

PRIMARY CARE & HEALTH SERVICES SECTION

Original Research Articles

Integrating Interdisciplinary Pain Management into Primary Care: Development and Implementation of a Novel Clinical Program

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Abstract

Objectives. The aims of this study were to develop and implement an interdisciplinary pain program integrated in primary care to address stakeholder-identified gaps.

Design. Program development and evaluation project utilizing a Plan-Do-Study-Act (PDSA) approach

to address the identified problem of insufficient pain management resources within primary care.

Setting. A large Healthcare System within the Veterans Health Administration, consisting of two academically affiliated medical centers and six community-based outpatients clinics.

Methods. An interprofessional group of stakeholders participated in a Rapid Process Improvement Workshop (RPIW), a consensus-building process to identify systems-level gaps and feasible solutions and obtain buy-in. Changes were implemented in 2012, and in a 1-year follow-up, we examined indicators of engagement in specialty and multimodal pain care services as well as patient and provider satisfaction.

Results. In response to identified barriers, RPIW participants proposed and outlined two readily implementable, interdisciplinary clinics embedded within primary care: 1) the Integrated Pain Clinic, providing in-depth assessment and triage to targeted resources; and 2) the Opioid Reassessment Clinic, providing assessment and structured monitoring of patients with evidence of safety, efficacy, or misuse problems with opioids. Implementation of these programs led to higher rates of engagement in specialty and multimodal pain care services; patients and providers reported satisfaction with these services.

Conclusions. Our PDSA cycle engaged an interprofessional group of stakeholders that recommended introduction of new systems-based interventions to better integrate pain resources into primary care to address reported barriers. Early data suggest improved outcomes; examination of additional outcomes is planned.

Key Words. Pain; Primary Care; Assessment; Systems-Based Care

Introduction

Pain is one of the most frequent reasons for health care utilization [1] and one of the costliest medical conditions treated in the U.S. health care system [2]. Despite the prevalence of chronic pain, access to and engagement in appropriate and effective treatments remain problematic, likely resulting from a combination of patient variables, provider referral behavior, and systems-level variables such as availability [3–7]. Guidelines for pain management emphasize the importance of multimodal, interdisciplinary care, which incorporates both a team-based approach as well as a combination of non-pharmacological and pharmacological treatment modalities [8–10]. Guidelines have also been developed that provide recommendations for opioid management with emphasis on monitoring for safety and efficacy, although uptake and adherence are variable [11–13].

The Veterans Health Administration (VHA) has identified pain management as a top priority, with particular focus on the goals of providing multimodal pain care and engaging in safe opioid-prescribing practices [8]. Over the past few years, primary care practice in VHA has been transformed to fit with the medical home model. Primary care medical homes, termed Patient Aligned Care Teams in VHA, consist of a core team comprised of a primary care provider, registered nurse, and health technician (e.g., licensed practical nurse), as well as ancillary team members such as social workers, pharmacists, and mental health providers. Much of the pain care in VHA occurs within these teams, with specialty pain services available for patients whose needs are not met by the services available in primary care. Pain management is an especially appropriate target for VHA given the high prevalence of chronic pain among veterans [14,15].

Given the importance of improved quality of pain care to VHA, the transition to the medical home model in which much of pain care occurs, and the guidelines highlighting the importance of access to specialty services, multimodal care plans, and safe opioid prescribing for pain, our objectives were to 1) examine the current state of pain care in primary care, including referral to specialty care services; 2) develop a new clinical program to address gaps and improve the quality of pain care within the primary care setting; and 3) evaluate initial outcomes in the year following the initiation of the program in the fall of 2012. The present report is a description of the methods and early results from this program development and evaluation project to inform similar efforts both within and outside VHA.

Method

Setting

Veterans Affairs Connecticut Healthcare System (VACHS) is composed of two academically affiliated Vet-

erans Affairs (VA) medical centers, located in southern (West Haven) and northern (Newington) Connecticut, and six community-based outpatient clinics located throughout the state. VACHS provides services to approximately 50,000 veterans annually and benefits from high-quality primary care services and robust facility-level commitment to the medical home model, as well as a large cadre of pain services ranging from behavioral and rehabilitation-focused modalities to interventional techniques.

Much of the pain care within VACHS, as well as within other VAs nationally, occurs within the primary care medical homes. Specialty pain care is requested via electronic “consults” entered into the electronic health record. Consults are ultimately either 1) “completed,” if the patient is seen by the consulting service; 2) “cancelled,” for example, if a patient is not deemed appropriate for the referred service (e.g., a consult entered for physical therapy for a patient who was already seen by the service within the past month); or 3) “discontinued,” such as when the service is unable to contact the patient to schedule an appointment.

Procedure

In order to examine and improve pain care specifically within primary care at VACHS, we adopted a Plan-Do-Study-Act (PDSA) framework (see Figure 1). PDSA was one of the first and remains one of the most effective models of change used in health care settings [16]. The “Plan” phase consisted of three components: 1) formative, qualitative surveys of primary care providers, nurses, and support staff; 2) review of the number of consults sent to pain-related services, as well as the proportion of completed consults; and 3) a Rapid Process Improvement Workshop (RPIM) involving an inter-professional group of stakeholders led by facilitators trained in an evidenced-based systems redesign method (Lean Thinking/Six Sigma). As nonclinicians, these facilitators repeatedly drew the focus back to the “voice of the customer,” i.e., how the proposed processes might be experienced by the patient. The goal was for these three components to provide valuable information about the state of pain services at baseline as well as gaps in quality of pain care provided within primary care in order to guide the “Do” portion of the cycle: the development of a new clinical program to address system needs and improve care for patients. Waivers of consent and Health Insurance Portability and Accountability Act authorization were obtained for the collection of these data.

The process and results of the qualitative surveys, administered in spring of 2011, have been described in detail elsewhere [17,18]. In brief, three stakeholder groups—all primary care providers, nurses, and support staff—were invited to respond to qualitative surveys asking them to describe barriers and facilitators to quality pain care within the primary care setting. Several themes emerged from the qualitative analyses of

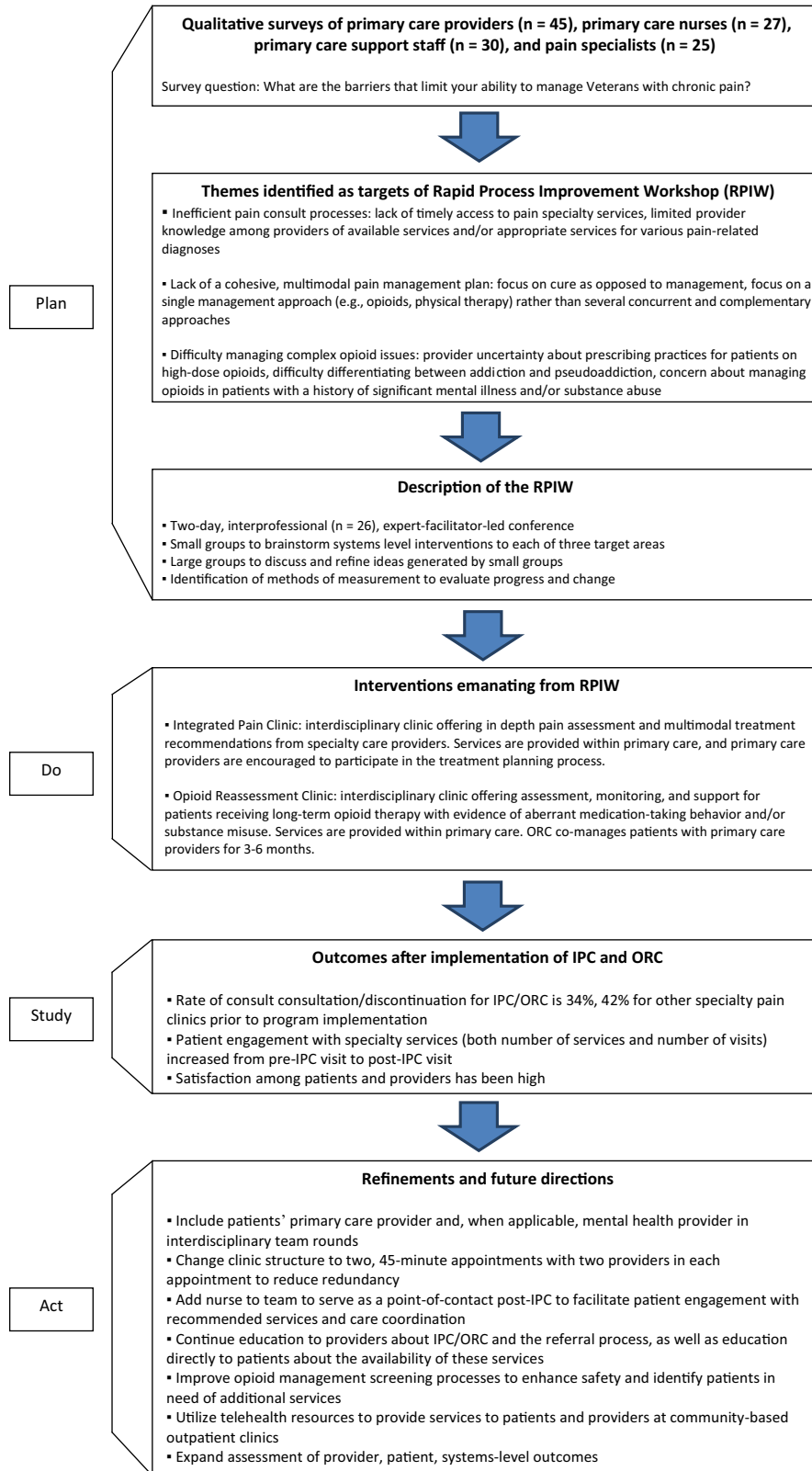


Figure 1 Process of intervention development, refinement, and implementation. IPC = Integrated Pain Clinic; ORC = Opioid Reassessment Clinic. [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

surveys, three of which we identified as present across all stakeholder groups and amenable to rapid process improvement: 1) difficulty accessing pain-related services, often because of lack of knowledge regarding appropriate pain services for patients with varied pain histories and presentations; 2) lack of a cohesive, multimodal pain management plan; and 3) difficulty with opioid management in patients with evidence of low efficacy, safety, or misuse problems (see Figure 1 for more information). Taken together, these three themes suggested that primary care teams, and, in turn, their patients, would benefit from improved access and communication with specialty care services, as well as provision of interdisciplinary pain management services, within the primary care setting. These themes served as the basis for the discussion of the RPIW described below.

RPIW

RPIW, a Lean Thinking technique [19] successfully translated to health care settings [20], is a method for developing stakeholder consensus around priorities and tasks related to quality improvement. RPIWs usually have a specific focus on discrete problems and gather stakeholders together for in-person, expert-facilitated meetings aimed at developing a readily implementable plan. Within the health care setting, RPIWs seek to create a more reliable, efficient, patient-centered process. Once a plan is developed and implemented, the plan's execution is evaluated on a recurring basis to assess intended and unintended outcomes.

Our RPIW was a 2-day meeting that took place in spring of 2012. Service chiefs from a broad range of pain-related clinical services, including primary care, pain medicine, health psychology, psychiatry/addiction psychiatry, physiatry, physical therapy, neurology, interventional radiology, chiropractic, rheumatology, and pharmacy, were contacted and asked to identify one to two individuals to participate in the RPIW. At least one representative from all invited clinical services attended the RPIW, as did representatives from hospital administration, quality management, and pain research, for a total of 26 representatives attending. The primary target of our RPIW was "Improved matching of pain treatment resources with patient pain care needs in primary care." A core group of providers from primary care, pain medicine, and psychology met prior to the RPIW to develop an initial proposal for developing an integrated clinical program, with the goal of discussing, modifying, and garnering stakeholder buy-in through the RPIW. Facilitators of the meeting included three Six Sigma trained professionals from the quality management department of VACHS. The morning session of the RPIW consisted of discussion of the goal of the RPIW, presentation of the qualitative survey data, and both small-group breakout discussions and an open-forum, full group discussion to identify and prioritize systems issues that would be most readily responsive to rapid interventions in the targeted areas. In the afternoon session, breakout groups were assigned to discuss issues in further detail

(streamlining the consult processes, defining the composition and function of an interdisciplinary pain clinic, or enhancing resources to help primary care providers manage opioid therapy among patients with evidence of low efficacy or safety/misuse problems) and arrive at a tentative proposal. Then, the large group reconvened to discuss the proposals of each of the breakout groups for further refinement.

Outcomes Assessment

Aligned with the identified gaps in care and the accompanying goals for the new clinical interventions, we defined several a priori outcomes to evaluate progress toward the goals. The initial "Study" phase of our PDSA cycle examined 1) changes in access to specialty pain care before and after the implementation of Integrated Pain Clinic (IPC) and Opioid Reassessment Clinic (ORC); 2) changes in patient engagement with specialty pain care before and after implementation of IPC and ORC; and 3) provider and patient satisfaction with the new programs. Institutional review board approval was obtained for the chart extractions, administrative data collection, and satisfaction data gathered from patients and providers.

Results

The RPIW reached consensus on two priority areas: 1) defining the composition and function of an interdisciplinary pain clinic integrated within primary care designed to both streamline the consult process and help develop cohesive, patient-centered, multimodal treatment plans; and 2) enhancing resources to help primary care providers manage opioid therapy issues. The development and implementation of these resources, as well as the process of educating providers and staff about resources to enhance utilization, served as the "Do" phase of the PDSA process. The process of referral, assessment, and follow-up with specialty care is described below and illustrated in Figure 2.

IPC: Providing Interdisciplinary Pain Assessment and Care Coordination Within Primary Care

With regard to defining the composition and function of an interdisciplinary pain clinic, the RPIW defined four specialty services—health psychology, pain medicine, physiatry, and physical therapy—as fundamental to the management plan for nearly every patient with chronic pain not responding adequately to the treatment plan initiated by primary care. As such, each of these four services were asked to contribute one provider, beginning in the fall of 2012, for one half-day per week to participate in a new IPC located within primary care to which consults could be made for detailed assessment and treatment planning. In addition to addressing the problem of the lack of interdisciplinary care, the RPIW anticipated that the creation and implementation of IPC would also streamline the consult process to specialty

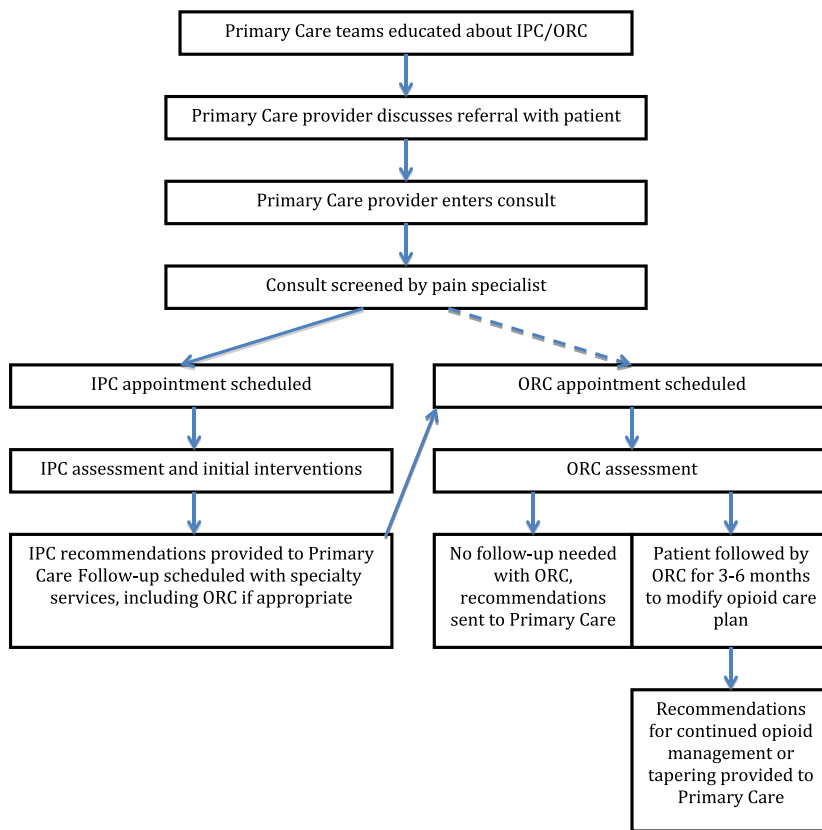


Figure 2 Referrals from primary care to IPC/ORC. IPC = Integrated Pain Clinic; ORC = Opioid Reassessment Clinic. [Color figure can be viewed in the online issue, which is available at wileyonlinelibrary.com.]

services. IPC team members provided information and education about appropriate consults and how to refer to IPC, as well as more broadly the role and purpose of the clinic, to primary care providers at primary care service line meetings and via e-mail. Primary care providers access the consult via a simple order within the electronic health record in which the entering provider is asked to document, among other things, the “goal of consult” using free text entry. Each consult is reviewed by a pain medicine specialist who contacts the referring provider if any clarifying questions remain. The IPC consult simplifies the process in that rather than putting the burden on primary care to determine appropriate specialty services for a given patient with pain, the patient is referred to IPC where a comprehensive, interdisciplinary assessment is conducted, typically consisting of a review of the chart and medical history, clinical interview, physical exam, review of prior treatments, biopsychosocial assessment, and evaluation of assistive devices, if applicable. An integrated plan of care is then developed, and specialty care consults and follow-up appointments are arranged consistent with the integrated plan of care. Thus, while the IPC was designed as a one-time, 3.5-hour visit (30 minutes with each specialist, 1-hour break while providers discuss their assessments and develop an integrated treatment plan, and a 30-minute feedback session with the patient) with no longitudinal follow-up, each IPC clinician can schedule patients into their respective service line clinics, as

appropriate. Patients can also be directly connected with other pain-related services within VACHS (e.g., chiropractic medicine, mental health, orthopedics). Furthermore, members of the ORC (see below) are present at the team discussion in order to facilitate a patient’s transition to the ORC when indicated.

ORC: Interdisciplinary Opioid Management for High-Risk Patients Within Primary Care

In order to enhance resources to help primary care providers manage opioid therapy among patients with evidence of misuse, low efficacy, or adverse events, the RPIW recommended the formation of the ORC. Modeled after the Philadelphia VA Medical Center’s Opioid Renewal Clinic [21] and staffed by an addiction psychiatrist, an internist with certification in addiction medicine and training in pain management, and a mental health nurse practitioner, the ORC was designed to accept consults for patients receiving long-term opioid therapy with evidence of aberrant medication-taking behavior (e.g., early refills, lost medications), co-use of illicit substances, and hazardous alcohol use. Patients seen in ORC are initially referred to IPC and then connected with ORC in one of two ways: 1) the patient is seen by the IPC team and determined to be a good candidate for ORC; or 2) the physician screening consults to IPC may choose to bypass IPC and directly schedule the

patient with the ORC team if it is clear from the consult information that the patient would benefit from more immediate engagement with the team to monitor and potentially modify opioid use. The purpose of the clinic is to increase the intensity and frequency of monitoring—weekly or biweekly visits to start, urine drug tests, pill counts, and discussions of safety and efficacy—to support patients' continued safe and effective use of opioids in the context of a multimodal and interdisciplinary plan of pain care. Patients are comanaged in the ORC with their primary care team for up to a 6-month period. If patients demonstrate adherence to the prescribed opioid therapy (i.e., absence of aberrant medication-related behaviors), benefits in terms of pain control and improved functioning, and the absence of adverse events, responsibility for long-term opioid therapy is transferred back to the primary care team. If patients are found not to be benefitting and/or continue to demonstrate evidence unsafe use, opioid therapy is safely discontinued and appropriate alternative treatment (e.g., addiction treatment) is initiated. As with the IPC, the ORC is embedded within primary care, meant to facilitate patients' attendance (given patient familiarity with the environment) and dialog among specialists, staff, and primary care providers who are invited for team discussions of their referred patients during IPC and ORC rounds.

Outcomes of Program Implementation

Changes to Access and Engagement with Specialty Care. Prior to the development of IPC, primary care teams reported difficulty accessing pain specialty services. In the 1-year period prior to implementation of IPC, 58% of consults to pain specialty services (including pain medicine, neurology, physical therapy, bone and joint, and pain rehab school) were completed. The remainder 42% (1,855 of 4,416 consults) were cancelled or discontinued, meaning that providers in those clinics determined that the patient and/or consult question was not appropriate for their service or that patients did not attend appointments. In contrast, the cancellation/discontinuation rate for IPC to date is 34% (210 of 610 consults). This likely reflects IPC's policy of seeing all patients referred to the clinic, but with one-third of patients referred not attending scheduled appointments.

Changes to engagement with specialty services were assessed by examining the total number of specialty services seen as well as the total number of specialty visits over a 3-month period for a subset of patients referred to IPC (N = 34). Specialty services included physical therapy, occupational therapy, health psychology, chiropractic, acupuncture, rheumatology, psychiatry, neurology, neurosurgery, pain medicine, pain rehab school, brace clinic, prosthetics, wellness center, weight management, and mental health/substance abuse. In the 3 months prior to their IPC visits, patients saw a total of 71 specialty services, or 2.09 services per patient, for a total of 174 visits, or 5.12 visits per patient.

In the 3 months after IPC, patients saw a total of 110 specialty services, or 3.24 services per patient, for a total of 295 visits, or 8.58 visits per patient.

Patient and Provider Satisfaction. We measured patient satisfaction at 3 months for the first 28 patients enrolled in the ORC. The mean treatment satisfaction on a 1–5 Likert scale was 3.8 (standard deviation = 1.3), suggesting that even though the clinic involved additional monitoring, patients were generally satisfied with treatment. Patient qualitative data generally favored the structure and approach of the clinics, with several patients acknowledging the personal attention: “They listened to me and really heard me. Treated me like a human being and gave me professional attention.” Qualitative data from primary care providers suggest that the IPC and ORC have attained the goals set out for them. The following is a representative quote: “These can be very challenging patients and I can get to end of my own set of ideas for treatment. It takes some of the weight of pain management off the individual PCP, gives fresh outlook on the patient and freshens a sometimes stale treatment plan.”

Discussion

This report describes a program development and evaluation project targeting the redesign of chronic pain management services at VACHS with the overarching objectives of improved integration of pain management resources into primary care and enhanced quality of pain care by better matching of treatment resources with patient needs. Using a PDSA framework, we utilized qualitative survey data gathered from primary care teams and the electronic health record to inform an RPIW, out of which two readily implementable strategies were instituted. Additional evaluation of the new interventions is underway and early data suggest improved access and engagement in multimodal care. Given the widespread prevalence of chronic pain and the well-recognized need to improve quality of pain care, our experience in evaluating the needs of primary care and integrating pain services into primary care may help guide other medical centers nationally, both within and outside of VA. To that end, we will discuss some of the ongoing challenges and next steps in this work, the “Act” phase of our PDSA cycle.

The integrated nature of the clinic is patient centered, given the efficiency of conducting multiple evaluations in 1 day and the whole-person approach of having patients see providers of various disciplines who assess a wide range of relevant factors, including not only pain severity and diagnosis but also functional ability, coping strategies, and relevant psychosocial factors. The provision of these services within primary care has also facilitated communication between specialists and primary care teams. Interdisciplinary rounds, during which cases are reviewed and recommendations developed, are

open to all primary care staff, and primary care providers in particular are encouraged to attend when a patient on their panel is being seen. Plans are in place to block out time during primary care providers' schedules in order to ensure availability to attend the meeting when one of their patients attends IPC, which will further enhance care coordination; we hope to also include patients' mental health providers in team meetings. In addition to collaboration with providers during interdisciplinary rounds, in-person discussions of individual cases, curbside consults, and descriptions of services available are facilitated due to the convenience of having IPC embedded within the primary care.

One of the challenges of IPC has been navigating potential overlap in roles among providers. After several months, we noticed some redundancy in the assessments conducted by providers, as well as disruption to clinic flow caused by multiple physical exams being conducted by providers. In order to address this, we have recently combined visits such that patients are seen in two, 45-minute appointments by two providers at once. We have found that this has reduced redundancy, improved efficiency, and provided an opportunity for providers to further collaborate and learn from one another. Patients have expressed appreciation for the efficiency of visits and the collaboration among providers.

While IPC has brought an interdisciplinary pain assessment team into primary care with a focus on generating patient-centered pain management recommendations and facilitating appropriate follow-up, tracking of patient and provider follow-through with recommendations is still lacking. Patients and their providers typically receive a number of recommendations during IPC feedback sessions, and despite being provided with written versions of the feedback, it is possible that some patients do not follow up with all of the recommended treatment modalities. To address this need, as part of the "Act" portion of our PDSA cycle, we plan to utilize nurse care coordinators to monitor care coordination and follow-through with pain management recommendations. Nurse care coordinators will do an initial interview with patients by phone prior to the IPC appointment, be present during IPC rounds, and follow longitudinally with the patient for several weeks to ensure continuity with care plans. Given that patients often leave IPC with a number of recommendations and follow-up appointments, this method will be patient centered in that it will provide a point of contact to help patients navigate the system and relay their progress and feedback to their providers. We hypothesize that it may be cost-effective by helping to decrease the number of missed appointments and emergency room visits; we plan to collect and evaluate these data. A similar challenge is that although short-term follow-up is built into the structure of ORC, after 3–6 months, the patient's pain care is returned to primary care, where, in some cases, the ongoing complexity of patients' management may require additional resources outside of the scope of routine primary care practice.

Reliance on provider referral to IPC is a potential limitation. Patients were not targeted in education efforts, and therefore patients generally do not request or seek out IPC services but instead rely on provider knowledge about the clinic and motivation to refer patients to the clinic. As part of the "Act" phase, we will continue to educate providers about IPC, and we are in the early stages of discussions regarding an educational campaign directed toward patients. A related challenge is effective screening of patients in primary care for safety, efficacy, and misuse problems related to opioids that may be amenable to treatment in the ORC. At present, there is significant variability in providers' surveillance for these issues. While the ORC may be effective in managing patients who are found to have safety, efficacy, or misuse problems, other patients with undetected problems, or who are continued to be prescribed escalating doses of opioids without significant benefit, represent missed opportunities for quality improvement. We are currently developing a patient-reported symptom checklist and routine urine drug screening protocol to enhance sensitivity of screening. Incorporating these screening processes into a clinic embedded in primary care, akin to some anticoagulation clinics, is a model that has demonstrated efficacy [21].

An ongoing systems barrier not unique to pain care and common in the hub and spoke model of health care system design [22] is the disproportionate concentration of pain specialists and other resources at the West Haven campus of VACHS. While the number and variety of pain-related specialty services available at VACHS, including IPC and ORC, are strengths of the organization, these strengths are tempered by the fact that most services are located at one site, which significantly limits access for many patients in the health care system. To address this, a parallel IPC at the other hub medical center of VACHS (Newington campus) has been established, and telehealth resources will soon be utilized to connect West Haven and Newington with providers and patients at community-based outpatient clinics. Given the prevalence of chronic pain among patients in primary care nationally, broader implementation of similar services at other sites could help facilitate a more patient-centered, interdisciplinary approach to pain management. The implementation of Primary Care-Mental Health Integration—in which all VA medical centers and large community-based outpatient clinics are mandated to provide colocated and collaborative mental health care services within primary care to improve access and integration of care—could serve as a model for implementation of integrated pain management services within primary care. Similarly, positive outcomes have been reported from the implementation of interdisciplinary assessment and management for geriatric patients within the primary care setting, which supports the feasibility and promise of similar primary care-based assessment and management services for patients with chronic pain [23]. The model of providing interdisciplinary pain assessment, management, and education within primary care has also been implemented outside

of VHA, with promising results including increases in the number of patients served and decreases in costs and overhead compared with the traditional model of interdisciplinary pain care [24].

Conclusions

The next steps in our project include continued evaluation of the aforementioned interventions. These evaluations will continue to assess the targeted outcomes of improved access and engagement in multimodal care. We will also examine patient outcome variables such as changes to pain intensity, functional status, and satisfaction, as well as provider referral and prescribing behavior and satisfaction. Outcomes relevant to primary care practice will also be examined, such as changes in consult patterns, utilization, and cost-effectiveness. We believe the clinical programs presented here could serve as models for programs in other medical centers, both within and outside of VA, with the goal of providing efficient, patient-centered care that leads to beneficial outcomes for patients, providers, and health care systems.

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