'the approach has changed, this medication has risks, we need to taper and cease this medication'

II. To confirm patients' comprehension [163] use close the loop or teach-back, to check that there is a shared understanding [175,215,307]

II. Explain [172] rationale for treatments [163]

II Review possible side effects and expected course of recovery, [163] use pro-recovery talk [308]

II. Remain positive [273] though provide patient education on the limits of medicine, make links [167] with early life or unresolved stress, [309,310] importance of restraint in medical management [311] and importance of self-management. Note that seeking and using health information is difficult for people experiencing CNCP and they may have greater difficulty in engaging in positive health behaviours [312]

II. Elicit change talk [169] commitment for improved function via exercise, dealing with psychosocial problems and making lifestyle changes [163]

II. Ask if patient would like to be provided with any plainly written materials,[169,313] inform the person regarding access to information such as Hunter Integrated Pain Service website for resources [163,215,314,315]

II. Use comparison activity [316] to demonstrate what planned care will look and feel like e.g. YouTube video Understanding Pain [317]

III. Explore and present choices or options to the patient [170] 'how long do you think it would take you to wean, a few days, a few weeks? 'we can work closely together to wean quickly or slowly?' actively listening [167,169] for patients preferences do not say you will write the same script as previously [163,298] Collaboration is key in bringing the patient into concurrence [318] with the overall recommendation (cessation), speed being negotiable [319]

III. Set clear limits for both the patient-provider relationship [320] and firm, respectful medication limits [163,321] 'I can understand that you've been on this medication for a long time, but medicine changes and we need to work toward weaning and ceasing over the next few months.' Set gentle but firm limits regarding anger 'I can see that you have been through a lot. When you become angry, it is hard for us to have a real discussion about why you are so upset. I'd like to understand more about what is going on with you, but I think I could do a better job if you could get your anger under better control' [223] 'It's our practice policy [247] (not to write a script for that), that's the framework we work in' 'let's work together to develop other strategies'

- II. Assess patients' ability and motivation to carry out the first steps of the plan and general principles of the plan for the future [163]. Explore current desire for medication vs. long term goal to get off opioids and engage in active strategies

IV. Roll with resistance; shift topics, ask for additional questions 'OK, aside from medications, do you have any other questions?' [163,215] You do not want the patient to suffer the mental defeat that comes with getting caught in a perseverance loop around a biomedical, medication focus [322-326]

IV. Provide validation 'it's natural that you are afraid to move because of worry about the pain flaring up' and appropriate reassurance [167,327] that at least limited physical reactivation is possible

IV. Communicate likelihood that exacerbations and relapse are normal, they will occur 'your pain is likely to be worse in times of stress, [328] it turns up the volume of the pain'

IV. Communicate that unhelpful beliefs are likely to surface on bad days and will need to be monitored 'it's important that we stick to the plan, your pain flare up is not a medical emergency and 'with self-monitoring and sticking to your flare up plan, this will be less of a problem. 'it is important that you keep self-monitoring and stick to your active management strategies for the long term'

IV. Commit to ongoing support [256,329] 'I will stand with you though this' until self-management is achieved [330]. Acknowledge you are both learning to work together in new ways. Stand with the patient, be familiar with their history [170,182] and be present [331] identify next steps and schedule fortnightly reviews [215]

IV. Commit to desire for improved outcomes [163] that are routinely monitored [73] 'together in this first cycle of care we can help you learn to live better with or without pain' Express willingness to connect with patient to improve health [174]

Study aims: Feasibility and acceptability from the patient perspective

The primary aims of the study are to explore the following among a sample of adults experiencing CNCP who have been using opioid medications for 90 days or more:

- i) Feasibility of recruitment and data collection procedures including: overall rate of response, rate of consent, attrition, and missing data. Survey completion time will also be explored
- ii) Acceptability of AIMM intervention components in terms of: a) quantitative patient-reported satisfaction with the number, type, duration and content of interactions; b) qualitative patient-reported satisfaction with and perceived overall benefit received from the intervention and c) nurse-recorded proportion of planned visits attended
- iii) Patient preferences for specific changes or improvements to the AIMM approach

Secondary

A secondary aim will be to examine the influence of mode of survey delivery (pen-and-paper versus iPad) at three months follow-up on rates of missing data including survey completion rate and item completion rate

Health care provider perspectives of feasibility, acceptability and fidelity to the model during care delivery

The primary aim of this study is to examine the following amongst a sample of health service providers delivering the pilot AIMM intervention

- (i) The feasibility of systematically implementing AIMM resources and practises at a practice level including providing patients who are experiencing ongoing pain with a custom GPMP and TCA and providing a block of multidisciplinary pain appointments for patients over 12 weeks
- (ii) The acceptability of implementing the AIMM study procedures (provision of training, resources offered, support received and perceived competence) within the practice setting
- (iii) The level of fidelity to the intervention among providers including delivery of a whole-person approach and use of a clear communication strategy

Schematic: A study participant receiving idealised self-management support in AIMM + 3/12 review

*If patient has elevated psychological distress at initial screening, this element of the intervention may be commenced *prior* to the remainder of the intervention (Up to 10 x Psychology sessions)

	Medical record screen	Invited to study	AIMM Pilot Study Week												
	2 week prior	1-2 week prior	1	2	3	4	5	6	7	8	9	10	12 weeks + 1 day after completion of GPMP/TCA		
Eligibility screening occurs -including opioid dose from patient medical record. Record flagged	Participant attendance not required														
Patient invited, consented and completes initial AIMM baseline survey. (Survey received by researchers and summary forwarded to GP- prior to Study week1)		✓													
Intervention-Medical -AIMM survey assessment broader discussion ¹ -Complete planning phase GPMP/TCA ² -Regular monitor ³ -Review GPMP/TCA ⁴			✓ ¹	✓ ²		✓ ³		✓ ³		✓ ³		✓ ³	✓ ⁴		
Intervention-Nursing -Co-complete GPMP/TCA ² -Regular supportive care/monitor ³ -Review GPMP/TCA ⁴				✓ ²		✓ ³		✓ ³		✓ ³		✓ ³	✓ ⁴		
Intervention- Psychology* If required up to 10 x sessions					✓	✓	✓	✓	✓	✓	✓	✓			
Intervention-Accredited Pharmacist Home Medication Review					✓										
Intervention-5 x Psychologically informed planned accredited exercise physiologist or physiotherapist & accredited practicing dietitian sessions						✓	✓		✓		✓	✓			
Complete-AIMM 3/12 survey Allocation to pen and paper (P& P) or iPad													P & P ✓	or iPad ✓	

ABBREVIATIONS

Assess, Inform, Manage and Monitor (AIMM)

Active learning Module (ALM)

Chronic non-cancer pain (CNCP)

Exercise Physiologist (EP)

General Practitioner (GP)

General Practice Management Plan (GPMP)

Informed consent form (ICF)

New South Wales (NSW)

Patient information sheet (PIS)

Physiotherapist (PT)

Team Care Arrangements (TCA)

United States (US)

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AIMM TO CHANGE THE PRACTICE OF PAIN MEDICINE IN PRIMARY CARE

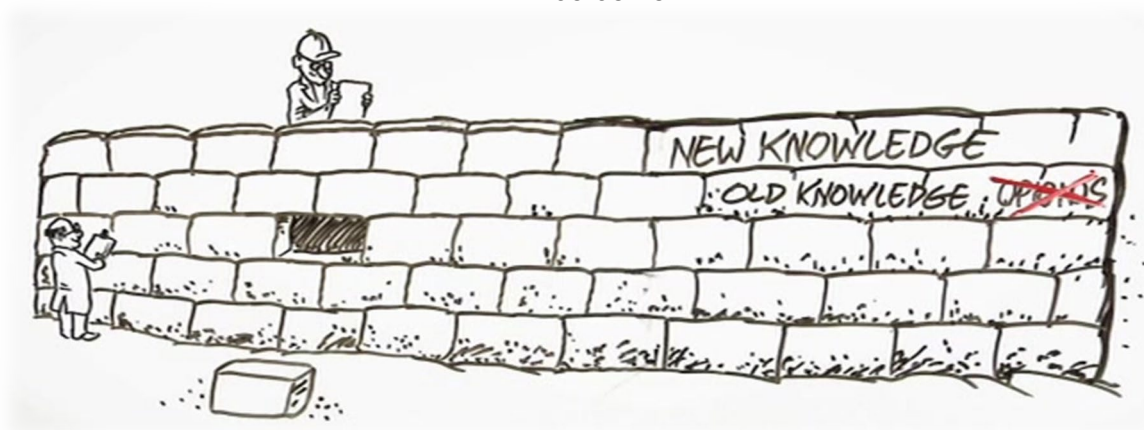
WORKSHOP #2

RACGP Activity ID 12103

ACRRM code E1501UNWC

APNA Application ID: C14150

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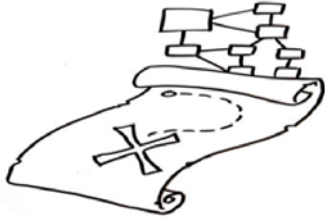
This document is confidential. It contains unpublished work of the researchers. The information contained herein is for the purpose of reviewing or performing this study.

RACGP Activity ID for AIMM Workshop is 12103. This activity has been allocated 40 Category 1 points in the RACGP QI & CPD Program for the 2014-2016 triennium. Hunter Medicare Local is an authorised provider of accredited activities under the RACGP QI & CPD Program.

This activity has been accredited by ACRRM Code: E1501UNWC 30 PRPDP Points + MOPS

This activity has been endorsed by APNA according to approved quality standards criteria.

Application ID: C14150. Upon successful completion of this activity eligible participants may claim a total of up to 8 CPD hours



AIMM Workshop

Presenters

Dr Hema Rajappa	Specialist Pain Medicine Physician, Hunter Integrated Pain Service (HIPS) at Hunter New England Local Health District
Sandra Fitzgerald	Pharmacist & HealthPathways Liaison Officer, Hunter Medicare Local (Hunter ML)
Ruth White	Physiotherapist (HIPS) & PhD candidate, Priority Research Centre for Health Behaviour, School of Medicine and Public Health, University of Newcastle

A three-part evidence informed process improvement strategy designed to influence work systems, enhance interdisciplinary communication skills and improve outcomes for patients experiencing chronic non-cancer pain whose use of opioids has exceeded 90 days.

Section 1	Prepare for learning activity with a 30 minutes pre-disposing activity designed to familiarise learners with relevant practice resources
Section 2	Learn, practice & read & reflect 2 x 2 hour group interactive learning sessions & 1 hour read and reflection on communication skills
Section 3	Reinforce & review with 2 hours of pain medicine mentorship via telephone and/or email used plus an individual interview

Workshop Part 2

Session 3: Key Messages in Pain Medicine. How does it sound?

AIMM TRAINING ACTIVITY

1. Discuss key messaging to reduce clinical variation across 5 domains
2. Demonstrate and discuss role play scripts
3. Practice use of audio recording devices



AIMM MESSAGES TO BE PROMOTED TO AND DELIVERED BY ALL HEALTH CARE PROVIDERS

	Key messages	Evidence supported language 'bites' to reinforce key messages	Consensus supported language 'bites'
1	Chronic Pain can change	• Shift the focus to evidence based active management strategies [1] • Beliefs of perceived disability such as hurt = harm are an untrue reality leading to poor outcomes [2-5] • Pain can linger past healing time [6,7] • Long term opioid use is no longer considered safe or effective and should be avoided if possible [8-11] • Adherence to broader self-management options bring real gains [12,13] and are much safer than opioids [14] • Beliefs are very important to recovery [15,16] • We will support you, [17] let go of any narrow pathological explanation [18] and negative expectations regarding self-management [19] • Intensive interdisciplinary rehabilitation helps [20]	• Most of your pain experience cannot be explained by what is happening in your body [21,22] • It is time to stop searching for a broken body part, healing is completed [22] • It is time to get your life off hold, it is unrealistic to continue with diagnosis, treatment, cure pathway [23] • Modern pain science has revolutionised how we think about chronic non-cancer pain [24] • Hurt and harm are not the same thing [25]. Opioids are now a restricted intervention • The balance of evidence does not support the long term efficacy and safety of opioid therapy for people experiencing ongoing pain [26,27] In line with new practice guidelines which have now shown opioids are harmful over the longer term, our practice policy [28] now supports a slowly weaning opioids after 90 days [26] • It will be good to wean off these medications, they prune your

			memory connections [29,30] The recommendation is for your opioid drugs to be slowly weaned. • A Home Medication Review [31] will be helpful to work through the details. • Our practice supports the optimal healing environment [32] • Changing health habits can be hard [33] • Finding the motivation to focus on changing your behaviour (actions) and not focus on finding ‘pain relief’ is difficult particularly when you may have an amplified (dopamine) reward system [34]
2	Make the mind-body link	• Mood and pain are linked [35] • Pain is just one of your problems, stress contributes too [36,37] • Neuroscience is at the centre of this revolution,[38-41] central sensitivity [42] and ideas around reorganisation [43] • The brain produces pain [42,44] • Low mood and stronger beliefs that pain equals harm [19,45] are predictors of poor outcome	• Interpersonal stress is important [22] • What do you <i>think</i> happened to your body at the start? [50-52] • Your pain experience is likely to be worse in times of life stress [53] • Repeated activation of the body’s stress response systems will [54] turn up the volume of your pain experience • Just because you are experiencing ongoing pain [55] does not mean that CNCP is a medically unexplained symptom [56] • Tell me about the start of your pain...I am interested in how the memories of pain were laid down [57]

		• Cognitive behaviour therapy helps [46] • Taking practical steps to improve sleep quality is associated with less pain [47-49]	• Psychological therapies are effective for pain, mood and disability [18] • You can expect a positive, hopeful outcome [58,59] and support [60, 61] for better life, even with some pain. • We can help you manage your low mood, without opioids [62] • Your pain is not unexplained, [63] science/pain medicine now has a very good scientific explanation for your pain experience [63]
3	Reconnection matters	• Reconnecting helps [64-66] How are you getting on? Being out of the work force and not participating in social or cultural activities doesn't help [67-69] • The aim is to become more able to self-manage and less reliant on health care providers [70-71]	• What is happening in your wider environment is associated with your ongoing pain experience [22] • With knowledge you can move away from suffering [72] • Finding ways to shift focus and persist with a positive view toward life helps [73]
4	Move more, sit less and sleep well	• Physical inactivity contributes to poor health, [74] we knew as early as 1923 that movement must be encouraged and bed rest 'forbidden' [75] • Early reactivation, with supervision is widely supported [46,76] • Bed rest is ineffective even in acute cases [77-79]	• It is important that you take this slowly as your 'protect by pain' threshold is lowered now [84] • It is important to monitor and reduce resting [85] • Gradually building up your steps per day helps, [86] being inactive is pro-inflammatory [87] • Planned physical activity helps, even if you experience a flare-flare-up [88]

		• Remaining active reduces disability [80,81] • Prolonged rest related to pain relief is unhelpful at best [9] and harmful [82] at worst. • Gradually resume normal function [83]	• I'm interested in your thinking and your fear [35] • Practicing through home-tasks is more likely to get the results you want [89] • We can help you with your stress and sleep in other ways [62] • Passively taking opioids, then resting trains the brain to expect this 'dual reward'. Instead, changing behaviour by gradually being exposed to feared physical activities followed by a rewarding break helps in the long term [90]
5	Healthy food is good medicine	• Your central sensitivity can be reduced with good nutrition [91] Nicotine dependence adds to your sensitivity, cessation is advisable [92,93] • Fish oil, or omega 3 fats may be of limited short term benefit [94,95] • Using alcohol as well as opioids is harmful and can be dangerous [96] • Adequate nutrition is important for pain relief and may reduce depression [97, 98]. Your diet needs to be rich in whole foods including plant foods and fish [97]	• We will support you to make (smoking, nutrition, alcohol, physical activity and weight) health changes [99,100] • Exploiting anti-inflammatory behaviour change is now considered a 'first-line' intervention in the management of chronic non- cancer pain [87] • There is potential for reversal if you work consistently on your 'whole' health [87] • Probiotics might be helpful [101] • Many opioid users also smoke and together these things may increase poor sleep, poor quality of life and poor oral health [102]

			• Alcohol can affect your memory and concentration [103] • Chronic caffeine consumption interferes with sleep [91]
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Audio

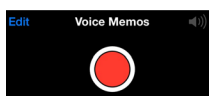
AIMM TRAINING ACTIVITY

Practice using iPhone audio recording device during the training role play

1. Obtain consent



2. Tap on the voice memo icon
3. Record memo by taping the big red button



4. Tap the same button to stop recording
5. Finalize the recording by tapping "Done"
6. Enter your SURNAME and DATE eg WHITE201014
7. Tap the newly named recording. The option to email will appear
8. Tap on the email icon to send to ruth.white@hnehealth.nsw.gov.au

Audio-recordings and interviews will be used to analyse adherence to fidelity of implementation of the various components of the AIMM model of care by health care providers. Health care providers will audio-record a sample of 3-5 therapeutic interaction with AIMM study participants, subject to signing the patient and provider approval. Audio recording, as opposed to video recording has been chosen as the less intrusive option. This data will be collected by each of the health care providers [104,105] and provided to the researcher for transcription and coding.

YOU HAVE CONSENTED TO AUDIO RECORD A SAMPLE OF 3-5 INTERACTIONS FOR THE AIMM STUDY

At your earliest convenience, please submit 3-5 recordings to the research team for analysis. Email to ruth.white@hnehealth.nsw.gov.au

Role-play case discussions / demonstrate key messages of pain interwoven with communication strategies within a behavioural change framework

AIMM TRAINING

Script 1: AIMM survey assessment discussion

GP Hello Mrs Jenkins, nice to see you. Are you happy for me to record today's session for the research we are both involved in?

Patient Yes

GP Thank you for that. I have your assessment results. I now have a better idea of some of the problems you are having with your pain experience

Patient So, what's next?

GP I know you were hoping that something could fix your problems. There are no quick fixes when someone is experiencing ongoing pain and we now know that the medication you are taking can actually make things worse

Patient But it's the only thing that helps

GP It may seem like it works for a short period but then it wears off and many patients, like you, are worse off than they were before

Patient I just want to be normal again

GP Well I think we can work towards a new normal. A lot has changed and winding down the sensitivity of the nervous system is the focus now. How do you feel about that?

Patient I'm not sure. What are you going to do?

GP Well, we need to work together to help you develop a management plan. Figuring out what you can do more of, or less of, to make things better, even if your pain experience doesn't go away entirely

Patient How do we do that?

GP You might want to take a look at the website for some more information (hand patient website magnet). I'd like you to come and see the practice nurse next week and work on a broader action plan together



Script 2: Regular monitor visit with GP

- GP** Come in, welcome Mrs Jenkins. Please, take a seat. Are you happy for me to record today's session for the research we are both involved in?
- Patient Yes
- GP** Now, tell me how are you getting on?
- Patient Terrible
- GP** Sounds like you're having some difficulties
- Patient Yes I am. This low dose of medications is not enough to cope with the pain I'm having. I needed more medication, not less. I just want my normal script.
- GP** We discussed last time the limited benefits and the balance between benefit and harm. You have been on them a long time and the pain you have been experiencing and your function had not really improved at all
- Patient I know it's important. I know they're no good for me and the diet and exercise are OK, but they're not enough to stop the pain
- GP** It sounds like you really want to give up the opioid medications as the best long term pathway but you're struggling with the active strategies
- Patient Yes, that's right, I do want to stop eventually but it's hard
- GP** If there was a way to wean off the medication without experiencing more pain, then you might be able to move ahead?
- Patient Yes, but I was thinking you could just put the dose back up for a while longer?

GP Putting the dose back up is not an option. We could hold you on this same dose for another week or even two weeks and we could also think about slowing down the rate that we wean the dose, how does that sound?

Patient Well staying on the same dose for a few more weeks is better than cutting it down again so fast, OK, thanks



Script 3: Regular monitor visit with GP

GP Welcome back Mrs Jenkins. Good to see you again, please, take a seat. Are you happy for me to record today's session for the research we are both involved in?

Patient Yes

GP Now, tell me how have things been going for you?

Patient I'm supposed to have a session with the exercise chap, but I'm having trouble. I think I need some medication, just like that one I was on before, so that I can get back to the exercise and build myself up again

GP I hear what you're saying. You really want to get back to activity and you believe the opioids you were on before will help that

Patient Yes

GP We have discussed before that staying on opioids is not the answer

Patient Yes, but the thing is I'm really having trouble believing you

GP May I share a story with you?

Patient Yes, of course

GP I have been working with a patient who had a similar situation to yours. What he realised was that he was using the pain experience as an excuse not to participate in life. He also said he was scared to come off....but we worked together to slowly wean him and now he's off all opioids. He told me he felt like he had "come out of a fog"

Patient Does he still have pain?

GP Yes, he does, but he is not distressed or scared by it. He can distract himself instead of focusing on the pain. He is now active and keeping busy with volunteering

Patient So, you're saying I could do that? Well, I don't think I can

GP It's normal to be worried about weaning. We know that people sometimes fear their pain will increase and they will lose control [106], though this isn't the case if we wean slowly. I will talk things over with the pain specialists at the Pain Clinic and see if we can come up with a slower weaning plan for you. How does that sound?

Patient OK

Script 4: Alternate opening when patient asks for 'refill' only visit

GP Come in, welcome Mrs Jenkins. Please, take a seat. Are you happy for me to record today's session for the research we are both involved in?

Patient I can see you are busy and I won't take up your time. I just need a script refill

GP Thank-you for that. Every patient is important. Please, sit down and we can talk about how you are getting on. Are you happy for me to record today's session?

Script 5: Co-complete GPMP/TCA with practice nurse

Nurse Hello Mrs Jenkins, good to see you again. Are you happy for me to record today's session for the research we are both involved in?

Patient Yes

Nurse Thank you for that. Are you ready to work on your plan?

Patient Not really, but whatever

Nurse This is called a GP Management Plan and it will help co-ordinate the support you need

Patient I'm worried about coming off my medications. I've been on them for 5 years

Nurse That's important information for your plan. Coming off medications can be hard for some people. How quickly or slowly you wean off needs to be discussed between you and the GP

Patient The doctors keep changing their minds. First they want you on the medications, then off

Nurse That's true, medicine changes with new evidence. You are part of a generation of people who *were* given opioids for the pain you were experiencing without a plan to stop. The new science means this won't happen any more

Patient What do you mean?

Nurse The pain medicine specialists have examined the latest science and they no longer recommend that people even start on opioids when they are experiencing chronic non-cancer pain

Patient Where does that leave me?

Nurse We've been helping people gradually switch over to more active strategies. This can mean doing less of some things, like resting and doing more things like eating a diet that is full of vegetables. Do you have any other questions before we start your planning?



Script 6: Home Medication Review

Pharmacist Hello Mrs Jenkins, my name is Sue, I am the pharmacist and I am here to do your Medication Review. Thank you for meeting with me today, may I come in?

Patient Please, come in

Pharmacist Thank you, are you happy for me to record today's session for the research we are both involved in?

Patient Yes

Pharmacist Thank you. What have you been told about this visit today?

Patient The nurse told me you will be talking with me about the medications I am taking and that I only see you once

Pharmacist Yes, that's right. After this review today I will write a report back to your GP. We need to make sure we have a good understanding of your prescription and non-prescription medications. The doctor said you were having trouble with ongoing pain and we need to take a look at your medications.

Patient Fair enough

Pharmacist We have an hour to gather this information. It is quite detailed because it is developed for you individually

Patient Will you be recommending I stop taking OxyContin®?

Pharmacist The new opioid practice guidelines recommend that people who are experiencing chronic non-cancer pain wean off those medications after 90 days, so yes we will need to discuss how you and your GP might go about gradually stopping OxyContin®

Patient What would they know? It's the only thing that takes the edge off

Pharmacist Yes, it's true that these types of medications can take the edge off, but that's not a reason to remain on them, over time, the harms outweigh the benefits

Patient I'm worried how I'll cope on bad days

Pharmacist I'm glad you discussed this with me. The plan you are on will mean you'll be doing less of some things, like taking medications and about doing more of other things, like regular strength exercises. It is important that you talk this over with your GP as well. For now, we need to start gathering all the medications that you have and we'll begin there. Afterwards we will have time to talk about recommendations including some of the supplements that may be helpful

Script 7: Mrs Jenkins visits the clinical psychologist

Psychologist Hello Mrs Jenkins, nice to meet you, thank you for coming in today, I'm Annie. Are you happy for me to record today's session for the research we are both involved in?

Patient Yes

Psychologist I'm interested in what brings you here today.

Patient I'm here because of my pain but don't really see how a psychologist can help me with my pain; the pain is in my knee not in my head.

Psychologist Ok, well my role is to help you start working on your psychological skills to help with managing your ongoing pain. Tell me, what have you been told about your ongoing pain experience?

Patient Not much, but I have been pretty depressed

Psychologist Ok, that's a good start. Seeing a psychologist is normal these days for many people who experience pain, especially when they have depression like you. I am here to help explain the new pain science and to teach you some new skills that you can practice that help wind down pain, like having good sleep habits. We have access to around 10 sessions if we need them

Patient How is that going to help?

Psychologist Your thoughts and beliefs are important too and they can affect what you're doing. The idea is to work out what you want to do more of, plus learn some skills on how to sleep better.

Patient Sleep, what sleep?

Psychologist 'I understand, many patients report sleep problems'

Patient It's awful, the pain wakes me up all the time

Psychologist Yes, and not sleeping well can certainly make peoples' pain experience worse. It can be a vicious circle, but it can be helped

Patient I really don't see how all this helps my knee

Psychologist We will be working with you as a whole person from a 'mind-body' perspective. Experiencing long-term pain can wear you down and what you believe and think about pain makes a difference to how you manage, or do things. We can work together over a few sessions to learn to deal with the stress of your pain experience and many people find it helps pain levels wind down. I look forward to working with you on this



Script 8 : Mrs Jenkins visits the psychologically informed planned physical activity session with exercise physiologist (EP) or physiotherapist (PT)

EP/PT Hi there Mrs Jenkins thanks for coming in on this wet and windy day, that can't have been easy. Are you happy for me to record today's session for the research we are both involved in?

Patient Yes

EP/PT I'm Mike. I'm an accredited exercise physiologist. My role is to work with you to help you make a plan to increase your planned activity levels as well help you with a plan to reduce your daytime lying down time

Patient I don't see why you people can't just figure out what is causing this pain and fix it

EP/PT (Looks patient in the eye and says) 'what do you think is the problem?'

Patient I have no idea; you're the one who is supposed to tell me

EP/PT What have you been told so far that might explain why you continue to experience pain, even after the body has healed?

Patient I haven't healed. The X-ray said I have bone on bone

EP/PT Do you want my opinion on that?

Patient Sure

EP/PT Imaging, like X-rays, only show your body structure and the radiologists label it as they see it in the picture. The picture though doesn't equal the pain you are experiencing. In fact, your Xray is a pretty poor way to explain pain. The new science is looking more closely at whether the brain decides there is credible evidence of safety or danger

Patient What does that mean?

EP/PT It's your brain that produces your pain experience. There is an actual field of medicine now known as Explain Pain. Your brain has an idea about the structure of your knee but it also weighs up other information, your health in general, your belief system, your expectations of recovery, your past experiences, whether you are depressed and so on

Patient Ok, my mood is low. So, would yours be with a knee like mine

EP/PT I agree with you, low mood or depression has a big impact for people with ongoing pain. It's not surprising that lots of people become less active with pain. Over time inactivity leads to more pain and like you say can lower your mood. Are you getting support for that?

Patient Yes, I'm seeing Annie, the psychologist. I've seen him a few times. He wants me to go for a scheduled daily walk and write down my thoughts about what I believe is happening when I walk. I'm worried though, I don't want to do any more damage

EP/PT Lots of people believe pain equals damage but it's not true. In fact, the opposite is true. We now know that being inactive actually makes your pain experience worse

Patient So, what am I supposed to do?

EP/PT I see your goal is to play more with your grandchildren and yet at the moment it's hard just to get out of a chair without using your hands. Do you think you could start to practice standing up using just your legs?

Patient Maybe, it's hard to get motivated

EP/PT We know that focusing on getting stronger can boost motivation. It's important though to start at a level that you can manage-where the brain can get used to the idea that you are safe and not in danger. Then you need to stick to a slow gradual plan to practice each day and not skip any days. Shall we assess how quickly you can safely stand up from a chair five times without using your hands?

Patient Sure

EP/PT *Perform baseline test...that took 22 seconds.*

Patient Is that OK?

EP/PT The aim is to get it done under 15 seconds

Patient What do I need to do?

EP/PT Doing a couple before every meal will improve your leg strength. The idea is to do your exercise, and then reward yourself with a short rest afterwards

Patient What if I forget?

EP/PT Then you won't get stronger and your pain will stay the same. I need to check if we're both straight with this, can you tell me the agreed plan to help get you stronger?

Patient I'm going to practice getting up without using my hands before each meal. Do I do as many as I can?

EP/PT Try and stick to doing a comfortable amount, an amount that feels safe, and bump it up every few days. I have some other aspects of planned activity I'd like to discuss today, like how far and how fast you're walking. I want to ask you if there are any other activity questions you might have for me, is that OK?



SCRIPT 9 Mrs Jenkins visits the psychologically informed dietitian

Dietitian Hello Mrs Jenkins, I'm Jane the dietitian Are you happy for me to record today's session for the research we are both involved in?

Patient Yes

Dietitian Great, nice to meet you and this is...?

Patient My wife, Mary does the cooking and the practice nurse said it would be good if we came along together

Dietitian I'm glad you could both make it. Having a support person makes a big difference. Thanks Mary. Before we start, I'd like to ask you what you are expecting from today's visit

Patient The nurse said something about what I eat being important

Dietitian Yes, that's correct. We need to assess your daily nutritional intake. This will give us an idea of whether you're getting the right mix of foods and whether you are eating an optimal anti-inflammatory diet or not. The newer evidence seems to suggest that diet and a whole person approach makes a difference in the long term

Patient Before you start, I can't lose weight. I've tried

Dietitian How do you feel about that?

Patient Useless

Dietitian Feeling useless when it comes to weight loss is more common than most people think. You're not alone. Lots of Australians are overweight or obese. Losing weight and keeping it off is hard, but not impossible. We will have a bit of time to talk about that today and more time in our review session next week. Was there anything else you wanted to ask before we begin?

Patient Do I have to stop drinking beer?

Dietitian That all depends on whether you're drinking in excess of the Australian guidelines. If you are, I would be recommending that you get your drinking down, sure

Patient OK

Dietitian Let me summarise. Today we'll be assessing your 24 hour nutritional intake, including beer and then together we will make an eating plan that will work for you and for Mary. After I've reviewed you in a week or two, I'll send a brief report to your GP to let him/her know the long term plan that you made with me that you feel you can follow. Are you ready to start?

Script 10 : Regular monitor visit with practice nurse

Nurse Hello again Mrs Jenkins, are you happy for me to record today's session for the research we are both involved in?

Patient Yes

Nurse Thanks for that. How are you getting on with your plan?

Patient Well I'm doing it, mostly

Nurse That's good, it's important to build up your active management skills. How are you going sticking to less caffeine? I know you thought that would be difficult?

Patient Actually, it's not too bad. Both my wife and I have cut back on the caffeinated soft drink and it seems to be shifting some of this weight too

Nurse Well done. We've got lots of patients who now 'rethink that sugary drink'. Are you having any difficulties with any other aspects of the plan?

Patient I am finding it hard to wean off the medications

Nurse Anything else?

Patient No not really, I can get out of a chair easier now – I feel *safer* and the exercise physiologist told me that that is important and my walking seems a little easier, though I have skipped my walk some days

Nurse It's not easy to switch to active strategies. You've been in the habit of taking medications to mask the pain for so long. In time, the active strategies you are working so hard on will lead to less inflammation and you are likely to experience less pain. Sticking with the bigger plan is the key. Mention all your concerns to the GP when you go in

Script 11 : Nurse explaining avoidance learning at regular monitor visit

Nurse Hello Mrs Jenkins, are you happy for me to record today's session for the research we are both involved in?

Patient Yes

Nurse Great, how are you going with your walking?

Patient I'm doing it, the walking I mean, but I'm not doing the stairs he wanted

Nurse Ok. You've progressed to stairs, that's good. What's up with the stairs though?

Patient Well, I said I was going better getting out of the chair and then Mike (the EP) thought I was ready to start going down and up my back stairs. I don't agree though, I'd rather just keep using the ramp in the front.

Nurse Did you speak with Mike about the fall you had on the stairs a year ago?

Patient Yes, but he thinks it is important. He doesn't realise the rail is quite low I feel a bit unsafe

Nurse It's understandable that you are frightened of your back stairs and want to avoid them. Your brain wants to protect you. It's just like when we're driving we tend to slow-down in

the same spot wherever we got a speeding ticket, even if the policeman isn't there anymore.[107]

Patient I just don't think I'm ready

Nurse You're probably both right. Perhaps you and Mike could find another solution, so that you can keep up this great progress. It is important to make sure your brain relearns that movement is safe. Have you thought about practicing on some stairs that feel safe?

Patient No, I hadn't. Come to think of it there are some stairs just down my street with a decent rail that I could hold on

Nurse Talk to Mike, but I think that sounds like a new goal, a better goal for now. Remember, coming down stairs is hard work on your legs. Do your exercises slow and steady, that will build strength. You probably need to practice a bit more on those safer stairs before you tackle those back stairs of yours

Patient Thanks, I am really quite pleased with my progress, but I was worried about those stairs of mine

Script 12 : EP/PT explaining quotas

EP/PT Hi Mrs Jenkins, how are you? Do you remember what we were going to discuss today?

Patient Stairs

EP/PT Yes, you have a good memory! I wanted to make sure you knew how to build up safely, using a quota system, as we only have this visit today and one more

Patient The nurse and I thought I could just practice on the easy stairs down the road

EP/PT Yes, the practice nurse filled me in, that was a good idea

Patient I've done four (up and down) on two days, five on one day and six on one. I got a bit sore when I did the six though

EP/PT That is really good information. We can use it to set a baseline, which just means finding a really safe starting point for the quota system

Patient So, do I just do what I can comfortably manage and then rest?

EP/PT EP/PT That is one approach but it tends to teach the brain to react to the pain experience in an unhelpful way. We teach a more useful strategy called a quota system.

When you use quotas you stick to your sensible and safe training plan, even if you're a bit uncomfortable, then you take a well-earned rest

Patient That's different

EP/PT Yes, but we know it works. It is important to start nice and low though. For you this would probably best be achieved by starting with four stairs for three days, then, no matter how you're feeling from a pain perspective upgrading to five for the next three days and then six for three days and so on

Patient I see, three days on each level and then bump it up, even if I'm having a bad pain day because I know I am safe and my body is not in any danger

Script13 : Mrs Jenkins visits the clinical psychologist for help with sleep

Psychologist Hello Mrs Jenkins, good to see you again. How are you getting on with your sleep diary?

Patient It's been an interesting two-weeks, I think I get a bit more sleep than I first thought

Psychologist That's pretty common Mrs Jenkins, tell me how many hours do you think you are getting?

Patient About six hours on average

Psychologist That's great information. How do you feel about limiting the amount of time you spend in bed to about six and a half hours until our next visit?

Patient Why?

Psychologist Well, it can be helpful for some people to restrict the number of hours in bed to improve sleep.

Patient What else could I try?

Psychologist There are some different ideas we could look at, but I really want you to start by restricting the time you spend in bed, do you think you could try that?

Patient I suppose so

Psychologist Ok, well try and stick to the 6 ½ hours for two weeks and we can look at things again then

Session 4: Key messages & good communication in pain medicine

AIMM TRAINING ACTIVITY

Please read the case scenario & discuss

A 79-year-old widow, who lives independently, has chronic low back pain and lumbar spinal canal stenosis documented on magnetic resonance imaging. She has been reviewed by an orthopaedic surgeon and neurosurgeon. She presents to you, her GP, today reporting constant, diffuse, aching pain in the low back, which is exacerbated by prolonged standing and walking. On examination she walks slowly with poor balance. She is slow on sit- to-stand testing. There is no evidence of neurological deficit in her legs.

The patient is unwilling to undergo an operation. She has well-controlled hypertension and is taking a combined ACE inhibitor and a diuretic preparation. Currently the back pain is treated with 16 mg hydromorphone controlled release once daily and occasional paracetamol. However, her daughter, a pathologist, is concerned that her mother is taking an opioid and even more concerned that her mother is becoming forgetful. Could the drug be contributing? The patient has been taking hydromorphone at this dose for over eight months, after trialing a variety of other analgesics, including oxycodone, which had given her unpleasant side effects. On two occasions she has tried to wean off the hydro-morphone but the ensuing back pain severely limited her independence.

She still does volunteer work reading to local schoolchildren and her eldest son, who recently separated from his wife, has come to live with her.

Should this patient continue taking the opioid or are there better alternatives that could provide analgesia?

Evaluation

POST-SESSION TRAINING ACTIVITY: 5 minutes

Complete provider survey of attitudes

**EXCHANGE CONTACT DETAILS FOR
MENTORSHIP/SUPPORTIVE CONTACT WITH TERTIARY PAIN
TEAM**

Thank you for participating in the AIMM training workshop

Part III Continued clinical monitoring

Following the workshop training, health care providers will be encouraged to engage in reflective practice to become more experienced around promoting complex behaviour change [108]. Reflective practice has been used as a strategy to assist improvement of any gaps in knowledge and skills and transition to advanced practice [109,110]. Clinical leadership development also recognises the benefits of reflective learning [111]. Following completion of the face-to-face interactive training sessions, the health care providers will be provided with ongoing support to assist in integration of new skills [112]. Study personnel and selected members of the advisory group will offer ongoing mentorship to the providers and ensure optimal integration and knowledge sharing across tertiary and primary care. This regular clinical mentorship (via phone or email as preferred) will also ensure optimal proficiency and fidelity for delivering the AIMM intervention and allow any difficulties encountered in implementing the newly acquired behaviours to be discussed with the mentor[60].

3/12 POST-AIMM INTERVENTION PROVIDER TELEPHONE INTERVIEW

Schedule to complete telephone interview

ABBREVIATIONS

Assess, Inform, Manage and Monitor (AIMM)

Active Learning Module (ALM)

Exercise Physiologist (EP)

General Practitioner (GP)

General Practice Management Plan (GPMP)

Informed Consent Form (ICF)

New South Wales (NSW)

Patient Information Sheet (PIS)

Physiotherapist (PT)

Team Care Arrangements (TCA)

United States (US)

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APPENDIX 4

AIMM BASELINE SURVEY, 3MONTH SURVEY

PAPER 5

ACCEPTABILITY OF INTEGRATED PRIMARY HEALTHCARE OPIOID TAPERING INTERVENTION A MIXED-METHODS
STUDY

AIMM BASELINE SURVEY (PAPER 5)

(1 Question Name=Participant ID)

Q1) Insert participant ID:

(2 Question Name=Info screen)

Information for the AIMM baseline study survey

Please read each question and answer every question by touching the best answer on the screen. If you are unsure about how to answer a question, please give the best answer you can. It should only take about 15 minutes. When you are ready to start, touch NEXT

SECTION 1 EDUCATION AND EMPLOYMENT

(3 Question Name= Education level)

Please touch your answer, then touch NEXT

Q3) What is the highest level of education you have completed? *Please select only one.*

- 1= Primary School
- 2= School Certificate or Leaving Certificate
- 3= Higher School Certificate
- 4= TAFE Certificate or Diploma
- 5= University or other Tertiary Qualification

(4 Question Name=Internet access)

Please select all that apply to you, then touch NEXT

Q4) Do you have access to the internet?

- 1= Yes - on home computer
- 2= Yes - on work computer
- 3= Yes – on my phone or tablet device
- 4= Yes- other
- 5= Not at all

(5 Question Name=Income)

Please touch your answer, then touch NEXT

Q5) Which of the following best describes your main source of income?

- 1= Paid employment (either full time or part time)
- 2= Government pension or benefit
- 3= Family member
- 4= Personal savings
- 5= Other

(6 Question Name= Employment status)

Please touch your answer, then touch NEXT

Q6) What is your employment status? *Please select only one.*

- 1= I am employed (full time or part time)
- 2= I am unemployed
- 3= I am retired
- 4= Other

(7 Question Name=Housing status)

Please touch your answer, then touch NEXT

Q7) What is your current housing status?

- 1= Property owner
- 2= Renting
- 3= Living with friends/family
- 4= Halfway house
- 5= Homeless

(8 Question Name=Insurance)

Please touch your answer, then touch NEXT

Q8) Do you have private health insurance?

- 1= Yes
- 2= No

SECTION 2 HEALTH INFORMATION

(9 Question Name = Waist measurement cm)

Please insert your measurement in centimetres (CM) by touching the numbers on the number pad



Q9) Please use a tape measure in cm to measure directly against your skin **in line with your belly button.**

1= Waist = ____cm

(10Question Name = Smoking status)

Please touch your answer, then touch NEXT

Q10) Which of the following best describes your smoking?

- 1= I smoke (occasionally or daily)
- 2= I don't smoke now but I used to
- 3= I have never smoked

(11 Question Name = Frequency of Alcohol Days)

Please touch your answer, then touch NEXT

Q11) How often do you have a drink containing alcohol?

- 0= Never
- 1= Monthly or less

2= Two to four times per month

3= Two to three times a week

4= Four or more times a week

(12 Question Name = Number of alcoholic drinks)

Please touch your answer, then touch NEXT

Q12) How many standard drinks (please see picture below) do you have on a typical day when you are drinking alcohol? (Note: One middy/100mls of wine= 1 standard drink

One schooner/375 ml premixed can= 1.5 standard drinks, One bottle wine= 7 standard drinks)

0= 1-2 drinks

1= 3-4

2= 5-6

3= 7-9

4= 10 or more



(13 Question Name = Alcohol 4SDs)

Please touch your answer, then touch NEXT

Q13) How often do you have 4 or more standard drinks on one occasion?

0= Never

1= Less than monthly

2= Monthly

3= Weekly

4= Daily or almost daily

(14 Question Name = Fruit status)

Please touch your answer, then touch NEXT

Q14) How many serves of fruit do you usually eat each day?

(Note: One serve of fruit=



1= Zero

2= 1

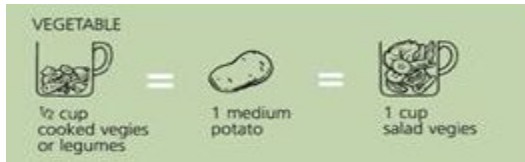
3= 2 or more

(15 Question Name = Vegetable status)

Please touch your answer, then touch NEXT

Q15) How many serves of vegetables do you usually eat each day?

(Note: One serve of vegetables=



1= Zero

2= 1-4

3= 5 or more

(16 Question Name =Ω-3 fatty acid supplement)

Please touch your answer, then touch NEXT

Q16) In the past 4 weeks have you taken fish oil or Omega-3 supplements?

1= Yes

2= No

3= Unsure

(17Question Name = Sedentarism)

Please touch your answer, then touch NEXT

Q17) Whenever you are sitting or lying down (e.g. watching TV, using a computer, and reading) do you

- 1= Deliberately stand up every 20 minutes
- 2= Deliberately stand up every 40 minutes
- 3= Deliberately stand up every hour
- 4= I do not deliberately stand up when I am sitting or lying down

SECTION 3 MENTAL HEALTH AND WELLBEING

(18 Question Name = Mental health treatments)

Please touch your answer, then touch NEXT

Q18) Have you ever received 'talking treatments (i.e. counselling, cognitive behavioural therapy) or medications for a mental health condition?

- 1= Yes
- 2= No
- 3= Unsure

(19 Question Name =Psychological Distress-K10)

Please touch your answer, then touch NEXT

Q19) Considering the past four weeks, which response best represents about how often you felt....?

Statement	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. Tired out for no good reason?	0	1	2	3	4
2. Without hope /hopeless?	0	1	2	3	4
3. Depressed?	0	1	2	3	4
4. That everything was an effort?	0	1	2	3	4
5. So sad that nothing could cheer you up?	0	1	2	3	4
6. Worthless?	0	1	2	3	4
7. Nervous?	0	1	2	3	4

8 So nervous that nothing could calm you down?	0	1	2	3	4
9. Restless or jumpy/ fidgety?	0	1	2	3	4
10. So restless that you could not sit still?	0	1	2	3	4

(20 Question Name =The primary care PTSD screen (PC-PTSD)

Please touch your answer, then touch NEXT

Q20) In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the last month, you

Experience statements	Yes	No
1. Had nightmares about it or thought about it when you did not want to?	1	0
2. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?	1	0
3. Were constantly on guard, watchful, or easily startled?	1	0
4. Felt numb or detached from others, activities or your surroundings?	1	0

(21 Question Name= Connection)

Please touch your answer, then touch NEXT

Q21) How many family members or friends can you rely on if you have a serious problem?

1= No family members or friends I can rely on

2= 1-2 family members or friends

3= 3-4 family members or friends

4= 5 or more family members or friends

SECTION 4 PAIN DETAILS

(22 Question Name =Duration of pain)

Please touch your answer, then touch NEXT

Q22) Thinking about how long you have had your current pain problem, have you had it for ...?

1= 3-12 months

2= 12 months to 2 years

3= 2-5 years

4= More than 5 years

(23 Question Name =Diagnosis)

ACCEPT MULTIPLES

Please touch your answer, then touch NEXT

Q23) What have you been told is the diagnosis related to your chronic pain experience?

1= Migraine and / or bad headaches

2= Post cancer (e.g. post mastectomy or post thoracotomy pain)

3= Arthritis (e.g. hip replacement, knee joint changes)

4= Shingles

5= Sciatica/intervertebral disc problem/spine problem/specific back problem

6= Related to another illness e.g. angina, diabetes or multiple sclerosis or Parkinson's disease

7= Muscle pain (e.g. fibromyalgia)

8= Accident or injury/fractures

9= Nerve pain/ neuropathic pain

10= Women's pelvic issues

11= Central sensitisation- intensified pain sensation felt in the body related to enhanced nervous system transmissions within the spinal cord and brain

12= Doctor didn't say/doctor didn't know

13= Pain just began, no clear relationship to any event

14= Other conditions associated with chronic pain

(24 Question Name =Pain as a reason to visit primary care practitioner)

Please touch your answer, then touch NEXT

Q24) Thinking about the reason for visiting the doctor when you were invited to the study, was your ongoing pain...?

1= The main reason for visiting

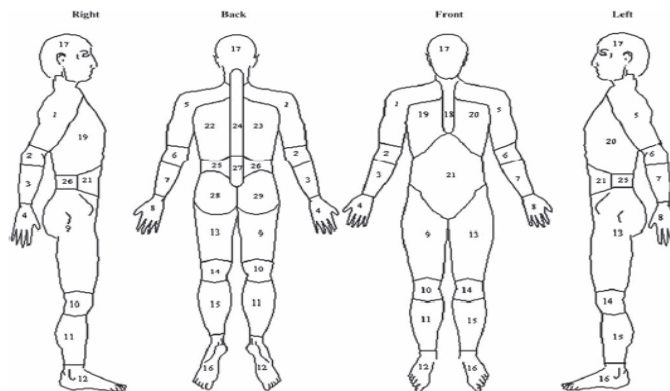
2= One of the reasons for visiting

3= Not the reason for visiting

(25 Question Name = Pain sites and main pain complaint)

Please touch each site on the body chart where you experience pain, then touch NEXT

- 1= Shoulder girdle, left and right
- 2= Hip /buttock, left and right
- 3= Left and right jaw/ face/head
- 4= Upper back
- 5= Lower back
- 6= Upper arm, left and right
- 7= Upper leg, left and right
- 8= Chest
- 9= Neck
- 10= Abdomen/genitourinary
- 11= Lower arm, left and right [hands]
- 12= Lower leg, left and right [feet]



Please touch the area that hurts you the most, then touch NEXT

(27 Question Name = Pain intensity-BPI)

*Please rate your pain by touching the number that best describes your pain **intensity** for each item below, then touch NEXT*

Pain intensity item	Where
---------------------	-------

	0= No pain and 10= Pain as bad as you can imagine										
1. Your pain at its worst in the last week?	0	1	2	3	4	5	6	7	8	9	10
2. Your pain at its least in the last week?	0	1	2	3	4	5	6	7	8	9	10
3. Your pain on average in the last week?	0	1	2	3	4	5	6	7	8	9	10
4. How much pain do you have right now?	0	1	2	3	4	5	6	7	8	9	10

(28 Question Name = Pain interference-BPI)

Please touch the number on the scale describing during the past week, how much has pain interfered with the following items, then touch NEXT

Pain interference item	Where 0= Does not interfere and 10= Completely interferes										
1. Your general activity?	0	1	2	3	4	5	6	7	8	9	10
2. Your mood?	0	1	2	3	4	5	6	7	8	9	10
3. Your walking ability?	0	1	2	3	4	5	6	7	8	9	10
4. Your normal work (both outside the home and housework)?	0	1	2	3	4	5	6	7	8	9	10
5. Your relations with other people?	0	1	2	3	4	5	6	7	8	9	10
6. Your sleep?	0	1	2	3	4	5	6	7	8	9	10
7. Your enjoyment of life?	0	1	2	3	4	5	6	7	8	9	10

SECTION 5 CURRENT PAIN MEDICATIONS

(29 Question Name =Over the counter [OTC] simple analgesic)

Please touch your answer, then touch NEXT

Q29) Are you currently (daily or a few times a week) taking any over-the-counter or non-prescription pain medication that does *not* contain codeine?

1= No

SKIP TO Q30)

2= Yes If yes, please complete the strength (or dose) of each medicine taken and how many you usually take and how many days per week you take them

Over the counter simple analgesic	Examples of medicine brand names	Medicine strength (or dose on label)	How many tablets in total do you usually take per day?	How many days per week you usually take this medication?
Ibuprofen	Nurofen®, Advil®, or generic equivalent 	200mg 400mg Other □□□mg	1X 2x 3x 4x 5X 6X Other □□	☐
Aspirin	Aspro tablets®, Aspro clear®, Aspirin®, Dispirin® or generic equivalent 	100mg 300mg 320mg 500mg Other □□□mg	1X 2x 3x 4x 5X 6X Other □□	☐
Paracetamol	Panadol®, Dymadon®, Panamax®, Paralgin®, Panadol® Osteo or generic equivalent 	250mg 500mg 665mg Other	1X 2x 3x 4x 5X 6X	☐

		mg	Other 	
Other	Please name	mg		☐

(30 Question Name =Over the counter [OTC] weak opioid combination analgesic)

Q30) Are you currently (daily or a few times a week) taking any over-the-counter or non-prescription medication that contains codeine?

1= No

SKIP TO Q31)

2= Yes If yes, please complete the strength (or dose) of each medicine taken and how many you usually take per day when you take them

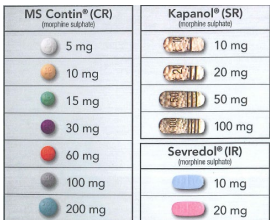
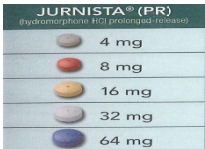
Over the counter —containing codeine	Examples of medicine brand names	Medicine strength (or dose on label)	How many do you usually take per day?	How many days per week you usually take this medication?
Aspirin and Codeine phosphate	Aspalgin® or generic equivalent 	Aspirin 300mg, Codeine phosphate 8mg Other / mg		☐
Ibuprofen and Codeine phosphate	Nurofen plus® or generic equivalent 	Ibuprofen 200 mg, codeine phosphate 12.8 mg Other / mg		☐
Paracetamol and codeine	Panadeine® or generic equivalent	Paracetamol 500 mg,		☐

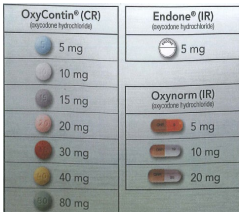
phosphate		codeine phosphate 8 mg Other / mg		
Paracetamol, codeine phosphate and doxylamine succinate	Mersyndol® or generic equivalent 	Paracetamol 450 mg, codeine phosphate 9.75 mg, doxylamine succinate 5 mg Other / / mg		☐
Other	Please name	mg		☐

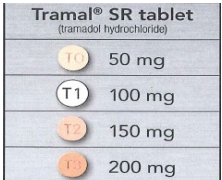
(31 Question Name = Class of prescription opioids/ narcotics used for 90+days)

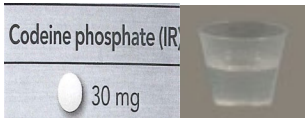
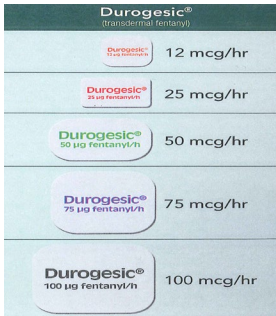
Please touch your answer, then touch NEXT

Q31) Please complete by ticking (✓) both the strength (or dose) of each prescription opioid medicine you are currently taking and ticking (✓) how often you usually take them per day

Prescription opioids	Examples of medicine brand names	Tick ✓ the medicine strength (or dose on label)	Tick ✓ how often you usually take per day	How many days per week you usually take this medication
Morphine sulphate	Immediate release Ordine® liquid, Sevredol® tablets, Anamorph® tablets Modified release 12 hour MS Contin® (CR), Momex® SR MS Contin suspension, Modified release 12 or 24hour Kapanol (SR), Modified release 24 hours MS Mono®-24 hrly Parenteral -subcutaneous, intravenous 	5mg 10mg 15mg 30mg 60mg 100mg 200mg Other □□□mg	1X 2x 3x 4x Other □□	□
Hydromorphone	Immediate release Dilaudid® tablets or mixture, injection Controlled release Jurnista® 	4mg 8mg 16mg 32mg 64mg Other □□□mg	1X 2x 3x 4x Other □□	□

Methadone	Physeptone® (tab and injection available) 	☐ ☐ mg	☐ ☐	☐
Oxycodone	Immediate release Endone®, OxyNorm® (capsules or mixture) Controlled release OxyContin®, Targin® (this has Oxycodone and naloxone in it as a combination product) Proladone® suppositories 	5mg 10mg 15mg 20mg 30mg 40mg 60mg 80mg 100mg 200mg Other ☐ ☐ ☐ mg	1X 2x 3x 4x Other ☐ ☐	☐
Dextropropoxyphene hydrochloride; paracetamol	Di Gesic  Tablets	2 tablets is 65mg (+paracetamol 650mg) Other ☐ ☐ ☐ mg	1X 2X 3X 4X 5X 6X	☐
Dextropropoxyphene	Doloxene  Capsules	100mg Other ☐ ☐ ☐ mg	1X 2X 3X 4X 5X 6X	☐
Tramadol hydrochloride	Immediate release	50mg 100mg	1X 2x	☐

	Capsules: Lodam®, Tramal®, Tramedo, Zydol®, Tramadol® Oral liquid: Tramal® Oral Drops Injectable, Tramal® Tramadol® 12 hour Controlled release: Lodam® SR Tramal® SR Tramedo® SR Zydol® SR Tramadol® SR 24 hour controlled release: Durotram® 	150mg 200mg 300mg Other □□□mg	3x 4x Other □□	
Tapentadol	Sustained release tablets Palexia®SR 	50mg 100mg 150mg 200mg 250mg Other □□□mg	1X 2x Other □□	□
Paracetamol 500mg Codeine 30mg	Panadeine Forte®; Codalgin Forte®; Codapane Forte® Comfarol Forte® Prodeine Forte® 	500mg paracetamol/30 mg codeine Other □□□mg	1X 2x 3x 4x Other □□	□

Prescription codeine	Codeine phosphate tablets Or codeine phosphate liquid Codeine Linctus; Actacode Linctus 	30mg codeine Other □□□mg	1X 2x 3x 4x Other □□	☐
Buprenorphine	Transdermal 7 day patch. 	5mcg/hr 10mcg/hr 20mcg/hr Other □□mcg/hr	1 x per week Other □□	☐
Transdermal Fentanyl	Transdermal patch Durogesic®, Denpax®, Dutran® Fenpatch®, Fentanyl® 	12mcg/hr 25mcg/hr 50mcg/hr 75mcg/hr 100mcg/hr Other □□mcg/hr	1x every 72 hours Other □□	☐

(32 Question Name = Prescription NSAIDs or benzodiazepines)

Please touch your answer, then touch NEXT

Q32) Are you currently (daily or a few times a week) taking any prescription anti-inflammatory oral medication and/or minor tranquilisers?

1= No

SKIP TO Q33)

2= Yes If yes, please complete the strength (or dose) of each medicine taken and how many you usually take when you take them

Class of prescription medicine	Examples of medicine brand names	Medicine strength (or dose on the label)	How many do you usually take per day?	How many days per week do you usually take this medication?
Antiinflammatory orals	Celecoxib (Celebrex®), Diclofenac (Voltaren®), Etoricoxib (Arcoxia®), Ketoprofen (Orudis®), Ketorolac (Toradol®), Indomethacin (Indocid®), Mefanamic acid (Ponstan®), Meloxicam (Mobic®), Naproxen (Naprosyn®), Piroxicam (Feldene®), Sulindac (Aclin®) NB: there are other generic names	7.5mg 10mg 12.5mg 15mg 20mg 25mg 30mg 50mg 60mg 100mg 120mg 200mg 250mg 500mg Other mg		
Minor tranquilisers Benzodiazepines	Alprazolam (Xanax®) Bromazepam (Lexotan®), Clonazepam (Frisium®),	250mcg 500mcg 1mg		

	Rivotril®), Diazepam (Valium®, Ducene®, Antenax®), Flunitrazepam (Rohypnol®, Hypnodorm®), Lorazepam (Ativan®), Nitrazepam (Mogadon®, Alodorm®), Oxazepam (Serepax®, Murelax®, Alepam®), Temazepam (Euhypnos®, Normison®, Temaze®), Triazolam (Halcion®) NB: there are other generic brand names 	2mg 2.5mg 3mg 5mg 6mg 10mg 15mg 30mg Other ☐ ☐ mg		
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SECTION 6 CONFIDENCE AND ATTITUDES

(33Question Name =Confidence to wean off opioids)

Please touch your answer, then touch NEXT

Q33 Please select the number which best describes how you feel about weaning off the opioids (eg OxyContin, Tramadol, Panadeine) you are currently using. Would you say you ...?

1= are ready to start weaning off in the next 30 days?

2= are ready to start weaning off in the next 6months?

3= may be ready to try weaning off in the future, but not in the next 6months?

4= never expect to wean off?

(34Question Name =Confidence to function-Pain Self Efficacy Questionnaire)

Q34 Please select the number to represent how confident you are that you can (or could) do the following things at present, despite the pain, *then touch NEXT*.

Confidence to function	Where 0= Not at all confident and 6= Completely confident						
1. I can enjoy things, despite the pain	0	1	2	3	4	5	6
2. I can do most of the household chores (eg. tidying-up, washing dishes etc.) despite the pain	0	1	2	3	4	5	6
3. I can socialise with my friends or family members as often as I used to do, despite the pain	0	1	2	3	4	5	6
4. I can cope with my pain in most situations	0	1	2	3	4	5	6
5. I can do some form of work, despite the pain ('work' includes housework, paid and unpaid work)	0	1	2	3	4	5	6
6. I can still do many of the things I enjoy doing, such as hobbies or leisure activities, despite the pain	0	1	2	3	4	5	6
7. I can cope with my pain without medication	0	1	2	3	4	5	6
8. I can still accomplish most of my goals in life, despite the pain	0	1	2	3	4	5	6
9. I can live a normal lifestyle, despite the pain	0	1	2	3	4	5	6
10. I can gradually become more active, despite the pain	0	1	2	3	4	5	6

(35Question Name =Survey of expectations and attitudes regarding chronic pain)

Q35) Please select the number which represents whether you agree or disagree with the following statements, *then touch NEXT*.

Attitude	Where 0= completely disagree and 4= Completely agree
----------	---

1. I need pain reduction before I can address other life issues	0	1	2	3	4
2. There is a chance the pain could improve	0	1	2	3	4
3. It is important that my health care providers understand the emotional impact of life events that might affect the pain	0	1	2	3	4
4. Addressing depression or anxiety helps with recovery from chronic pain	0	1	2	3	4
5. Getting back to a social life may help with pain management	0	1	2	3	4
6. Regular physical activity does <u>not</u> help reduce my pain	0	1	2	3	4
7. Addressing sleep problems would help me cope better with pain	0	1	2	3	4
8. A healthy lifestyle will reduce inflammation and improve my wellbeing	0	1	2	3	4

SECTION 7 OTHER HEALTH PROBLEMS

(36 Question Name = Lifetime comorbidity)

Please touch your answer, then touch NEXT

Q36) Has a doctor ever told you that you have any of the following health conditions...?

Health condition	Yes	No
1. Neck/back disorder. This includes lumbago, sciatica, chronic back or neck pain, vertebrae or disc problems. It can be injury related or something you were born with..."	1	0
2. Osteoarthritis, degenerative arthritis or rheumatoid arthritis	1	0
3. Heart disease. Includes those ever diagnosed with a heart attack, angina, heart failure or other heart disease (excludes high blood pressure and high cholesterol)	1	0
4. High blood pressure and/or high cholesterol	1	0
5. Migraine	1	0
6. Asthma. Includes those who have experienced an asthma attack or been woken by an attack or shortness of breath in the past 12 months	1	0

7. Eczema/dermatitis	1	0
8. Cancer other than skin cancer, (e.g. lung, breast, prostate, head and neck, oesophageal, colorectal, kidney, bladder cancer)	1	0
9. Bowel disease. Includes irritable bowel syndrome, inflammatory bowel disease, Crohns disease, ulcerative colitis, celiac disease, diverticular disease, and other bowel problems	1	0
10. Diabetes—includes Type 1 or Type 2	1	0
11. Thyroid condition—includes hyperthyroidism, hypothyroidism, Graves' disease, Hashimoto's disease, thyroiditis and other unspecified thyroid conditions	1	0
12. Stomach/gastric ulcers/ Gastro Oesophageal Reflux Disease (GORD)	1	0
13. Osteoporosis (reduced bone mineral density or low bone mass)	1	0
14. Stroke, seizures, Parkinson's disease or another neurological condition	1	0
15. Endometriosis. This condition relates to women only (the abnormal presence of endometrial tissue outside the uterus, usually in the abdominal/pelvic cavity)	1	0
16. Bronchitis/emphysema/chronic obstructive pulmonary disease	1	0
17. Prostate problems. This condition relates to men only (enlarged prostate also known as benign prostatic hypertrophy)	1	0
18. Mental health condition. A mental health condition that has lasted or is expected to last 6 months or more and the symptoms may be present all the time or be intermittent (e.g. depression, anxiety, panic disorders)	1	0
19. Liver condition—abnormal liver function chronic liver disease, cirrhosis	1	0
20. Kidney condition—abnormal renal function	1	0

SECTION 8 BACKGROUND INFORMATION

(37Question Name =Gender)

Please touch your answer, then touch NEXT

Q37) Are you:

1= Male

2= Female

(38 Question Name= Age)

Please type your age, then touch NEXT

Q38) Your age:

1= Years

(39Question Name= Ethnicity status)

Please touch your answer, then touch NEXT

Q39) Are you Aboriginal and or Torres Strait Islander?

1= Yes

2= No

3= Don't know

Thank you for completing this survey. The survey will now be forwarded to the research team and a summary will be forwarded to your GP prior to your initial study visit

AIMM 3 MONTH SURVEY (PAPER 5)

This questionnaire requests information helpful to the research team in assessing how effective the AIMM pilot study has been. Please touch the screen when you are ready to commence the survey. It should only take around 15minutes. Answer every question by touching the answer on the screen. If you are unsure about how to answer a question, please give the best answer you can.

(1 Question Name=Participant ID)

Q1) Insert participant ID:

(2 Question Name=Info screen)

SECTION 1 PATIENT EMPLOYMENT

(3 Question Name= Employment status)-

Please touch your answer, then touch NEXT

Q3) What is your employment status? *Please select only one.*

1= I am employed (full time or part time)

2= I am unemployed

3= I am retired

4= Other

SECTION 2 HEALTH INFORMATION

(4 Question Name = Waist measurement cm)

Please insert your waist measurement in centimetres (CM) by touching the numbers on the number pad. Then touch NEXT.

Q4) Please use a tape measure in cm to measure directly against your skin in line with your belly button around your middle.

1= Waist = _____cm

(5 Question Name = Smoking status)

Please touch your answer, then touch NEXT

Q5) Which of the following best describes your smoking?

- 1= I smoke (occasionally or daily)
- 2= I don't smoke now but I used to
- 3= I have never smoked

(6 Question Name = Frequency of Alcohol Days)

Please touch your answer, then touch NEXT

Q6) How often do you have a drink containing alcohol?

- 0= Never
- 1= Monthly or less
- 2= Two to four times per month
- 3= Two to three times a week
- 4= Four or more times a week

(7 Question Name = Number of alcoholic drinks)

Please touch your answer, then touch NEXT

Q7) How many standard drinks (please see picture below) do you have on a typical day when you are drinking alcohol?(Note: One middy/100mls of wine= 1 standard drink

One schooner/375 ml premixed can= 1.5 standard drinks, One bottle wine= 7 standard drinks)

- 0= 1-2 drinks
- 1= 3-4
- 2= 5-6
- 3= 7-9
- 4= 10 or more



(8 Question Name = Alcohol 4SDs)

Please touch your answer, then touch NEXT

Q8) How often do you have 4 or more standard drinks on one occasion?

0= Never

1= Less than monthly

2= Monthly

3= Weekly

4= Daily or almost daily

(9 Question Name = Fruit status)

Please touch your answer, then touch NEXT

Q9) How many serves of fruit do you usually eat each day?

(Note: One serve of fruit=



1= Zero

2= 1

3= 2 or more

(10 Question Name = Vegetable status)

Please touch your answer, then touch NEXT

Q10) How many serves of vegetables do you usually eat each day?

(Note: One serve of vegetables=



1= Zero

2= 1-4

3= 5 or more

(11 Question Name =-Ω-3 fatty acid supplement)

Please touch your answer, then touch NEXT

Q11) In the past 4 weeks have you taken fish oil or Omega-3 supplements?

1= Yes

2= No

3= Unsure

(12 Question Name = Sedentarism)

Please touch your answer, then touch NEXT

Q12)

Whenever you are sitting or lying down (eg watching TV, using a computer, and reading) do you

1= Deliberately stand up every 20 minutes

2= Deliberately stand up every 40 minutes

3= Deliberately stand up every hour

4= I do not deliberately stand up when I am sitting or lying down

SECTION 3 MENTAL HEALTH AND WELLBEING

(13 Question Name =Psychological Distress-K10)

Please touch your answer, then touch NEXT

Q13) Considering the past four weeks, which response best represents about how often you felt....?

Statement	None of the time	A little of the time	Some of the time	Most of the time	All of the time
1. Tired out for no good reason?	0	1	2	3	4
2. Without hope /hopeless?	0	1	2	3	4
3. Depressed?	0	1	2	3	4
4. That everything was an effort?	0	1	2	3	4
5. So sad that nothing could cheer you up?	0	1	2	3	4
6. Worthless?	0	1	2	3	4

7. Nervous?	0	1	2	3	4
8 So nervous that nothing could calm you down?	0	1	2	3	4
9. Restless or jumpy/ fidgety?	0	1	2	3	4
10. So restless that you could not sit still?	0	1	2	3	4

(14 Question Name =The primary care PTSD screen (PC-PTSD)

Please touch your answer, then touch NEXT

Q14) In your life, have you ever had any experience that was so frightening, horrible, or upsetting that, in the last month, you

Experience statements	Yes	No
1. Had nightmares about it or thought about it when you did not want to?	1	0
2. Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?	1	0
3. Were constantly on guard, watchful, or easily startled?	1	0
4. Felt numb or detached from others, activities or your surroundings?	1	0

(15 Question Name= Connection)

Please touch your answer, then touch NEXT

Q15) How many family members or friends can you rely on if you have a serious problem?

1= No family members or friends I can rely on

2= 1-2 family members or friends

3= 3-4 family members or friends OR

4= 5 or more family members or friends

SECTION 4 PAIN DETAILS

(16 Question Name =Diagnosis/Cause)

ACCEPT MULTIPLES

Please touch your answer, then touch NEXT

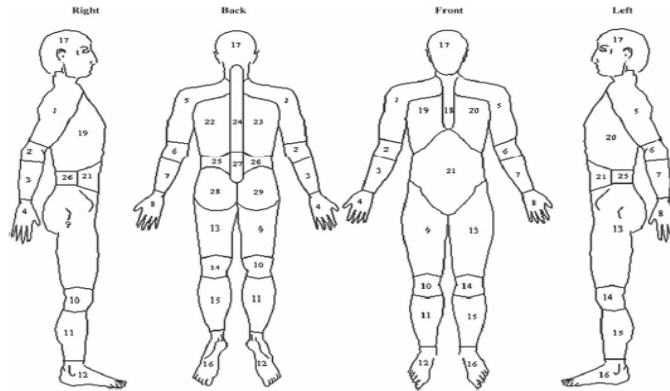
Q16) What have you been told is the diagnosis related to your chronic pain?

- 1= Migraine and / or bad headaches
- 2= Post cancer (e.g. post mastectomy or post thoracotomy pain)
- 3= Arthritis (e.g. hip replacement, knee joint changes)
- 4= Shingles
- 5= Sciatica/intervertebral disc problem/spine problem/specific back problem
- 6= Related to another illness e.g. angina, diabetes or multiple sclerosis or Parkinson's disease
- 7= Muscle pain (e.g. fibromyalgia)
- 8= Accident or injury/fractures
- 9= Nerve pain/ neuropathic pain
- 10= Women's pelvic issues
- 11= Central sensitisation- intensified pain sensation felt in the body related to enhanced nervous system transmissions within the spinal cord and brain
- 12= Doctor didn't say/doctor didn't know
- 13= Pain just began, no clear relationship to any event
- 14= Other conditions associated with chronic pain

(17 Question Name = Pain sites and primary pain complaint)

Please touch each site on the body chart where you experience pain, then touch NEXT

- 1= Shoulder girdle, left and right
- 2= Hip /buttock, left and right
- 3= Left and right jaw/ face/head
- 4= Upper back
- 5= Lower back
- 6= Upper arm, left and right
- 7= Upper leg, left and right
- 8= Chest
- 9= Neck
- 10= Abdomen/genitourinary
- 11= Lower arm, left and right [hands]
- 12= Lower leg, left and right [feet]



Please touch the area that hurts you the most, then touch NEXT

(18 Question Name = Pain intensity-BPI)

*Please rate your pain by touching the number that best describes your pain **intensity** for each item below, then touch NEXT*

Pain intensity item	Where 0= No pain and 10= Pain as bad as you can imagine										
1. Your pain at its worst in the last week?	0	1	2	3	4	5	6	7	8	9	10
2. Your pain at its least in the last week?	0	1	2	3	4	5	6	7	8	9	10
3. Your pain on average in the last week?	0	1	2	3	4	5	6	7	8	9	10
4. How much pain do you have right now?	0	1	2	3	4	5	6	7	8	9	10

(19 Question Name = Pain interference-BPI)

Please touch the number on the scale describing during the past week, how much has pain interfered with the following items, then touch NEXT

Pain interference item	Where 0= Does not interfere and 10= Completely interferes										
1. Your general activity?	0	1	2	3	4	5	6	7	8	9	10
2. Your mood?	0	1	2	3	4	5	6	7	8	9	10
3. Your walking ability?	0	1	2	3	4	5	6	7	8	9	10
4. Your normal work (both outside the home and housework)?	0	1	2	3	4	5	6	7	8	9	10
5. Your relations with other people?	0	1	2	3	4	5	6	7	8	9	10
6. Your sleep?	0	1	2	3	4	5	6	7	8	9	10
7. Your enjoyment of life?	0	1	2	3	4	5	6	7	8	9	10

SECTION 5 CURRENT PAIN MEDICATIONS

(20 Question Name =Over the counter [OTC] simple analgesic)

Please touch your answer, then touch NEXT

Q20) Are you currently (daily or a few times a week) taking any over-the-counter or non-prescription pain medication that does *not* contain codeine?

1= No

SKIP TO Q21)

2= Yes

If yes, please complete the strength (or dose) of each medicine taken and how many you usually take when you take them

Over the counter simple analgesic	Examples of medicine brand names	Medicine strength (or dose on label)	How many tablets in total do you usually take per day?	How many days per week you usually take this medication?
Ibuprofen	Nurofen®, Advil®, or generic equivalent	200mg Other □□□mg	1X 2x 3x	☐

	 		4x 5X 6X Other ☐ ☐	
Aspirin	Aspro tablets®, Aspro clear®, Aspirin®, Dispirin® or generic equivalent  	300mg 320mg 500mg Other ☐ ☐ ☐ mg	1X 2x 3x 4x 5X 6X Other ☐ ☐	☐
Paracetamol	Panadol®, Dymadon®, Panamax®, Paralgin®, Panadol® Osteo or generic equivalent  	500mg 665mg Other ☐ ☐ ☐ mg	1X 2x 3x 4x 5X 6X Other ☐ ☐	☐
Other	Please name	mg		☐

(21 Question Name =Over the counter [OTC] weak opioid combination analgesic)

Q21) Are you currently (daily or a few times a week) taking any over-the-counter or non-prescription medication that contains codeine?

1= No

SKIP TO Q22)

2= Yes

If yes, please complete the strength (or dose) of each medicine taken and how many you usually take when you take them

Over the counter –containing codeine	Examples of medicine brand names	Medicine strength (or dose on label)	How many do you usually take per day?	How many days per week you usually take this medication?
Aspirin and Codeine phosphate	Aspalgin® or generic equivalent 	Aspirin 300mg, Codeine phosphate 8mg Other □□□/ □□mg	□□	□
Ibuprofen and Codeine phosphate	Nurofen plus® or generic equivalent 	Ibuprofen 200 mg, codeine phosphate 12.8 mg Other □□□/ □□mg	□□	□
Paracetamol and codeine phosphate	Panadeine® or generic equivalent 	Paracetamol 500 mg, codeine phosphate 8 mg Other □□□/ □□mg	□□	□
Paracetamol, codeine phosphate and doxylamine succinate	Mersyndol® or generic equivalent 	Paracetamol 450 mg, codeine phosphate 9.75 mg, doxylamine succinate 5 mg Other □□□/ □□/□□ mg	□□	□

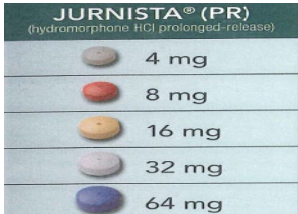
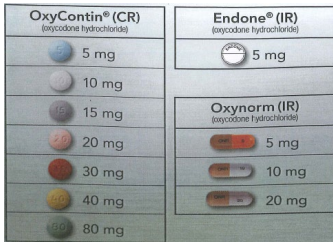
Other	Please name	mg		
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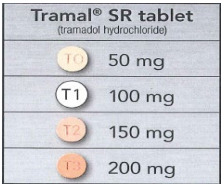
(22 Question Name = Class of prescription opioids/ narcotics used for 90+days)

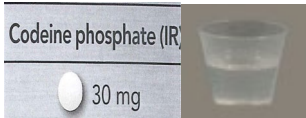
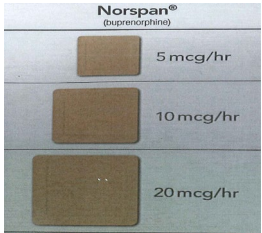
Please touch your answer, then touch NEXT

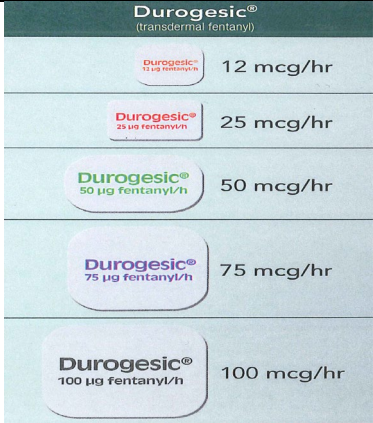
Q22) Please complete by touching (✓) both the strength (or dose) of each prescription opioid medicine you are currently taking and ticking (✓) how often you usually take them

Prescription opioids	Examples of medicine brand names	Tick ✓ the medicine strength (or dose on label)	Tick ✓ how often you usually take per day	How many days per week you usually take this medication																										
Morphine sulphate	Immediate release Ordine® liquid, Sevredol® tablets, Anamorph® tablets Modified release 12 hour MS Contin® (CR), Momex® SR MS Contin suspension, Modified release 12 or 24hour Kapanol (SR), Modified release 24 hours MS Mono®-24 hrly Parenteral -subcutaneous, intravenous <table border="1"> <caption>MS Contin® (CR) (morphine sulphate)</caption> <tr><td></td><td>5 mg</td></tr> <tr><td></td><td>10 mg</td></tr> <tr><td></td><td>15 mg</td></tr> <tr><td></td><td>30 mg</td></tr> <tr><td></td><td>60 mg</td></tr> <tr><td></td><td>100 mg</td></tr> <tr><td></td><td>200 mg</td></tr> </table> <table border="1"> <caption>Kapanol® (SR) (morphine sulphate)</caption> <tr><td></td><td>10 mg</td></tr> <tr><td></td><td>20 mg</td></tr> <tr><td></td><td>50 mg</td></tr> <tr><td></td><td>100 mg</td></tr> </table> <table border="1"> <caption>Sevredol® (IR) (morphine sulphate)</caption> <tr><td></td><td>10 mg</td></tr> <tr><td></td><td>20 mg</td></tr> </table>		5 mg		10 mg		15 mg		30 mg		60 mg		100 mg		200 mg		10 mg		20 mg		50 mg		100 mg		10 mg		20 mg	5mg 10mg 15mg 30mg 60mg 100mg 200mg Other mg	1X 2x 3x 4x Other	
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Hydromorphone	Immediate release Dilaudid® tablets or mixture,	4mg 8mg	1X 2x																											

	injection Controlled release Jurnista® 	16mg 32mg 64mg Other mg	3x 4x Other 	
Methadone	Physeptone® (tab and injection available) 	mg		☐
Oxycodone	Immediate release Endone®, OxyNorm® (capsules or mixture) Controlled release Oxycontin®, Targin® (this has oxycontin and naloxone in it as a combination product) Proladone® suppositories 	5mg 10mg 15mg 20mg 30mg 40mg 60mg 80mg 100mg 200mg Other mg	1X 2x 3x 4x Other 	☐
Dextropropoxyphene hydrochloride; paracetamol	Di Gesic 	2 tablets is 65mg (+paracetamol 650mg)	1X 2X 3X 4X 5X 6X	☐
Dextropropoxyphen	Doloxene	100mg	1X	☐

e			2X 3X 4X 5X 6X	
Tramadol hydrochloride	Immediate release Capsules: Lodam®, Tramal®, Tramedo, Zydol®, Tramadol® Oral liquid: Tramal® Oral Drops Injectable, Tramal® Tramadol® 12 hour Controlled release: Lodam® SR Tramal® SR Tramedo® SR Zydol® SR Tramadol® SR 24 hour controlled release: Durotram® 	50mg 100mg 150mg 200mg 300mg Other □□□mg	1X 2x 3x 4x Other □□	☐
Tapentadol	Sustained release tablets Palexia®SR 	50mg 100mg 150mg 200mg 250mg Other	1X 2x Other □□	☐

		□□□mg		
Paracetamol 500mg Codeine 30mg	Panadeine Forte®; Codalgin Forte®; Codapane Forte® Comfarol Forte® Prodeine Forte® 	30mg codeine Other □□□mg	1X 2x 3x 4x Other □□	□
Prescription codeine	Codeine phosphate tablets Or codeine phosphate liquid Codeine Linctus; Actacode Linctus 	30mg codeine Other □□□mg	1X 2x 3x 4x Other □□	□
Buprenorphine	Transdermal 7 day patch. Norspan®. 	5mcg/hr 10mcg/hr 20mcg/hr Other □□mcg/hr	1 x per week Other □□	□
Transdermal Fentanyl	Transdermal patch Durogesic®, Denpax®, Dutran® Fenpatch®, Fentanyl®	12mcg/hr 25mcg/hr 50mcg/hr 75mcg/hr 100mcg/hr	1x every 72 hours (default)	□

		Other mcg/hr		
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(23 Question Name = Prescription NSAIDS or benzodiazepines)

Please touch your answer, then touch NEXT

Q23) Are you currently (daily or a few times a week) taking any prescription anti-inflammatory oral medication and/or minor tranquilisers?

1= No

SKIP TO Q24)

2= Yes If yes, please complete the strength (or dose) of each medicine taken and how many you usually take when you take them

Class of prescription medicine	Examples of medicine brand names	Medicine strength (or dose on the label)	How many do you usually take per day?	How many days per week do you usually take this medication?
Antiinflammatory orals	Celecoxib (Celebrex®), Diclofenac (Voltaren®), Etoricoxib (Arcoxia®), Ketoprofen (Orudis®), Ketorolac (Toradol®), Indomethacin (Indocid®), Mefanamic acid (Ponstan®), Meloxicam (Mobic®), Naproxen (Naprosyn®),	7.5mg 10mg 12.5mg 15mg 20mg 25mg 30mg 50mg 60mg		

	Piroxicam (Feldene®), Sulindac (Aclin®) NB: there are other generic names 	100mg 120mg 200mg 250mg 500mg Other □□□ mg		
Minor tranquilisers Benzodiazepines	Alprazolam (Xanax®) Bromazepam (Lexotan®), Clonazepam (Frisium®, Rivotril®), Diazepam (Valium®, Ducene®, Antenax®), Flunitrazepam (Rohypnol®, Hypnodorm®), Lorazepam (Ativan®), Nitrazepam (Mogadon®, Alodorm®), Oxazepam (Serepax®, Murelax®, Alepam®), Temazepam (Euhypnos®, Normison®, Temaze®), Triazolam (Halcion®) NB: there are other generic brand names 	250mcg 500mcg 1mg 2mg 2.5mg 3mg 5mg 6mg 10mg 15mg 30mg Other □□ mg	□□	□

SECTION 6 CONFIDENCE and ATTITUDES

(24Question Name =Confidence to function-Pain Self Efficacy Questionnaire)

Q24 Please select the number to represent how confident you are that you can (or could) do the following things at present, despite the pain, *then touch NEXT*.

Confidence to function	Where 0= Not at all confident and 6= Completely confident						
1. I can enjoy things, despite the pain.	0	1	2	3	4	5	6
2. I can do most of the household chores (eg. tidying-up, washing dishes etc.) despite the pain	0	1	2	3	4	5	6
3. I can socialise with my friends or family members as often as I used to do, despite the pain	0	1	2	3	4	5	6
4. I can cope with my pain in most situations.	0	1	2	3	4	5	6
5. I can do some form of work, despite the pain ('work' includes housework, paid and unpaid work).	0	1	2	3	4	5	6
6. I can still do many of the things I enjoy doing, such as hobbies or leisure activities, despite the pain.	0	1	2	3	4	5	6
7. I can cope with my pain without medication	0	1	2	3	4	5	6
8. I can still accomplish most of my goals in life, despite the pain.	0	1	2	3	4	5	6
9. I can live a normal lifestyle, despite the pain	0	1	2	3	4	5	6
10. I can gradually become more active, despite the pain	0	1	2	3	4	5	6

(25Question Name =Survey of expectations and attitudes regarding chronic pain)

Q25) Please select the number which represents whether you agree or disagree with the following statements, *then touch NEXT*.

Attitude	Where 0= Completely disagree and 4= Completely agree				
1. I need pain reduction before I can address other life issues	0	1	2	3	4
2. There is a chance the pain could improve	0	1	2	3	4

3. It is important that my health care providers understand the emotional impact of life events that might affect the pain	0	1	2	3	4
4. Addressing depression or anxiety helps with recovery from chronic pain	0	1	2	3	4
5. Getting back to a social life may help with pain management	0	1	2	3	4
6. Regular physical activity does <u>not</u> help reduce my pain	0	1	2	3	4
7. Addressing sleep problems would help me cope better with pain	0	1	2	3	4
8. A healthy lifestyle will reduce inflammation and improve my wellbeing	0	1	2	3	4

SECTION 7 ACCEPTABILITY AND CHANGE

(26a Question Name =Acceptability of AIMM healthcare provider content)

Q26) Please select the number which represents whether you found the health support helpful or, *then touch NEXT.*

Healthcare provider element	Where 0= Completely unhelpful and 4= Completely helpful, 5=Not applicable					
1. Additional psychologist support to improve capability and confidence in applying psychological skills	0	1	2	3	4	5
2. Attending the GP for regular review and support sessions to improve confidence and motivation to wean off long-term opioid therapy and understand pain	0	1	2	3	4	5
3. Working with the Practice nurse to develop a management plan and attending regular support sessions to improve confidence and motivation to self-manage pain	0	1	2	3	4	5
4. Having a home pharmacist visit to improve confidence and motivation to wean off opioids	0	1	2	3	4	5
5. Attending the dietitian sessions to improve confidence and motivation to make planned dietary changes	0	1	2	3	4	5
6. Attending the exercise sessions to improve confidence and	0	1	2	3	4	5

motivation to make planned physical activity changes						
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(26b) Question Name =Satisfaction with sessions)

Q26b) Thinking about the healthcare sessions overall, please select the statement which represents how satisfied you were with each element, *then touch NEXT*.

Healthcare sessions	Where 0= Completely unsatisfied and 4= Completely satisfied				
1 The overall number of sessions	0	1	2	3	4
2 The different mix (types) of sessions	0	1	2	3	4
3 The duration of the sessions	0	1	2	3	4

(27Question Name =Acceptability of AIMM study questionnaires)

Q27) Please select the number which represents how satisfied you are regarding completion of this questionnaire, *then touch NEXT*.

Completion of AIMM study questionnaires	Where 0= Completely unsatisfied and 4= Completely satisfied				
1. Which response best represents how satisfied you have been completing the AIMM study outcome measures:	0	1	2	3	4

(28 Question Name= Survey of global impression of change)

Q29) We are interested in your impression of overall change in AIMM. Which response indicates your overall improvement, would you say it was...? *Then touch NEXT*

0= Very much worse

1= Much worse

2= Somewhat worse

3= Not changed

4= Somewhat improved

5= Much improved

6= Very much improved

Thank you for completing this survey

APPENDIX 5

INTERVIEW SCRIPTS

PAPER 5

ACCEPTABILITY OF INTEGRATED PRIMARY HEALTHCARE OPIOID TAPERING INTERVENTION A MIXED-METHODS
STUDY

TELEPHONE INTERVIEW SCHEDULE FOR PATIENTS WHO COMPLETED THE AIMM PILOT STUDY (PAPER 5)

Date: _____

Participant No: _____

Good morning/good afternoon, my name is _____. You were invited to take part in the research project being jointly conducted by Hunter New England Local Health District and University of Newcastle. Firstly, we would like to thank you for participating in the:

Assess, Inform, Manage and Monitor (AIMM) pilot study for people with chronic pain being managed with chronic opioid therapy in an Australian primary care setting.

Is now a good time to discuss your honest and open thoughts about the study further over the phone? It is expected the interview will take around 15 minutes to answer 7 questions and you will be asked mid-way if you wish to continue

1. To begin, can you tell me whether you were offered any or all of the following health provider appointments? (psychology, home medication review, dietitian, exercise physiologist or physiotherapist, practice nurse- who would have helped with the management plan, general practitioner appointments). Ask each in turn. [Enquire as to] how long the person had to wait (days? Weeks?) for **health professional appointments?** (Need to identify whether the option of having the appointments was raised and if so, did patient accept or decline)

2. Thinking about **how far you had to travel** (time and costs e.g. petrol involved) to attend the appointments. Do you think this affected your ability to attend your appointments?

3. Were the **appointment times** convenient? Did this affect your ability to attend your appointments? _____

4. Were the appointment times **long enough** with the health professionals? (How supported did the person feel with the health professionals?) _____

You have now completed 4 of the 7 questions, there are three questions remaining, do you wish to continue now?

If no, reschedule

If yes, proceed

5. In your opinion, could you now tell me about which aspects of the AIMM approach **worked well**? Follow with, we are particularly interested in whether this was your first attempt at weaning off opioids? Or second? Or third? etc. and what it was that helped you decide to wean now? i.e., was there any particular reason- such as the offer of support through the study, a health scare? A life event that happened? Something coming up- e.g. a holiday? or no particular reason? - that meant you were ready?

6. In your opinion, could you now tell me about which aspects of the AIMM **approach did not work well**? (I am particularly interested in whether you *travelled to different places* to work with health professionals or not-and how that experience was for you/ any aspects of the weaning process that did not work well?)

7. If you have any other questions or comments about any aspect of the pilot study, negative or positive, I would appreciate your views. What is next for you (continue weaning/ other?)

To conclude...

On behalf of the researchers, the University of Newcastle and Hunter New England Local Health District we thank you for your time today and again for having participated in the research

Goodbye

TELEPHONE INTERVIEW SCHEDULE FOR HEALTHCARE PROVIDERS WHO PARTICIPATED IN THE AIMM PILOT STUDY (PAPER 5)

Date: _____

Participant No: _____

Good morning/good afternoon, my name is _____. You were invited to take part in the research project being jointly conducted by Hunter New England Local Health District and University of Newcastle. Firstly, we would like to thank you for participating in the:

Assess, Inform, Manage and Monitor (AIMM) pilot study for people with chronic pain being managed with chronic opioid therapy in an Australian primary care setting.

Is now a good time to discuss your honest and open thoughts about the study further over the phone?

It is expected the interview will take around 30 minutes to answer all 6 questions and you will be asked midway if you wish to continue

1. This question asks you *about the feasibility of routinely using a chronic pain General Practice Management Plans and Team Care Arrangement* framework. In your opinion, could you tell me how the organisational support to embed patient information into the template has impacted on your practice? (Ask *whether the resources, which were developed for time poor clinicians, were easy to use/ was there too much or too little information?*) _____

2. Could you tell me about how well the AIMM multidisciplinary appointment schedule worked for you? Do you think it is *feasible* to be part of an opioid reduction focused multidisciplinary pain team providing regular/consistent key message to the patients? (*collaborative nature of pain team*)

3. Can you tell me now how *acceptable*/how satisfied you found the training you were given i.e. 30 minutes session familiarising yourself with the pain resources available on Hunter Integrated Pain Service website and a ½ day active learning workshop plus follow up mentorship over 12 weeks (*how interesting was the training? How satisfied were you with the quality of the training and mentorship*)?

You have now completed 1/2 of the interview, there are a further 3 questions, do you wish to continue now?

If no, reschedule

If yes, proceed

4. Thinking about the time you had to learn the key messages and 4 communication habits-how confident you were (or now are) to deliver the intervention-how *acceptable was learning* (pre disposing activity/ ½ day workshop/reading and 3/12 mentorship/5 *key messages of complex system-whole person model/4 communication habits*/)

5. In your opinion, could you now tell me about which aspects of the AIMM approach worked well—were *acceptable*/not so acceptable? (attitudes about stewardship for pain medicine/ knowledge of professional role and confidence in managing and monitoring patients as part of an opioid reduction team/ *were patients easy to activate?* /*concerns/barriers?* / *did patients say they did not like any aspect?*)

6. If you have any other questions or comments about any aspect of the pilot study, negative or positive, I would appreciate your views (*Is provider still using any of the resources/any of the skills? -If so, which parts are still be used?*)

*To conclude...*On behalf of the researchers, the University of Newcastle and Hunter New England Local Health District we thank you for your time today and again for having participated in the research. Goodbye.