

Pain Treatment Centers at a Crossroads: A Practical and Conceptual Reappraisal

**Mitchell J.M. Cohen and
James N. Campbell, Editors**

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**Pain Treatment Centers
at a Crossroads**
A Practical and Conceptual Reappraisal

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Preface

What is so often forgotten in the debate about medicine and health care is how incredibly young medical science is when compared to most of humanity's accomplishments. Civilization itself is at least nine thousand years old; democracy, as defined by the Greek city-state, is at least twenty-five hundred years old. Even the Industrial Revolution occurred over two hundred fifty years ago. Yet modern, scientific medicine is barely a century old. It's astounding how quickly we adjust the benchmark of what constitutes "good routine medical care."

—Phillip Moffitt, *Medicine's Great Journey: One Hundred Years of Healing*, 1992

Pain Centers at a Crossroads: A Practical and Conceptual Reappraisal is the title of both this book and a meeting held in Baltimore at Johns Hopkins Hospital, March 3–5, 1995. The meeting and the book substantially reflect Moffitt's sentiments. We share his concern that treatment approaches rather quickly can become the accepted "gold standard" in the "young" discipline of scientifically approached, rational medicine. Illness constructs and treatments often escape critical review. Our meeting planning committee and the book's contributors all agreed that the concept and implementation of the multidisciplinary pain center (MPC) was a relatively young innovation, at a critical crossroads in its maturation, and deserving of a careful reexamination. The March meeting also commemorated the twentieth anniversary of a landmark development at Johns Hopkins Hospital—the establishment of its first MPC. In 1975, shortly after assuming the chair of the Department of Neurosurgery, Donlin Long created the Johns Hopkins MPC. He describes the organizational, administrative, clinical, and scientific challenges he faced in launching the Hopkins pain effort in his lead chapter in this book. He also describes the historical context fostering the emergence of MPCs.

Allan Belzberg, Michael Clark, Jennifer Haythornthwaite, and Peter Staats were recruited for our planning committee, serving not only as the muscle of our planning effort but also as leaders of modules and discussion panels at the meeting and contributors to this volume. The enormous, high-quality efforts of this group, combined with the help of a generous educational grant from Bristol-Myers Squibb, allowed the meeting and this book to come

to fruition. The planning committee met for more than 20 months to design the *Crossroads* meeting and ultimately focused on the following mission: a critical reappraisal of the MPC as an ideal and an intervention, *not* a contrived commemorative celebration of the MPC.

This book represents the best distilled products of the *Crossroads* meeting. Beyond commemorating the Hopkins MPC anniversary, the meeting was propelled by several issues and questions, including: the planning committee's sense that the time was right for a close reexamination of the multidisciplinary pain center concept, economic pressures forcing all health care providers to scrutinize the rationales and outcomes of their work, and our sense of less than full consensus in the pain field regarding the ideal constitution, focus, and treatment protocols for MPCs. Nothing was sacrosanct. We formulated several shaping questions that influenced the meeting and book. Among these: What evaluations and treatments should an MPC offer? What data are available to corroborate the validity of the many different approaches used at MPCs? Why is treatment of cancer frequently left out of the work of MPCs? (See chapters by Cohen and Staats.) What will happen to MPCs with changes in health care financing, especially in America? (See chapters by Federico, Lippe, Saper, and Taricco, as well as the commentary on Part VI by Seres.) Contributors to the meeting and book were encouraged to struggle with difficult issues, including the very definition of the MPC, whether MPC concepts are "revolutionary" or better seen as outgrowths of comprehensive medicine, and whether pain medicine is best construed as a discrete specialty.

After a quarter-century of effort, we considered the MPC at something of a crossroads; that is, a time to look back at where we have been as well as a time to consider alternative directions before us. In conceiving the *Crossroads* meeting, we thus sought to bring together many pioneers of the pain medicine movement with many of the field's young thinkers. We also invited the candid input of insurance industry representatives who could explain how the reputation of MPCs in the payor community has become tarnished (chapters by Taricco and Federico). Chapters focus on successful outcome measurement strategies from pain treatment (Turk, Kidd and North) and point out problems with outcome assessment (Max, Cohen, Taricco, Federico) and problems with interpreting the placebo response (Turner).

The meeting featured short, focused presentations with ample, often lively discussion periods and break-out panels. Case presentations were included, and for one day the meeting was folded into a Hopkins medical grand rounds forum to bring critical issues in clinical pain medicine to the practicing community. Cancer pain assessment and management and the use of opioids in noncancer pain were the meeting topics during the grand rounds segment.

We charged our contributing authors with expanding aspects of their presentations, condensing others, and tolerating our editorial prerogative so that we could produce a coherent, readable, useful book rather than a strict proceedings transcript. Commentators for the book were charged with the task of summarizing major lessons of the past quarter-century of MPC work and framing remaining uncertainties and critical questions. The resulting chapters and commentary reflect a great deal of effort and faithfully convey the critical issues raised at the meeting in presentations, questions, discussion, and panels. Beyond a critical revisiting of the conceptual rationale and outcome data supporting MPCs, the meeting was a crossroads in stimulating dialogue between providers and payors. We hope the volume conveys our sense at the meeting that minds were opened on each side of this health care divide.

We have already mentioned the dedicated planning committee and the long gestation period that allowed the *Crossroads* meeting to take life in March 1995. Bristol-Myers Squibb must be recognized for their generous financial support of the meeting without any intrusion into its scientific content. The Johns Hopkins School of Medicine Office of Continuing Medical Education, especially Sally George, worked tirelessly to help us manage the administrative aspects of the meeting. In our respective offices, Kathy Wiley, Deborah Cooper, and Florence Spencer are recognized for their great efforts in getting meetings and conference calls scheduled, managing manuscripts, sending diskettes, and in general helping us keep this large project moving forward. We also extend our gratitude to IASP Press, particularly production editors Leslie Nelson Bond and Sandra Marvinney, for their dedication to seeing this book into print.

We are also indebted to the great figures in the past and present of Johns Hopkins who have nurtured our interests in pain medicine, sometimes directly as mentors, morale raisers, and programmatic advocates, and as often indirectly through their clarifying ideas and vision. Many (e.g., Joel Elkes, Robert Heyssel, Donlin Long, Paul McHugh, Adolf Meyer, Arthur Siebens) are mentioned in this volume, and some have contributed directly to it.

In 1987 the pain program at Johns Hopkins was endowed by The Jacob and Hilda Blaustein Foundation, Inc. This endowment arose from our ability to treat successfully a neuropathic pain disorder in Dr. Morton Blaustein. We gratefully acknowledge this endowment and further note that it has greatly added to the Hopkins pain program and, in many ways, has made this book possible.

MITCHELL J.M. COHEN, MD
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Part I

Evolution of Pain Treatment Centers: An Institutional Case History

1

The Development of the Comprehensive Pain Treatment Program at Johns Hopkins

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Neurosurgeons have traditionally been involved in the therapy of pain. Foerster first mapped dermatomes while cutting nerve roots for pain. Cordotomy was devised by Martin and Spiller and then carried out by neurosurgeons throughout the world as a fundamental treatment for cancer pain. Sympathectomy for a variety of visceral pains was in common use. From its earliest days neurosurgery was involved in the treatment of trigeminal neuralgia. The surgical literature from 1930 to 1960 is filled with reports of neurotomy, rhizotomy, cordotomy, and a spectrum of direct and stereotactic lesions created in the supposed pathway through brain stem, thalamus, and even cortex (Long 1980). Throughout these reports pain was viewed in the traditional medical model. A diagnosis was made, therapy for the underlying disease was prescribed and if ineffective, pain was treated directly. The destructive techniques available required the patients to give up some function for pain relief. There was general recognition of a vague entity that was usually regarded as a psychological overlay, but the complexities of the human experience of pain were rarely addressed (Long 1978a, 1980).

Into this milieu the publication of the gate control theory of pain dropped like the proverbial bomb (Melzack and Wall 1965; Long 1995). A remarkable renaissance in thinking about pain occurred after the publication of the gate theory. The concept that it might be possible to treat pain by augmenting the function of the nervous system was exciting to neurosurgeons, and the consequences for pain management have been enormous.

The other signal event in the pain field was the establishment of the multidisciplinary pain treatment program by Bonica, Fordyce, and numerous

associates (Fordyce, this volume). They recognized that pain was a complex psychological, physiological, sociological, and psychiatric issue beyond the expertise of any individual specialty. However, the impact of this revolutionary thinking did not occur until well after the renaissance that followed the gate theory (Long 1974b, 1995).

Rather than being comprehensive, this chapter will identify some seminal events that led to our current conceptualization and treatment of pain. The first event was the publication of the gate control theory of pain perception (Long 1995). The most notable feature of this controversial theory was its heuristic value. The theory suggested that pain could be modified by stimulation of a sensory pathway not normally associated with pain, a concept that opened up new clinical and research possibilities. The most important clinical event that followed the gate theory was the demonstration by Wall and Sweet (1967) that stimulation of the human nervous system truly could alter pain perception. Following this important lead, Shealey and a team of engineers at the Medtronics Corporation developed a radio-powered remote, implantable nervous system stimulator for activation of the dorsal columns of the spinal cord (Long and Hagfors 1975). Shealey's subsequent presentation at a national neurosurgery meeting (1969) led a group of interested neurosurgeons to meet to plan strategies for testing the new device. This meeting was the origin of the greatly increased emphasis upon pain therapy that persists in neurosurgery today (Long and Hagfors 1975).

The original dorsal column stimulator was soon joined by the development of other methods of stimulating the nervous system (Long 1976, 1991c; Solomon et al. 1980). Long and Hagfors developed a modern version of the transcutaneous stimulator (Long 1974b). Electrical stimulation of the nervous system had been in use virtually since electricity was harnessed in controllable form and these first attempts to examine the value of the technique spawned an entire new industry. The Medtronics engineers working with Long for peripheral nerve stimulators and Adams and Hosobuchi for brain stimulation added these two concepts to the newly developing field of neuroaugmentation (Long 1973, 1974a, 1976, 1978b; Campbell and Long 1976; Long et al. 1979).

PAIN MANAGEMENT AND THE MULTIDISCIPLINARY PAIN TREATMENT CENTER

It was in this environment of increased scientific inquiry into the anatomy and physiology of pain perception, and new enthusiasm among clinicians for treatment of pain, that Bonica called an organizational meeting for the Inter-

national Association for the Study of Pain in Seattle in the early 1970s. Invitees included representatives of virtually every medical discipline interested in pain. From the beginning the approach was holistic and all those fields traditionally involved in the care of patients in pain were represented. Through this new organization the Washington model of multidisciplinary pain treatment became well known and served as the foundation for many new clinical efforts in pain. One of the negatives in the early organization of many pain centers was a therapeutic tunnel vision. "Nerve block" clinics were not uncommon. These ventures spawned some discredit to the field, in my view (Long 1979a).

THE OPIATE RECEPTOR

Shortly after these two seminal efforts several investigators reported the discovery of the opiate receptor in animal and human tissues and the actions of peptides on endogenous opioid receptors. These findings opened a new field of receptor pharmacology and added the third piece of the triad that supports modern pain research and therapy (Pert et al. 1977).

NEUROAUGMENTATION, SURGERY FOR PAIN, AND UNDERSTANDING THE PATIENT'S COMPLAINT OF PAIN

The literature that details the first six decades of neurosurgical involvement in patients with chronic pain offers little to suggest that patients differ or that anything but the complaint of pain needs consideration. Two developments changed this view and strengthened the multidisciplinary approach. The first was the initial meeting of those involved in the new field of neuroaugmentation. At that meeting it became apparent that much of the initial enthusiasm for neuroaugmentation as a panacea in chronic pain was overly optimistic. Initial achieved pain reductions often showed substantial decline over time (Long and Erickson 1975). Neurosurgeons also soon learned that neuroaugmentation at best only partially addressed the difficulties of these complex patients. Consequently, many of the neurosurgeons involved in neuroaugmentation began to develop multidisciplinary pain programs.

THE JOHNS HOPKINS PAIN TREATMENT PROGRAM

The University of Minnesota Pain Treatment Program, which I organized in 1968, was principally a vehicle to support investigations in neuroaugmentation. Brief experience with the patients referred to the unit for consideration of nervous system stimulation for pain control quickly led us to postulate that

psychiatric skills were critical for evaluation and management of patients with chronic pain. At that time substance abuse struck us as being a pervasive issue in these patients. It was readily apparent that deconditioning was a major issue, so physical rehabilitation of these patients was a part of my first efforts in pain management. In the initial phase the psychiatrist's major role was to identify those patients who should not have interventional procedures and to give advice concerning withdrawal from drugs considered at the time to be harmful (opiates and sedatives). A reconditioning program was overseen by physical therapists.

When I came to Johns Hopkins in 1973, there was an opportunity to establish a closer liaison with psychiatry and develop a more comprehensive program. I met with Dr. Joel Elkes, then chairman of the Department of Psychiatry, and with Dr. Arthur Siebens, director of the Division of Rehabilitation and Physical Medicine. Together we examined the current theories of pain perception and correlated them with existing pain treatment programs. We identified three models that we considered useful. Most neurosurgeons employed the *medical model*. That is, pain was treated as a symptom of disease to be diagnosed and treated. Treatment should eliminate the symptom, and elimination of pain should restore the person to normal function. The *behavioral model* was the theoretical basis for the University of Washington program in which "pain behavior" and associated impaired function were considered as important as the underlying pathophysiology. The presence of disease was questioned in many cases. The goal was to modify pain behavior, thus improving function even when pain itself could not be treated directly. The *cognitive-behavioral model* suggested that patients developed negative, distorted convictions regarding their functional capacities, diagnoses, prognoses, and futures. These illness convictions affected behavior, could be strongly held, and were reinforced when activity or reconditioning proved painful. Treatment goals in this formulation involved identifying and reframing negative cognitions and simultaneously increasing patients' repertoire of activities.

With these models in mind we planned the new unit around a staff from neurosurgery, psychiatry, and medical psychology. The stated goals of the program were (1) to improve understanding of chronic pain syndromes and provide specific therapies for patients suffering from them; (2) to understand the psychological, behavioral, and medical ramifications of chronic pain (now known as comorbidities); (3) to examine the value of medical, behavioral, and cognitive therapies commonly employed in chronic pain; and (4) to educate physicians to improve their understanding and treatment of chronic pain. Parallel goals for the Department of Neurosurgery were to interest young neurosurgeons in the pain field and to begin a basic science examination of neuropathic pain.