

Community-based pain programs commissioned by primary health networks: key findings from an online survey and consultation with program managers

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Received: 10 August 2021

Accepted: 30 January 2022

Published: 22 March 2022

Cite this:

De Morgan S *et al.* (2022)
Australian Journal of Primary Health
28(4), 303–314. doi:[10.1071/PY211195](https://doi.org/10.1071/PY211195)

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ABSTRACT

Objective. There is an increasing demand for tertiary pain services, with long waiting times compounded by limited reach to regional and remote areas. Community-based pain programs are a feasible evidence-based model of care to improve access to multidisciplinary care. Australian primary health networks (PHNs) are well placed to commission pain programs to reduce the growing burden of chronic pain. The aim of this study was to support PHN decision-making by: (1) describing current PHN community-based pain programs; (2) assessing their alignment to key elements and implementation enablers of pain programs identified by an expert consensus process; and (3) describing PHN pain program adaptations during the COVID-19 pandemic.

Methods. PHN program managers of community-based pain programs ($n = 9$) were invited to participate in an online survey and follow-up email consultation about their pain program. Six PHN program managers (representing South Eastern NSW PHN, Nepean Blue Mountains PHN, North Western Melbourne PHN, Gold Coast PHN, Adelaide PHN and the WA Primary Health Alliance) participated in the study with three PHNs commissioning two different types of pain programs. **Results.** PHN community-based pain programs are multidisciplinary programs underpinned by a biopsychosocial model of pain, and focus on self-management (e.g. exercise, psychological strategies) and pain education. Most PHN pain programs are group-based programs that target adults with chronic non-cancer pain, provide individual allied health referrals as required and are evaluated as part of the electronic Persistent Pain Outcomes Collaboration. Gaps include pain programs for Aboriginal and Torres Strait Islander people, and people from culturally and linguistically diverse backgrounds, with one notable exception of a PHN pain program for people from culturally and linguistically diverse and refugee backgrounds co-designed with consumers and relevant services. Programs targeting subacute pain to prevent progression to chronic pain are, with one exception, another gap area. PHN pain programs demonstrated a high level of alignment with expert-agreed key elements and implementation enablers. The COVID-19 pandemic precipitated the rapid adaptation of PHN pain programs using available methods for the delivery of digitally enabled care. **Conclusions.** The findings provide a greater understanding for researchers and PHN decision-makers of the key features of PHN community-based pain programs, their alignment with expert-agreed key elements and implementation enablers, the target-population gaps, and the types of program adaptations during the COVID-19 pandemic. The findings also illustrate the potential for using digitally enabled delivery methods to increase accessibility to pain programs with further research warranted.

Keywords: chronic pain, community health: planning, COVID-19, health service, primary health care, primary health network, secondary prevention.

Introduction

Chronic non-cancer pain is a major public health issue (Blyth *et al.* 2019), and has been classified as a disease in itself through the World Health Organization (WHO-ICD 11;

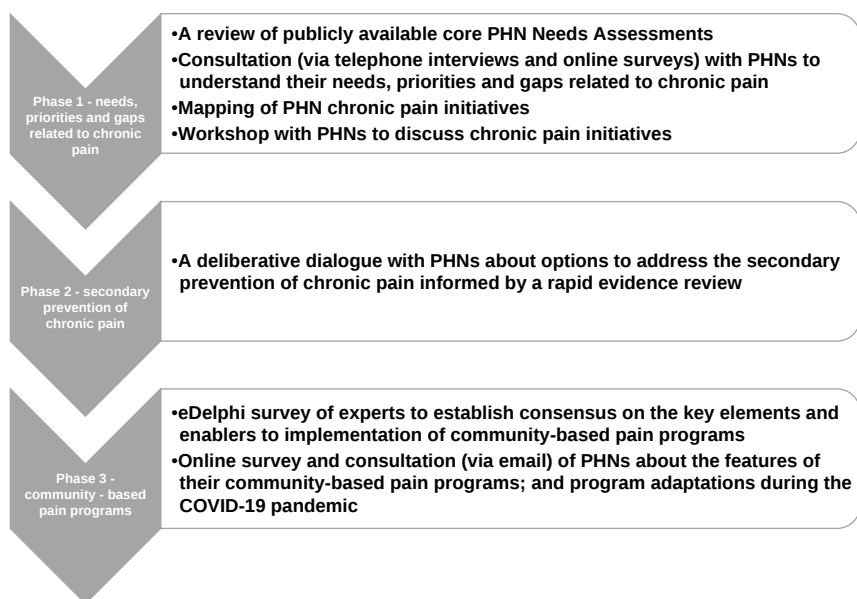


Fig. 1. Phases of the Chronic Pain Project.

Treede *et al.* 2019). Chronic pain affects approximately one in five people in Australia (AIHW 2020), and is increasing due to the ageing population (Blyth *et al.* 2019).

Chronic pain can lead to poorer quality of life, depression and anxiety, loss of income and premature retirement, and create feelings of stigmatisation and exclusion (Australian Government 2021). The total economic cost of chronic pain in Australia is high, estimated as A\$139 billion in 2018, through reduced quality of life, productivity losses and direct health system costs (Deloitte Access Economics 2019).

Multidisciplinary pain management programs have been shown to improve pain-related disability, mood and self-efficacy (Scascighini *et al.* 2008; Kamper *et al.* 2014). Although there are many types of multidisciplinary pain management programs, they often promote a self-management approach (Nicholas and Blyth 2016), and include pain education, psychological strategies (e.g. relaxation techniques, thought management, problem-solving, goal-setting, activity pacing) and exercise (Wilson 2017). Typically, programs are delivered by two or more healthcare professionals working in a collaborative, interdisciplinary manner in inpatient, outpatient or community settings (Scascighini *et al.* 2008; Wilson 2017).

Given the increasing demand for hospital-based pain services and long waiting times (Hogg *et al.* 2021), compounded by limited reach to regional and remote areas, the National Strategic Action Plan for Pain Management (Australian Government 2021) recommends greater involvement of primary care and more community-based pain programs.

Australian primary health networks (PHNs) are well placed to commission community-based pain programs to reduce the growing burden of chronic pain as commissioning bodies for local services to address local health needs (Commonwealth of Australia 2018). There is also evidence

in the literature that community-based pain programs commissioned by PHNs can be effective; for example, the Turning Pain Into Gain program commissioned by the Gold Coast PHN showed increased pain self-efficacy among participants, increased alignment with Australian pain medication guidelines and reduced self-reported hospitalisations (Joypaul *et al.* 2018). PHNs are also well-placed to promote pain programs through their health professional networks and HealthPathways (online clinical and referral information portals), given that a lack of awareness of chronic disease programs and their target groups has been shown to be a barrier to health professional referral (Zurynski *et al.* 2021).

Our three-phased study (Fig. 1) aimed to improve knowledge, knowledge sharing, and knowledge use among PHNs about options to address the secondary prevention and management of chronic pain in primary care. Consultation with PHN program managers as part of Phase 1 of our study found a lack of awareness of initiatives to improve the secondary prevention and management of chronic pain implemented in other PHNs, and a desire for knowledge-sharing and greater collaboration.

Phase 3 of the study focused on PHN community-based pain programs, identified in the Phase 1 mapping of PHN chronic pain initiatives. The first component of Phase 3 established expert-agreed key elements and implementation enablers using an eDelphi consensus process (Walker *et al.* 2022). The second component, outlined in this paper, aimed to support PHN decision-making and build the evidence about community-based pain programs by: (1) describing current PHN community-based pain programs; (2) assessing their alignment to key elements and implementation enablers of pain programs identified by an expert consensus process (see Supplementary Table S1); and (3) describing

PHN pain program adaptations during the COVID-19 pandemic, and program managers' perceptions of the level of consumer engagement, what worked well and challenges implementing the adapted programs.

Methods

Eight PHN program managers of community-based pain programs who were consulted in Phase 1 of the study (Nov 2018 to Feb 2019) were invited in October 2020 to participate in an online survey and follow-up email consultation about their pain program to understand the features of their program and adaptations during the COVID-19 pandemic. The online survey was chosen as the most appropriate design, as it could be completed at the convenience of program managers, with the ability to stop the survey, gather information and restart the survey (Nayak and Narayan 2019). Program managers were also encouraged to upload relevant documents to the survey site to provide further information about their pain program. Follow-up email consultation aimed to enable clarification of survey responses and gaps in information to be addressed. Participants were given as much time as they needed to respond to the survey, upload additional files and participate in the email consultation. Data collection was completed by February 2021.

Development of the questionnaire

The questionnaire was developed by the research team (SDM, PW and FB), informed by the list of key elements and implementation enablers established in the eDelphi consensus process (Table S1). The questionnaire was pilot tested with the Manager of the Pain Management Network, NSW Agency for Clinical Innovation, who provides support for NSW PHNs to commission pain programs to ensure that the questions were comprehensive and would be accurately interpreted by PHN program managers. Questionnaire categories included the following: 'program name and background; PHN role, partners and commissioned providers; target population; program promotion and referral pathways; program format; program facilitation; program accessibility and appropriateness; COVID-19 adaptations to the program; program monitoring, evaluation and continuous improvement; and program costs, funding and other resources'. See Table S2 for the questionnaire.

Data analysis and reporting

Data sources included online survey data, email consultation data and data from additional files. A deductive content analysis (Miles *et al.* 2014) was undertaken by the authors (PW and SDM). Content categories were established *a priori* and derived from the categories in the questionnaire. The data were reviewed by the authors (PW and SDM) for validation, and any disagreements resolved by discussion and consensus.

In addition, summaries for each program were developed from the data. The summaries were reviewed by the authors (PW and SDM) and participating PHN program managers for accuracy and completeness, with gaps addressed and information clarified as needed.

A description of PHN pain programs is provided by content category across PHNs (Table 1). Program adaptations during the COVID-19 pandemic are outlined by PHN to highlight differences between PHNs related to the types of program adaptations, the level of consumer engagement, what worked well and the challenges implementing the adapted programs, as perceived by program managers.

Ethical approval

The research was approved by the University of Sydney Human Research Ethics Committee (HREC) Phase 3: Improving the prevention and management of chronic pain in primary care. Project number: 2020/342. The contents of this published material are solely the responsibility of the individual authors and do not reflect the views of the NHMRC or funding partners. The research was approved by the University of Sydney Human Research Ethics Committee (HREC) Phase 3: Improving the prevention and management of chronic pain in primary care. Project number: 2020/342.

Results

Participation

Six of the eight invited PHN program managers (representing South Eastern NSW PHN, Nepean Blue Mountains PHN, North Western Melbourne PHN, Gold Coast PHN, Adelaide PHN and the WA Primary Health Alliance/WAPHA) participated in the online survey and email consultation. One PHN did not participate (no response on follow-up) and one PHN was excluded, as their pain program had concluded and a new pain program was in the procurement stage. Program managers sought further details about the key features of their pain programs from other members of their pain program team, such as the PHN program coordinator or the program facilitator (recruited by the commissioned provider) if needed, to address any information gaps.

All PHN program managers participating in the study provided one or more additional documents about their pain program; for example, documents related to program format and session details, description of the clinical pathway for the program, operational guidelines, facilitator's guides, promotional materials provided to GPs, and budget outlines.

Description of PHN community-based pain programs

Table 1 outlines the key features of PHN community-based pain programs. Nine pain programs were represented in this

Table 1. Description of PHN community-based pain programs.

Key component	Description
Jurisdiction, name of the program and date commenced	Pain programs ($n = 9$) represented in this study include: • New South Wales: South Eastern NSW PHN (<i>Chronic Pain Management Program</i>, 2017–present); Nepean Blue Mountains PHN (<i>Community Chronic Pain Program</i>, 2019–present) • Victoria: North Western Melbourne PHN (<i>Chronic Pain Management Service</i>, 2020–present, North region of the catchment; <i>Living Well with Pain</i>, 2020–present, Western region of the catchment) • Queensland: Gold Coast PHN (<i>Turning Pain Into Gain</i> program for chronic pain, 2013–present, <i>Early Intervention Subacute Pain Program</i>, 2021–present) • South Australia: Adelaide PHN (<i>Living Well with Persistent Pain</i>, 2015–present; <i>Supporting people from culturally and linguistically diverse (CALD) communities to manage persistent pain</i>, 2020) • Western Australia: Western Australian Primary Health Alliance/WAPHA (<i>Persistent Pain Program</i>, 2017–present)
Metro and regional	Most pain programs are commissioned by metropolitan PHNs, with one pain program commissioned by a regional NSW PHN. WAPHA commissions the pain program, which is implemented in metropolitan Perth (Perth South PHN and Perth North PHN regions).
No. of locations	Pain programs are implemented in one to seven locations in each PHN region (average = 3)
Program models/program developers	Pain programs implemented by PHNs are based on one of five program models: 1. <i>Turning Pain Into Gain</i> program model developed by PainWISE in Queensland 2. <i>Brief Pain Self-Management Program</i> model developed by the Pain Management Research Institute at the University of Sydney 3. <i>Chronic Pain Management Service</i> model developed by Merri Health in Victoria 4. <i>Living Well with Pain</i> program model developed by the Barbara Walker Centre for Pain Management at St Vincent's Hospital Melbourne 5. <i>Supporting people from CALD communities to manage persistent pain</i> program model developed by Adelaide PHN in collaboration with Survivors of Torture and Trauma Assistance and Rehabilitation Service (STTARS) The two most common program models are the <i>Turning Pain Into Gain</i> program model implemented in 2 PHNs (Gold Coast PHN and Adelaide PHN) and WAPHA; and the <i>Brief Pain Self-Management Program</i> model implemented in 2 PHNs in NSW (South Eastern NSW PHN and Nepean Blue Mountains PHN).
Program funding and governance	• Most PHNs commission healthcare providers to deliver the program and support the implementation of these programs using core flexible funding. • PHNs commission local providers to implement their pain programs. • The NSW Agency for Clinical Innovation provides guidance for PHNs in NSW to implement their pain programs using the <i>Brief Pain Self-Management Program</i> model. • Gold Coast PHN, Adelaide PHN and WAPHA receive guidance for implementation from PainWISE to implement their pain programs using the <i>Turning Pain Into Gain</i> program model. • Some PHNs establish a steering committee of key stakeholders from the PHN, local government, hospital networks and the commissioned provider, and consumers to support program implementation. For example, the program steering committee for the Southern Eastern NSW PHN, the <i>Southern Pain Collaboration</i>, is chaired by the NSW Agency for Clinical Innovation Pain Network Manager and members include representatives from the South Eastern NSW PHN, St Vincent's Hospital Sydney Pain Clinic, Southern NSW Local Health District and consumers. The steering committee provide oversight to ensure the program is appropriately implemented and responsive to local need.
Target population	• Most pain programs target adults with chronic non-cancer pain (including primary and secondary chronic pain). • A pilot program in the Gold Coast PHN, <i>Early Intervention Subacute Pain Program</i>, targets adults with subacute pain to help prevent the progression to chronic pain and associated disability.
Program promotion and referral pathways	• PHNs promote their pain programs through their health professional networks and via HealthPathways. • Consumers are referred directly by their GP or another healthcare provider, such as a physiotherapist or nurse practitioner, with the support of their GP.
Program format	• Pain programs vary in length from 4 weeks to 6 months. Most programs including six core group education sessions, which run for 2–3 h and are provided either weekly or monthly. • Some programs may also include introductory sessions and follow-up or refresher sessions for consumers, which can extend contact with consumers for up to 1 year. • All pain programs apply a biopsychosocial model of pain and focus on behaviour change and pain self-management strategies, such as exercise and mood/stress management strategies and all pain programs include education on safe and effective use of pain medicines. Common topics covered are outlined in Table 2. • All pain programs provide group-based sessions with most programs also referring consumers to allied health practitioners (e.g. psychologists, physiotherapists) for individual consultations as required. • All pain programs provide additional information resources to consumers such as printed materials and links to relevant websites.

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Table 1. (Continued)

Key component	Description
Program facilitation and delivery	• Most pain programs also link consumers with online or face-to-face peer-support groups to promote long-term behaviour change and patient engagement. • Programs are provided at no cost to consumers. • Most pain programs are facilitated by one or more primary care providers with additional primary care providers presenting on relevant topics. Facilitators and presenters represent a range of professional disciplines (including physiotherapists, exercise physiologists, psychologists, occupational therapists, dieticians, social workers and GPs with a special interest in pain). • Most pain programs upskill primary care providers in best-practice pain management to facilitate the program, although training varies. The University of Sydney's Pain Management Research Institute provides a Webinar Skills Training in Pain Self-Management for program facilitators of the <i>Brief Pain Self-Management Program</i> model. A detailed examination of the training provided to program facilitators was not within the scope of this study.
Program adaptations for aboriginal and torres strait islander people and culturally and linguistically diverse groups	• Adelaide PHN has recently implemented a pain program for people from CALD and refugee backgrounds in collaboration with consumers and the Survivors of Torture and Trauma Assistance and Rehabilitation Service – STTARS. Apart from this program, no other pain program has been adapted for CALD communities. • PHNs provide interpreters for consumers in most pain programs, as required, to increase access for people from CALD communities. • There are no PHN pain programs specifically for Aboriginal and Torres Strait Islander people, although South Eastern NSW PHN is currently planning a program. • South Eastern NSW PHN has also recently conducted a 'Yarnup about Pain' event involving the St Vincent's Health Service pain clinic team, the chronic pain program coordinator, a program facilitator, local Aboriginal health providers and Aboriginal community members with an interest in chronic pain to foster cultural capability. • The Gold Coast PHN builds cultural capability of program facilitators and other staff via cultural awareness training and partnering with a local Aboriginal and Torres Strait Islander community-controlled organisation (Kalwun Health) to access support from Aboriginal health workers. GPs at Kalwun Health also review the program material to ensure it is culturally appropriate.
Program monitoring and evaluation	• All pain programs collect participant feedback and patient outcome data. • Six out of the nine programs are part of the electronic Persistent Pain Outcomes Collaboration (ePPOC), https://www.uow.edu.au/ahsri/eppoc/, which collects a standardised set of patient outcome measures. Evaluation reports are provided to PHNs every 6 months and can be benchmarked against other similar services to support the implementation of best-practice care. • The <i>Turning Pain into Gain</i> pain program is evaluated by researchers at Griffith University, Queensland.

Table 2. Topics frequently included in the content of PHN commissioned pain programs.

Topic areas	Description
Knowing pain	• Introduction to pain science and self-management
Medications and pain	• Discusses medicines and their role in pain management
Movement and pain	• Explains the pros and cons of medical investigations, and the role of movement in pain management (including physical activity, conditioning and pacing)
Food and pain	• Explores the role of a healthy lifestyle and diet, and how this affects pain management
Sleep and pain	• Discusses the role of sleep in pain management and highlights tips for getting better sleep
Thoughts and emotions	• Discusses emotional and other coping strategies for dealing with pain, disability, and distress, e.g. relaxation, mindfulness, distraction techniques, challenging unhelpful thinking – reconceptualise pain as less threatening, acceptance, facilitate reconnection to core values and purpose
Goal setting	• Goal setting, tracking progress and problem solving • Managing flare-ups

study, with three PHNs commissioning two different types of pain programs; for example, for different target groups or regions of the PHN catchment. Most pain programs targeted adults with chronic non-cancer pain (including primary and secondary chronic pain). One pilot program targeted adults with subacute pain to prevent the progression to chronic pain.

Alignment of PHN pain programs to expert-agreed key elements and implementation enablers

PHN community-based pain programs were found to have a high level of alignment with expert-agreed key elements and implementation enablers of community-based pain programs (see Table S1).

Areas of alignment related to the key elements included providing 'multidisciplinary care, led by health professionals, consumer focused, and continuous improvement and evaluation', with the following area of non-alignment – 'accessible and appropriate' – with only one program identified for culturally and linguistically diverse communities, and an absence of programs for Aboriginal and Torres Strait Islander people or consumers living in remote locations.

Most PHN community-based pain programs enablers to implementation were aligned with the expert-agreed enablers; however, areas of non-alignment (with not all programs involving these enablers) included engaging program champions, establishing advisory groups to support implementation, using multiple funding streams, co-commissioning with relevant agencies, including family members and carers in response to consumer need, providing referrals for individual healthcare consultations, and developing standardised processes for ensuring feedback and patient outcome data are used as part of a continuous quality improvement cycle.

Adaptations of PHN community-based pain programs during the COVID-19 pandemic

Pain programs were adapted during the COVID-19 pandemic in a range of ways, such as online 'live' Zoom sessions, topic-specific pre-prepared videos, social media closed Facebook groups, telephone and telehealth for individual consultations, and text messages and emails as reminders. In jurisdictions that allowed face-to-face programs, consumer participant numbers were reduced to allow for social distancing (with more sessions conducted), larger rooms were used and innovative ideas, such as the 'silent disco' with participants wearing headsets from a close location (e.g. balcony, their car), were explored. Overall, there was a decrease in the number of consumer enrollees in the pain programs, although program managers reported positive feedback from consumers who participated in the programs.

Adaptations during the COVID-19 pandemic stimulated program redesign in three PHNs. North Western Melbourne PHN plans to offer consumers after the end of COVID-19 restrictions both non-face-to-face and face-to-face options, and to deliver the program in a mixed model where required; Gold Coast PHN plans to provide both non-face-to-face and face-to-face options; and South Eastern NSW PHN is currently piloting an online pain program in addition to their face-to-face pain program. Table 3 outlines the types of program adaptations, the level of consumer engagement, what worked well and challenges implementing the adapted programs, as perceived by PHN program managers.

Discussion

PHNs are well-placed to commission pain programs to reduce the growing burden of chronic pain (Joypaul et al. 2018). Current barriers for PHNs to commission pain programs,

identified in Phase 1 of the study, include competing priorities and limited resources, and a lack of reimbursement under Medicare (Australia's national public health insurance scheme) for group-based programs. A possible solution to improving the capacity of PHNs to commission pain programs is co-commissioning with state and territory health departments (Swerissen et al. 2018), Local Health Networks (Freeman et al. 2021), Aboriginal Community Controlled Health Organisations (Davis and Gordon 2018), and other agencies. However, a recent study found that there is variation in how well PHNs are currently collaborating with 'state and territory actors', ranging from poor relationships through to strong cooperation and co-commissioning, with factors affecting the level of collaboration/commissioning including characteristics of the state health department, geography, PHN funding and regulations, ambiguities in the federal/state divided responsibilities for primary healthcare, and the extent of use of collaboration mechanisms and strategies, such as reciprocal board memberships and multi-actor agreements (Freeman et al. 2021).

This study identified that PHN pain programs usually target adults with chronic non-cancer pain, with only one pilot program targeting adults with subacute pain to prevent the progression to chronic pain. Given the growing burden of chronic disease and specifically chronic pain (Blyth et al. 2019), there is a need for PHNs to provide greater support for the secondary prevention of chronic pain (Walker et al. 2021). Risk factors for developing chronic pain after surgery or injury are well known, and often modifiable and early intervention to prevent chronic pain and associated disability is crucial (Nicholas et al. 2011; Katz et al. 2019). There is a role for multidisciplinary and integrated pain programs that identify and manage people at risk of developing chronic pain to overcome the disconnect between hospital-based acute postoperative pain management and chronic pain management in general practice (Glare et al. 2019). The Toronto General Hospital Transitional Pain Service, while situated in the hospital setting, is an example of this model, targeting patients at risk of developing chronic pain in the post-surgery phase, and providing multidisciplinary pain management, and has been shown to reduce pain intensity, pain-related interference, pain catastrophising, symptoms of anxiety and depression, and opioid use (Katz et al. 2019).

This study identified a gap in PHN pain programs specifically for Aboriginal and Torres Strait Islander people. Pain programs for Aboriginal and Torres Strait Islander people are crucial, as they are at higher risk of disabling musculoskeletal pain, with pain conditions often co-existing with other health conditions and socioeconomic disadvantage (Lin et al. 2019), and they experience barriers to accessing best-practice pain management, including geographical and financial factors (Davy et al. 2016), poor communication by health professionals who lack cultural sensitivity (Lin et al. 2019), and institutional racism and discrimination (Artuso et al. 2013). Community-based pain programs

Table 3. Adaptations to PHN community-based pain programs during the COVID-19 pandemic.

Types of program adaptations, engagement, what worked well and challenges as perceived by program managers
NSW – South Eastern NSW PHN – <i>Chronic Pain Management Program</i> Types of program adaptations The program was adapted in different ways by facilitators in different locations including: • One group was adapted using an existing Facebook group and telephone calls. • One group was adapted to online delivery using Zoom webinars with facilitators in the two locations collaborating to adapt the program. This format included two 1.5-h sessions a week rather than the usual 3-h session. • One group was adapted using two delivery rooms to enable in-person delivery and video conferencing between rooms. • One group postponed the delivery date until later in the year and used a larger room to follow social distancing requirements. • One group trialled the use of 'silent disco' technology to enable social distancing. This includes the use of headsets for each participant and a microphone for the facilitator. The headsets allow consumers to listen to program content wherever they feel comfortable (e.g. in the room, on the balcony of the venue, in their car or outside). • One group was cancelled and did not provide consumer support. Consumer engagement • There was a reduced number of consumer completions in the program. Possible reasons provided included: living in an area with poor internet connection, lack of confidence with technology, accessing other online programs (e.g. Reboot), using telehealth services provided by St Vincent's Hospital Service or choosing to wait until face-to-face programs resumed. • The 'silent disco' face-to-face format to enable social distancing had a good response from consumers, with these groups reporting better attendance at follow-up sessions compared with the non-face-to-face groups. What worked well • The consumers who participated in the adapted non-face-to-face groups had similar outcomes to the face-to-face groups implemented prior to the COVID-19 pandemic. Challenges • Lack of confidence from one facilitator to deliver an adapted non-face-to-face group. • Difficulty promoting the online groups and engaging consumers due to the disruption of the COVID-19 pandemic 'lockdown'. This was perceived to improve over time and resulted in better engagement with the program. NSW – Nepean Blue Mountains PHN – <i>Community Chronic Pain Program</i> Types of program adaptations • The program was adapted for all locations via Zoom. The adapted format included two 1.5-h sessions via Zoom each week. The sessions were split to provide exercise and education in the morning and relaxation in the afternoon, with breaks every half hour and extra time at the end of each session to encourage social interaction. Providers printed resources for pick up or postal delivery, and ePPOC measures were collected online. To ensure exercises were completed properly and to minimise the risk of injury, each participant received a one-on-one session with a physiotherapist or exercise physiologist. • The program was later adapted to a face-to-face format with social distancing and participant number limitations. The program was also run as two 1.5-h sessions per week rather than one 3-h session. Consumer engagement • There was a low level of engagement with the adapted online program. What worked well • Consultation with SENSWPHN, who were adapting the same program model. Challenges • Low level of engagement of consumers in the adapted online program. VIC – North Western Melbourne PHN – <i>Chronic Pain Management Service and Living Well with Pain</i> Types of program adaptations • The <i>Chronic Pain Management Service</i> commenced during the COVID-19 pandemic period, via Telehealth • The <i>Living Well with Pain</i> program commenced during the COVID-19 pandemic period, via Telehealth Screening, Telehealth Assessment and online delivery of the program.

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Table 3. (Continued)

Types of program adaptations, engagement, what worked well and challenges as perceived by program managers
Consumer engagement • There was a low level of engagement in the <i>Chronic Pain Management Service</i> online program with most consumers preferring to wait for the return of the face-to-face program. • The <i>Living Well with Pain</i> online program had better consumer engagement compared to the <i>Chronic Pain Management Service</i>. Consumers who participated in the online program provided positive feedback. What worked well • The <i>Living Well with Pain</i> program was perceived as easily adapted to an online format. Challenges • The programs commenced online during the disruption of the COVID-19 pandemic.
QLD – Gold Coast PHN – <i>Turning Pain Into Gain (TPIG)</i> and <i>Early Intervention Subacute Pain Program</i> Types of program adaptations • The TPIG program and the subacute pain program were adapted in similar ways including: (1) webinars (topic-specific pre-recorded videos) and online access (live Zoom sessions); and (2) telehealth, Facebook, SMS and telephone calls, which were part of the program prior to the COVID-19 pandemic. • The recruitment process for consumers was conducted via Zoom, Skype, FaceTime or telephone consultations. • A video was developed to instruct participants about how to use Zoom on their mobile phones. • Online administration assistance was provided to prepare consumers for their online appointment where required. • Vimeo links of each module were sent directly to consumers via text message and attached notes. • The program content was sent to consumers periodically to encourage breaks similar to the face-to-face program. Access to the online videos was unlimited for the duration of the program. To ensure consistency with the face-to-face program outline, text messages and consumer reminders were sent on the same day and time as would have been provided for the face-to-face program. • Hard copy newsletters were posted, as occurred prior to the COVID-19 pandemic. • All consumers enrolled in the program were invited to a private closed Facebook page (moderated by the TPIG director). This included daily posts, reminders, exercises from the allied health team members and foundational skills (e.g. breathing) to encourage behaviour change. The program had approximately 80% of consumer participants on the Facebook page. Prior to the COVID-19 pandemic, some support groups as part of the program had been conducted via Facebook. • Telehealth was used for individual consultations with allied health practitioners, nurses etc. Consumer engagement • Good consumer engagement and positive consumer feedback with some consumers finding the adapted non-face-to-face program more accessible (e.g. consumers with transport limitations). • Text messages were perceived as the key to maintaining patient engagement and compliance e.g. 'Have you watched the video? How did you find it? What is the next goal/plan?'. What worked well • Consumers were perceived to have enjoyed the convenience and versatility of being able to access, view and re-view the content when they wanted to. Challenges • Training consumers about how to use the technology. • Older consumers were perceived as more anxious initially about using technology to access the program. • Additional administration time was needed to teach consumers how to use the technology and increase their confidence in using the technology.
SA – Adelaide PHN – <i>Living Well with Persistent Pain</i> and <i>Supporting people from CALD communities to manage persistent pain</i> Types of program adaptations • The <i>Living Well with Persistent Pain</i> program was adapted to provide consumers with topic-specific pre-prepared videos (developed by PainWISE – TPIG program developers- see Gold Coast PHN) with the opportunity to view and re-view content. This was supplemented with online access (live Zoom sessions) and telephone calls. • The CALD program was provided face-to-face in large rooms to allow for social distancing when the COVID-19 pandemic restrictions eased.

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Table 3. (Continued)

Types of program adaptations, engagement, what worked well and challenges as perceived by program managers
Consumer engagement • There was a low level of consumer engagement in the non-face-to-face program, particularly in one location. Possible reasons included: not wanting to access the program in the online mode and consumers not wanting to join a new group at a time of disruption and uncertainty due to the COVID-19 pandemic. • Positive feedback received from consumers who participated in the adapted non-face-to-face program. What worked well • The topic-specific pre-prepared videos were perceived as well presented (as part of the <i>Living Well with Persistent Pain</i> program). Challenges • In one location, as part of the <i>Living Well with Persistent Pain</i> program, consumers did not often provide an RSVP for their attendance in the online sessions, so it was difficult to predict the numbers that would attend the session. • Some consumers were concerned about privacy and using Zoom. • Some consumers found navigating the Zoom platform challenging.
WA – WAPHA – Persistent Pain Program Types of program adaptations • The program in all locations was adapted using topic-specific pre-recorded videos (developed by PainWISE – TPIG program developers – see Gold Coast PHN), online access (live Zoom sessions) and telephone calls for individual consultation. Consumer engagement • Fewer consumers attended the adapted online group than the face-to-face group implemented prior to the COVID-19 pandemic. • Some consumers enjoyed the option of re-viewing the videos, and the convenience of not needing to travel to the program. What worked well • All the program adaptations were perceived by the program manager as working well. Challenges • Overall, a face-to-face-format was considered preferable by the program manager to a non-face-to-face format due to better rapport in individual sessions and the difficulty of creating social support in online group-based movement classes.

co-designed with Aboriginal Community Controlled Health Organisations, Aboriginal health workers and local communities could help to address this gap. The literature highlights how chronic disease self-management programs could be adapted for Aboriginal and Torres Strait Islander people by providing easy access to programs, including no cost and transport; permitting flexibility in attendance; using a group format; program staff prioritising relationship building; implementing personalised and integrated care; by empowering participants to self-manage with regular feedback to individuals; and by ensuring community ownership of programs (Parmenter *et al.* 2020). In addition, developing culturally appropriate supporting resources using visual formats, narratives, metaphors and avoiding medical jargon has also been shown to be important for Aboriginal and Torres Strait Islander people (Lin *et al.* 2017).

This study also identified a gap in PHN pain programs specifically for people from culturally and linguistically diverse and refugee backgrounds, although most PHN pain programs provided interpreters as required. One notable exception was identified – a pain program implemented by Adelaide PHN, co-designed with consumers and relevant services (Survivors of Torture and Trauma Assistance and

Rehabilitation Service, STTARS). Culturally appropriate community-based programs are vital to increase participation and enable positive participant experiences (Montayre *et al.* 2020; Zurynski *et al.* 2021). The literature highlights that there has been very few initiatives in these population groups implemented by former Medicare Locals or commissioned by PHNs, with a small number of notable exceptions (Ziersch *et al.* 2020). Key factors associated with the likelihood of former Medicare Locals and PHNs implementing initiatives related to refugee and migrant health, identified by Ziersch *et al.* (2020), were the extent to which refugee and migrant health was an identified priority, state government policy context and nature of funding mechanisms, levels of collaboration with migrant and refugee organisations and communities, and formal engagement mechanisms and local champions.

This study described how PHNs rapidly adapted their pain programs to a non-face-to-face format during the COVID-19 pandemic, and highlighted the potential for commissioning digitally enabled programs to overcome barriers, such as geographic barriers, transport costs, mobility difficulties and workforce shortages (Slater *et al.* 2016). There is a growing interest in online pain programs, with varying levels of

clinical contact (Dear et al. 2018b). Although there is evidence of effectiveness (Dear et al. 2018b; Smith et al. 2019) and cost effectiveness (Dear et al. 2021) of online pain programs accessed directly by the public, there is a paucity of evidence about the feasibility, acceptability and effectiveness of online pain programs that are integrated into routine care delivery (Dear et al. 2018a; Lim et al. 2021). Furthermore, there is limited evidence about the feasibility, acceptability and effectiveness of using technology for group-based exercise, cognitive behavioural therapy or education, an important component of face-to-face pain programs (Gentry et al. 2019).

The COVID-19 pandemic precipitated the rapid introduction of eHealth pain management (Eccleston et al. 2020; Shanthanna et al. 2020; Fritz et al. 2021). Considerations identified in the literature for the 'virtual' delivery of multidisciplinary pain management include providing training and support for health professionals and patients to use the new technologies, developing strategies to establish and maintain patient engagement and motivation, and enabling communication and coordination of the multidisciplinary care team (Tauben et al. 2020; Fritz et al. 2021).

Further research is needed to understand the optimal methods for digitally enabled pain programs, the barriers and enablers to consumer access to these programs, and specific population groups that may benefit most from these programs.

Limitations

This study represents nine PHN community-based pain programs with six PHN program managers participating in the study. Although program managers sought further details about the key features of their pain programs from other members of their pain program team, such as the PHN program coordinator or the program facilitator (recruited by the commissioned provider), if needed to address any information gaps, it is recognised that the scale of the project is small in terms of participant numbers, and a more-in-depth approach would add value to the study, especially in terms of understanding consumer engagement in the programs, what worked well and challenges implementing the adapted programs during the COVID-19 pandemic.

Further research is also warranted about the feasibility, acceptability, and enablers and barriers to implementation of digitally enabled pain programs informed by a theoretical implementation framework, such as the Consolidated Framework for Implementation Research (Damschroder et al. 2009). Research is needed to explore local contextual factors, and the perspectives of PHN executive level staff, key PHN pain program team members and commissioned providers, and consumers.

Conclusions

The findings provide a greater understanding for researchers and PHN decision-makers of the key features of

community-based pain programs commissioned by PHNs, their alignment with expert-agreed key elements and implementation enablers, the large population gaps, and the types of adaptations during the COVID-19 pandemic. The findings also illustrate the potential for using digitally enabled delivery methods to increase accessibility to pain programs with further research warranted.

Supplementary material

Supplementary material is available [online](#).

References

- Artuso S, Cargo M, Brown A, Daniel M (2013) Factors influencing health care utilisation among Aboriginal cardiac patients in central Australia: a qualitative study. *BMC Health Services Research* 13, 83. doi:10.1186/1472-6963-13-83
- Australian Government (2021) 'National Strategic Action Plan for Pain Management.' (Department of Health: Canberra, ACT, Australia)
- Australian Institute of Health and Welfare (AIHW) (2020) Chronic Pain in Australia. Cat. no. PHE 267. AIHW, Canberra, ACT, Australia.
- Blyth FM, Briggs AM, Schneider CH, Hoy DG, March LM (2019) The global burden of musculoskeletal pain—where to from here? *American Journal of Public Health* 109, 35–40. doi:10.2105/AJPH.2018.304747
- Commonwealth of Australia (2018) 'PHN Program Performance and Quality Framework.' (Australian Government Department of Health: Canberra, ACT, Australia)
- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC (2009) Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science* 4, 1–15. doi:10.1186/1748-5908-4-50
- Davis B, Gordon S (2018) A new culturally informed and innovative commissioning approach to boost access and primary health care performance for Indigenous communities of rural and remote New South Wales and Queensland. *International Journal of Integrated Care* 18, 172. doi:10.5334/ijic.s2172
- Davy C, Harfield S, McArthur A, Munn Z, Brown A (2016) Access to primary health care services for Indigenous peoples: a framework synthesis. *International Journal for Equity in Health* 15, 1–9. doi:10.1186/s12939-016-0450-5
- Dear BF, Nicholson Perry K, Siddall P, Middleton JW, Johnson J, Katte L, Monypenny F, Karin E, Gandy M, Titov N (2018a) The pain course: exploring the feasibility of an internet-delivered pain management programme for adults with spinal cord injury. *Spinal Cord* 56, 931–939. doi:10.1038/s41393-018-0146-3
- Dear BF, Gandy M, Karin E, Fogliati R, Fogliati VJ, Staples LG, Wootton BM, Sharpe L, Titov N (2018b) The Pain Course: 12-and 24-Month Outcomes From a Randomized Controlled Trial of an Internet-Delivered Pain Management Program Provided With Different Levels of Clinician Support. *The Journal of Pain* 19, 1491–1503. doi:10.1016/j.jpain.2018.07.005
- Dear BF, Karin E, Fogliati R, Dudeney J, Nielssen O, Scott AJ, Gandy M, Bisby MA, Heriseanu AI, Hathway T (2021) A cost-effectiveness analysis of an internet-delivered pain management program delivered with different levels of clinician support: results from a randomised controlled trial. *The Journal of Pain* 22, 344–358. doi:10.1016/j.jpain.2020.11.003
- Deloitte Access Economics (2019) 'The cost of pain in Australia.' (Commissioned by Painaustralia)
- Eccleston C, Blyth FM, Dear BF, Fisher EA, Keefe FJ, Lynch ME, Palermo TM, Reid MC, Williams ACC, Williams AC (2020) Managing patients with chronic pain during the COVID-19 outbreak: considerations for the rapid introduction of remotely supported (eHealth) pain management services. *Pain* 161, 889–893. doi:10.1097/j.pain.0000000000001885
- Freeman T, Baum F, Javanparast S, Ziersch A, Mackean T, Windle A (2021) Challenges facing primary health care in federated

- government systems: implementation of primary health networks in Australian states and territories. *Health Policy* 125, 495–503. doi:10.1016/j.healthpol.2021.02.002
- Fritz JM, Davis AF, Burgess DJ, Coleman B, Cook C, Farrokhi S, Goertz C, Heapy A, Lisi AJ, McGeary DD (2021) Pivoting to virtual delivery for managing chronic pain with nonpharmacological treatments: implications for pragmatic research. *Pain* 162, 1591–1596. doi:10.1097/j.pain.0000000000002139
- Gentry MT, Lapid MI, Clark MM, Rummans TA (2019) Evidence for telehealth group-based treatment: a systematic review. *Journal of Telemedicine and Telecare* 25, 327–342. doi:10.1177/1357633X18775855
- Glare P, Aubrey KR, Myles PS (2019) Transition from acute to chronic pain after surgery. *The Lancet* 393, 1537–1546. doi:10.1016/S0140-6736(19)30352-6
- Hogg MN, Kavanagh A, Farrell MJ, Burke ALJ (2021) Waiting in pain II: an updated review of the provision of persistent pain services in Australia. *Pain Medicine* 22, 1367–1375. doi:10.1093/pm/pnaa374
- Joypaul S, Kelly FS, King MA (2018) Turning pain into gain: evaluation of a multidisciplinary chronic pain management program in primary care. *Pain Medicine* 20(5), 925–933. doi:10.1093/pm/pny241
- Kamper SJ, Apeldoorn AT, Chiarotto A, Smeets RJE, Ostelo RW, Guzman J, van Tulder MW (2014) Multidisciplinary biopsychosocial rehabilitation for chronic low back pain. *Cochrane Database of Systematic Reviews* CD000963. doi:10.1002/14651858.CD000963.pub3
- Katz J, Weinrib AZ, Clarke H (2019) Chronic postsurgical pain: from risk factor identification to multidisciplinary management at the toronto general hospital transitional pain service. *Canadian Journal of Pain* 3, 49–58. doi:10.1080/24740527.2019.1574537
- Lim DZ, Newby JM, Gardner T, Haskelberg H, Schultz R, Faux SG, Shiner CT (2021) Evaluating Real-World Adherence and Effectiveness of the “Reboot Online” Program for the Management of Chronic Pain in Routine Care. *Pain Medicine* 22, 1784–1792. doi:10.1093/pm/pnaa458
- Lin IB, Ryder K, Coffin J, Green C, Dalgety E, Scott B, Straker LM, Smith AJ, O’Sullivan PB (2017) Addressing disparities in low back pain care by developing culturally appropriate information for aboriginal Australians: “My Back on Track, My Future”. *Pain Medicine* 18, 2070–2080. doi:10.1093/pm/pnw314
- Lin I, Green C, Bessarab D (2019) Improving musculoskeletal pain care for Australia’s first peoples: better communication as a first step. *Journal of Physiotherapy* 65, 183–185. doi:10.1016/j.jphys.2019.08.008
- Miles MB, Huberman AM, Saldana J (2014) ‘Qualitative data analysis: a methods sourcebook.’ (SAGE Publications)
- Montayre J, Neville S, Dunn I, Shrestha-Ranjit J, Wright-St. Clair V (2020) What makes community-based physical activity programs for culturally and linguistically diverse older adults effective? A systematic review. *Australasian Journal on Ageing* 39, 331–340. doi:10.1111/ajag.12815
- Nayak MSDP, Narayan K (2019) Strengths and weaknesses of online surveys. *Technology* 6, 7.
- Nicholas MK, Blyth FM (2016) Are self-management strategies effective in chronic pain treatment? *Pain Management* 6, 75–88. doi:10.2217/pmt.15.57
- Nicholas MK, Linton SJ, Watson PJ, Main CJ Group, DotFW (2011) Early identification and management of psychological risk factors (“yellow flags”) in patients with low back pain: a reappraisal. *Physical Therapy* 91, 737–753. doi:10.2522/ptj.20100224
- Parmenter J, Basit T, Nelson A, Crawford E, Kitter B (2020) Chronic disease self-management programs for Aboriginal and Torres Strait islander people: factors influencing participation in an urban setting. *Health Promotion Journal of Australia* 31, 104–111. doi:10.1002/hpja.256
- Scascighini L, Toma V, Dober-Spielmann S, Sprott H (2008) Multidisciplinary treatment for chronic pain: a systematic review of interventions and outcomes. *Rheumatology* 47, 670–678. doi:10.1093/rheumatology/ken021
- Shanthanna H, Strand NH, Provenzano DA, Lobo CA, Eldabe S, Bhatia A, Wegener J, Curtis K, Cohen SP, Narouze S (2020) Caring for patients with pain during the COVID-19 pandemic: Consensus recommendations from an international expert panel. *Anaesthesia* 75, 935–944. doi:10.1111/anae.15076
- Slater H, Dear BF, Merolli MA, Li LC, Briggs AM (2016) Use of eHealth technologies to enable the implementation of musculoskeletal models of care: evidence and practice. *Best Practice & Research Clinical Rheumatology* 30, 483–502. doi:10.1016/j.berh.2016.08.006
- Smith J, Faux SG, Gardner T, Hobbs MJ, James MA, Joubert AE, Kladnitski N, Newby JM, Schultz R, Shiner CT (2019) Reboot online: a randomized controlled trial comparing an online multidisciplinary pain management program with usual care for chronic pain. *Pain Medicine* 20, 2385–2396. doi:10.1093/pm/pnz208
- Swerissen H, Duckett S, Moran G (2018) ‘Mapping primary care in Australia.’ (Grattan Institute: Melbourne, Vic., Australia)
- Tauben DJ, Langford DJ, Sturgeon JA, Rundell SD, Towle C, Bockman C, Nicholas M (2020) Optimizing telehealth pain care after COVID-19. *Pain* 161, 2437–2445. doi:10.1097/j.pain.0000000000002048
- Treede R-D, Rief W, Barke A, Aziz Q, Bennett MI, Benoliel R, Cohen M, Evers S, Finnerup NB, First MB (2019) Chronic pain as a symptom or a disease: the IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11). *Pain* 160, 19–27. doi:10.1097/j.pain.0000000000001384
- Walker P, Cornell S, De Morgan S, Bonner C, Blyth FM (2021) Chronic pain and cardiovascular disease prevention in primary care: a review of Australian primary health network needs assessments. *Australian Health Review* 46(1), 70–77. doi:10.1071/AH21058
- Walker P, De Morgan S, Wilson A, Blyth FM (2022) Establishing consensus on key elements and implementation enablers of community-based pain programs to support primary health network decision making: an eDelphi study. *Australian Journal of Primary Health* 28(1), 56–62. doi:10.1071/PY21145
- Wilson IR (2017) Management of chronic pain through pain management programmes. *British Medical Bulletin* 124(1), 55–64. doi:10.1093/bmb/ldx032
- Ziersch A, Freeman T, Javanparast S, Mackean T, Baum F (2020) Regional primary health care organisations and migrant and refugee health: the importance of prioritisation, funding, collaboration and engagement. *Australian and New Zealand Journal of Public Health* 44, 152–159. doi:10.1111/1753-6405.12965
- Zurynski Y, Smith C, Siette J, Nic giolla easpaig B, Simons M, Knaggs GT (2021) Identifying enablers and barriers to referral, uptake and completion of lifestyle modification programmes: a rapid literature review. *BMJ Open* 11, e045094. doi:10.1136/bmjopen-2020-045094

Data availability. The datasets generated and analysed during the current study are available from the corresponding author on reasonable request.

Conflicts of interest. The authors declare that they have no competing interests.

Declaration of funding. Funding for this research was provided from the Australian Government's Medical Research Future Fund (MRFF). The MRFF provides funding to support health and medical research and innovation, with the objective of improving the health and wellbeing of Australians. MRFF funding has been provided to The Australian Prevention Partnership Centre under the MRFF Boosting Preventive Health Research Program. Further information on the MRFF is available at www.health.gov.au/mrff. This research was also supported by the Sydney Medical School Foundation, University of Sydney.

Acknowledgements. The authors thank the executive staff and program leaders from PHNs who participated in this study. Thank you also to Carol Bennett, CEO of Painaustralia, and Susan Rogers, Manager of the Pain Management Network, NSW Agency for Clinical Innovation, for their input. The research team also acknowledge and thank the Chronic Pain Project steering group members.

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