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PART SIX

Provision of Pain Treatment

CHAPTER 106

Interdisciplinary Chronic Pain Management: Overview and Lessons from the Public Sector

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History of Interdisciplinary Chronic Pain Management

In the 1940s, John J. Bonica became the first physician to publicly recognize the complexity of chronic pain syndromes, understanding that they affect patients not only physically but across myriad dimensions of their lives. Chronic pain of nonmalignant origin (i.e., non-cancer pain) has been noted to be the most unpredictable type when compared to acute and chronic pain due to malignancy, which also makes it the most challenging to address.⁽¹⁾ Bonica found himself frustrated by his inability to effectively treat those with chronic pain and found that consultation with his colleagues seemed to benefit all who were involved.⁽²⁾ Because of this, Bonica developed the first formal multidisciplinary pain management team at Tacoma General Hospital, with members including an anesthesiologist, orthopedist, neurosurgeon, internist, psychiatrist, and radiation therapist. However, the model used was multidisciplinary triage in order to determine which team member would provide treatment and included only physicians with differing specialties versus professionals from entirely different fields.

Concurrently, unbeknownst to Bonica, others were simultaneously developing similar programs in Texas, Oregon, Canada, and Europe.(3) Although some of these programs were successful, Bonica's efforts to change the overall approach to chronic pain management were not so, and he wrote accordingly, "Despite my persistent drum beating, consisting of several hundred lectures and the publication of numerous articles in various parts of the world, the multidisciplinary concept was ignored by the medical profession for two decades."(4) Fortunately, the integration by Wilbert Fordyce of a strong behavioral component into Bonica's team in the late 1960s was instrumental in the development of the first multidisciplinary pain evaluation and triage team, which included disciplines outside of medicine. With the availability of behavioral approaches to assessment and treatment, the focus of pain clinics shifted from the eradication of pain to teaching patients how to *manage* their symptoms and restore a positive quality of life.(6) Behavioral approaches were soon replaced by cognitive-behavioral approaches, which were not only less time-consuming and costly but emphasized the patient as an *active participant* in his or her rehabilitation who is able to develop the coping skills necessary to restore independence.(2)

Multidisciplinary Chronic Pain Management programs proliferated in the 1970s and 80s, described as "medicine's new growth industry."(7) Among the most active and prestigious of these facilities was that developed by Bonica at the University of Washington where he was succeeded in directorship by the neurosurgeon, John Loeser. According to Loeser, the great success of the program was due to the interaction between the various disciplines of the team members rather than to any specific intervention that was applied.(8) This encapsulates the magic of interdisciplinary treatment that is often difficult to explain to outsiders but easily understood by those who have worked in the milieu. By the early 1980s, approximately 1000

multidisciplinary evaluation and treatment centers were in operation in the United States (9) and were becoming more numerous in other parts of the world as well. However, these programs were *multidisciplinary* rather than *interdisciplinary*. Contrary to common belief, the first truly interdisciplinary treatment program was not developed until the early 1980s, when Drs. Wilbert Fordyce and John Loeser opened the facility at the University of Washington that resembled the modern concept of the interdisciplinary chronic pain management (ICPM) program (J. Loeser. Personal communication, December 2, 2017).

While third party payers were initially enthusiastic regarding these programs, they soon became less supportive. It is difficult to specifically determine the point at which the number of interdisciplinary treatment programs and the availability of this type of pain management began to decline; however, Schatman(12),(13) has noted that the number of programs in the United States accredited by the Committee on Accreditation of Rehabilitation Facilities (CARF) declined from 210 in 1998 to 84 in 2005; in 2017 the total number of CARF-accredited pain rehabilitation programs has dwindled to 67. The availability of ICPM programs in the United States has flourished in the Department of Veterans Affairs (VA) with the Department of Defense following step, a phenomenon which will be explored in greater depth later in this chapter.

Empirical Support for Interdisciplinary Chronic Pain Management

The evidence to support the clinical efficacy and cost-effectiveness of ICPM is robust and the studies are numerous; therefore, it is most efficient to focus on meta-analyses and systematic reviews that provide the approach with unequivocal empirical support. These studies will be reviewed briefly and several prominent and more recent studies will be highlighted. Flor and her colleagues(68) performed the earliest meta-analysis of ICPM in 1992. The review of 65

studies identified numerous benefits for participants: reducing medication use, reducing emotional distress, reducing health care utilization, reducing iatrogenic consequences, increasing return to work and physical activity levels, and closing disability claims, as well as an average pain reduction of 20%. Although the figure for pain reduction may not seem impressive, patients in these programs are generally told that pain relief is not the goal of treatment, and are taught to focus on functional and emotional benefits. Not surprisingly, ICPM programs were determined to be superior to unimodal treatments as well as to no treatment and waiting list controls. The beneficial effects of the programs appeared to be stable over time. As with most large scale reviews, it was recommended that results be interpreted with some caution due to inconsistencies in methodologies and quality of research designs and descriptions.

The area of cost effectiveness for ICPM deserves attention as it is typically regarded as an intensive and concomitantly expensive option for chronic pain management; however, a review of the literature does not support this widely held belief. In 1998, Turk and Okifuji(69) performed a comparative analysis of ICPM programs in order to assess their cost-effectiveness as compared to surgery, chronic opioid therapy, and implantable devices. Most striking was the finding that ICPM programs were up to 21 times more cost-effective than alternative treatments for chronic pain such as surgery (69). Okifuji and colleagues(30) performed a review of the literature on various treatment approaches to chronic pain, analyzing the cost-effectiveness of ICPM in comparison to surgery or conventional medical treatment. ICPM compared favorably to other treatments in terms of pain reduction, management of opioid analgesics, restoration of function as measured by activity levels and return to work, health care utilization, and closure of disability claims. Additionally, the authors dispelled the myth of ICPM representing an expensive approach to pain management, calculating that its use in lieu of the other typical

approaches could result in a cost savings of \$5 billion per year in the United States. Turk(70) obtained similar findings in a 2002 review, noting not only that ICPM is comparable to oral medications, surgery, spinal cord stimulation, and intrathecal drug delivery in terms of pain relief, but that interdisciplinary treatment can provide considerable savings in costs for medications and additional health care utilization. Turk's data on cost-effectiveness are dramatic, as he determined that interdisciplinary care is 6.29 times more cost-effective than surgery, 15 times more so than conventional care, and 25 times more cost-effective than spinal cord stimulation (SCS). This opens up the question regarding why insurance would reimburse procedures such as SCS but deny any coverage for ICPM programs when the evidence suggests that this is misguided.

Turk and Swanson(29) performed an "analysis and evidence-based synthesis" of the efficacy and cost-effectiveness of medications, surgery, spinal cord stimulation, intrathecal drug delivery systems, and ICPM in the treatment of chronic pain. The authors found that all of these approaches resulted in roughly the same amount of pain relief, with only ICPM determined to be essentially free of iatrogenic complications and adverse events, as well as being numerous times more cost-effective than the other treatments considered in achieving therapeutic goals. Perhaps the most compelling empirical support for ICPM is provided by the 2001 and 2002 systematic(72) and Cochrane(73) reviews by Guzman and colleagues and the 2003 Cochrane Review by Schonstein et al.,(74) as these studies involved careful analyses of trial quality. In each of these reviews, the authors determined that ICPM improves pain and function, which was not determined to be the case for less intensive treatments.

In an ICPM context and beyond, increasing functioning and optimizing quality of life often requires the re-evaluation of pharmaceuticals. With a recent emphasis on reducing the use

of analgesics that are not always helpful and potentially harmful, including opioids, it is worthwhile to include several studies demonstrating the role of ICPM programs in this effort. A 2013 study by Murphy et al. examined the outcomes of more than 700 participants who completed the inpatient ICPM program at the VA in Tampa, FL. Since the program's advent in 1988, Veterans who enter the program taking opioids are tapered off during the course of their three-week participation. The study compared how those who were on opioid medications at program admission fared against those who were not on opioids (New Citation A). There were no significant differences between groups at admission and all participants improved, but those on opioid analgesics at program initiation *benefitted even more* on several domains including catastrophizing and activities of daily living. A study and 6-month follow-up conducted by the ICPM program at Mayo Clinic in Minnesota examined treatment outcomes following opioid analgesic cessation (New Citation B, C) and found that while patients on opioid analgesics at admission reported higher levels of pain and depression relative to those not taking opioids, there were no differences in outcomes at discharge or 6-month follow-up. Clearly, further research on the effects of opioid tapering on ICPM outcomes is warranted, as the Tampa and Mayo studies suggest a significant and sustained improvement in pain severity and functioning following interdisciplinary treatment regardless of previous opioid status.

Evaluating mediations is not only important to patient long-term well-being, but has financial implications as well. A novel economic analysis was conducted in 2015 by Mayo Clinic's Florida ICPM program in collaboration with Florida Blue, the state branch of Blue Cross Blue Shield (New Citation D). Sletten et al. collaboratively examined the economic impact of participation in an ICPM on healthcare utilization and expenditures. Results indicated decreases in overall medical costs for up to 18 months including the use of specialty care, tests,

and procedures. Of note, unlike many other cost effectiveness studies that focus on low back pain, this ICPM sample included a broad range of chronic pain conditions with an average pain duration of 8 years. The involvement of a third party payer in this analysis represents an important model for future studies since this may be the most convincing way to garner the support of insurance companies. This is consistent with Schatman's work on the demise of interdisciplinary pain management in the United States, in which he posited that insurers' exclusive focus on cost-containment and profitability trumps pain patient well-being (13). In the future, it would be ideal for ICPM programs to partner together and enlist the collaboration of multiple health care plans and payer types to once again demonstrate the economic benefit of interdisciplinary care.

Given these data, the process by which third party payers determine what is worthy of a cost investment can be puzzling. Procedures such as back surgery, which is costly, risky, and yield very mixed empirical outcomes, are typically covered, yet payers are unlikely to reimburse evidence-based and lower risk ICPM programs. This in part speaks to the antiquated yet ongoing biomedical approach that much of the public, providers, and payers apply to chronic pain treatment. Although it is clearly a complex biopsychosocial experience that persists across time, chronic pain continues to be approached in the same manner as acute pain. This error is a significant reason why individuals and systems seek and support medical solutions that "cure" pain, rather than understanding that pain can be best minimized and quality of life improved with a whole-person, comprehensive, self-management approach.

Theoretical Basis of the Interdisciplinary Approach

Before proceeding, it is important to clarify the distinction between *multidisciplinary* and *interdisciplinary*. Although the terms are often used interchangeably, they are not synonymous.

Multidisciplinary treatment suggests that there are providers from multiple discipline treating a patient in parallel. Communication may exist, but is not required, and varies widely.

Coordination of care and treatment planning is atypical, and is unfortunately often fragmented. This is a common approach in primary and secondary care, in which specialists are consulted as needed and work in silos. On the other hand, interdisciplinary care is best reflected in a cohesive team comprised of experts from various disciplines who share a philosophy of care and communicate routinely regarding patient treatment. They are ideally co-located, although if not, may use technology for information sharing (e.g., phone calls, emails, electronic medical records) as well as holding scheduled and unscheduled in-person meetings. The importance of regular communication among team members cannot be overstated and consistency in the philosophy of patient care is critical for program success.

All ICPM is based on the biopsychosocial approach that emphasizes the complex and dynamic interaction between physiologic, psychologic, and social factors. These variables and how patients respond to them can exacerbate or ameliorate the patient's pain experience. For Bonica, the addition Fordyce contributed to the evolution of the interdisciplinary approach by considering the emotional and behavioral sequelae of chronic pain as well as nociceptive experience was invaluable. Chronic pain is a disease of the *person*, and the person is often obscured by using the traditional biomedical approach without the integration of other critically relevant factors. (20) Therefore, to effectively treat chronic pain, the motivational-affective and cognitive-evaluative contributions must be weighed in addition to the nociceptive. ICPM recognizes the bidirectionality of pain and psychosocial factors, considering that emotions and maladaptive behavioral patterns can perpetuate as well as result from persistent physical discomfort. Regardless of the etiology of pain and even its comorbidities, patients who have

functional impairments can improve on multiple dimensions if they are provided with appropriate guidance and are motivated by the staff to exert maximal effort. The goal is for participants to achieve management of their pain, with an emphasis on increasing self-efficacy and restoring independence and overall quality of life.

Composition of the Interdisciplinary Team and Roles of Members

ICPM is based on the premise that no one individual or discipline can “cure” the patient of all of the ills associated with his or her pain condition. While specialization serves to enhance expertise, specialization without diversification results in limitations to what healthcare can offer patients whose conditions are as complex as chronic pain. This, perhaps, was the greatest wisdom that Bonica contributed to the pain treatment community. While the specific construction of ICPM programs vary depending on factors such as available resources, the typical treatment provided includes 3 common elements: (1) medication management, (2) graded physical exercise, and (3) cognitive and behavioral techniques for pain and stress management. (30) The CARF standards (New citation E) identify only two defined disciplines as essential for ICPM rehabilitation programs: the pain team physician and pain team psychologist; additional healthcare professionals are based on the needs of the persons served. The roles of ICPM team members that are generally identified as constituting the core as well as other members that expand and enrich services provided are reviewed below.

Core Team Members

- **Physician/Medical Director:** The ICPM program medical director provides medical leadership and accepts responsibility for the physical well-being of the patients treated. While it is important that the physician possesses expertise in the rehabilitation of pain disorders, a survey of programs yields wide variance in the training experience and

practice specialties of their medical directors. These specialties range from physical medicine and rehabilitation to psychiatry, rheumatology to internal medicine. Of note, the CARF standards require that a medical director be a physician who is certified in their recognized board, has met established interdisciplinary training requirements, and is involved in the field of pain and in the ICPM program (New citation E).

The precise duties of the medical director vary depending on his or her engagement in patient care versus nurse practitioners or physicians' assistants, which is discussed below. If involved in a more hands-on role, the physician may take a medical history, evaluate the patient for purposes of providing or confirming a diagnosis, analyze test results, manage medications, and in some cases provide interventions such as trigger point injections. If nurse practitioners or physicians' assistants provide much of the direct clinical contact, the medical director may be called upon to see patients that are most complex or may value from the input of a physician. The medical director also may represent the program to hospital or academic leadership. In general, the physician who is seen as warmer and less directive is likely to foster greater team cohesiveness (34). Similarly, Spoonhour and Schatman(35) have suggested that selflessness is ideal, as the most effective medical directors are those who are willing to allow the team member with certain expertise to function in a manner maximizing the benefit of that expertise.

- **Advanced Practice Nurses and Physicians' Assistants:** As mentioned, the day to day duties involved in an ICPM may be carried out by a nurse practitioner or physician's assistant. This is done typically to conserve fiscal resources although nurse practitioners and physicians' assistants often have high levels of pain expertise and need limited input from a physician. They perform duties such as evaluating individuals for program

appropriateness, completing histories and physicals, managing medication regimens, evaluating patients during crises, participating in team meetings, and offering input on various impacts of biomedical information regarding the treatment plan. They may communicate with the medical director or other physicians often or seldom, depending on the structure and needs of the specific program.

- **Psychologist:** Pain psychologists on interdisciplinary treatment teams are primarily responsible for the psychosocial aspects and status of patients' care. As patients' pain becomes more chronic, their development of maladaptive emotional and behavioral patterns increases, necessitating expert psychologic care if they are to become more functional in their lifestyles. In addition to a medical director, CARF requires a pain psychologist on the team whose qualifications include licensure, completion of established interdisciplinary training requirements, and routine involvement in the ICPM program (New citation E). While CARF does not specify the discipline of the pain program director, this is often fulfilled by the psychologist.

The duties of psychologists in ICPM are vast. Initially, they assist in determining whether a patient is appropriate for program participation by evaluating pain-related functional status and psychological stability. Often they communicate information regarding program benefits and expectations. During the program, the pain psychologist will work with patients on both an individual and group basis, with an emphasis on identifying more adaptive ways to respond to pain, acquiring problem-solving and stress management techniques, decreasing catastrophization, and enhancing self-efficacy. Through these approaches, reductions in depression and anxiety along with more adaptive behavioral responses to pain are typically evidenced.

While not always the case, psychologists also may serve as the biofeedback therapist on the ICPM team to facilitate reducing patients' psychophysiologic reactivity to stress. Effective use of relaxation techniques (e.g., progressive muscle relaxation, imagery, diaphragmatic breathing) are a cornerstone of pain management and help shift a patient toward internal locus of control(52) as well as reduce tension and pain. In some cases, such as the program led by the second author (MES) for many years, the biofeedback therapist would work in tandem with the physical therapist, using biofeedback technology to help patients improve patterns of muscle activation during physical activities. The ICPM psychologist will also often work with a patient's family during the course of a program, as the family may unwittingly be reinforcing the "patient role," thereby enabling the patient. Finally, as psychologists are trained as scientist-practitioners, they are likely to coordinate outcomes information and performance improvement projects for the ICPM team.

- Nurse: Nurses on ICPM treatment teams often assume diverse responsibilities and are accordingly invaluable. Because of their medical backgrounds, they can potentially serve in a variety of roles. They support other medical staff and often provide education to patients and their families. In a role delineation study, Pellino and colleagues(36) determined that assessing, evaluating, and monitoring pain were nurses' most common activities. Nurses are also the multidisciplinary team members that spend the greatest amount of time with patients.(37) Additionally, as many nurses are trained and experienced in case management, a nurse is often the team member responsible for the day-to-day management of the program and in many cases serve as program directors.

- **Physical Therapist:** Movement-based therapies are an essential element of physical activation that is essential for effective pain rehabilitation. The physical therapist on a pain treatment team is responsible for assessing patients' levels of functioning, and then designing and monitoring programs of graded therapeutic exercise that will safely increase these levels. Areas of focus may include increasing flexibility and range of motion, restoring appropriate posture and body mechanics, ambulation and gait training, development of core and limb strength and stability, and decreasing pain-related fear of movement. Treatment is typically provided on both an individual and group basis. Modalities such as ultrasound and massage are generally avoided, as the focus of ICPM is on teaching patients *independent* active management of their pain. Stretching and strengthening are emphasized, as these exercises have been empirically supported through systematic reviews as being among the most effective treatments for a number of types of chronic pain.(40)–(45) It is critical that the ICPM physical therapist has received specialized training in chronic pain management emphasizing a behavioral approach, which is not the norm; however, for those who value working on a team and the reward of success with patients with longer standing issues, it can be an excellent fit.
- **Case Manager/Coordinator:** This is a role versus a discipline and can be performed by those in various areas but is most commonly fulfilled by a nurse. Duties are critical for smooth maintenance of the program and may include triaging referred patients, confirming insurance sponsorship, development of policies and procedures, quality assurance, collection and maintenance of patient data, and correspondence with referral sources, employers, attorneys, health insurance providers, and other health care professionals treating a patient.

Other Team Members

- Vocational Counselor: The vocational counselor on the treatment team is responsible for evaluating the capacity, goals, and needs of patients in the area of return to work, school, or other meaningful activity. A common aspect of this interaction is helping the patient understand the benefits of returning to the work force, as participating in gainful employment is considered a primary goal of many ICPM programs, particularly those that emphasize a *functional restoration* approach.(49) Vocational counselors may serve as case managers who contact employers, obtain and analyze job descriptions, and facilitate return to previous employment. They may also provide testing and counseling in order to prepare patients for vocational retraining. Perhaps even more than other team members, it is important for vocational counselors to understand issues such as primary and secondary gain as well as the role of psychologic factors in perpetuating perceived disability.
- Occupational Therapist: Areas that are considered primarily within the domain of occupational therapists include ergonomic training, upper extremity activities of daily living, work activities, leisure activities, and any other activities that are meaningful and purposeful to the individual patient. Some occupational therapists perform work-site analyses, visiting the work place to which the patient intends to return, observing the specific job-related tasks that he or she will need to perform, and then developing a work simulation component of the ICPM program. If a patient has a specific job to which he or she intends to return, a workplace analysis may be conducted by an occupational therapist and vocational counselor, in order to assess the physical and emotional safety of returning to that position.

- **Aquatic Therapist:** When available, the use of supervised exercises in a heated therapeutic environment can be a helpful element of physical rehabilitation and one of those most enjoyed by the patients. It can be conducted by those in various disciplines but is most commonly a physical therapist or kinesiotherapist who is interested and has additional competency in the area. Water-based treatments are complementary to land-based exercises and have various therapeutic benefits that are especially helpful for those with chronic pain, such as buoyancy that reduces the effects of gravity and hydrostatic pressure that offers stability and support.
- **Recreational Therapist:** Those programs fortunate enough to have the influence of a recreational therapist reap various patient benefits. Due to the social isolation that many with chronic pain experience, recreational therapy typically offers an opportunity to be around others and practice potentially rusty social skills. Recreational therapists also evaluate pleasurable activities in which patients wish to engage (either through initiation or rekindling) and determine how to help individuals move towards their goals. They often offer options such as crafts and art work as a means to stimulate creativity, improve focus, and distract from pain.
- **Clinical Pain Pharmacist:** Particularly with the emphasis on analgesics, the presence of a pain pharmacist can be very helpful in providing support to medical and other staff as well as to patients regarding medications. Within the context of ICPM programs, pain pharmacists typically advise on medication choices, provide educational classes, and meet with patients as needed to answer in depth questions about pharmaceuticals, including addressing issues regarding polypharmacy, adverse events, and side effect profiles.

- **Social Worker:** Social workers may play a variety of roles in ICPM programs. They can function in a case manager and coordinator role, tracking patient participation and addressing issues that arise. If participation in the program involves travel, social workers often play an important role in making sure that transportation is arranged and patients are able to access what is needed at the facility. They also provide more traditional guidance on introducing various administrative forms, and can teach classes on how to access opportunities in the community. Those who are licensed clinical social workers may have more direct contact to address clinical needs.

In addition to those specialties listed here, many ICPM programs include other professionals, including a dietician who reviews the important role of nutrition and weight in pain management, a chaplain who addresses spiritual needs, a yoga or tai chi instructor who provides guided direction on these active and beneficial treatments, as well as options such as an art therapist, music teacher, and other disciplines that encourage the development of activities that are enjoyable and assist with fostering positive self-esteem and sense of purpose.

The Process of Interdisciplinary Chronic Pain Management

Despite the long history and strong empirical support for ICPM, this form of treatment is often seen as a “last resort” by referral sources, many of whom have a limited understanding of the complexities of and best treatments for chronic pain. This is a reflection of a biomedically based healthcare system and society that tends to seek passive/receptive interventions for the management of pain rather than approaching it as a chronic condition that requires active self-care by the patient as a foundation for the potential success of other treatment options. ICPM programs are viewed as tertiary, which too often subsumes that all other treatments have “failed;” however, it is a treatment best correlated with complexity and pain-related functional

impairment, and should be considered as soon as possible when these conditions are met. If individuals had access to ICPM programs earlier in their pain journeys, it is likely that our system could be spared billions of dollars, as the chronification and negative impacts for many would be minimized.

Referrals may come from a wide variety of sources, including other physicians and health care providers, attorneys, employers, and insurance carriers. Some ICPM programs are a part of a broader pain management system, in which case triage may be necessary. Due to economic realities, insurance coverage is generally confirmed prior to proceeding. Once this is accomplished, medical records are requested and reviewed to ascertain the patient's appropriateness for evaluation. In systems such as the VA, referrals for evaluation can be made more easily since third party payer obstacles are removed.

The initial evaluation of a candidate for ICPM may occur in a variety of ways, but the goal is to determine if the individual is appropriate for the treatment, provide education on the treatment approach, and determine collaboratively a plan of care. Typically, providers from more than one discipline are involved in this process so that information regarding all relevant biopsychosocial factors can be assessed. For example, a medical professional gathers information regarding medication use and comorbidities as well as physical fitness and ability, while a mental health professional ascertains details regarding pain-related functional impacts, emotional and social factors, and shares the program's philosophy, expectations, and potential benefits from participation. Physical therapists or others may also be involved in this evaluation in order to obtain objective measurement of functional capacities. At times, the patient is not currently ready for ICPM due to various factors including psychiatric or medical instability (e.g., active suicidal ideation and intention, unmanaged psychosis, cardiac issues). If the ICPM team

believes that these factors can be addressed, delaying admission until the patient has received appropriate treatment may be in the best interest of the patient and the program. If the option for reconsideration is not viable, the program should provide treatment recommendations to the patient and the referral source.

ICPM programs tend to be intensive, often requiring patients to participate from 20-40 hours per week. While patients may find the prospect of such a commitment daunting, they will not be asked to perform physical tasks that are beyond their functional capacities. Distinguishing between “hurt” and “harm” and assuring patients that the treatment team considers their physical and emotional safety to be of the greatest importance helps build therapeutic trust, thereby enhancing adherence.⁽³³⁾ The specific “mix of services” that patients receive between and within programs will vary. Typically, patients spend significant time engaging in physical activities that will increase their flexibility, strength, and functional capacities. Patients whose emotional status and behavioral responses to their pain are less dysfunctional will likely require less time with the psychologist than will those patients who are struggling psychosocially. Similarly, patients demonstrating limited psychophysiological reactivity to stress will require less intensive biofeedback training, and those whose vocational issues are less complex will require less concentrated vocational counseling services. The frequency with which a patient sees the physician and/or nurse practitioner or physicians’ assistant on an individual basis will vary depending on the specific philosophy of the program. Frequent individual physician appointments are discouraged, as a goal of ICPM is typically reduction of medical services in lieu of enhanced independent self-management of pain.

The patient-centered nature of ICPM requires regular team conferences in which the entire treatment team meets to discuss patient progress, which includes any issues that are

potentially limiting gains and therapeutic goals. This may happen with the patient, without the patient, or both. Regardless, feedback to patients should be immediate, consistent, and coherent. In situations in which patients' adherence is considered good and they are making progress, team conference provides a forum in which they are able to receive much-needed positive reinforcement regarding their attitude and effort. Patients with chronic pain are often unjustifiably blamed for the failures of the primary and secondary care systems to help them recover, making appropriate positive reinforcement even more important. Conversely, in cases in which adherence and progress are considered by the team to be inadequate, the conference provides an opportunity for the treatment team to develop an approach for patient feedback and/or to present a united front in addressing the relevant issues and work with patients to remedy any problematic aspects of their programs. Since the literature confirms that individuals with personality disorders are prevalent in ICPM programs (38),(39), it is not unusual to encounter attempts to "split" treatment team members. Because of this, it is particularly important for the program team to develop a coherent plan together and enforce it consistently so that patients receive a unified message throughout their participation. Unfortunately, while ICPM programs work to facilitate success for all patients, some circumstances necessitate early discharge. Stanos(26) has recently suggested that such premature discharge can potentially encourage enhanced compliance or efforts among other patients in the group.

Once a patient has completed an ICPM program, he or she can be neither forgotten nor abandoned. Although programs are typically close-ended, some form of follow-up to determine implementation of what has been learned in the program is important. Additionally, if the program is involved in outcomes research, follow-up provides a source for collection of more data. For the sake of cost-efficiency, selected measures of patients' emotional and behavioral

responses to their pain that are administered at initial evaluation can be sent to them to determine longer term outcome and identify any clinical needs. Positive outcomes data should serve as a powerful tool for demonstrating the program's effectiveness to patients and providers which can assist with marketing. Potential referring physicians may be uninformed regarding the wide range of benefits of interdisciplinary treatment for their patients, and well-organized data may help them understand how a program can make their own lives easier as well as helping their more challenging patients. Additionally, while some health insurance programs may argue against the efficacy of ICPM, data that invalidates their arguments will ideally help convince them of the legitimacy of this treatment approach.

Interdisciplinary Chronic Pain Management in VHA: Overview of a Model System

While ICPM programs have greatly diminished in the United States in the last 20 years, there is one place where they have flourished: the VA healthcare system (New Citation F). The VA undertook specific efforts to highlight the need for improved pain care in 1998. At that time, leaders in the VA acknowledged that pain was an under recognized and undertreated issue that impacted Veterans across the continuum of care. This led to a series of successful initiatives and collaborations that increased the measurement, tracking, treatment, and overall quality of services available to Veterans with pain. One of the most important was a 2003 pain management policy, the first of its kind and an important step towards establishing pain as a high priority for the Veterans Healthcare Administration (VHA) (New Citation G). In 2004, pain management was established as a separate organizational entity within VA Central Office under the direction of Dr. Robert D. Kerns. Among many identified areas of focus was an emphasis on multidisciplinary and interdisciplinary pain care, the least common models previously found in the community.

In 2009, a revised VHA Pain Directive was established which introduced a stepped care approach to pain management as the standard for the VA (New Citation H). It not only reasserted VHA's commitment to an approach that is informed by a biopsychosocial model of pain and an interdisciplinary, multidimensional, and multimodal approach to pain management, but asserted that improved quality of life, rather than pain relief, per se, is the accepted standard outcome measure of effectiveness. In addition to many other recommendations such as establishing facility multidisciplinary pain committees and specific research efforts, the stepped care model delineated the primary level Patient Aligned Care Team (PACT) and reinforced secondary level specialty pain care (e.g., pain medicine, behavioral health). The tertiary level was defined as interdisciplinary care for the most complex, treatment refractory, and at risk patients. Along with the availability of advanced pain diagnostics, VHA made a commitment to developing at least one interdisciplinary pain rehabilitation program in each Veteran Integrated Service Network (VISN) by the end of September 2014. These programs were to be accredited by the Commission for the Accreditation of Rehabilitation Facilities (CARF), ensuring the highest level of quality for care.

At the time the Directive was published (New citation H), there were only two CARF-accredited programs in the VA system, located in Tampa, Florida and San Juan, Puerto Rico, both in VISN 8; therefore, developing and implementing programs for the other 20 VISNs was an ambitious mandate. Five years were allotted to accomplish the goal, with no particular pathway defined for how each different region or facility would meet it. Furthermore, no resources were provided by VA Central Office, and the details and timeline of implementation were left to the VISNs. The VA Pain Team Training Program was established under the leadership of Dr. Michael E. Clark at the James A. Haley Veterans' Hospital in Tampa, Florida,

site of the longest standing CARF-accredited pain rehabilitation program in the VA. Over the next 5 years, the program directly assisted facilities with training visits, providing models and advisement in their fulfillment of the directive as well as ongoing consultation as needed. Tampa trained over thirty VA teams in the philosophical and practical foundations of an interdisciplinary pain rehabilitation program, many of whom went on to implement their own versions at local facilities.

In 2017, the VA's 20 programs represent almost a third of the 67 CARF-accredited pain programs that are available in the United States, even though veterans served by the VA represent only a fraction of the nation's population. While the overall presence of programs has steadily decreased in the United States, the VA has maintained an upward trend and taken steps to coordinate these centers across the country. The first author of this chapter (JLM), the VA's liaison for the development and maintenance of CARF programs, formed a national CARF Pain Programs Leadership Committee in late 2015 which serves as a community of practice and forum for collaboration across CARF sites. Through regularly scheduled calls, members share questions and updates, and consult with each other in order to maintain the CARF standards. As an example of collaboration across sites, a group of VA programs established mutually agreeable core outcome measures to foster a means for comparison of program outcomes. While not required, this effort serves as a model for the level of coordination that may one day become standard across the system as a means for continual program improvement.

The current state of affairs begs the question: why is the VA committed to ICPM programs more than the private sector? There are several explanations which have been reviewed by LaChappelle et al. (New citation G). First, the VHA emphasizes those treatment options such as ICPM, which have the most evidence-based support. This is supported in the mission

statement of the VA as well as in the policies for supported interventions and pharmaceuticals. Undoubtedly, another factor is the cost-benefit analysis of lifelong patient care that takes into account, and often prioritizes, long-term outcomes over short-term outcomes. Outside the VA, third-party payer health insurance plans will often fund and reimburse care that may be less expensive in the short-term, but may be more expensive in the long-term. However, a system that treats patients for the span of their lives is more likely to value an initial higher financial cost of multidisciplinary treatment. This investment in the interdisciplinary approach achieves greater health and wellbeing in the long-term rather than a lower cost financial investment in the short-term, with poorer health outcomes in the long-term (New citation I, J). While a number of factors contribute to frequently switching health insurance carriers in the private sector, the behavior results in a disincentive for insurers' coverage of ICPM programs. Despite the literature supporting their cost-efficiency, they are considered a formidable expense in the short-term and accordingly, insurance payers are more likely to cover inferior (and often more dangerous) but less expensive treatment options. Sadly, if insurance companies would recognize that the investment in ICPM care is well worth the cost, these programs would flourish outside of the VA system and all would benefit as demonstrated by the 2015 Mayo Clinic study (New citation D).

There are numerous lessons to be learned from the growth of ICPM programs in the VA. First, while many in the private sector perceive the VA system to be flushed with endless resources, the limitations of space and personnel are familiar barriers across the system. Because of this, programs have taken a variety of forms, tailored and built to fit the unique picture of each particular facility. For instance, a program that is two to three days per week may require .25 of a full-time physical therapist who also works in other settings. Others in less routinely incorporated specialties such as a chaplain, dietician, pharmacist, or addictions counselor may be

able to provide a group once during the course of a program, something that adds greatly to the richness of program content while not taxing human resources. Although these creative strategies could theoretically be helpful in convincing insurers to reconsider coverage of ICPM programs, “carving out” essential aspects of them has been empirically established as resulting in far less favorable outcomes (New citation K, L).

In addition, VA’s model of setting an administrative mandate for one CARF ICPM program per region was an ambitious goal, yet it has served several purposes. First, it represented formal recognition by leadership of the importance of interdisciplinary care. Second, while the number was insufficient to serve the entire veteran population, the emergence of ICPM programs throughout the country introduced the treatment approach to providers and patients who were previously unfamiliar. This has served to reinforce the need for a biopsychosocial model and increase access to additional pain care options that are not strictly medical or pharmacological. Since insurance companies appear unlikely to return to coverage of ICPM programs, a legislative mandate supporting ICPM programs is necessary to affect a restoration of reimbursement for this effective mode of chronic pain treatment. As in the VA, it took a national pain directive recognizing a public health need to spur the development of this valued treatment option and a similar call from on high is needed in the private sector.

Future Considerations for Interdisciplinary Chronic Pain Management

Chronic pain is and has been under-recognized and undertreated as a healthcare need. While the biopsychosocial model is recognized as the gold standard for pain care, in reality the biomedical model continues to reign supreme. This means that despite the overall clinical efficacy and cost-effectiveness of ICPM programs, the number in the United States has decreased precipitously since 1999 (28), thereby severely limiting the availability of a treatment

approach that has been the most rigorously validated. The demise of these programs is a disturbing phenomenon, particularly given the cost of chronic pain and the drastic increase in opioid use disorder and opioid-related overdose deaths. As Chapman states, “Concurrent with the decline of intensive programs is the rise of procedural interventions and medication, which receives a great deal of support from medical technology and pharmaceutical companies.”(100) These unfortunate realities only underscore the need for an approach to chronic pain that matches its complexities without defaulting to a unimodal medical attempt to cure something which requires long-term management.

One potentially positive result of America’s prescription opioid crisis has been a shift in focus to treatments that are nonpharmacological. This has significantly increased the interest of some in options such as pain psychology, complementary integrative health (e.g., acupuncture, yoga), and ICPM programs which provide comprehensive care with a decreased focus on medical modalities and an increased emphasis on self-management strategies. It is unfortunate that it took the drastic increase in opioid prescribing and related negative events to propel healthcare professionals, systems, and even lawmakers toward considering treatment options that capture the biopsychosocial approach, but the momentum is welcome. Additional funding for treatment options as well as research that considers physiological as well as other highly relevant factors in the chronic pain experience may lead to improvement in the availability of ICPM options. The growth of interdisciplinary pain rehabilitation programs within the VA demonstrates a cultural transformation within the largest single healthcare system in the United States, one that should be used as a model for how to walk the walk of whole person pain care across the country.

Conclusion

Seventy years after Bonica introduced the concept of interdisciplinary pain management, those who work in the field sadly continue to encounter similar challenges to those that he faced. The lack of acceptance by the medical community of the interdisciplinary approach that left Bonica ready “to give up” challenges those medical and non-medical providers that rightly acknowledge the necessity of an interdisciplinary treatment model for optimal patient outcomes. Despite substantial and unequivocal empirical support for its clinical utility and cost-efficiency, in every setting but the VA the number of programs in the United States has dwindled. Patients have been forced to resort to less effective, more expensive, and often more dangerous treatment options which tend to focus on body parts as opposed to the person in need, often at the advisement of their doctors.

While third party payers and some in the field suggest that the ICPM model should be pared down to de-intensify the commitment by providers and patients, the evidence suggests the opposite; providers, payers, and patients should instead embrace the intervention which best matches the treatment needs of those with complex chronic pain. The evidence indicates that the model is not broken – the system is. As one of the most pervasive and costliest healthcare issues, chronic pain and the ICPM approach deserves the attention and support of legislators, insurance companies, and the healthcare industry writ large. Those who have the privilege of working in a true interdisciplinary framework must be the leaders in this mission: to advocate, to educate, to model, and to celebrate the patients with whom they have the ability to affect change. The noble practitioners of the interdisciplinary approach need to become ICPM “champions” to defend the life of that which science and clinical experience tells us is the closest things we have to a “cure” for our patients.

References

1. Katz WA. The needs of a patient in pain. *Am J Med* 1998;105:2S–7S.
2. Meldrum ML. A capsule history of pain management. *JAMA* 2003;290:2470–2475.
3. Bonica JJ. Evolution and current status of pain programs. *J Pain Symptom Manage* 1990;5:368–374.
4. Bonica JJ. Oral history interview. *John C. Liebeskind History of Pain Collection*. Los Angeles, CA: Louise M. Darling Biomedical Library, UCLA; 1993.
5. Fordyce WE, Fowler RS, DeLateur B. An application of behavior modification technique to a problem of chronic pain. *Behav Res Ther* 1968;6:105–107.
6. Leff DN. Management of chronic pain: medicine's new growth industry. *Med World News* 1976;54.
7. Loeser JD. Multidisciplinary pain management. In: Merskey H, Loeser JD, Dubner R, eds. *The Paths of Pain, 1975–2005*. Seattle, WA: IASP Press; 2005:503–511.
8. Aronoff GM, Evans WO, Enders PL. A review of follow-up studies of multidisciplinary pain units. *Pain* 1983;16:1–11.
9. Schatman ME. The demise of multidisciplinary pain management clinics? *Practical Pain Manage* 2006;6:30–41.
10. Schatman ME. The demise of the multidisciplinary chronic pain management clinic: bioethical perspectives on providing optimal treatment when ethical principles collide. In: Schatman ME, ed. *Ethical Issues in Chronic Pain Management*. New York: Informa Healthcare; 2007:43–62.

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11. Flor H, Fydrich T, Turk DC. Efficacy of multidisciplinary pain treatment centers: a meta-analytic review. *Pain* 1992;49:221–230.
12. Turk DC, Okifuji A. Treatment of chronic pain patients: clinical outcomes, cost-effectiveness, and cost-benefits of multidisciplinary pain centers. *Crit Rev Phys Rehab Med* 1998;10:181–208.
13. Okifuji A, Turk DC, Kalauoklani D. Clinical outcome and economic evaluation of multidisciplinary pain centers. In: Block AR, Kramer EF, Fernandez E, eds. *Handbook of Pain Syndromes: Biopsychosocial Perspectives*. Mahwah, NJ: Lawrence Erlbaum Associates; 1999:77–97.
14. Turk DC. Clinical effectiveness and cost-effectiveness of treatments for patients with chronic pain. *Clin J Pain* 2002;18:355–365.
15. Turk DC, Swanson K. Efficacy and cost-effectiveness treatment for chronic pain: an analysis and evidence-based synthesis. In: Schatman ME, Campbell A, eds. *Chronic Pain Management: Guidelines for Multidisciplinary Program Development*. New York: Informa Healthcare; 2007:15–38.
16. Guzmán J, Esmail R, Karjalainen L, et al. Multidisciplinary rehabilitation for chronic low back pain: a systematic review. *BMJ* 2001;322:1511–1516.
17. Guzmán J, Esmail R, Karjalainen L, et al. Multidisciplinary bio-psycho-social rehabilitation for chronic low back pain. *Cochrane Database Syst Rev* 2002;(1):CD000963.
18. Schonstein E, Kenny DT, Keating J, et al. Work conditioning, work hardening and functional restoration for workers with back and neck pain. *Cochrane Database Syst Rev* 2003;(1):CD001822.
19. Murphy JL, Clark ME, Banou E. Opioid cessation and multidimensional outcomes after interdisciplinary chronic pain treatment. *Clin J Pain* 2013; 29(2):109–117.
20. Rome JD, Townsend CO, Bruce BK, et al. Chronic noncancer pain rehabilitation with opioid withdrawal: comparison of treatment outcomes based on opioid use status at admission. *Mayo Clin Proc* 2004;79:759–768.
21. Townsend CO, Kerkvliet JL, Bruce BK, et al. A longitudinal study of the efficacy of a comprehensive pain rehabilitation program with opioid withdrawal: comparison of treatment outcomes based on opioid use status at admission. *Pain* 2008;140:177–189.
22. Sletten CD, Kurklinsky S, Chinburapa V, et al. Economic analysis of a comprehensive pain rehabilitation program: a collaboration between Florida Blue and Mayo Clinic Florida. *Pain Med* 2015;16(5):898–904.
23. Schatman ME. Psychological assessment of maldynamic pain: the need for a phenomenological approach. In: Giordano J, ed. *Maldynia: Inter-disciplinary Perspectives on the Illness of Chronic Pain*. New York: Informa Healthcare; 2009.
24. Committee on Accreditation of Rehabilitation Facilities. *Medical Rehabilitation Standards*. Tucson, AZ: Committee on Accreditation of Rehabilitation Facilities; 2017.
25. Antonuccio DO, Davis C, Lewinsohn PM, et al. Therapist variables related to cohesiveness in a group treatment for depression. *Small Group Behav* 1987;18:557–564.
26. Spoonhour P, Schatman ME. Development of policies and procedures: assurance of consistent chronic pain management practice. In: Schatman ME, Campbell A, eds. *Chronic Pain Management: Guidelines for Multidisciplinary Program Development*. New York: Informa Healthcare; 2007: 189–202.
27. Katz RC, Simkin LR, Beauchamp KL, et al. Specific and nonspecific effects of EMG biofeedback. *Biofeedback Self Regul* 1987;12:241–253.
28. Pellino TA, Willens JS, Polomano RC, et al; and the American Society of Pain Management Nurses. The American Society of Pain Management Nurses role-delineation study. National Association of Orthopaedic Nurses respondents. *Orthop Nurs* 2003;22:289–297.
29. McCaffery M, Ferrell BR, Pasero C. Nurses' personal opinions about patients' pain and their effect on recorded assessments and titration of opioid doses. *Pain Manag Nurs* 2000;1:79–87.
30. Swenson RS. Therapeutic modalities in the management of nonspecific neck pain. *Phys Med Rehabil Clin N Am* 2003;14:605–627.
31. Kay TM, Gross A, Goldsmith C, et al; and the Cervical Overview Group. Exercises for mechanical neck disorders. *Cochrane Database Syst Rev* 2005;(3):CD004250.
32. Arnold LM. Biology and therapy of fibromyalgia. New therapies in fibromyalgia. *Arthritis Res Ther* 2006;8:212.
33. Joines JD. Chronic low back pain: progress in therapy. *Curr Pain Headache Rep* 2006;10:421–425.
34. Gross AR, Goldsmith C, Hoving JL, et al; and the Cervical Overview Group. Conservative management of mechanical neck disorders: a systematic review. *J Rheumatol* 2007;34:1083–1102.
35. Taylor NF, Dodd KJ, Shields N, et al. Therapeutic exercise in physiotherapy practice is beneficial: a summary of systematic reviews 2002–2005. *Aust J Physiother* 2007;53:7–16.
36. Mayer TG, Gatchel RJ. *Functional Restoration for Spinal Disorders: The Sports Medicine Approach*. Philadelphia: Lea & Febiger; 1988.
37. Hatzakis M, Schatman ME. The impact of interventional approaches when used within the context of multidisciplinary chronic pain management. In: Schatman ME, Campbell A, eds. *Chronic Pain Management: Guidelines for Multidisciplinary Program Development*. New York: Informa Healthcare; 2007:101–115.
38. Schatman ME. The challenge of the characterologically disturbed chronic pain patient. *Pain Pract* 2003;13:5–7.
39. Schatman ME. Dramatically disturbed patients in interdisciplinary pain programs. *Pract Pain Manage* 2004;4:24–29.
40. Stanos S. Developing an interdisciplinary multidisciplinary chronic pain management program: nuts and bolts. In: Schatman ME, Campbell A, eds. *Chronic Pain Management: Guidelines for Multidisciplinary Program Development*. New York: Informa Healthcare; 2007:151–172.
41. Schatman ME. Interdisciplinary chronic pain management: international perspectives. *Pain: Clin Updates* 2012;20(7):1–5.
42. LaChappelle K, Boris-Karpel S, Kerns RD. Pain management in the Veterans Health Administration. In: Miller TW, ed. *Veterans' Healthcare: Volume IV. Future Directions for Veterans Healthcare*. New York: Praeger Publishers Inc; 2012.
43. Department of Veterans Affairs Veterans Health Administration. Pain Management. VHA Directive 2009-053. Oct 28, 2009. Available at: <https://www.va.gov/painmanagement/docs/vha09paindirective.pdf>. Accessed .
44. Boris-Karpel S. Policy and practice issues in pain management. In: Ebert MH, Kerns RD eds. *Behavioral and Psychopharmacologic Pain Management*. Cambridge, United Kingdom: Cambridge University Press; 2007: 407–433.
45. Martell BA, O'Connor PG, Kerns RD, et al. Systematic review: opioid treatment for chronic back pain: prevalence, efficacy, and association with addiction. *Ann Intern Med* 2007;146:116–127.
46. Gatchel RJ, Noe C, Gajraj N, et al. The negative impact on an interdisciplinary pain management program of insurance "treatment carve out" practices. *J Work Compens* 2001;10:50–63.
47. Robbins H, Gatchel RJ, Noe C, et al. A prospective one-year outcome study of interdisciplinary chronic pain management: compromising its efficacy by managed care policies. *Anesth Analg* 2003;97(1):156–162.
48. Chapman SL. Chronic pain rehabilitation: lost in a sea of drugs and procedures? *Am Pain Soc Bull* 2000;10(suppl 3):8–9.