PILOT PROGRAM

Addressing the Needs of Patients With Chronic Pain

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A novel interdisciplinary team approach within a primary care setting may be a promising model for delivering effective comprehensive treatment options for patients with chronic pain.

Chronic pain is a common health care problem that remains a significant burden for the VHA. Some reports indicate that nearly 50% of VA patients report chronic pain. Both within and outside the VHA, primary care providers (PCPs) generally manage patients with chronic pain. Historically, a biomedical approach to chronic pain also included the use of opioid medications, which may have contributed to increased opioid-related morbidity and mortality especially among the veteran patient population. The use of opioids also is controversial due to concerns about adverse effects (AEs), long-term efficacy, functional outcomes, and the potential for drug abuse and addiction. Consequently, alternative treatment options that incorporate an interdisciplinary approach have gained significant interest among pain care providers. Interdisciplinary programs have been shown to improve functional status and psychological well-being and to reduce pain severity and opioid use. These benefits may persist for a decade or longer.

BACKGROUND

The Stepped Care Model for Pain Management (SCM-PM) is a specific pain treatment approach promoted by the VA National Pain Management Directive. This systematically adjusted approach is associated with improved patient satisfaction and health outcomes for pain and depression. At its core, the model promotes engaging patients as active participants in their care along with a team of doctors who can offer an integrated, evidence-based, multimodal, interdisciplinary treatment plan.

To successfully implement this strategy at the VA, patient aligned care teams (PACT) assess and manage patients with common pain conditions through collaboration with mental health, complementary and integrative health services, physical therapy, and other programs, such as opioid renewal clinics and pain schools. This collaborative care approach, which the PCP initiates, is step 1 of the SCM-PM. If initial treatment is not successful and patients are not improving as expected, specialty care consultation and collaborative co-management through interdisciplinary pain specialty teams are sought (step 2). Finally, step 3 involves tertiary, interdisciplinary care, including access to advanced diagnostic and pain rehabilitation programs accredited by the Commission for Accreditation of Rehabilitation Facilities (CARF).

Although the advantages of interdisciplinary pain programs are clear, resource limitations as well as challenges related to competencies of the PCPs, nurses, and associated health care professionals in pain assessment and management can make implementation of these programs, including the SCM-PM, difficult for many clinics and facilities. Thus, identifying effective chronic pain models and strategies, incorporating the philosophy and key elements of interdisciplinary programs, and accounting for facility resources and capacity are all important.

At the Ann Arbor VAMC, development of a comprehensive interdisciplinary team started...
with the implementation of joint sessions with a clinical pharmacist and health psychologist embedded in primary care to enhance access to behavioral pain management interventions. This program was subsequently expanded to include a pain physician, 2 pain-focused physical therapists (PTs) and a pain nurse.

This article describes a novel team approach for providing more comprehensive, interdiscipli- nary care for patients with chronic pain along with the initial results for the patients who were part of an outpatient pain group program (OPGP).

**METHODS**

Developing a more interdisciplinary pain management program included integrating different services and creating a strategy for comprehensive evaluation and management of patients with chronic pain. After patients were referred to the interdisciplinary pain clinic by their PCP, they received a systematically structured multidimensional assessment. The primary focus of this assessment was to create an individually directed treatment approach based on the patient’s responses to previous treatments and information collected from several questionnaires administered prior to evaluation. This information helped guide individual patient decision making and actively engaged patients in their care, thus following one of the central tenants of the SCM-PM model. Moreover, functional restoration was at the core of each patient’s evalua-

**TABLE 1 Outpatient Pain Group Program Weekly Schedule**

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Therapy Focus</th>
<th>Objectives</th>
<th>Responsible Provider</th>
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| Week 1    | CBT: Coping with chronic pain                     | • Developing coping skills  
- adaptive coping  
- self-statements  
- group psychotherapy  
- SMART goal setting | Psychologist                |
| Week 2    | Exercise, movement, and physical therapy          | • Physical activity and exercise in chronic pain  
• Adherence to the prescribed physical therapy | Physical/occupational therapist |
| Week 3    | CBT: Cognitive restructuring and healthy thinking | • Monitoring and evaluating negative thoughts  
• Generating more accurate and adaptive thoughts | Psychologist                |
| Week 4    | Pain medications                                   | • General principles of analgesic therapy  
• Opioid and nonopioid analgesics in management of chronic pain | Pharmacist                 |
| Week 5    | CBT: Advanced relaxation and mindfulness          | • Benefits of relaxation  
- muscle relaxation  
- imagery  
- visualization  
- meditation  
• Stress and anger management | Psychologist                |
| Week 6    | Medical approach to managing chronic pain          | • Approaches to managing chronic pain  
• Role of multimodal treatment | Physician                  |
| Week 7    | CBT: Activity pacing and sleep                     | • Understanding overactivity/underactivity cycle  
• Sleep hygiene | Psychologist                |
| Week 8    | CBT: Importance of communicating with family and providers | • Chronic pain and family relationships  
• Effective communication | Psychologist                |

Abbreviations: CBT, cognitive behavioral therapy; SMART, specific, measurable, achievable, results-focused, time bound.
tion and management. The primary focus was on nonpharmacologic treatment options that included psychological, physical, and occupational therapy; self-management; education; and complementary and alternative therapies. These modalities were offered either individually or in a group setting.

The first step after referral was an evaluation that followed the main core principles for complex disease management described by Tauben and Theodore. All new patients were asked to complete a 2-question pain intensity and pain interference measure, the 4-question Patient Health Questionnaire (PHQ-4), 4-question Primary Care-PTSD screening tool (PC-PTSD), and the STOP-BANG questionnaire to assess the risk for obstructive sleep apnea. Each measure allowed the physician to identify specific problem areas and formulate a treatment plan that would incorporate PTs or occupational therapists, psychologists and/or clinical specialists, and pharmacists if needed.

Patients who were found to have or expressed significant disability because of pain and who wished to learn pain self-management strategies could participate in an 8-week OPGP. This program included the use of cognitive behavioral therapy (CBT) strategies along with group physical therapy classes. Some patients also received individual therapies concurrently with the 8-week OPGP. Patients were excluded from participating in the OPGP only if their current medical or psychiatric status precluded them from full engagement and maximum benefit as determined by the pain physician and psychologist.

Participants and Intervention
Program participants were patients with a chronic pain diagnosis who enrolled in the interdisciplinary pain team OPGP between April 2016 and April 2017. Most patients were referred by their PCPs due to chronic low back, neck, joint or neuropathic pain, although many presented with multiple pain areas. The onset of pain often was a result of a service-related injury or overuse, or the etiology was unknown.

A board-certified pain physician, licensed clinical psychologist, 2 licensed PTs, and a clinical pharmacist led the OPGP sessions. The program was composed of 3-hour-long sessions held weekly for 8 consecutive weeks. Each week, a member of the team covered a specific topic (Table 1). The team psychologist provided a CBT approach for managing chronic pain, which included an introduction to a proactive model of coping with chronic pain; cognitive restructuring and ways to promote healthy thinking; relaxation techniques and mindfulness; and strategies to improve communication with family and providers related to chronic pain. Other team members presented information from their discipline. These sessions focused on the importance of exercise, movement, and physical therapy; appropriate use of medications for managing chronic pain; pacing activities and body mechanics; and the medical approach to managing chronic pain. In addition to didactic presentations, interaction and therapeutic dialogue was encouraged among patients.

The education portion of each weekly session lasted about 90 minutes, including a short break. Then, following another short break, patients proceeded to the physical therapy area and engaged in an individualized, monitored exercise program, conducted by the team PTs. Patients also were issued pedometers and encouraged to track their steps each day. Education in improving posture and body mechanics was a key component of the exercise portion of the program so patients could resume their normal daily activities and regain enjoyment in their life. Pain outcome measures were collected at admission and immediately before discharge.

Medication management also was an important part of the program for some patients and included tapering off opioids and other drugs and implementing trials of adjuvant pain medications shown to help chronic pain. For some patients, this medication management continued after the patient completed the program.

Measures
The Pain Outcome Questionnaire (POQ) is a 19-item, self-report measure of pain treatment
outcomes. Pain rating, mobility, activities of daily living, vitality, negative effect, and fear are the functioning domains evaluated, and the subscale scores are added to produce a total score. The POQ was developed from samples of veterans undergoing inpatient or outpatient pain treatment at VA facilities. For each of the subscales and the total score, higher values indicate poorer outcomes. In normative outpatient VA samples, a total score of 71 is at the 25th percentile, and 120 is at the 75th percentile. The POQ has been shown to have good reliability and validity among veterans in an outpatient setting.25

The Pain Catastrophizing Scale (PCS) is a 13-item scale designed to measure various levels of pain catastrophizing.26 Each item is rated on a 5-point Likert-type scale, from 0 (not at all) to 4 (all the time). The PCS consists of 3 subscale domains: rumination, 4 items; magnification, 3 items; and helplessness, 6 items. Responses to all items also can be added to produce a total score from 0 to 52, with higher scores indicating a higher level of catastrophic thinking related to pain. This project evaluated both the total score and the 3 subscale scores.

The Pain Self-Efficacy Questionnaire (PSEQ) is a 10-item questionnaire that assesses confidence in an individual’s ability to cope or to perform activities despite the pain.27 The PSEQ covers a range of functions, including household chores, socializing, work, as well as coping with pain without medications. Each question has a 7-point Likert scale response: 0 = not at all confident, and 7 = completely confident, to produce a total score from 0 to 60. Higher scores indicate stronger pain self-efficacy, which has been shown to be associated with return to work and maintenance of functional gains.

The Patient Health Questionnaire-4 (PHQ-4) is a 4-item instrument used to screen for depression and anxiety in outpatient medical settings.22 Patients indicate how often they have been bothered by certain problems on a 4-point Likert scale, from 0 (not at all) to 3 (nearly every day). The PHQ-4 provides a total score (0-12) with scores of 6 to 8 indicating moderate and 9 to 12 indicating severe psychological distress; 2 subscale scores, 1 for anxiety (2 questions) and 1 for depression (2 questions). For this analysis, the total PHQ-4 score has been dichotomized with 1 indicating a score in the moderate or severe range vs 0 for a score of mild or no psychological distress. Likewise, each of the subscale scores have been dichotomized with 1 indicating a score of 3 or greater, which is considered a positive screen.

The 6-minute walk test (6MWT) measures the distance (in feet) an individual can walk over a total of 6 minutes on a hard, flat surface.28 Even though the individual can walk at a self-selected pace and rest if needed during the test, the goal is for the patient to walk as far as possible over the course of 6 minutes. The 6MWT provides information regarding functional capacity, response to therapy, and prognosis across a range of chronic conditions, including pain.

**DATA ANALYSIS**

Data analysis included the use of both descriptive and comparative statistics. A descriptive analysis was conducted to examine the characteristics of patients who did and did not complete the OPGP. Specific outcomes for those individuals who completed the program, and thus had complete pre- and post-OPGP information, then were compared. Paired t tests were used to compare differences in continuous measures between baseline (pre-OPGP) and the 8-week follow-up (post-OPGP). Comparisons involving dichotomous measures were made using the Fisher exact test. A 2-sided α with a P value .05 was considered statistically significant. All statistical analyses were conducted using STATA version 14.1 (StataCorp, College Station, TX).
RESULTS
A total of 36 patients enrolled, and 28 (77%) completed the OPGP. Patients who did not complete the program (n = 8) either self-discharged due to lack of interest or had difficulty in consistently making their appointments and decided not to continue (Table 2). Most of the participants who completed the program were male (75%) compared with those who did not complete (37.5%). Both groups were predominantly white, with a mean age of 51.8 years for completers and 55.8 years for noncompleters.

Outcomes for OPGP Completers
Improvements were observed for all outcome domains among patients who completed the program (eTable, available at fedprac.com). There were statistically significant reductions in POQ scores (110.8 pre-OPGP to 85.9 post-OPGP, P < .01) and the PCS overall score (31.6 pre-OPGP to 20.3 post-OPGP, P < .01), including reductions in each of the pain catastrophizing subscale domains. The rumination subscale decreased from 10.8 to 7.2 (P < .01); magnification decreased from 6.8 to 4.3 (P < .01); and helplessness decreased from 13.8 pre-OPGP to 8.7 post-OPGP (P < .01). Participants who reported pain self-efficacy also showed a statistically significant improvement with scores increasing from 23.5 pre-OPGP to 24.8 post-OPGP (P < .01). The percentage of patients scoring in the moderate/severe distress range on the PHQ-4 and likewise those screening positive for anxiety or depression also decreased, but none of the differences were statistically significant. Finally, an objective measure of functional capacity, significantly improved from an average of 1,140 feet to 1,377 feet pre- and post-OPGP, respectively.

DISCUSSION
This report describes the novel model for improving delivery of chronic pain management services implemented at the Ann Arbor VAMC through the development of a multidisciplinary pain PACT. The program included using a systematically structured multidimensional approach to identify appropriate treatments and delivery of interdisciplinary care for patients with chronic pain through an OPGP. The authors’ findings establish the feasibility and acceptability of the OPGP. More than 75% of those enrolled completed the program, indicating the promising potential of this approach with significant improvements observed for several pain-related outcomes among those who completed the 8-week program.

Stepped care is a well-established approach to managing complex chronic pain conditions. The approach adds increased levels of treatment intensity when there is no improvement after initial, simple measures are instituted (eg, over-the-counter pain medications, physical therapy, life style changes). Understanding the complexity of the pain experience while treating the patient and not simply the pain has the highest likelihood of helping patients with chronic pain. Given the prevalence of chronic pain among patients in primary care nationally, measurement-based pain care potentially could result in an earlier referral to appropriate care well before pain becomes intractable and chronic.

Growing evidence shows that multidisciplinary treatments reduce pain symptoms and intensity, medication, health care provider use, and improve quality of life.11-15,29,30 A systematic review by van Tulder and colleagues, for example, noted improvements in physical parameters, such as range of motion and flexibility and behavioral health parameters, including anxiety, depression, and cognition.29 Similarly, the cohort of patients who participated in the OPGP showed statistically significant improvements in several domains of pain-related distress and functioning following treatment, including pain catastrophizing, pain self-efficacy, and the multicomponent pain outcomes questionnaires. Functional improvement also was observed by comparing the distance walked in 6 minutes before and after program completion.

There is significant variation in duration of rehabilitation programs lasting from 2 weeks to 12 weeks or longer. These sessions consist of half days, daily sessions, weekly sessions, and monthly sessions. Inconsistencies also exist among programs that
use 3 to 280 professional contact hours. Although it has been shown that programs with more than 100 hours of professional contact tended to have better outcomes than did those with less than 30 hours of contact, Stratton and colleagues reported that a 6-week group program was equivalent or better than a 12- and 10-week group program among veterans.11,31 These findings along with staffing and resource constraints led to the implementation of the 8-week OPGP with fewer than 30 hours of contact time per group. These results have important practical implications, as shorter treatments may offer comparable therapeutic impact than do longer, more time-intensive protocols.

Limitations
These findings were derived from a quality improvement project within one institution, and several limitations exist. Although the broader purpose of the article was to show how the fundamentals of creating a cohesive multidisciplinary chronic pain team can be implemented within the VA setting, the highlighted outcomes were primarily from participants in the OPGP. Since this was not a controlled or experimental study and given potential sample size and selections issues as well as the lack of longer-term follow-up information, further study is needed to draw definitive conclusions about program effectiveness, despite promising preliminary results. In addition, medication use, such as opioids either before or after completion of the program, was not included as part of this evaluation. As previously discussed, medication management for some patients continued beyond the 8-week time frame of the OPGP. Nonetheless, understanding the impact of this team approach on opioid use also is an important topic for future research.

Despite these limitations, the described model could be a feasible option for improving pain management in outpatient practices not only within the VA but in community settings.

CONCLUSION
These results suggest that the use of short-term, structured therapeutic protocols could be a potentially effective strategy for the behavioral treatment of chronic pain conditions among veterans. The development and implementation of effective, innovative, evidence-based practice to address the needs of patients with chronic pain is an important priority for maximizing clinical service delivery and meeting the needs of the nation’s veterans.

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