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Introduction

In March 2014, Dr. Steven Graff-Radford, D.O., saw a 17 year old girl at the Headache, Orofacial Pain and Sleep Apnea Program at the Cedars-Sinai Pain Center in Los Angeles, California. A leading doctor in the pain management specialty, Graff-Radford was the first person to complete a fellowship in pain management through the Department of Anesthesiology at the University of California Los Angeles in 1991. Trained as a dentist, Graff-Radford exemplified the variety of physicians that the pain management specialty attracted.

Dr. Graff-Radford pictured examining a patient in a Los Angeles Times Article in 1991.¹

¹ Photograph of Dr. Steven Graff-Radford pictured examining a patient, 1991, American Academy of Pain management records (Manuscript collection 125). Box 3, Folder 16. Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
On this particular day, the patient presented with chronic migraine, continuing a pattern of 6 to 7 migraines per week over the previous 3 months. She was a junior in high school but was unable to attend classes regularly, read, write, or function normally. She had already seen upwards of 10 doctors, all of whom had prescribed the “normal” treatment for migraine. None of the treatments worked. Graff-Radford quickly updated her diagnosis to chronic intractable migraine, meaning that she was not responsive to medication.

The severity of this patient’s migraines caused other chronic pain conditions. She had central sensitization, which is when the pain nerve cells in the brain and spinal cord become “over-excited” easily.² Central sensitization puts the nervous system in a persistent state of high reactivity, producing pain hypersensitivity by lowering the threshold for pain and abnormal responses to noxious and innocuous stimuli.³ Due to the central sensitization, she had also developed allodynia, which occurs when a person experiences pain from stimuli that are normally innocuous and not painful.⁴ For example, brushing her hair, being touched, or taking a shower with water that was too hot or too cold was physically painful, as her brain would produce a sensation of pain and discomfort due to the hyper-excited state of her nervous system. She also had chronic fatigue issues. Anything from washing the dishes to walking upstairs was exhausting.

³ Ibid.
⁴ Ibid, 895.
After having been seen by numerous physicians, this girl and her family were helpless. All the neurologists and headache specialists that she had seen did not know how to proceed with such an extreme case of migraine. Her intractable pain seemed unsolvable. Visiting the Cedars-Sinai Pain Center was her last hope. After hearing her history and doing her intake, Graff-Radford looked at her and said, “We’re going to get you your life back.” The girl and her mother immediately started crying. No doctor had acknowledged the toll that her chronic pain condition had taken on her life. Instead of being treated like a medical oddity, she was being treated like a person.

This patient was me. I would not have written this thesis if not for Dr. Graff-Radford. It took over two years of weekly infusions, countless medication trials, and sheer determination to get me to a place where I could begin to live a life that resembled who I was before I became sick. Having been treated by a pain management specialist in a multidisciplinary clinic, I knew first-hand about how impactful this type of care could be. Unfortunately, Dr. Graff-Radford passed away suddenly in October 2016 at age 59. His death was a major loss to the pain management specialty, the headache community, and to his patients and family. I was only one of the many patients that he helped. My story is only one of the 100 million people in the US who suffer from chronic pain.\(^5\) Despite these numbers, our stories

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are not known nor are the stories of the pain management professionals who are dedicated to finding real solutions to chronic pain.

This thesis focuses on the role of pain management organizations and how these institutions laid the foundation for a revolutionary way of diagnosing and treating chronic pain. My work concentrates on the period between 1990 to 2010 which I consider to be the “Renaissance” of pain management, marked by increased emphasis on education, diagnosis, and the treatment of pain that extended into the public sphere and influenced public policy through the efforts of organizations like the American Pain Society, the American Academy of Pain Medicine, and the American Academy of Pain Management, leading to the Decade of Pain Control and Research from 2000 until 2010.

Chronic pain and its treatment is currently thought about in relation to the opioid crisis. The coincidence of the rise of the pain management specialty with the introduction of the branded opioid Oxycontin in the late 1990’s created the opportunity for many chronic pain sufferers to obtain some pain relief, but also initiated the beginnings of the over-reliance on opioids as a treatment modality. I aim to explore why the pain management specialty and associated professional organizations began and how the creation of this new specialty affected the medical, political, economic and social environment in the United States from 1970 to 2010.

Acute pain had always been recognized in medicine. Chronic pain, however, presented a more complicated phenomenon. Normal pain regimens failed to relieve many patient’s pain, and as a result, their pain persisted for
months or even years. To many physicians, it posed a problem that had no real answer. Furthermore, pain was seen as a dichotomous issue, either stemming from psychogenic sources or from a tangible physical stimulus. Unexplained and untreatable chronic pain seemed to be outside the purview and interests of most physicians. This began to change in the 1950’s after World War I and II when soldiers came back from war. These soldiers had unexplained persistent pain like causalgia and phantom limb pain. Despite the fact that there was no physical stimulus causing the pain, many physicians believed their pain was psychological. However, that answer failed to be sufficient for some doctors. This was a major turning point in the study of pain because specificity theory, which had been the standard pain theory for over a century, no longer explained the clinical phenomena physicians observed. What if chronic pain was not all psychological? Do physicians truly understand pain?

The pain management specialty began forming in the 1960’s as a result of these questions. Doctor John J. Bonica, one of the leading pioneers of pain management, began his first multidisciplinary clinic at the University of Washington, bringing together multiple physicians and specialties to approach and treat an individual case. This new approach required physicians to use their collective knowledge to create treatment plans that focused on holistic treatment, blending specialties and psychology to create individual treatment regimens. In 1965, Dr. Ronald Melzack and Dr. Peter Wall’s Gate Control Theory was published, highlighting that psychological evidence failed to support the “one-to-one relationship between pain
perception and intensity of the stimulus” as had been suggested with specificity theory and intensive theory. Instead, Melzack and Wall argued that perceptions of pain are determined by psychological “variables” in addition to sensory inputs. The introduction of Gate Control Theory created newfound interest for other physicians to become interested in pain conditions.

As the specialty developed in the 1970s, pain management physician organizations were created to unify and validate pain management as an emerging specialty. These organizations changed the way that physicians viewed and treated pain. Focusing first on educating other physicians on how to appropriately diagnose and treat acute and chronic pain, these organizations, like the American Academy of Pain Management, the American Pain Society, The American Academy of Pain Medicine and the International Association for the Study of Pain, codified standards and expectations for the diagnosis and treatment of pain. Between 1970 and 1990, these organizations became the backbone of the pain management specialty.

These organizations also became political advocacy groups as their work increasingly involved educating the public and the federal government about pain. This new role began with the increase of chronic pain Social Security Disability Insurance (SSDI) claims where pain management physicians served as experts to provide evidence on the legitimacy of pain conditions in SSDI claims court in the early 1980s. From there, it became

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clear to these organizations that focusing solely on educating other physicians would not be enough to change the way that pain was understood and treated in the United States. Instead, these physicians needed to influence legislation and federal organizations to formally recognize pain management and advocate for the funding of pain research and increasing access to pain medication. These organizations capitalized on the American political process by engaging with legislators and federal agencies, illustrating to them that the problem of pain would not go away on its own. Pain needed to be treated adequately, but guidelines and standards needed to be developed to educate other physicians. These organizations created campaigns to introduce pain as the fifth vital sign, decrease barriers to access pain medicine and pass other laws that aligned with their goals.

Even though there is increased focus on pain in the United States today and certainly significant attention on the opioid crisis, the field of pain management is not always included. Part of this is due to the fact that the field of pain management itself has not been written about much outside of medical literature. The field of pain management is well represented in twentieth century medical texts. There are thousands of articles, studies and books that talk about the treatment of chronic pain, the value of interdisciplinary and multidisciplinary care, and research related to the pain field, especially from the pioneers of pain management like John Bonica, known as the “founding father of pain relief” and revolutionary researchers like Ronald Melzack and Peter Wall.

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7 Ibid.
Non-medical literature, however, paints a fragmented picture of pain management. Historically, books like The Sense of Suffering: Constructions of Physical Pain in Early Modern Culture by Jans Frans van Dijkhuizen and Karl Enenkel and The Story of Pain: From Prayers to Painkillers by Joanna Bourke illustrate how pain has been perceived and treated culturally over time. Other works, like A Calculus of Suffering: Pain, Professionalism, and Anesthesia in Nineteenth-century America by Martin Pernick highlight the overlap of anesthesiology and pain, which is an important relationship that continues into the twenty-first century. Pernick illustrates the subjective nature of pain and the difficulties in judging whose pain was real and even more important, whose pain should be relieved.

From Lesion to Metaphor: Chronic Pain in British, French and German Medical Writings 1800-1910 by Andrew Hodgkiss also touches upon this important theme of imagined versus physical pain. Physicians in the nineteenth century categorized pain as either psychogenic or somatic, classifying any pain that did not have a specific, apparent stimulus categorized as psychogenic and therefore a mental health issue. These texts set the historical background for how pain management came to be. Evolving out of World Wars I and II, pain management began to place more importance on understanding psychogenic pain that had been dismissed as psychological for a hundred years before that.

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Marcia Meldrum’s “A Capsule History of Pain Management” provides a taste of the history of pain management, tracing a similar history but she does not dive deeply into its social, political, and medical implications. Isabelle Baszanger’s “Inventing Pain Medicine: From the Laboratory to the Clinic” uses interviews from the “founder” of pain management, John Bonica, to explore his influence in the beginning of the specialty but then does not follow the rise in the United States of the pain management specialty. Politically, Keith Wailoo’s *Pain: A Political History* briefly touches upon Bonica and the field of pain management through the lens of politicized chronic pain in the era of Social Security Disability Insurance and increased disability policies in the United States. These works, while important in their fields, leave major holes in the timeline of pain management and the role that pain management organizations play in medicine and politics in the United States. My work aims to fill in these gaps by illustrating the impact of pain management organizations on American medicine and politics, leading to the beginning of a period of more effective pain management.
A Specialized History of Pain

From birth until death, pain is a normal part of life. As the experts, doctors hold the key to understanding the human body and to decoding a patient’s pain. But how much do people – and especially doctors – actually know about pain? Although pain is a universal part of life, the history of the theory and treatment of pain is a story of constant change, with widely varying perspectives and treatment approaches. Doctors, historians, anthropologists, sociologists, politicians and patients all tell different stories about pain. While this thesis examines the birth of modern pain management from 1960 onwards, it is appropriate to begin with this foundational chapter which analyzes the historical framework of pain theories leading up to the creation of the pain management specialty. I argue that pain theories in the West from the period of Descartes until the 1960’s strove to separate the mind and the body in their explanations of pain, choosing to focus on the physical mechanisms behind pain and qualifying any non-obvious complex pain as psychological and therefore outside of the purview of doctors. This history of pain highlights a fragmented theoretical construct of pain that later in the twentieth century was revitalized into the unifying modality of the “multidisciplinary pain clinic” to unify and treat pain as both a somatic and mental disease state and not just as a physical symptom.

Creating a history of pain is difficult due to the fact that pain itself has not been prioritized as a part of medicine and medical history. The story of pain cuts across disciplines, woven into the histories of anesthesia, neurology, and psychology and the rise of these specialties in the nineteenth and
twentieth centuries as told through the contentious relationship between the mind and body in identifying and conceptualizing pain. However, certain theories and people recur in many histories of pain. Chronologically, interpretations of pain in the West begins with the ancient physician Galen and the philosopher Aristotle. After the ancient period, Christianity offered a new religion connotation of pain, insinuating that the presence of pain signaled divine purpose. While the divinity of pain fell away from perceptions of pain in the Enlightenment, the undertones of being “deserving” of the pain that patients experienced shadowed patients for hundreds of years. With each waxing and waning of interpretations of pain, certain aspects of each new iteration brought explanations and associations from the past. However, the main debate between the eighteenth and twentieth centuries largely focused on whether pain was a somatic or psychological condition. It was in the mid-twentieth century that previous conceptions of pain were increasingly challenged, leading to the creation of pain management as a medical specialty and the beginning of the categorization of pain as its own medical entity.

Early Conceptions of Pain

Aristotle and other Greek philosophers believed that pain was a “quale,” or a state of feeling “opposite of pleasure experienced in the heart.”¹ Galen in the 2nd century presented a view of pain that existed well into the Middle Ages and even into the Enlightenment. He argued that pain was a “sense, in the

¹ Pain Mechanisms, John J. Bonica Papers (Manuscript collection 118). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.1.
general category of touch.”² Pain could signal damage to the body, but also the absence of pain could also indicate that the body had “merely adjusted to whatever damage without a cure.”³ To Galen, there were two different types of damage that were possible. The first was the “interruption of continuity” of body tissue or “bodily humors” that had become distended, compressed, crushed or injured. The second was “sudden and major changes in the individual’s temperament,” leading to an imbalance of heat, cold, dryness, and moisture.⁴ In addition to this, Galen demonstrated that dissecting the spinal cord caused sensory and motor deficits. He postulated that in order for perception to occur, the organ must be able to receive the stimulus, which then needed to be connected from the organ to the brain.⁵ Finally, a “processing center” then converted that sensation to a “conscious perception.”⁶

Galenic conceptions of pain have remained prominent in the increasing discourse surrounding pain well into the common era. However, in his book *Pain*, pain management physician John Bonica wrote that after “the ignorance and superstition of the Dark Ages settled over Europe after the fall of Rome,” the next advancements in pain theory did not occur until the Renaissance.⁷ As a result, the historical accounts of pain written by

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³ Ibid.
⁴ Ibid.
⁶ Ibid.
physicians, like Bonica’s “Pain Mechanisms,” or Ronald Melzack’s “Pain: Past, Present and Future,” do not focus on the theories of pain during the medieval period as it does not provide much medical insight for modern medicine.⁸

Despite being somewhat overlooked in histories of pain, the Middle Ages elucidated a spiritual explanation for understanding pain. Between 1300 and 1700, religion established a framework for building upon existing understandings of pain. With increasing emphasis on Christ’s suffering in Catholicism, pain was interpreted as evidence of having been chosen by God or being of divine retribution, both of which encouraged the acceptance of pain and suffering as a normal and somewhat encouraged part of life.⁹ Pain, therefore, became an “officially sanctioned religious experience.”¹⁰ Professor of Early Modern Studies and English Jan Frans van Dijkhuizen and Professor of Medieval and Early Latin Philology Karl Enenkel described this time period as a “theological pain contest,” as the Protestant Reformation and the Counter Reformation also weighed in on the theological meaning of pain, forming a battleground for religious authority and ultimately intertwining early modern debates about pain with questions of power.¹¹ However, as historian Joanna Bourke’s book title The Story of Pain: From Prayers to Painkillers

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⁹ Victoria Grey Hardcastle. 3.
illustrated, prayers were not enough to relieve or to explain pain by divine providence or religion itself. While religion does not play a major part in the medical treatment of pain today, the medieval period and Christian theology created a foundation for the cultural understanding of pain to be perceived as a test of moral character and tenacity. As we will see later in this chapter, there was an underlying theme in the history of pain of being “deserving” of pain and, consequently, of pain relief. As time passed, the experience of pain was no longer seen as having been chosen by God. However, the connotations of divine retribution, namely that pain was a punishment, have remained in the cultural legacy of understanding pain, even in the late nineteenth and twentieth centuries.

While the role of religion is largely left out of many accounts of the development of pain theories, René Descartes, the famed Enlightenment philosopher, theorized a doctrine of pain in the 17th century that included it. Professor of Social and Political Policy Grant Duncan argues that Descartes’ theory preserved the “possibility for the Christian belief in a soul which survives the death of the body,” but it also permitted “a positive science of the body and an interventionist medical practice.” According to Descartes, although humans have souls, the human body is a machine, like an animal’s body, meaning that it can be studied using the “experimental methods of physics pioneered by Galileo and others.” Descartes’ influence was widely

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11 Ibid.
seen in articles and books that recount the history of pain. In fact, one could argue that the modern history of pain began with Descartes.

As one of the first Western philosophers to describe the somatosensory pathway in humans, Descartes theorized that pain existed as a perception in the brain made possible by the physiology of the body.\textsuperscript{14} He argued that sensations of pain are “nothing but confused modes of thinking” due to the union and “intermingling of the mind and the body.”\textsuperscript{15} Professors of neuroscience Massieh Moayed and Karen Davis highlighted that Descartes made a distinction between the “neural phenomenon” of the sensory transduction of pain, the conversion of a stimulus from one form to another, and the perceptual experiences of pain.\textsuperscript{16} Descartes’s theory also focused on his description of nerves, which he perceived as “hollow tubules” that communicated both sensory and motor information.\textsuperscript{17} Descartes further built on Galen’s model and theorized that there was a “gate” that existed between the brain and the nerves, which was opened by a sensory cue.\textsuperscript{18} John Bonica, a leading physician in the field of pain management, wrote that Descartes described the “conduction of sensation” of pain via “delicate threads contained in nerves which connected the tissues to the brain.”\textsuperscript{19} Any peripheral stimulation, like that of a foot being burned by fire, caused “minute particles of fire to pull upon the delicate cord just like pulling at the

\textsuperscript{14} The Philosophical Writings of Descartes, vol. II (Cambridge University Press, 1984). 56.
\textsuperscript{15} Ibid.
\textsuperscript{17} Ibid.
\textsuperscript{18} Ibid.
end of a rope to strike a bell.”20 The opening of the gate would then allow “animal spirits,” or an extension of the Greek *pneuma*, to “flow through these tubes and within the muscles to move them.”21

However, Descartes noted that the while pain may be “produced by mechanical bodily responses,” it required a “choosing, thinking mind to ‘know’ pain emotionally, rationally, and morally.”22 While pain had a mechanistic component, it was still connected to the mind. Therefore, pain’s ambiguity illustrated that pain was both of the mind and of the body. Dijkhuizen and Enenkel believed that the phenomenon of phantom limb pain led Descartes to question “the mind’s ability to separate itself from unreliable physical senses.”23 If vision and touch were supposed to convey information about the outside world, pain could “mislead the mind about what goes on inside the body.”24 Descartes’ theory of the conduction of sensations would remain a prominent aspect in the history of pain, creating the basis of “specificity theory,” the main accepted theory of pain in the late nineteenth and early twentieth century. The conduction of sensations focused on peripheral sensation as the initiator of pain messages to the brain. With this reasoning, pain had to have a physical peripheral sensation to be perceived as real. Any pain that did not have physical stimuli as the direct cause of the pain signal led physicians to believe that the brain failed to experience sensations

20 Ibid.
22 Duncan. 496.
24 Ibid.
accurately. This initial distrust of the mind’s perception laid the foundation for physicians to distrust their patient’s verbal descriptions of their pain and search for a physical locus of pain.

Anesthesia and Pain

While Descartes presented a mechanistic way of thinking about pain, the introduction of anesthesia in the nineteenth century illustrated the complexity of understanding and treating pain in clinical settings, as it provided a window into the way that cultural beliefs influenced the medical treatment of pain. The history of anesthesia is largely intertwined with the history of pain and pain management. Historian of science Marcia Meldrum’s “A Capsule History of Pain Management” provided a brief overview of the importance of nineteenth century anesthesia in setting the stage for debates evaluating claims of pain and the ethics of providing pain relief to patients. Historian Martin Pernick’s A Calculus of Suffering told the tale of the social and medical implications of using anesthesia during the nineteenth century, highlighting the fact that some patients were unworthy of receiving pain medicine or anesthesia. The moral calculus of anesthesia played a major role in the cultural modern perception of patients in pain, creating the implication that some patients are not worthy of pain relief. The modern specialties of anesthesia and pain management are heavily interwoven. Understanding the early history of anesthesia is therefore imperative to comprehending how the pain management specialty began.
In 1846, William T.G. Morton gave a famous demonstration of the use of anesthesia, illustrating that surgery did not have to be painful for the patient. However, this new availability of pain belief during the beginning of the field of anesthesia exposed physicians to issues of morality and duty. More “conservative” physicians argued that anesthetics were to blame for creating an imbalance of power in favor of physicians. Under anesthesia, patients were “rendered passive, unconscious bodies, stripped of sensibility and agency.” The experience of pain was a part of life and to many physicians, a part of the surgical experience. Pernick argued that non-anesthetized patients had the ability to protect themselves against “medical carelessness,” making sure that the right appendage, growth or tooth was being removed. Conservative physicians feared that the availability of ether provided “an irresistible temptation for hack surgeons to perform unnecessary operations.” This moral debate highlighted questions of if and how a patient should be involved in their procedures, which is an important question to keep in mind when looking at patient and physician interactions in the upcoming analyses of pain management.

Martin Pernick wrote in *A Calculus of Suffering* that the mid-nineteenth century was the “Age of Pain,” marked by changes in social values

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28 Ibid.
and the beginning of a technical revolution in the treatment of pain. The chemical isolation of morphine, cocaine, and heroin provided new ways to treat acute and recurrent pain. Morphine was industrially produced in United States in the 1830’s, and the invention of hypodermic syringe in the 1850’s with a hollow needle allowed for subcutaneous injections, leading to an increase in the usage of pain medicines. Marcia Meldrum argued that the invention of the hypodermic needle made frequent administration of opiates so convenient that it contributed to the overuse of morphine.

Despite the availability of new treatments for pain, there was still the remaining problem of determining who deserved and ultimately should receive pain medicine. In 1848, a New York surgeon named Alexander Stevens told the American Medical Association that the profession of anesthesia was the “link between science and philanthropy,” selectively choosing who was worthy of receiving anesthetics. The application of this moral calculus of anesthesia and pain relief only pertained to some social and racial groups. Some physicians and surgeons believed that certain humans were “relatively or totally insensitive to pain.” Nineteenth-century medical literature urged doctors to take into account a multitude of factors, like sex, race, age, ethnicity, economic class, personal habits, and temperament before using pain relievers. Women, children, and people of color typically had their

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29 Ibid. 59.
30 Ibid.
31 Ibid, 104.
33 Pernick, A Calculus of Suffering. 115.
34 Bourke. 275.
pain invalidated and undertreated by physicians. As a result of this debate, the claims of differences in pain sensitivity in medical literature provided justification for this discriminatory treatment.35 There was public pressure over the antebellum years for physicians to feel more emotional involvement with their patients. However, as seen with the moral calculus of anesthesia, discerning which patient’s pain deserved to be treated could lead to physicians failing to be seen as rational. Physicians therefore needed a way to discern real pain, leading to the development of the concept of “lesionless” pain.

The Nineteenth Century and “Lesionless” Pain

Pain in the nineteenth was usually observed as having some type of “lesion” or physical cause. The treatment of chronic pain was by far the most confounding type to treat, as lesionless pain existed in patients without clear pathology and oftentimes persisted after treatment with traditional pain relievers.36 Physiologists and clinicians in the 1840’s viewed “lesionless pain” as “imaginary,” or the “creation of a liar or a neurotic.”37 This thought stemmed from the French philosophical school and its emphasis on localization of disease and discerning of the somatosensory system and the pathways from the spinal cord to the brain.38

35 Pernick. 148.
36 Meldrum. 2471.
38 Ibid.
Michel Foucault argued in *The Birth of the Clinic* (1963) that this revolution of ideas in the 1800s shifted the “medical gaze” from relying on a patient’s verbal explanation to prioritizing the examination of the body.\(^{39}\) The clinical gaze was the “most decisive authority” in patient interactions, fixating on the anatomy of the body and engaging in a biological reductionism that allowed the physician to unmask the illusion of the person to create the possible recognition of a disease state, based on their knowledge of existing medical frameworks.\(^{40}\) In this way, the conversations with patients changed from acknowledging the whole of the body to discerning specific, localized pain and other physical signs of disease. The patient’s subjective self-report, generally thought of as most likely unreliable, would at least tell the physician where on the body to look for a localized lesion that was responsible for the patient’s pain.\(^{41}\)

In *From Lesion to Metaphor*, one of the first monographs devoted to the history of chronic pain, Andrew Hodgkiss analyzed the works and controversies of eighteenth and nineteenth century neurophysiology, specifically focusing on the debates surrounding lesionless pain.\(^{42}\) The point of Hodgkiss’s work was to highlight these arguments and theories as a path which informed modern conceptions and theories of pain. Hodgkiss approached the history of chronic pain as a forgotten problem in historical accounts of medicine. How did understandings of lesionless pain change over

\(^{39}\) Andrew Hodgkiss, *From Lesion to Metaphor: Chronic Pain in British, French and German Medical Writings, 1800-1914* (Rodopi, 2000), 2.


\(^{41}\) Hodgkiss, *From Lesion to Metaphor*. 2.
the course of the nineteenth century? How has this informed modern interpretations of pain? Analyzing writings and work from medical authors from a range of specialties including surgeons, physicians, psychiatrists and neurologists, Hodgkiss argued that many modern texts in the twentieth century did not focus on the debate surrounding lesionless pain. Instead, these texts continued to solidify the traditional historical narrative that pain was routinely dismissed as imaginary during and after the rise of neuroscience as a specialty. Hodgkiss challenged this orthodox view by explaining the scientific reasoning for the separation of “real” and “imaginary” pain through the context of the search for explanations of pain mechanisms and sensations. Hodgkiss argued that the nineteenth century debate surrounding lesionless pain further solidified and led to the modern perception that chronic pain was a result of psychological misidentification and not truly a somatic disorder. While modern physicians often gloss over these debates and their importance in medical canon, it is important to highlight that there were active conversations about lesionless pain in the early 19th century.

To understand the phenomena of lesionless pain, some physicians attempted to create etiologies of nerve malfunction to explain pain since past theories of pain were not sufficient. New theories still attempted to reconcile how the mind-body divide affected pain sensations in the body. François V. Broussais proposed the concept of a “functional lesion” in 1826, focusing on

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42 Ibid.
43 Ibid, i.
inflammation as an explanation for the presence of pain in the absence of physical signs of chronic diseases. Another theory called Gemeingefühl, which was defined as an “individual’s inability to correctly perceive his internal sensation,” was found in German theories of pain as another explanation of lesionless pain. Benjamin Brodie, a British specialist in chronic pain, joint disease, neuralgia, and hysteria, believed that a lesion “anywhere in the body will do to account for an otherwise inexplicable pain.” Brodie was the first doctor to draw a clear distinction between neuralgic pain, with a “local cause somewhere in the nervous system,” and hysterical pain of more “diffuse origin.” These theories were only the beginning of the nineteenth century goal of identifying the reasons and mechanisms behind pain.

Charles Bell’s work illustrated that there was a discontinuity in the historical timeline of pain theories. Charles Bell’s work on facial pain occurred during a period that prioritized neurological findings over psychological evidence in pain theory. Focusing on the fifth cranial nerve and the sympathetic nerves, Bell postulated that external pains played a “significant role in alerting a physician to internal disease, irritation, and disordered functioning.” This identification of the anatomical structures of sensation marked the beginning of a “sustained effort” to map pain pathways

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44 Ibid, 47.
45 Meldrum. 2471.
46 Hodgkiss, From Lesion to Metaphor. 59.
48 Ibid, 48.
49 Ibid, 51.
in the body.\textsuperscript{50} However, Bell’s work and the ensuing neuro-physical research on pain in the nineteenth century were a part of the biological reductionism that separated pain into being interpreted as either “real,” and therefore found in anatomical structures, or “imaginary.”\textsuperscript{51} Nevertheless, while these theories did not gain much traction, they emphasized the need to formally discover neurological and pain pathways. The underlying separation between the body and the mind in the definition of pain left a lasting legacy on the study of pain.

**The Birth of American Neurology**

The emergence of neurology as a medical specialty played an important part in the understanding of pain mechanisms, as it created a distinct field dedicated to understanding the mechanisms of the nervous system. Theories of pain in Europe developed from practices of internal medicine from France and psychiatry from Vienna.\textsuperscript{52} In the United States, the American Civil War proved to be a pivotal moment in the development of neurology. Silas Weir Mitchell, one of the founders of American neurology, observed various pain syndromes like phantom limb pain and “causalgia,” which was the severe burning pain in a limb caused by injury to a peripheral nerve.\textsuperscript{53} Weir wrote descriptions of these pain syndromes and sought to understand the apparent reality of his patients’ illnesses “despite their

\textsuperscript{50} Ibid, 48.
\textsuperscript{51} Ibid.
\textsuperscript{53} Meldrum, “A Capsule History of Pain Management.” 2471
unexplained pain."⁵⁴ William A. Hammond, the other co-founder of American neurology, also became interested in war-related injuries to the nervous system in Union soldiers that he observed while he was Surgeon General.⁵⁵

American neurology strove to link itself to existing European traditions of internal medicine and psychiatry to explain the confounding pain conditions of soldiers. This was especially prominent given the fact that many neurological advances in the study of pain followed directly from the experience of war with male soldiers as their subjects. Soldiers coming back from the front lines deserved to have their pain treated to the best of physician’s abilities because they had sacrificed themselves for a larger moral and national purpose. Doctors validated soldier’s unexplained pain as opposed to applying the same “moral calculus” that was applied to deny or limit the use of anesthesia and other pain-relieving treatments to patients deemed to be less-deserving.

After the Civil War, neurology quickly emerged as a separate clinical specialty in the United States, as there was a general international movement towards the subdivision of medical practice happening concurrently.⁵⁶ Many American general practitioners resisted specialization, arguing that it challenged the existing, established practice of medicine and broke up the examination of the whole body into separate parts. One editorial titled “Specialism on the Rampage” published by the Pacific Medical and Surgical Journal in 1881 sarcastically asserted, “Why not have a Pneumatologist to

⁵⁴ Ibid.
attend to the lungs—a Thermatologist to observe temperature—a Narcotizer
to see that the patients sleep well—a Defecator to attend to the bowels?”57 By
breaking up the general practitioner’s role and presenting specialized parts of
the body to specific doctors, the practice of medicine was no longer focused
on the whole body, but instead on specific systems and body parts, seemingly
taking away any holistic approach to medicine.

The field of neurology in the latter 1800s began to “eliminate
unexplained chronic pains from their professional purview” through the use
of specific diagnostic tests. Medicine overall became more focused on
“symptomatology,” prioritizing observation, precise descriptions, and
practical medicine over etiological theories.58 However, without defined
accreditation processes, some American specialists held “questionable
qualifications,” leading to a reevaluation of the specialization movements.59
Despite an initial separation of the mind from the body and from psychology
with the use of diagnostic tests, neurology became much more closely
intertwined with psychological explanations to explain the persistent
behaviors of patients in pain instead of neurological mechanisms of their
patients.

As a result, chronic pain in the late nineteenth century became the
purview of psychoanalysts. Freud’s work on hysteria was a turning point for
neurology, as many doctors believed that patient’s descriptions of lesionless

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56 Ibid.
59 Ibid.
pain indicated an underlying psychiatric disorder, discrediting any possibility of physical pain.\textsuperscript{60} One prototype of a neurological treatment center in New York included a rural neurological sanitarium, where patients would be transferred after initial evaluation for “the restoration of the diseased personality, the disordered functions, and the perverted metabolism that these patients always have.”\textsuperscript{61} This ideology of attributing pain patients’ dysfunctional bodies as the cause for their lesionless pain left a lasting legacy on the study of pain and the treatment of pain patients, marking the beginning of a new era with the definition of “true” pain that was backed up by physical evidence. Accepted medical practices defined true pain as a “direct, proportional response to a specific noxious stimulus.”\textsuperscript{62} With this new definition of somatic pain, physicians strove to uncover the true mechanisms of how the body communicated pain to the brain.

**Specificity Theory as the Modern Pain Theory**

*Specificity theory* became the first modern and widely-accepted pain theory, stating that pain was a “specific sensation with its own sensory apparatus independent of touch and other senses.”\textsuperscript{63} Building upon Descartes’ theory of the conduction of sensation via delicate threads in nerves that connected to the brain tissue, Moritz Schiff formulated the basis for specificity theory when he discovered that pain and touch were independent

\textsuperscript{60} Meldrum, “From Lesion to Metaphor.” *From Lesion to Metaphor.* 366.


\textsuperscript{62} Meldrum, “A Capsule History of Pain Management.” 2472.

in 1858.\textsuperscript{64} Using animal vivisection experiments, he found that severed sections of gray matter in the spinal cord eliminated pain, but not touch.\textsuperscript{65} Conversely, portions of disconnected white matter eliminated touch, but pain was still present.\textsuperscript{66} A decade later in 1868, physiologist Maximilian von Frey extended this theory and mapped out pain and touch spots, identifying “specific end-organs responsible for each sensation.”\textsuperscript{67} Von Frey’s specificity theory dealt only with pain receptors, which propagated the belief that “pain is subserved by specific fibers from the receptors to spinal cord and specific pain pathways.”\textsuperscript{68}

Specificity theory, however, was not the only pain theory at this time. The \textit{intensive theory} in 1874 proposed that “every sensory stimulus was capable of producing pain if it reached sufficient intensity.”\textsuperscript{69} Erasmus Darwin’s 1794 theories of pain provided the model for intensive theory. He thought of pain as a “phase of unpleasantness,” occurring whenever “sensorial motions” like light or the presence of heat or cold were “stronger than usual,” therefore causing pain.\textsuperscript{70} Alfred Goldscheider, a German neurologist, fully developed this theory stating that “stimulus, intensity, and central summation were the critical determinants of pain.”\textsuperscript{71} Other variants of this theory were called “patterned” or “summation” theories, proposing that

\textsuperscript{64} Ibid.
\textsuperscript{65} Ibid.
\textsuperscript{66} Ibid.
\textsuperscript{67} Ibid.
\textsuperscript{68} Ibid.
\textsuperscript{69} Ibid, 5.
\textsuperscript{70} Ibid, 3.
\textsuperscript{71} Ibid, 5.
the “particular pattern of nerve impulses that evoked pain were produced by the summation of the skin sensory input” into the spinal cord.\textsuperscript{72}

However, summation theory and intensive theory, while still regarded as pain theories, were slowly edged out by specificity theory. By the 1920s, specificity theory was the standard model of pain taught in U.S. medical schools.\textsuperscript{73} In \textit{A Practical Treatise on Medical Diagnosis for Students and Physicians}, a popular medical school textbook published and re-published between 1894 and 1914, John H. Musser writes about the problems of patients exaggerating the reality of their pain. Without a specific, noxious stimulus to explain a patient’s pain, how could physicians know what was a real and valid report of pain? After all, Descartes had created the established legacy that the mind could interpret sensations falsely, which was now firmly established in specificity theory. Musser viewed exaggeration as “the greater evil,” claiming that it was “most marked in women, children, and those people who devoted their energies to mental labor or who possessed a ‘nervous temperament.’”\textsuperscript{74} Physicians needed to be wary about patients complaining about their pain. Given the complexity of the “connections and sympathies of the nerves of a sensation,” pain was “an unreliable basis upon which to base diagnosis.”\textsuperscript{75} Despite the physiological advances in understanding how pain mechanisms worked when stimulated by a specific apparent stimulus, doctors struggled to answer the same questions that Descartes raised. Could pain be a

\textsuperscript{72} Ibid.
\textsuperscript{73} Meldrum, “A Capsule History of Pain Management.” 2472.
\textsuperscript{74} Bourke, \textit{The Story of Pain}. 141.
\textsuperscript{75} Ibid, 138.
conscious choice? Was pain a type of personality typically found in certain
genders, races and social classes? Pain was “the most baffling and misleading
symptom” to a doctor, placing them in the position of judge and jury
evaluating the validity of their patient’s pain.\textsuperscript{76}

In the nineteenth and early twentieth centuries, pain was under-
treated because of the fear that patients would become “tolerant to
analgesics,” thereby forcing physicians to prescribe stronger drugs, or “worse,
they could become addicted.”\textsuperscript{77} In addition to the monopoly of specificity
theory and increasing psychological diagnoses for unexplained chronic pain,
patients who suffered from chronic pain syndromes found themselves
branded as “deluded or were condemned as malingerers or drug abusers.”\textsuperscript{78}

Part of this stereotype was due to the belief that the problem of pain
had already been solved, as multiple textbooks in the 1950s seemed to
explain. Dr. Ronald Melzack, one of the creators of the modern gate control
theory of pain, which directly challenged specificity theory, wrote in 1976 that
specificity theory was “taught in most medical schools as gospel-truth,” as a
fact instead of what it actually was—a theory.\textsuperscript{79} All that was left was to find
the pain center in the brain, since specificity theory espoused that there was a
specific sensory system with “pain receptors and fibers that projected through
a specific pain pathway to a pain center in the brain.”\textsuperscript{80} Not all doctors

\textsuperscript{76} Ibid.
\textsuperscript{77} Ibid, 296.
\textsuperscript{78} Meldrum, “A Capsule History of Pain Management.” 2472.
\textsuperscript{80} Ibid.
believed in specificity theory, but these dissenting opinions failed to impact its wide-spread acceptance. Ronald Melzack in his essay *Pain: Past, Present, and Future* described the somewhat futile efforts in the 1940s and early 1950s to change the pain narrative or offer alternative theories. Before delving into these efforts, however, it is important to understand how World War I and II helped to begin to change the perception of chronic pain, providing the clinical studies that allowed physicians to begin to question specificity theory.

**The Impact of World War I and II on Anesthesiology and Pain**

As seen with the American Civil War, wars provided fascinating clinical experiences for doctors to understand the problem of pain. With both World War I and II taking part in the first half of the twentieth century, a known fact of war, starting from the American Civil War and continuing through the 20th century, was the problem of persistent, intractable pain seen in many soldiers.  

Many soldiers during and after World War I were suffering neurological symptoms like dizziness, tremors, tinnitus, amnesia, weakness, and headaches, but had no obvious signs of physical injury.  

This condition, later known as “shell shock” mirrored some of the “hysterical presentations” described in the 19th century French school. As with many other complex pain conditions lacking clear somatic symptoms, many physicians looked to explain these symptoms psychologically, concluding instead that the “intensity of the bombings, the constant sight of dead

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comrades, and the uncertainty of coming out alive” must have caused these symptoms in the soldiers.\textsuperscript{84} Once again, physicians in the early 20th century were continuing the tradition of separating psychological and somatic pain.

The onset of World War I provided a turning point in pain relief through the refining and professional establishment of anesthesiology. Before World War I, general anesthesia was only practiced by anesthesiologists, while regional or local anesthesia practices fell into the purview of surgeons.\textsuperscript{85} This was due to the fact that the use of ether, a gas used for anesthesia, was simple, safe and effective, impinging on the ability of the medical practice of anesthesia to grow. During and after World War I, spinal and regional anesthesia became preferred as they were perceived as less dangerous than general anesthesia.\textsuperscript{86} Surgeons used regional anesthesia, containing mixes of nitrous oxide, oxygen, and morphine, for amputations and chest surgery, greatly changing the ability of surgeons to carry out more complicated operations and have better patient outcomes with life-saving surgery.\textsuperscript{87}

However, even though surgeons primarily used anesthesia, there was a lack of systematic instructions for how to effectively and safely use it. Before the war, the general consensus in the medical community was that physicians who only specialized in anesthesia were “incompetent in general practice or

\begin{thebibliography}{9}
\bibitem{83} Ibid.
\bibitem{84} Pedroso et al. 318.
\bibitem{85} Frederick W. Courington and Roderick K. Calverley, “Anesthesia on the Western Front: The Anglo—American Experience of World War I,” \textit{Anesthesiology: The Journal of the American Society of Anesthesiologists} 65, no. 6 (December 1, 1986): 642
\bibitem{86} Ibid, 644.
\bibitem{87} Ibid, 650.
\end{thebibliography}
in other branches."  Since anesthesiologists at this time were only responsible for general anesthesia, some physicians viewed their clinical experience as limited and uncomplicated compared to that of surgeons or other practitioners. Despite this belief, the experience of anesthesiologists during World War I drew attention to the fact that many surgeons, who had full control over the anesthetic decisions in their operating theaters, generally did not know much about the practice of anesthesia.  British doctor Captain Geoffrey Marshall wrote in February 1917 that the correct choice of anesthetics is “of first importance...the bulk of preventable deaths at a casualty clearing station was due to improper anesthesia, or giving the right anesthetic wrongly.”

As a result of the lack of education, protocols, and the need for more anesthetists to support the war effort, Dr. Paluel Joseph Flagg proposed a school of anesthesia in October of 1917 for training United States wartime anesthetists. While Flagg was unable to secure a commission from the U.S. military, he focused his efforts on training war anesthetists at the Rockefeller War Demonstration Hospital in Manhattan. He invented the drawover vaporizer in 1919, known as the “Flagg can,” which was an ether can with holes in the top connected to the mouth or nose by a rubber hose. The Flagg can proved to be extremely useful during World War II as it delivered

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89 Courington and Calverley, “Anesthesia on the Western Front.” 650.
90 Ibid, 647.
91 Ibid, 650.
92 Ibid.
anesthesia when there was no equipment or compressed ether available on the battlefield.\textsuperscript{94} Looking to improve the quality of anesthesia and minimize the risks, wars in the twentieth century provided the perfect way for anesthesiologists to prove that their specialization was not one of incompetence, but instead become established as a necessary part of medicine.

In the 1920’s and 1930’s, the field of anesthesiology grew both academically and institutionally. Dr. Ralph Waters created a template for the study of “academic anesthesia” at the University of Wisconsin, Madison, emphasizing medical student and resident education in the science behind anesthesia, as well as training to perform basic science and clinical research and clinical care.\textsuperscript{95} In addition to the academic settings for the teaching of anesthesiology, the specialty began to establish journals and accreditation protocols. The American Society of Anesthesiologists was formed in 1935, and the first board certification exam for anesthesiology was given in 1939.\textsuperscript{96} After gaining more recognition in the medical sphere, anesthesiologists were able to expand their field and refine their techniques. Nerve blocking was an example of a new technique used to keep patients safer from the “physical shock” of general anesthesia.\textsuperscript{97} Nerve blocks worked by blocking a nerve fiber, either temporarily or permanently, through the “precise puncturing” of nerve

\textsuperscript{93} Ibid.
\textsuperscript{94} Ibid.
\textsuperscript{95} Waisel, “The Role of World War II and the European Theater of Operations in the Development of Anesthesiology as a Physician Specialty in the USA.” 907.
\textsuperscript{96} Waisel. 907.
\textsuperscript{97} Isabelle Baszanger, \textit{Inventing Pain Medicine: From the Laboratory to the Clinic}. 22.
structures and injecting either a chemical substance or heat into the area.\textsuperscript{98} During World War II, anesthesiologists became “remote neurosurgeons,” who were able to intervene directly to stop battle wound pain with nerve blocks “through the intermediary of the needle without direct contact with a particular site.”\textsuperscript{99}

In 1944, John J. Bonica, M.D., a young anesthesiologist, was appointed the head of the anesthesia and surgery unit at Madigan Army hospital at Fort Lewis in Washington State. Bonica’s experience came from the academic anesthesiology programs set up in the 1930s, as he had recently graduated from an accelerated six-month internship and eighteen month residency in anesthesiology.\textsuperscript{100} For the first six months of his tenure at Fort Lewis, Bonica was the only physician available to administer anesthesia to patients due a lack of specialists.\textsuperscript{101} Treating as many as fifty or sixty surgical patients a day, Bonica was able to refine and improve his technique administering local anesthesia and analgesic nerve blocks.\textsuperscript{102} As a young doctor working in a Veteran’s Affairs hospital, Bonica attended to both his normal practice as an anesthesiologist as well as treating the complex pain conditions of wounded soldiers. These soldiers presented with various neurological or locomotive disorders, like causalgia and phantom limb pain. Anesthesiology was the first line of defense for these patients, as many doctors hoped that a “blockage or even interruption of nerve paths by means of classical local anesthetic

\textsuperscript{98} Ibid.  
\textsuperscript{99} Ibid.  
\textsuperscript{100} Ibid, 21.  
\textsuperscript{101} Ibid.  
\textsuperscript{102} Ibid.
techniques would improve, if not cure, their condition.”  

Generally nerve blocks were a stable form of relief for causalgia and other specific problems, but Bonica was confused when faced with patients suffering from complex pain who did not respond to these routine solutions. He had no prior training in handling such complications. Furthermore, Bonica observed little medical literature with any therapeutic insights about how to treat complex pain. Bonica found that existing pain theories, namely specificity theory, did not explain the clinical realities that he faced, and that his colleagues also did not know how to explain it either. His patients were experiencing pain without a specific noxious stimulus, leaving Bonica to wonder why specificity theory required a specific stimulus if he had patients who routinely experienced pain with no obvious stimulus.

Bonica realized that his developing ideas of pain were not of interest to his anesthesiologist colleagues. While many of them used analgesic blocks, they did not approach the problem of pain as Bonica did. Pain, to Bonica’s colleagues, was a “uniform” and uninteresting phenomenon that did not require much thought or effort outside of administering routine treatment techniques like nerve blocks. There was no reason for anesthesiologists to step beyond their now well-defined role of the givers of nerve blocks and anesthesia, yet Bonica saw the promise of treating pain and expanding beyond anesthesiology to find medical solutions to treat pain effectively.

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103 Ibid.
104 Ibid.
105 As seen with Bonica’s essay “Pain Mechanisms” and other essays and speeches in his archive.
106 Isabelle Baszanger. 25.
Bonica’s experience at Madrigan Army hospital was the “genesis” of his 20-year campaign for multidisciplinary pain clinics and an interdisciplinary pain field. The medical world, however, was not yet ready for such a radical change and still clung to specificity theory to explain pain.\footnote{Meldrum, “A Capsule History of Pain Management.” 2473.}

Bonica’s clinical experience during World War II highlighted the fact that existing pain theories were not sufficient to explain the pain syndromes of patients. In the 1950s and 1960s, the medical literature grew and began to produce convincing arguments against specificity theory. One of the first pieces came from Henry K. Beecher, an anesthesiologist at Harvard, who observed that “seriously wounded soldiers reported much lower levels of pain than his civilian patients” when treating soldiers who fought in World War II.\footnote{Ibid, 2472.} He proposed that clinical pain was a “compound of the physical sensation and a cognitive and emotional reaction component,” arguing that pain could only be studied in clinical settings and not in laboratory studies with healthy patients.\footnote{Ibid.} These observations led to new analgesic testing methods, like using double-blind crossover trials and numerical scales to quantify patients’ pain reports. Yet Beecher’s work did not completely break with specificity theory. He avoided a theoretical confrontation by suggesting that pain was a primary, and therefore specific, sensation and that variations in patients’ experiences were representative of their different reactions to

\footnote{107 Meldrum, “A Capsule History of Pain Management.” 2473.}
\footnote{108 Ibid, 2472.}
\footnote{109 Ibid.}
pain rather than the pain itself.\textsuperscript{110} Despite the avoided confrontation, Beecher’s work had sown the seeds of dissent against specificity theory.

It became clear that instead of having solved the pain problem as the widespread belief in specificity theory suggested, the problem of pain was just beginning to be explored. Melzack proposed that three clinical observations led to the breakthrough of gate control theory and the downfall of specificity theory. The first was through the clinical observations of phantom limb pain, causalgia, and neuralgia, all of which were seen in soldiers returning from World War II. These conditions could not be cured through “conventional neurosurgical approaches,” indicating that there was a great need for “new conceptual and theoretical orientations.”\textsuperscript{111} Secondly, there was increasing evidence that psychological factors like culture, early experience, attention, and other variables which played a major role in determining the occurrence of pain or the differences in the level of pain reported in certain situations.\textsuperscript{112} Lastly, there was an increase in neurophysiological and anatomical studies that disproved that the somatic sensory projection system could not always be “neatly categorized to warmth, cold, touch or pain” as had been previously thought since the 1700s.\textsuperscript{113}

With increasing evidence of the inadequacy of specificity theory, all that was needed to dispel specificity theory from its pedestal was a new theory to take its place which would account for these new findings. In 1965, Ronald

\textsuperscript{110} Ronald Melzack, “Pain: Past, Present, and Future.” 137.
\textsuperscript{111} Ibid.
\textsuperscript{112} Ibid, 138.
\textsuperscript{113} Ibid.
Melzack and Patrick Wall formulated a new theory called the “gate control theory.” This theory proposed that a “gate-like mechanism” existed in the somatic nervous system which allowed pain signals to be “modulated before they evoke perception and response.”\textsuperscript{114} The gates could be opened or closed based on certain factors like the “relative activity in large and small peripheral fibers,” also known as bundles of nerves, and “various psychological processes such as attention and prior experience.”\textsuperscript{115} As a result, there was finally a theory that explained the communication of the transmission of pain between the periphery and the brain. The introduction of gate control theory ushered in a new era in the study of pain, finally leaving behind the theories that had reigned supreme for an entire century.

Gate control theory played a large part in the pain management movement in the United States, specifically in reinvigorating the efforts of Bonica to bring pain to the forefront of clinical medicine. In 1947, Bonica became the head of the anesthesia department at Tacoma General Hospital in Washington, where he created an informal group to test the idea of a multidisciplinary approach to pain treatment.\textsuperscript{116} The group consisted of Bonica, a neurosurgeon, a psychiatrist, an orthopedist, an internal medical specialist, and a radiologist who had all shown interest into the problem of pain.\textsuperscript{117} Their weekly or bi-weekly meetings, continuing for thirteen years, were open to the referring physician and anyone interested in the problems of

\textsuperscript{114} Ibid.
\textsuperscript{115} Ibid.
\textsuperscript{116} Isabelle Baszanger, \textit{Inventing Pain Medicine: From the Laboratory to the Clinic}. 23.
\textsuperscript{117} Ibid.
treating pain, fostering interest in pain in residents and interns at the hospital.\textsuperscript{118}

This type of collaboration differed greatly from existing medical interactions, as it required doctors to work collaboratively instead of moving patients between specialties. Most importantly, figuring out problems of complex pain disorders required physicians to grapple with problems of persistent pain that had remained unsolved. By discussing these cases, the multidisciplinary aspect of the group implied a “willingness to discuss an example of one’s failure” in the treatment.\textsuperscript{119} This approach had been missing from the study of pain for many years. As seen with the development of neurology as a specialty, when doctors failed to understand pain phenomena, they would label it a psychiatric problem, instead of acknowledging their failure or lack of knowledge to treat the problem within their specialization. By specializing medicine, many doctors had forgotten the importance of their subjects and the interconnectedness of the body.

In 1953, Bonica formally introduced the concept of pain clinics which would be devoted to effective pain management by bringing together a multidisciplinary team of specialists.\textsuperscript{120} During the same year, Bonica wrote a 1,500-page monograph called \textit{The Management of Pain}, which was devoted entirely to the study and management of pain, which was aptly nicknamed “the Bible.”\textsuperscript{121} The book presented a “concise but complete discussion of the

\textsuperscript{118} Ibid.
\textsuperscript{119} Ibid, 24.
\textsuperscript{120} Ibid, 2.
fundamental aspects of pain” in one volume. In the foreword to his first edition, Bonica noted that while there were several books that covered certain aspects of the problem of pain, there was no singular text that contained all of the necessary information that a practitioner would need. Bonica’s comments in his monograph were consistent with the more concise histories of pain in his speeches and other writings. In a way, Bonica’s “Bible” and his ensuing publications created a mythology of the history of pain that placed emphasis on the most important past medical pain theories according to Bonica, solidifying a specific narrative about the trajectory of pain theories. Despite the important role that Bonica’s work would play in developing pain management as a medical specialty, his work did not have much of an impact immediately. There was still a long way to go until Bonica could prove that pain needed more attention than physicians were giving it. In 1960, Bonica was offered the chairmanship of the Department of Anesthesiology and the position of Anesthesiologist-in-Chief at the University of Washington Medical Center, where he was in charge of developing a new major academic anesthesia program. In addition to creating this new program, Bonica organized the Multidisciplinary Pain Clinic at the University of Washington in 1961.

The importance of the multidisciplinary clinic was in the reunion of the mind and the body. To Bonica, pain was not part of just either the mind or the

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123 Ibid.
body, but instead a relationship between both. However, his radical ideas had not been widely supported throughout the medical field. Pain medicine needed to become medically validated in order to be accepted. As seen with neurology and anesthesiology, medical specialties become accepted when institutions begin to surface and educational processes and organizations legitimized the specialty in the eyes of the medical community. During Bonica’s time at Madrigan Army Hospital and Tacoma General Hospital, the study of pain was not an accredited, accepted part of medicine. However, over the next 30 years with the creation of multiple pain societies, accredited education programs and pain clinics, pain slowly but surely made its foray into the forefront of American media and medicine.
The Development of the Specialty: The 1960s and 1970s

In the late 1960’s and throughout the 1970’s, the field of pain management saw an increase in national attention with the creation of multiple organizations, meetings and clinics that were devoted to assessing and ameliorating the problem of pain in America. There were four major branches of this growth: clinical, research, education and institutions. This expansion resulted from Bonica’s work, which had previously failed to garner national attention. However, there were multiple developments that thrust pain into national attention, starting with the 1965 discovery of Gate Control Theory and Nixon’s 1972 visit to China. In this chapter, I will explore how the Pain Clinic at the University of Washington capitalized on these national developments and created a “gold standard” of clinical, research and educational practices. These practices then led to the development of diagnosis and treatment protocols, solidifying the creation of pain management as a medical specialty.

The Multidisciplinary Pain Clinic at the University of Washington

After Bonica’s experiences with minor versions of multidisciplinary pain clinics at Madrigan Army Hospital and Tacoma General Hospital, his transition to the University of Washington allowed him to build upon his dream of forming a pain clinic that would deconstruct the highly specialized legacy of pain medicine and focus holistically on patients. Bonica’s objective was to create a comprehensive multidisciplinary pain center which would
include research, teaching, and patient care.\textsuperscript{1} However, with a dearth of established practices, Bonica needed to not only develop protocols and new research, but also to persuade other doctors to view pain in the way that he did. The Multidisciplinary Pain Clinic at the University of Washington first opened in 1961, four years before the discovery of Gate Control Theory. Bonica collaborated with Lowell White, the Chairman of Neurosurgery to begin the clinic, and was soon joined by Chairmen Herb Ripley of Psychiatry, Kay Clawson of Orthopedic Surgery, Walter Stolov of Rehabilitation Medicine, Robert Parker of Radiation Oncology, John Stevenson of General Surgery, Dorothy Crowley from the School of Nursing, and later by Wilbert Fordyce of Rehabilitation Medicine. By 1965, the group grew to 15 physicians representing 8 disciplines.\textsuperscript{2}

The group built upon the foundation established by the working group at Tacoma General between 1947 and 1960. In order to be seen at the Clinic, patients had to be referred by health professionals. The types of patients that were referred to the clinics were those who could not be easily managed within one specific specialty, requiring a multidisciplinary approach.\textsuperscript{3} The patient was first assigned a managing physician who conducted an initial evaluation and then established the coordination of consultations with

\textsuperscript{1} “Pain Center: Chronology of the Development of the Pain Center,” 1982, Box 44, Folder 3, John J. Bonica Papers (Manuscript Collection 118). 1. 
\textsuperscript{2} Jane Estes, “Correspondence from Jane Estes to Hal Wingo, People Magazine,” Letter., 1977, Box 121, Folder 71, & Special Collections Division, University of California, Los Angeles. 1. 
\textsuperscript{3} “Pain Clinic University Hospital Pamphlet,” 1975, Box 44, Folder 8, John J. Bonica Papers (Manuscript collection 118). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles. 1.
doctors at the pain clinic. After the completion of the consultations and laboratory tests, the results were collected and collated by the managing physician who then decided on a diagnosis and a plan for treatment. If there was any doubt or uncertainty, the patient was seen at the Weekly Conference where all of the physicians in the clinic were able to ask them clarifying questions about their experience with pain, in addition to hearing a synopsis of the patient’s history and the clinical findings presented by the managing physician. This forum allowed doctors to have more efficient and direct communication as opposed to more traditional practices which would involve communicating through more fragmented types of communication like notes on the patient’s charts, letters and telephone conversations where details can be left out or glossed over. Furthermore, the face-to-face discussion provided an opportunity to teach and educate other doctors, interns, and residents about the complex treatment of pain.

An average patient made five to six trips to the clinic and was examined by five or six different consultants. A study in an informational pamphlet about the Clinic noted that the fewest number of clinic visits for evaluation was only four visits, while the highest number of visits ever made was fourteen. Due to the highly individualized nature of each patient, there was no one way to diagnose and treat pain patients. However, beginning in 1965, the rise of gate control theory allowed a new framework for the way that

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4 Jane Estes. 7.
5 Ibid.
6 Ibid.
7 Ibid.
8 “Pain Clinic University Hospital Pamphlet.” 4.
physicians approached and treated pain. In an interview with *People Magazine* in 1977, Bonica stated:

We don’t claim to solve every problem that is sent to us but we do help about 70% of the patients. In the majority of these, we make a correct diagnosis and if the appropriate therapy is carried out, the patient’s pain is eliminated. In others, we are able only to decrease but not completely eliminate the pain, while in still others, we teach the patient how to live with the pain.10

Bonica’s comments illustrated a fundamental change in the way that pain management specialists viewed their patients as a result of the introduction of gate control theory - the most important part of pain medicine would be teaching patients how to manage their pain since chronic pain was very difficult to cure. Professor of psychology Robert Kugelmann argued that the understanding of pain before 1950 and after 1950 differed in that all domains of a patient’s existence, as seen in the differences between mind and body, all fell within “one discourse, one set of techniques of intervention, [and] one reimbursement scheme.”11 However, while Kugelmann’s opinion can be read with a slightly negative tone, there is not necessarily a negative connotation with the solidification of a medical specialty. If anything, a singular, medically recognized multidisciplinary specialty was what Bonica was striving to achieve. A large part of this unification was due to the introduction of Gate Control Theory and how it revolutionized the way American doctors thought about pain.

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9 Ibid.
10 Jane Estes. 7.
Gate Control Theory and the Biopsychosocial Model

The introduction of gate control theory was a turning point in pain management. Melzack and Wall provided a new framework to think about pain, one which validated the multidisciplinary approach and its treatments. Gate control theory incorporated elements of previous pain theories, but ultimately stated that “pain occurs only as a result of complex interaction of afferent and efferent signals in the nervous system, all converging on the gate control mechanisms in the spinal cord.” The transmissions of nerve fibers were sent to the spinal cord transmission, or T, cells, through the gate control mechanism. This mechanism used large and small afferent fibers to inhibit or facilitate the closing or opening of the gating mechanism. When the output of
the T cells reached a certain level, it activated the action system which was defined as those “neural areas that underlie the complex sequential patterns of behavior and experience characteristic of pain.”

Pain in this model was no longer strictly anatomical or psychogenic, but instead integrated physiological and psychological causes suggesting that psychological factors like attention, past experience and emotions influence a patient’s pain response by acting on the gate control system. Compared to the Cartesian theories, gate control theory provided a connected and dynamic approach that depicts a temporal, and not spatial approach.

Gate control theory followed a biopsychosocial model of disease, which “maintains the biological, psychological, and social factors are all-important determinants of health and illness.” This medical adoption of this model, according to Kugelmann, led to the shifting of the onus from the medical focus of disease to the patient’s psychosocial existence, changing what it meant to be a patient. Modern medicine had developed to a point where infectious diseases do not claim as many lives in developed countries, with many controlled by medicine, leaving chronic diseases as the most prominent modern medical problem. As Bonica noted above, for many patients, it was difficult to cure their pain. The biopsychosocial goal therefore

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15 Robert Kugelmann. 54.
16 Robert Kugelmann. 43.
17 Robert Kugelmann. 44.
aimed not to cure, but instead to manage pain, which became an important part of multidisciplinary pain treatment.  

As the focus of the biopsychosocial model, the patient provided the key for defining and understanding pain. Kugelmann argued that since the patient was seen as the new medical object, physicians could not use the clinical gaze to point to one specific spot in the body where the sensation of pain began. A physician needed the patient to map the flowchart of the patient’s pain and fully decode the patient’s description of pain that is imperative for treatment. One major issue, however, was the fact that there did not seem to be an objective way to measure the psycho-social aspects of pain within the biopsychosocial model.

In 1971, Ronald Melzack and Warren Torgerson from McGill University created the McGill Pain Questionnaire, which is still in use today. In a 1975 article in the journal PAIN, Melzack wrote that there were severe limitations imposed by current measuring tools that did not accurately assess pain. In the article “The McGill Pain Questionnaire: From Description to Measurement,” Melzack wrote that the dolorimeter, which was an instrument to measure pain, was popular in the 1950s when Melzack was a graduate student. The dolorimeter used focused radiant heat concentrated on a participant’s hand to measure the heat intensity at which the participant says “ouch” and pulls away from the instrument, which then recorded the pain

18 Ibid.
19 Robert Kugelmann. 55.
tolerance threshold. However, Melzack highlighted that dolorimetry did not accurately measure all pains as if they were qualitatively the same and differ only in intensity forces the assumption that there was only one straightforward pain pathway from the skin to a pain center in the brain. Due to this shortcoming, Melzack and Torgerson set out to find an accurate way to measure pain.

The solution to this problem was the creation of the McGill questionnaire which has four parts. The first was a general intake form, asking medical questions about diagnosis and medications. Then, four major questions were asked: Where is your pain? What does it feel like? How does it change with time? How strong is it? After verbally talking about their pain, patients indicated the spatial distribution of their pain on drawings of the front and back of a human body, providing a second response to the first verbal question. If the pain was external or internal, the patient marked the locations as E or I respectively, or both if it was both external and internal. Part two of the questionnaire was labeled “What Does Your Pain Feel Like?” where patients were presented with a list of words to describe their present pain using only a single word in each category. The words, which were divided into 3 major classes and sixteen subclasses, describe sensory qualities, like temporal, spatial, pressure, thermal, etc., and affective qualities,

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22 Ibid.
23 Ibid.
like tension and fear; and evaluative words that expressed the overall intensity.\textsuperscript{26} In order to create a numerical value for each word, Melzack described that groups of doctors, patients and students were asked to assign intensity values to each word using a numerical scale that rated them from the least to worst pain.\textsuperscript{27} These words were picked from questionnaire data from two hundred and ninety-seven patients, resulting in the most descriptive words that pain patients actually used to describe their pain. The third part of the questionnaire evaluated a patient’s pain over time, seeking to understand the patterns of pain as well as the activities and practices that relieved or increased pain levels. Finally, the fourth part presented a numerical scale from 1 to 5 describing pain intensity, ranging from mild to excruciating.

From the questionnaire, doctors were able to obtain data based on a pain rating index of the patient’s responses. The data was a quantitative index of pain that allowed doctors to track the extent of change in pain and its intensity before and after procedures.\textsuperscript{28} In pain medicine, the McGill Pain Questionnaire initiated a language of pain which allowed patients to communicate with their physicians. Instead of struggling to figure out how to verbalize their pain, the words on the pages in front of them, in addition to the figures which highlighted the spatial distribution of pain, provided a clear methodology and vocabulary to answering to the question, “where does it hurt?”

\textsuperscript{26} Melzack. 278.
\textsuperscript{27} Ibid.
\textsuperscript{28} Melzack. 283.
With new ways to obtain and analyze information, Gate Control Theory further influenced the secondary part of a patient’s experience at the Pain Clinic— their treatment. Gate Control Theory influenced psychological treatments by suggesting that treating the psychology behind pain was imperative to treating the patient’s physical pain. The application of the biopsychosocial model forced the responsibility for pain control to shift from the physician to shared management between the patient and the physician. Psychologically, this shift was meant to give patients a sense of control and to become active participants in their treatment and management of pain. Kugelmann termed this the “new morality of biopsychosocial treatment,” which would become a prominent concept with the intersection of pain patients and public policy. New technologies, like behavior therapy, biofeedback, guided imagery and other psychosocial techniques required both the consent and the active participation of patients. To be responsible for co-managing their therapies, however, was a double-edged sword for patients. Kugelmann argued that the call for patients to be “responsible” was a call to openness. This openness was perceived as the ability of patients to not fall into patterns of maladaptive behavior, and instead to do everything in their power to think positively and get better.

With a clinical diagnostic method available to diagnose pain, the psycho-social aspects of pain were still largely uncategorized. In a 1976 letter

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31 Ibid.
to Bonica from Wilbert Fordyce at the Pain Clinic, Fordyce outlined the objectives of the Pain Data Protocol (PDP) enterprise which aimed to map the life and pain of a patient using a series of assessments and questionnaires. Fordyce specialized in using operant conditioning to treat pain, working at the Pain Clinic since 1969. Operant conditioning is a psychological model that believes that positive and negative reinforcement serve as “mechanisms through which acute pain behaviors are maintained over time and thus become chronic.”

In the letter, Fordyce outlined three objectives of creating procedural and conceptual guidelines of the behavioral analysis of pain. The first was to develop an objective, quantifiable, and descriptive system to collect and analyze information about chronic pain patients and the “interactions with treatment and the health care delivery systems.” The second objective was to create a common data pool for faculty research projects as well as to develop a database to study the characteristics of chronic pain patients. Lastly, the final objective was to create a data protocol for the use of pain evaluation and treatments to broaden the national foundation of information about chronic pain. This protocol emphasized “objective observations or patient performance reports” and not subjective ratings. The forms and questionnaires were split up into three types based on who was filling out the form. Any letter designated with an “M” would be filled out by the physician.

32 Wilbert Fordyce, “Correspondence from Wilbert Fordyce to Dr. John Bonica,” Letter., November 18, 1976, Box 44, Folder 7, John J. Bonica Papers (Manuscript collection 118). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
33 Hadjistavropoulos and Craig, Pain. 43.
These five forms consisted of the physician’s overview of the topography of the pain problem, the physician checklist of sensory and neurologic signs, non-pain related medical problem checklist, past medication and its effects, and a physician pain classification rating.\textsuperscript{35} Forms with an “I” were to be filled out by a hired interviewer in sessions with each patient.\textsuperscript{36} This general information consisted of four forms that go over history. The fourth one asked the patient to map pain sites and associate pain quality with classification. Any forms with a “P” were to be filled out by the patients. One of the most in-depth parts of the questionnaire was Card 4, also known as the Activity Form. The interviewer asked the patient about physical activity, starting with the amount they are able to lift, how long they can sit without having to stand, how long they can stand without having to sit, and how long they can walk without rest.\textsuperscript{37} The McGill Pain Questionnaire does not include this data, but I suggest it should as this information is necessary to fully understand the impact of a patient’s pain on their life. Patients were often unable to perform normal functions, like drive cars, do household chores, or work at a job, due to pain. The PDP sought to evaluate how often, if at all, patients were able to participate in daily activities. Furthermore, because Fordyce focused on operant conditioning, there was a “plan to do” check box next to these activities in addition to the “do, but less often” and “never do,” which showed the motivation and the determination of a patient

\textsuperscript{34} Wilbert Fordyce, “Correspondence from Wilbert Fordyce to Dr. John Bonica.”
\textsuperscript{35} Ibid.
\textsuperscript{36} Ibid.
\textsuperscript{37} Wilbert Fordyce, “Correspondence from Wilbert Fordyce to Dr. John Bonica.” I-3, 1.
to get better and return to normal functioning. At the end of the M-5 form, there was a “Genesis of Pain Behaviors” form, which sought to identify the percentage of the “source” of the patient’s pain. A patient could be somewhat respondent, meaning that they were “largely (or totally) controlled by body damage or underlying neuro physical factors.” This would lead physicians to discern if the patient’s pain was somatic and not psychogenic. Conversely, operant findings signaled that a patient’s pain was controlled by “direct reinforcement,” like rest, addiction, or special attention, or by “indirect reinforcement” where the pain helped the patient avoid “aversive situations.” The sum of the percentage of these three sources highlighted the extent to which the patient’s pain problem was somatic or psychogenic; however, it also reinforced the stereotype that a patient’s pain was a result of reinforced behaviors and/or depression leading to learned helplessness.

While Fordyce’s Pain Data Protocol is not widely used in modern evaluations of pain today, the legacy of understanding pain through the operant conditioning perspective has continued to influence the way that pain is understood. This model viewed chronic pain as a “set of behaviors” that persisted past normal rehabilitation time, leading to a decline in physical activity and deconditioning, increases in uses of analgesic medications, and the development of additional illness behaviors. In Chapter Three, this will be further examined in the relationship between the patient and the politics of

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38 Ibid, 3.
39 Ibid, M-5.
40 Ibid, M-5.
41 Hadjistavropoulos and Craig, Pain. 43.
insurance coverage reimbursement and Social Security Disability Insurance. For the purposes of this chapter, however, the main point is that Fordyce created a way to objectively and systematically evaluate pain behaviors in an effort to help the patient to unlearn them. As discussed earlier, Kugelmann’s idea of patient responsibility in the biopsychosocial model is salient here, as Fordyce’s protocol implied that the patient’s pain is inherently a product of their own psychology and could be fixed by unlearning persistent and maladaptive pain behavior.

Another type of psychosocial data collection, in addition to the PDP, came from the Psycho-Social Assessment. This assessment consisted of six different tests and scales that were a mix of clinical evaluations and test interpretations. The first test was the Holmes-Rayhe Schedule of Recent Events which measured how a patient’s life had changed over the previous three years.\(^{42}\) As the patient answered, the scale indicated the number of stressors that the patient had experienced. Numerical values were then assigned to these events, which indicated potential psychological stress reactions. The Zung Depression Scale tested for the presence and the degree of depression in patients.\(^{43}\) The Dudley Coping Scale measured the ability of the patient to use coping mechanisms during times of stress.\(^{44}\) The Pain and Discomfort scales indicated the degree to which how much pain and

\(^{42}\) Margot Wycoff, “Psycho-Social Assessment,” n.d., Box 44, Folder 8, John J. Bonica Papers (Manuscript collection 118). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.

\(^{43}\) Ibid.

\(^{44}\) Ibid.
discomfort the patient is feeling. These scales were self-reported, so they were subjective from patient to patient depending on that individual’s response to pain and discomfort. Then, the productivity scale measured how the patient rated their own productivity with 100 percent as the desired maximum of productivity. Finally, the Illness Behavior Questionnaire was a 62-question yes-no questionnaire that measured the intensity and presence of seven subscales: hypochondriasis, general illness behavior, psychological and somatic focusing, disease conviction and symptom preoccupation, affective inhibition and disturbance, denial of life’s problems, and irritability. The continued use of these patient surveys illustrated the entrenchment of psycho-social ideologies in pain management. Through these types of questionnaires and surveys, patients were implicated as having some, if not complete, responsibility for the presence of their pain. While the biopsychosocial model changed the trajectory of pain medicine, it was still difficult to ascertain whether that change was positive or negative. While positive for the specialty, pain patients faced the issue of bearing responsibility for their pain, whether or not it was actually theirs.

The Growing Pains of the Clinic

As pain research increased in the 1970s and the specialty grew, it became clear that some of the initial objectives of the organizations and practices of the Pain Clinic were not being achieved. Most notably, in 1982, the Pain Center re-evaluated its functions, splitting into Clinical Services and

45 Ibid.
the Pain Research Center to better deliver on Bonica’s original goals for the
pain clinic.\textsuperscript{47} A large part of this change was due to the fact that the Pain
Center rapidly grew throughout the 1980s, leading to a number of
interrelated problems. Given that Bonica’s initial multidisciplinary idea was
predicated on the involvement of all physicians at weekly meetings,
physicians found that there was not enough time to be devoted to the “team
effort” that was “critical to the success of the operation.”\textsuperscript{48} The
multidisciplinary effort was also undermined by the development of other
pain programs, like the Operant Conditioning Center, the Lower Back Pain
Clinic and a couple other clinics, which took funding away from the primary
Pain Clinic.\textsuperscript{49} While there was communication between the Pain Clinic and
these other clinics, their presence wholly undermined the multidisciplinary
focus of the clinic as it separated the treatment of chronic pain into specific
body parts and treatment styles. Secondly, there was a lack of support by the
University hospital to provide enough space for outpatient clinics and
inpatient beds, making it impossible to accept more than 20 to 25 percent of
the referred patients.\textsuperscript{50} The third issue was focused on the allocation of time
and funds for research. Over the previous 21 years, extensive data had been
accumulated from thousands of patients who had visited the clinics, all of

\textsuperscript{46} Ibid.
\textsuperscript{47} “Pain Center Advisory Committee Minutes,” January 6, 1982, Box 44, Folder 3, John J.
Bonica Papers (Manuscript collection 118). Louise M. Darling Biomedical Library, History &
Special Collections Division, University of California, Los Angeles. 1.
\textsuperscript{48} Ibid, 2.
\textsuperscript{49} Ibid.
\textsuperscript{50} Ibid.
which could be used for education and further data-mining research. In addition to this, there was inadequate coordination or collaboration between the University of Washington faculty that was conducting pain research in laboratories and the clinical physicians who wanted to do clinical research.

As a result of these evaluations of the Pain Clinic and the Pain program, the Pain Center Advisory Committee recommended that the Pain Center be split into two sections: the Pain Research Center and the Clinical Services. The Pain Research Center in 1982 hosted fourteen principal investigators and collaborators on eighteen pain research projects. These projects were supported with $1.2 million annually by the NIH and nonfederal sources. By the early 1980s, pain clinics and research centers were a necessary and thriving part of pain management, which was bolstered by an increase in media attention towards the subject of pain as well as the creation of several important pain management organizations.

Pain in the Forefront of 1970s Media Coverage

With a significant increase in the study of pain after the introduction of gate control theory, the problem of pain caught national attention in the 1970s. Growing interest in the use of acupuncture was reflected in articles in the New York Times and in the journal Science in 1971. Outside of “unofficial use in the Chinese sections of New York, San Francisco, and other cities that have Oriental communities,” the practice of acupuncture as a medical therapy

51 Ibid.
52 Ibid.
53 Ibid, 3.
54 Ibid, 5.
had little impact in the United States.\textsuperscript{55} Nixon’s 1972 visit to China also spurred discussions of acupuncture in treating pain as Americans became curious about “all things Chinese.”\textsuperscript{56} Major General Walter R. Tkach wrote an article in \textit{Readers Digest} called “I Watched Acupuncture Work,” which stirred up more media attention towards acupuncture.\textsuperscript{57} Americans were fascinated with this new therapeutic treatment, leading the NIH to award grants for the study of acupuncture. Bonica was the Chairman of the Ad Hoc Committee on Acupuncture at the NIH. After a three week trip to China, Bonica wrote a report in the \textit{Journal of American Medicine} to review the use of therapeutic acupuncture in China, and in turn to summarize the use of acupuncture in the United States and to offer conclusions and recommendations that will “help the physician place this technique in proper perspective.”\textsuperscript{58}

Chinese acupuncture lacked the clinical data that Western medicine needed to legitimize treatments. Bonica focused on the fact that no controlled clinical trials had been done nor was there consistent record keeping, and in some cases there were no records at all. Acupuncture therapy was an old treatment for pain and Bonica noted that it could be “highly effective” in relieving pain.\textsuperscript{59} Yet without any clinical trials or records, any patient

\textsuperscript{56} Ibid.
\textsuperscript{57} Ibid.
\textsuperscript{58} J. J. Bonica, “Therapeutic Acupuncture in the People’s Republic of China Implications for American Medicine,” 1551.
\textsuperscript{59} Bonica. “Therapeutic Acupuncture in the People’s Republic of China Implications for American Medicine,” 1547.
outcomes were purely anecdotal in his mind. The reason for the lack of clinical trials, however, was not due to an ignorance of Western medicine. There were integrated hospitals which used acupuncture in conjunction with analgesics, radiation therapy, and various other Western techniques and drugs. Younger and better educated acupuncturists, in Bonica’s words, thought that clinical trials were unethical. A patient in a control group would therefore be deprived of the “benefits of a well-established, long-tested therapeutic modality.” To Bonica, this rhetoric was unacceptable, especially in the wake of profound American interest in acupuncture therapy. Much like pain medicine, acupuncture needed to be clinically tested to become a legitimized part of treatment. With the results of clinical studies, patients interested in acupuncture would know exactly what it could and could not do, instead of perpetuating anecdotal misconceptions among the American public and physicians. Furthermore, Bonica worried about untrained and unqualified people capitalizing on the interest in acupuncture, which could harm patients keen on finding a miraculous cure for their pain.

Bonica did not doubt the effectiveness of acupuncture. In fact, in the coming decade, Bonica would welcome acupuncturists into his organizations and into his arsenal of treatments at the Pain Clinic. However, like the pain management specialty itself, acupuncture needed to be “repackaged in a scientific perspective” in order to take its place among the legitimized

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60 Ibid.
61 Ibid.
62 Bonica, 1549.
63 Bonica, 1549.
64 Bonica, 1546.
therapeutic techniques of pain medicine.\textsuperscript{65} The promises of acupuncture as a treatment for pain, however, had already been disseminated to the American public and it quickly became an exciting and ground-breaking field of study.

Increased media attention towards pain was not limited to acupuncture. In 1972, NBC ran a documentary called “Pain! Where Does it Hurt Most?” In a collection of news clippings found in Bonica’s archive, it is clear that the audience for the documentary was far-reaching, with Bonica saving clippings from Baltimore, Milwaukee, New York, Indianapolis, Memphis, Oakland, and Chicago. Lucy Jarvis, the producer of the documentary, filmed the special at pain research clinics across the US, including Bonica’s. Her hope was to “show in a personal way that pain, of and by itself, can be responsible for millions of lost man-hours, and that if pain could be controlled, produced or eliminated, many illnesses would not be debilitating.”\textsuperscript{66} For years, Bonica had espoused that pain was a national and economic health problem. The 1970s provided a glimpse of hope that Americans would start taking the epidemic of pain seriously.

With more attention focused on both chronic and acute pain, 1973 proved to be a pivotal year in bringing together the medical world of pain. Bonica had been keeping tabs on important pain-related clinical and basic science articles and wanted to create a meeting where clinicians and basic scientists interacted. This meeting came to fruition as the International


\textsuperscript{66} \textit{“NBC News Documentary on Pain and New Ways In Which It Is Treated Will Be Presented on NBC Television Network in Match.”} January 19, 1972, Box 49, Folder 41, John J. Bonica
Symposium on Pain, held in Issaquah, Washington, from May 21 to 26, 1973. Bonica secured funding from the National Institutes of Health (NIH), which had taken an interest in pain research through the National Institute of General Medical Sciences (NIGMS) and the National Institute of Dental Research (NIDR). Bonica had denoted 102 speakers as key people who were at the conference along with 237 other delegates representing 13 countries. Lasting for five and a half days, the symposium saw the presentations of eighty-nine formal papers, with discussions held after each session. At the end of the day, participants who were interested in specific subjects met in groups for questions, comments, and informal discussions.67 The paper presentations were further organized into specific days. For the first three days, there were presentations of basic and clinical studies on the mechanisms of pain. For the remaining two and a half days, presentations focused on the “neuroanatomic, neurophysiologic, and biochemical substrates of pain,” as well as the physiopathology of pain.68

All of the presentations and discussions were summarized and preserved in a monograph volume, edited by Bonica, ensuring that interested physicians could still take part in the changing field of the study of pain even if they had not attended. In the foreword to this volume, Ronald Melzack wrote that “the field of pain research and theory, which lay conceptually stagnant for almost a century, has suddenly become alive—full of new

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68 Ibid.
controversy and renewed fascination.”\textsuperscript{69} The 1970s saw the genesis of the formalized study of pain, as the increased research breakthroughs led to more scientific and medical communication and the creation of a pain community. To Bonica and Melzack, the Symposium and the creation of the volume represented a “milestone in pain research, theory, and therapy” fulfilling a “long-standing need for a comprehensive summary that covers the full gamut of problems in the field of pain.”\textsuperscript{70} With this new field, the culmination of the symposium highlighted the sheer excitement that surrounded a rapidly changing field. For the first time in a long time, pain was not stuck in the world of specificity theory, but instead was now an exciting new field coming together to solve the puzzle of human pain. Melzack wrote that the solution to this puzzle of pain was “compelled by the human desire to relieve pain and suffering, for those who will recover and go on to lead useful lives, and for those whose lives are coming to an end.”\textsuperscript{71} The focus of this field was ultimately focused on the patients. This new biopsychosocial model of gate control theory revolutionized an immobile field to redefine its focus on the patient and the body, not one or the other.

The Symposium was not only an opportunity to truly create the pain community that Bonica had endeavored to create, but it also aligned the medical community in a way that had only existed as fragments before. In the preface to the symposium volume, Bonica wrote that there are two categories

\textsuperscript{70} Ronald Melzack. V.
\textsuperscript{71} Ibid.
that “seriously detract from our biomedical scientific achievements.”\textsuperscript{72} The first was that there was a void in knowledge of the mechanisms and physiology of pain that were imperative to providing proper therapy.\textsuperscript{73} While there had been an influx of new information, Bonica noted that little to no attention had been paid to actually apply the new knowledge and technology to the study of chronic pain.\textsuperscript{74} Furthermore, the second issue highlighted the lack of organized education of the management of pain to medical students and physicians.\textsuperscript{75} Without education, Bonica argued that this would continue to facilitate the “progressive trend towards specialization which is conducive to each specialist viewing pain in a very narrow, tubular fashion.”\textsuperscript{76} Without education and communication, there was no way to implement effective pain management care for patients.

In addition to these two major issues, Bonica raised the point that there was no international standard terminology for pain syndromes, no national and/or international pain databases or repositories, nor any epidemiologic data on pain as a disease state.\textsuperscript{77} In order to remedy these issues, there needed to be major efforts to create consistent communication between basic scientists and clinicians in order to advance the field and apply new information to clinical practices. The symposium provided an opportunity for these groups to mingle and exchange techniques and information that had previously been arbitrarily separated into research and

\textsuperscript{72} John J. Bonica, “Preface.” Vii.
\textsuperscript{73} John J. Bonica. V.
\textsuperscript{74} Ibid.
\textsuperscript{75} Ibid.
\textsuperscript{76} Ibid, Viii.
clinical work. Bonica noted that multidisciplinary pain clinics were an important and recent development which strove to connect basic scientists and clinicians in research, teaching, and patient care.\textsuperscript{78} However, the symposium provided a larger scale dissemination of information and techniques over a short period of time. With the creation of the volume of papers and discussions that extended the reach of the symposium, increased communication and collaboration inside of the study and treatment of pain seemed like a reasonable and achievable goal.

\textbf{The International Association for the Study of Pain}

At the end of the symposium, there was unanimous approval to start a journal dedicated to the field of pain.\textsuperscript{79} In addition to the journal, an international association would also be created to help support the journal and advance the study of pain.\textsuperscript{80} One of the first suggestions for a name was the “World Association for the Study of Pain,” with the acronym “WASP.”\textsuperscript{81} However, as Louisa Jones, who organized the symposium and would become the Executive Secretary of this organization, recounted, the acronym “WASP” had “another meaning stemming from the early days of the country that is not always positive: ‘White Anglo-Saxon Protestant.’”\textsuperscript{82} This was how “International” was substituted, leading to the official creation of the International Association for the Study of Pain. The establishment of the IASP
was not just a milestone in terms of creating the organization, but also for creating a future as well.

As Executive Secretary Louisa Jones recalled, the IASP was created to “stimulate progress in the study of pain mechanisms and management of chronic pain.” Furthermore, there would be international symposia and meetings so that the organization could facilitate the discussion and publications of new research and management practices. The IASP would be the impetus that drove standardization of the specialty. One of the objectives that Bonica outlined in the volume was that the IASP would “recommend standards relating to use of drugs, appliances, and other procedures in the treatment of pain.” With standardization, organizations, and communications, pain management was beginning to become more institutionally recognized, just as neurology and anesthesiology had done in the nineteenth and early twentieth centuries. The only things that were missing were consistent publications and a professional organization.

The creation of the journal *PAIN* was unanimously approved at the Symposium. The IASP would support the journal and further advance and disseminate information on the study of pain and its treatment. The journal was published quarterly with 100 pages per issue through Elsevier Science Publishers with the first issue published in March 1975. The first issue coincided with the first IASP Congress in Florence, Italy, in 1975. As the IASP

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82 Ibid.
83 John J. Bonica, “Preface.” Viii.
84 Ibid.
86 Louisa E. Jones. 5.
took shape administratively in 1974 with the identification of a Board of Directors and the publication of the first IASP newsletter, the membership began to grow. Executive Secretary Louisa Jones wrote that by the end of 1974, IASP had 652 members from 42 countries. In the first two years of its creation, the IASP focused on the journal, preparations for the first IASP congress and increasing membership. Support for the journal was built into membership, as it was a requirement in the publishing contract that all members of IASP receive the journal. Jones wrote that the last “founding member” of IASP was enrolled at the end of February 1975, and by March, IASP had grown to 975 members from 49 different countries.

The First World Congress of Pain in September of 1975 was a milestone for the IASP and for the worldwide pain community. Over 1,100 scientists, physicians and health professionals attended the Congress representing 75 disciplines from 35 countries. As Bonica had done in 1973, a monograph of the proceedings at the Congress was created to disseminate new information and continue to enhance communication and education to those who did not attend the conference. In the preface to this volume, Bonica wrote that the 1975 World Congress was the “largest and most extensive multidisciplinary and interdisciplinary meeting of professional people...that has ever been

87 Ibid.
88 Louisa E. Jones. 7.
89 Ibid.
assembled anywhere.”91 Bonica’s dream of a multidisciplinary specialty was finally actualized, and this was only the beginning.

The IASP filled a much-needed gap of creating standards in the specialty. In 1976, a Subcommittee on Taxonomy published a list of definitions of pain terms in PAIN, subtitling the article as “the first step towards codifying the terminology of the study and treatment of pain.”92 By developing and implementing the taxonomy, the IASP was fulfilling what Bonica thought of as one of the most urgent and important objectives of the organization.93 Furthermore, the IASP published an official definition of pain in 1979. Pain was defined as an “unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.”94 However, attached to the definition was a note declaring that pain was subjective and that there was no way to differentiate or distinguish psychological pain from tissue damage. If patients themselves regarded their experience as pain and reported it as such, then their pain should be accepted.95 This definition therefore “avoids tying pain to the stimulus,” cementing the biopsychosocial model of gate control theory into clinical practice.96 The IASP was actively continuing Bonica’s dream of creating a specialty devoted to pain. In the coming two decades, more

91 Ibid.
93 Ibid.
95 Ibid.
96 Ibid.
organizations would be founded to continue and expand upon the flourishing pain management specialty.

One example of these organizations was the American Pain Society (APS) which was incorporated in 1978, stemming from the merger of the Eastern and Western Regional chapters of the IASP.97 Boasting 510 Charter members and 200 regular members, the organization’s mission statement included the “promotion of education, training and research in pain,” like the IASP.98 However, Dr. B. Berthold Wolff, the President of the Society, in 1979 expanded on his view of the Society’s proper mission:

It became obvious that the general public— the consumer— should have an organization which could speak authoritatively on pain control, management and research. In addition, such an organization could both protect the consumer from charlatanism, fraud and incompetence by establishing guidelines for pain clinics and centers, and stimulate federal, state and local authorities to start providing support for pain services and research.99

It is clear that the APS had its sights set on much more than just education and research in the medical world. While Bonica’s ideation of a pain specialty included working with and being responsive to the National Institutes of Health, Wolff’s comments laid the foundation for a major change in the focus of the organizations that were founded during the rise of pain management. In addition to the growth of the pain management medical specialty and its validation within the physician community, their new objectives would

97 “Program: Pain Trends in Research and Management Seminar for Science Writers,” April 17, 1979, Box 62, Folder 55, John J. Bonica Papers (Manuscript collection 118). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
98 Ibid.
99 Ibid.
include entry into American politics to advocate for their patients and their specialty and a leading role in educating the American public about pain.
The Politics of Pain

Pain management moved from being a fledgling specialty in the 1970’s and 1980’s into the realm of politics as society struggled to define pain in relation to the welfare state and the rise of disability politics. As Keith Wailoo noted in *Pain: A Political History*, the field of pain management is more than just a medical entity; it is a social and political one as well.¹ The entry of the American Pain Society and other advocacy organizations into politics was not a sudden occurrence. The rise of federally funded programs like Medicaid, Medicare, and Social Security Disability Insurance politicized pain and its treatment, leading pain physician groups to become politically active in order to bring pain to the forefront of American public health issues. This politicization of pain exposed liberal and conservative conceptions of pain which viewed chronic pain as a dichotomy of “true” pain versus “feigned” pain.² The 1980s provided the first entrance into politics for the American Pain Society (APS) and the American Academy of Pain Management (AAPManagement), allowing them to stay within their traditional roles as physicians and experts supporting pain research, the reform of Social Security Disability insurance, and the Patient Self-Determination Act. During this time, the pain management organizations took further steps to institutionally validate the specialty by creating accreditation processes and educational programs. This time period played a crucial role in the development of the specialty because the 1980s illustrated gaps in knowledge.

¹ Keith Wailoo, *Pain: A Political History* (Baltimore: Johns Hopkins University Press, 2014). 75-
about chronic pain and its treatment. By becoming institutionally validated, the pain management specialty sought to bridge the gap between medical and political understandings of pain.

**Social Security Disability Insurance and the Liberalization of Chronic Pain**

President Dwight D. Eisenhower signed Social Security Disability Insurance into law in 1956, implementing cash benefits for workers aged between 50 and 64 who met the requirements and for disabled adults whose disability began before the age of 18 and were dependents of deceased beneficiaries or dependents of existing beneficiaries of Social Security Benefits.³ Disability was defined as the “inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment which can be expected to result in death or to be of long-continued and indefinite duration.”⁴ The 1956 legislation also established a “disability trust fund” that was different from old age and survivors funds which would provide benefits for disabled workers.⁵

Much like the goal of multidisciplinary pain clinics, the goal of SSDI was to rehabilitate individuals “into productive activity,” which loosely translated to being gainfully employed and a functioning member of society.⁶ In this piece of legislation, disability determinations were made by state agencies rather than the Social Security Administration (SSA) due to

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² Wailoo, *Pain: A Political History*. 100.
⁴ Ibid.
⁵ Ibid.
Congressional belief that states would be better equipped to rehabilitate recipients because the state “administered vocational rehabilitation agencies.” The states, however, were overwhelmed with applications as more than 800,000 people had been referred to state vocational agencies by June of 1958. Out of the 95,000 individuals who were selected for additional consideration, only 550 beneficiaries, 0.2 percent of the beneficiary population, were considered “successfully rehabilitated” by the SSA in 1959. To relieve the states of this administrative pressure, the SSA revised their procedures so that only “motivated applicants” received services. This distinction between unmotivated and motivated applicants was rooted in the desire to increase rehabilitation results in beneficiaries. The SSA defined unmotivated applicants as individuals who were “older than 50, bedridden, institutionalized, or mentally ill with a negative prognosis or who had an impairment that was worsening.” While the efficacy of the administrative process was increased, the number of successful rehabilitations remained low. In the 1963 fiscal year, state vocational rehabilitation agencies accepted 48,000 people, but the number of successfully rehabilitated persons was only 5,600, or 0.7 percent of the beneficiaries. By 1967, the number of

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6 Ibid.
7 Ibid.
8 Ibid.
9 Ibid.
10 Ibid.
11 Ibid.
12 Ibid.
rehabilitated beneficiaries rose to 14,500, or 1.2 percent of the beneficiary population.\textsuperscript{13}

Over the course of the 1960’s and 1970’s, multiple amendments expanded and further defined the reach of SSDI. In 1960, Congress abolished the age requirements for eligibility and introduced a trial work period.\textsuperscript{14} The trial period consisted of a 9-month trial during which the beneficiary could test their ability to work without losing their benefits, which was a different attempt at achieving rehabilitation.\textsuperscript{15} In the 1960 fiscal year, the disability insurance program paid $533 million in benefits to 455,000 disabled workers.\textsuperscript{16}

In 1965, the Amendments re-defined disability as an “impairment that could be expected to last for a period of 12 months or longer,” rather than a “long-continued and indefinite duration.”\textsuperscript{17} To some politicians, this “liberalized” the definition of disability. However, this liberalization was a result of changing economic and demographic trends. Social Security Disability Insurance was developed when a large proportion of jobs in America were manufacturing jobs that required physical labor.\textsuperscript{18} With the decline of industrial jobs and the increase of largely sedentary white-collar

\begin{footnotes}
\item[13] Ibid.
\item[14] Ibid.
\end{footnotes}
jobs, the definition of disability had to adapt as the workplace environment changed.\textsuperscript{19} After all, SSDI dealt specifically with work disabilities which were determined by the individual’s ability to be gainfully employed, even in a rapidly changing economy.

However, as seen in the case of \textit{Page v. Celebrezze}, which began in 1959 and ended in 1963, a major issue that the SSA faced was distinguishing true pain from fraudulent pain. The Department of Health, Education and Welfare (HEW) secretary during President John F. Kennedy’s term was Anthony Celebrezze. He called people who applied for government handouts through deceit and fraud “chiselers.”\textsuperscript{20} In 1959, Rosie Page was a packer at a Texas manufacturing plant who began to feel stiffness and aching in her hands and neck. She quit her work soon afterwards and filed for SSDI claiming to be in “extreme pain and extraordinarily nervous as well.”\textsuperscript{21} However, HEW questioned the legitimacy of Page’s complaint. While she had been diagnosed with osteoarthritis with significant rheumatoid arthritis in both hands, she also complained of back pain that disabled her so much that she could not complete household tasks or climb stairs.\textsuperscript{22} Despite her complaint of back pain, HEW examiners could not find evidence confirming it. Further examinations brought mixed opinions. One examiner believed Page, noting that she was not a fraud due to the way that she moved as she

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20 Ibid, 59.
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21 Ibid, 57.
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22 Ibid, 60.
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walked unsteadily with assistance and had limited range of motion in her neck and shoulders.\textsuperscript{23} However, other examiners used Page’s gender to create what Wailoo called a “damning analysis,” dismissing her pain as a “severe anxiety state with conversion hysteria.”\textsuperscript{24} Another examiner also offered a psychiatric diagnosis, insisting that Page’s pain complaint had a “genesis in the woman’s hostile, defensive reaction to being challenged...based on her belief that she was being deprived of disability compensation.”\textsuperscript{25} Due to these reasons, HEW rejected Page’s claim for SSDI.

Page then took her case into the federal courts to be tried before Judge John R. Brown, who was a Republican appointed by Eisenhower. Brown ruled that the lack of objective clinical and lab findings were not grounds for dismissal, judging that “if the pain is real to the patient... the disability entitles the person to the statutory benefits even though the cause of such pain cannot be demonstrated.”\textsuperscript{26} Brown’s 1963 decision introduced the revolutionary and highly controversial belief that subjective complaints of pain were “real and deserving of compensation,” establishing the liberal (and Democratic) pain standard in America.\textsuperscript{27} If pain was real to the patient, that pain could become grounds for entitlement to compassion and program benefits, including financial support. Alternatively, the conservative pain standard supported “medically validated pain” in an effort to counteract the

\textsuperscript{23} Ibid.
\textsuperscript{24} Ibid.
\textsuperscript{25} Ibid.
\textsuperscript{26} Ibid, 62.
\textsuperscript{27} Ibid.
claim that liberals alone spoke for people in pain.\textsuperscript{28} This conservative standard focused on differentiating between “true” pain and “feigned suffering,” defining pain fraud as deceit by people falsely claiming to be in pain.\textsuperscript{29}

Wailoo focused on Page’s case as an important turning point in the liberalization of pain in the U.S. However, the landmark importance to Wailoo of Page’s case ruling was overshadowed by the fact that this case did not make national headlines. In fact, no newspapers reported on the \textit{Page v. Celebrezze} case at all. The only records of it are in the case proceedings available to the public.\textsuperscript{30} Despite this, Page’s individual experience mirrored hundreds of other disability cases that were tried by HEW at this time. In 1965, HEW found that many of the cases that they had rejected were being taken to court where the HEW Secretary’s decisions were reversed in a significant number of cases.\textsuperscript{31} With these rulings, Wailoo argued, came a “sweeping liberal expansion” as claims grew and the disability program increased in size.\textsuperscript{32}

In 1967, a revision of the definition of disability under the Social Security Act clarified that a person should be unable to do not only their previous work, but also, with consideration to their age, education and experience, fail to be able to complete any other work that “exists in the national economy, whether or not a vacancy existed or the person would be

\textsuperscript{28} Ibid, 124.
\textsuperscript{29} Ibid, 100.
\textsuperscript{31} Wailoo. \textit{Pain: A Political History}. 63.
hired to do the job.” This definition responded to the concern that the previous definition may have led to more allowances in accepting claims than had initially been anticipated. While claimants of SSDI already were under intense scrutiny to prove the legitimacy of their pain, the fear that claimants were gaming the system ran rampant, leading to the revisiting of definitions in an effort to find true disabled workers in need. The low rehabilitation statistics proved a point about chronic pain that the multidisciplinary pain world would increasingly come to know over the course of the 1960’s and 1970’s. Sometimes all physicians could do for their patients was teach them how to live with their pain. If rehabilitation was not achievable for many SSDI recipients, was the government truly responsible for taking care of them?

Keith Wailoo argued that the increasing liberalization of government expansion and responsibility was to achieve the “goal of relieving pain in society,” allowing pain and policy to commingle. With an increase in Social Security claims throughout the 1960s and 1970s, the liberalization of pain and disability signaled that the government was increasingly involved in the lives of Americans in pain, playing an active role in their pain management, treatment and recovery. By 1970, there were 1.5 million workers and 1.2 million dependents receiving $3 billion in total benefits. Between 1970 and 1980, the number of beneficiaries grew by 75 percent to 4.7 million

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32 Ibid.
33 John R. Kearney, “Social Security and the ‘D’ in OASDI.”
34 “Disability History Museum--A History Of The Social Security Disability Programs.”
35 Wailoo, Pain: A Political History, 2.
36 Pear and Times, “Fairness of Reagan’s Cutoffs of Disability Aid Questioned.”
beneficiaries receiving $15.3 billion in benefits.\textsuperscript{37} In response to this five-fold growth in benefits, Congress amended the law to require “periodic review” of all disability cases officially starting in January 1982.\textsuperscript{38} People with “non-permanent” disabilities would have their cases reviewed every three years, and those with “permanent” disabilities would have their claims reviewed every five to seven years.\textsuperscript{39}

Under the Reagan administration, however, the focus of these reviews turned to minimizing pain fraud. Richard Schweiker, the Secretary of the federal Department of Health and Human Services, oversaw the purge of over half a million people from the disability rolls in an effort to “weed out ineligibles” starting in March of 1981, 10 months earlier than the initial start date.\textsuperscript{40} Wailoo argues that Reagan’s “war on pain fraud” was actually a policy response to the rise of disability benefits, Medicare, and the “growth of the welfare state organized around misguided compassion.”\textsuperscript{41} Under the new law, the government reviewed 565,000 cases in 1982. Between October 1981 and May 1982, the Reagan Administration ended disability benefits for more than 106,000 families.\textsuperscript{42} In addition to the increase in expenditures, Wailoo argued that the Reagan administration’s purging of the rolls also cemented the greater conception that liberalized policies had created a system of “taxpayer-financed government” disability benefits which “encouraged a culture of

\textsuperscript{37} Ibid.
\textsuperscript{38} Pear and Times.
\textsuperscript{39} Ibid.
\textsuperscript{40} Wailoo, \textit{Pain: A Political History}. 3.
\textsuperscript{41} Ibid.
\textsuperscript{42} Pear and Times, “Fairness of Reagan’s Cutoffs of Disability Aid Questioned.”
complaint and easy relief.” Conservatives argued that liberals indulged Americans to come forward with their pain, leading them to feel entitled to disability benefits. In an effort to ameliorate this, Robert C. Cohen, an employee of the SSA for 17 years and the director of the state agency in Wisconsin, said that the current attitude towards claims, and especially mental disability claims, was “deny, deny, deny.” Social Security officials encouraged state agencies to deny “what were and still are meritorious disability claims,” according to administrative law judge Ainsworth H. Brown. Of the cases that were denied, 55 percent of all appeals in 1981 were ruled in favor of the claimants.

In these appeals, patients needed experts to judge their ability to work and evaluate the legitimacy of their pain. Wailoo argued that drawing in experts into the legal arena of judging pain and disability was the development of the “slow expansion of a bureaucracy of relief spanning the 1960s’ and 1970’s.” This brought back the age-old question: whose pain was real? With these hearings, the Social Security Administration proclaimed that in order to receive disability benefits, a claimant must be “unable to do any kind of work,” regardless of whether they had any kind of experience or if there were any jobs available. The biopsychosocial model pushed the patient into the forefront of their own care, but in the case of politicized pain and

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44 Pear and Times, “Fairness of Reagan’s Cutoffs of Disability Aid Questioned.”
45 Ibid.
46 Ibid.
47 Wailoo. *Pain: A Political History*. 64.
SSDI, the patient’s voice was not a source of legitimacy. Instead, lawyers brought in doctors, like John Bonica, to be the experts in Social Security Disability Insurance hearings. Pain management doctors were the “gatekeepers to relief,” judging “true and feigned pain...and helping governments to navigate these expanding problems of relief.” Furthermore, conservatives harped on the idea that people claiming to be in disabling pain “embodied the problems of liberalism,” with an inherent need for welfare dependence, a refusal to work and prolonged malingering, as well as “extreme social indulgence.” A pain patient could no longer have their pain assessed for disability claims without being inherently politicized, and the physicians who treated them also engaged in the politicization of pain.

Stephen Brena, a colleague of Bonica’s who built a pain clinic in Atlanta, emerged as a conservative voice cutting through the liberalized relief system. In his writings, he argued that many patients at his clinic exhibited “learned helplessness,” a psychological term created in the 1970s. Learned helplessness stated that individuals lacked “behavioral control over environmental events, which, in turn, undermines the motivation to make changes or attempt to alter the situation.” Brena argued that people who were in pain tended to give up self-reliance, and therefore lost the ability to cope and to control their lives. Many patients, he wrote, “float miserably from doctors’ to attorneys’ offices with no real understanding of the needs for and

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results of such visits.”52 Brena saw this problem, which he called the “learned pain syndrome,” as the result of society creating new forms of dependent behavior which fostered welfare.53 In Brena’s work, he found that pain patients who fixated on their pain and had pending disability claims reported higher subjected pain and longer persisting pain even after being medicated.54 Patients who were not preoccupied by their pain and did not have active “stakes in the disability system” reported lower subjective pain.55 The conclusions of the study found that pain patients who lacked any pending disability claim, lacked a spouse or any type of support system and exhibited what Brena categorized as “low pain behavior” had a better response to pain medications.56 Conservatives devoured this rhetoric as it equated pain sufferers to “malingers,” a term used to describe the “conscious and deliberate feigning of an illness or disability for gain,” marked by the “voluntary production and presentation of false or grossly exaggerated physical or mental symptoms” in pursuit of a financial reward or the avoidance of work.57 Brena’s opinion was a minority opinion in the medical pain world, but his work conveniently played into the narrative of pain fraud, malingerers, and the liberal encouragement of pain that conservatives believed in the 1980s.

53 Wailoo, Pain: A Political History, 95.
55 Ibid.
56 Ibid.
Between 1981 and 1984, more than 200,000 people were stripped of their SSDI eligibility, leading to the proposal of the Social Security Disability Benefits Reform Act of 1984 by Health and Human Services Secretary Margaret Heckler. Congressional deliberations prior to the introduction of the Benefits Reform Act highlighted multiple issues with how the Social Security Administration determined disability. Some members of Congress argued that Federal courts were highly influential in defining various pain standards in the disability program. These decisions, however, varied greatly from circuit to circuit. Other members believed that court pain standards were “improper and beyond the intent of Congress,” while others argued that the SSA had been “too restrictive in its interpretation of how to evaluate pain.” No matter what members individually believed, there was a consensus that Congress needed to authorize a “statutory standard for the evaluation of pain to apply to all disability decisions during the period in which SSA policy could be evaluated in the light of adjudicative experience and current medical knowledge.” Section 3 of the 1984 Act also required the Secretary of HHS to appoint a Commission in consultation with the National Academy of Sciences (NAS) to make recommendations on how pain should be evaluated as a disability in Social Security programs.

In 1984, Patricia M. Owens, the Associate Commissioner for Disability at the Department of Health and Human Services, wrote a letter to APS

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60 Ibid, 13.
member Dr. Donglin M. Long thanking him for working on the ad hoc committee workgroup “Pain: A Factor in Determining Disability.” The letter indicated that there was previous collaboration between pain management physicians in the APS and HHS. Owens noted that the workgroup was no longer necessary, as the Benefits Reform Act included the provision for creating a Commission on the Evaluation of Pain.62 The Commission was tasked with preparing specific policy recommendations for the SSA regarding the evaluation of pain.63 By law, the Commission consisted of at least 12 members who represented the fields pain management, law, administration of disability insurance programs, and other fields of relevant interest.64 The twenty person Commission included multiple APS members: Fordyce, Stephen Brena, Richard Black, Harold Carron, and Kathleen Foley.65

In a June 3, 1985, letter to Fordyce, Kenneth L. Casey, the President of the APS, informed him that Long has requested to hold a meeting in Chicago to construct a recommendation for the Commission which would function as the “official input” of the American Pain Society to the SSA through the liaison committee.66 The issue was that the Commission had created a parallel

61 Ibid.
62 Patricia M. Owens, “Correspondence from Patricia M Owens, Associate Commissioner for Disability, Department of Health and Human Services, to Dr. Donlin Long,” December 7, 1984, Box 1, Folder 21, American Pain Society records (Manuscript collection 123) Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
64 Ibid.
65 Ibid.
66 Kenneth Casey M.D., “Correspondence from Kenneth Casey to Wilbert E. Fordyce,” June 3, 1985, Box 1, Folder 21, American Pain Society records (Manuscript collection 123) Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
government liaison committee “largely but not entirely” composed of APS members, of which only one (Fordyce) happened to also be on the Government Liaison Committee as well. Casey did not see this as a problem, arguing that this cross-membership was acceptable as long as there was solid communication between the members of the Commission and the Government Liaison Committee. Furthermore, Casey noted that it seemed to be “a desirable state of affairs” to have more APS members who were appointed to advisory panels to be able to participate freely in the deliberations of the APS Governmental Liaison Committee.\footnote{Ibid. 2.} In a letter three days later to Long, Fordyce proposed that the functions of the APS’s Governmental Liaison Committee should be reconsidered. Instead of the Committee preparing recommendations for the Commission, it should “gear itself to react to whatever recommendations the Commission may come up with.”\footnote{Wilbert E. Fordyce, Ph.D., “Wilbert Fordyce to Donlin M. Long.”} By doing this, the Governmental Liaison Committee would not be repeating the work of the Commission, but instead creating a public and open dialogue reacting to the guidelines. The APS therefore decided as an organization to wait and respond to the guidelines after they were released.

The guidelines of the Commission were published in a report in 1987, clarifying many of the divisive issues regarding pain and disability. The Commission defined pain, noting that there was a difference between acute and chronic pain that was important to consider with the evaluation of chronic pain in disability claims. In this document, they recognized chronic
pain syndrome, where pain lasted past the expected healing time and lacked “objective laboratory and clinical evidence of physical impairment which could reasonably cause the reported pain.”69 This recognition was important, as Rosie Page’s case was a textbook case of chronic pain syndrome that lacked clinical evidence. The Commission denoted that there was a difference between claimants with chronic pain and those with chronic pain syndrome, both of which posed problems within the SSA due to a lack of “systematic evaluation approach to such claimants” and the complexity of evaluating subjective experiences of pain.70 In an effort to clarify this, the Commission created four groups of chronic pain claimants: a) chronic pain syndrome (i.e. chronic pain, inability to cope, insufficiently documented impairment) not covered by current law, b) chronic pain (competent coping, insufficiently documented impairment) also not covered by current law, c) chronic pain (inability to cope, sufficiently documented impairment) covered by current law, and d) chronic pain (competent coping, sufficiently documented impairment ) covered by current law.71 In addition to defining these four groups, the Commission also examined psychogenic pain and concluded that it was not the same as chronic pain or chronic pain syndrome. The Commission deferred to the definition of psychogenic pain in the DSM-III in order to ascertain if it was the same as chronic pain. According to the DSM-III, psychogenic pain presented as a symptom that was “inconsistent with the

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70 Ibid.
71 Ibid.
anatomic distribution of the nervous system” and had no “organic pathology or pathophysiological mechanism” that accounted for the patient’s pain.72 Psychological factors could be etiologically involved in pain if there was a temporal relationship between an environmental stimulus and the genesis or exacerbation of the pain, or if the pain enabled the individual to avoid an activity or to enlist support from places or people that may not necessarily help without the excuse of pain.73 Psychogenic pain can only be classified as a mental disorder. Therefore, the Commission concluded that chronic pain and chronic pain syndrome were not psychiatric disorders and could not be evaluated as mental disorders. This finding was especially important given the history of psychologically pathologized pain, as chronic pain under this legal definition was a physical disorder that can have psychological factors, but was not caused by these factors and has a biological origin.

The Commission was formed to provide recommendations on the adjudication process and existing problems with fraud and paying benefits to those who were not eligible. A major issue was that there was insufficient data on how many claimants had insufficient clinical data but still displayed chronic illness behavior. In order to measure the amount of cases like this, the Commission recommended that the SSA should create a dedicated data management system that monitored “both allowances and selected sample denials in which pain forms a substantial element of the claim” and to follow

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73 Ibid.
these cases through each stage of the process.\textsuperscript{74} To counteract the conservative claim of fraud, the Commission argued that there had to be a way to track these claims without hurting the meritorious claims of people in pain. Furthermore, the Commission came to a “clear consensus” that malingering was not a significant problem as any trained professional would be able to discern true and feigned pain.\textsuperscript{75} Despite this belief, Stephen’s Brena’s ideas regarding learned helplessness were salient in the report, especially in the section regarding the consequences of awarding or denying disability. The Commission believed that the availability of benefits “may influence the persistence and continuation of pain behavior,” as the pursuit of disability benefits risked the claimant’s “commitment to a self-image as a disabled person.”\textsuperscript{76} As a caveat to this claim, the Commission noted that there were instances where income from disability benefits was the “major factor insulating the recipient [and their family] from economic deprivation and attendant potential health-jeopardizing stresses.”\textsuperscript{77} Despite this acknowledgement, the Commission returned to supporting the notion that the granting of disability benefits created a “sick person out of one who could be at least partially productive.”\textsuperscript{78} While the Commission did believe that chronic pain was a legitimate issue and that malingering was not a large problem, this belief reinforced stereotypes that a pain patient’s behavior was a

\textsuperscript{75} Ibid, 17.
\textsuperscript{76} Ibid, 18.
\textsuperscript{77} Ibid.
\textsuperscript{78} Ibid.
result of the reactions of the physicians and other members of society and not a result of their actual pain.

To improve the way that disability claims were adjudicated within the existing structure of the SSA, the Commission proposed improving the training of personnel on all adjudicative levels, a redesign of disability applications to collect more information about their pain and pain behavior, increased personal and face-to-face interviews and examinations, and the use of trained pain specialists when examining and evaluating claims where pain is a major factor. In addition to this, the Commission reaffirmed that pain was a complex experience with social and psychological factors that is difficult to measure. The SSA could ameliorate this by using a “multidimensional approach” to assess claimants with chronic pain, which would allow for a correlation of functional limitations with reported pain. As a result of the Commission’s recommendations, the Institute of Medicine (IOM) was asked by the SSA to further investigate chronic pain claims and its factors and make recommendations for the SSDI process. The work of the APS physicians on the initial recommendations triggered further research into chronic pain and the SSDI claimant process.

The IOM report highlighted gaps in knowledge that hindered the Commission’s ability to make responsible recommendations. These included inconsistencies in definitions and statistics related to the number of people with chronic pain in the population and in SSA claimants, a lack of predictive

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80 Ibid.
models for calculating when and if patients with acute pain would develop chronic disabling pain, and whether or not rehabilitation was possible for chronic pain patients.\(^{81}\)

If a claim cited significant pain as its primary complaint, the report recommended that a functional assessment should be mandatory, even when there was a lack of objective clinical evidence. This functional assessment included physical abilities like sitting, lifting, and walking, as well as limitations that affect the claimant’s life like sleeping, eating, self-care, and ability to work.\(^{82}\) By using this type of adjudication process, an increased emphasis on a claimant’s functional abilities earlier in the evaluation process held “promise for preventing some errors of commission and omission in eligibility determinations and for averting at least some of the later appeals for higher review and adjudication.”\(^{83}\) Ultimately, the IOM report concluded that evaluation of chronic pain disability claims would always be subjective, “regardless of the specificity of the rules and regulations developed to guide disability examiners.”\(^{84}\) Despite not affecting the SSDI process in a revolutionary way, the IOM report confirmed the pressing need for pain research and the need to educate health professionals to improve diagnosis and treatment of chronic pain.\(^{85}\) This only reaffirmed the necessity of the pain management specialty and began the formal introduction of pain


\(^{82}\) Ibid, 267.

\(^{83}\) Ibid, 269.

\(^{84}\) Ibid, 284.

\(^{85}\) Ibid, 265.
management organizations into public policy. Pain management was initially created to fill a gap in medical knowledge and care. Now, the specialty also could address missing knowledge in the political system about chronic pain as well but needed effective institutions to make that truly possible.

**The Accreditation and Certification on Pain Management**

In addition to supporting research in the 1980s, the pain management field sought to publicly and institutionally validate their practices in the eyes of the larger medical and political community through accreditation. In 1983, the American Academy of Pain Medicine (henceforth known as the AAPMedicine since there is another organization called the American Academy of Pain Management) was founded with the intent of becoming a member group of the American Medical Association, which was largely considered to be the “voice of medicine” in the United States.\(^6\) In addition to its advocacy, the AAPMedicine created the American Board of Pain Medicine (ABPM) to provide certification to physicians in pain medicine who already were board certified in another discipline as a subspecialty of anesthesiology.\(^7\)

However, the physicians of pain management wanted to go even further and create an accreditation process for pain management facilities. One of the major issues with that, however, was the fact that in order to apply for full American Board of Medical Specialties (ABMS) status, there needed to

be uniform training standards, approved residencies and fellowships in pain medicine.\textsuperscript{88} The American Academy of Pain Management in addition to advocacy, also focused on the coordination, promotion and education of the multidisciplinary approach to health care delivery.\textsuperscript{89} The Credentialing Committee of AAPManagement decided that in order to possibly fulfill the ABMS status, the only option was to create the American College of Pain Medicine, which was formed in June 1991. Although sponsored by the AAPManagement, the College was a separate entity. Its purpose was to prepare, organize and administrate examinations to grant fellowship status to candidates who met the admission criteria. The Credentialing Committee accepted that while the Academy would not be recognized officially by the ABMS, it would be seen as a respected organization by the rest of the medical field.\textsuperscript{90}

While the physicians themselves could now become board certified and credentialed by completing a pain fellowship and subsequent examination, the next step was to create credentials for the pain management programs themselves. In 1982, Bonica wrote in a letter that he was concerned about the “proliferation of so-called pain centers throughout the U.S. and other countries.”\textsuperscript{91} Much like the introduction of acupuncture in the West, pain centers had become a topic of interest in the U.S., and with interest came the

\textsuperscript{87} Ibid.
\textsuperscript{89} “Pain Facility Accreditation Information Packet,” 91 1990, Box 4, Folder 3, American Academy of Pain Management records (Manuscript collection 125). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
\textsuperscript{90} Winston C.V. Parris, M.D., “Certification of Pain Specialists.” 281.
risk of taking advantage of pain patients with false claims of treatment and questionable treatment. In the early 1990s, the AAPManagement took on the role of creating and implementing an accreditation process for pain management facilities.92 For a pain facility to become accredited, it must have first demonstrated that there was a functioning program that had been running for at least 6 months. Once under consideration, the pain facility’s organization had to submit the Pain Facility Accreditation Application at least 3 months prior to the requested date for the on-site survey. A self-study report of the facility had to be completed by the facility itself and sent to the AAPManagement. The site visit team then reported its findings and made a recommendation to the Facility Accreditation Committee of the Academy, which then evaluated the survey findings and delivered its decisions and recommendations.93 The benefits of being accredited started with enhanced public recognition and benefits of services provided to the public, but did not end there. According to materials created by the AAPManagement, by becoming accredited, pain facilities were able to facilitate reimbursement for treatments and marketing, increase working relationships with governmental regulators and third party payors, and promote the quality of pain management.94 All of these issues were major problems facing the pain management community in the coming decade, highlighting that

92 “Pain Facility Accreditation Information Packet.” 5.
94 “Pain Facility Accreditation Information Packet.” 2.
accreditation provided another avenue towards legitimizing pain management.

**Pain Advocacy in the 1980s**

As physicians were thrust into the politics of pain through the Social Security Administration, pain advocacy organizations slowly began to voice their opinions in the shaping of public policy. The American pain problem, Wailoo wrote, did not subside but instead would evolve with cultural politics. The purging of the rolls and subsequent activity in shaping SSA policies in the 1980s acted as the beginning of pain management organizations’ entrance into political advocacy, paving the way for larger campaigns and activism in the 1990s.

In 1985, Dr. Kenneth L. Casey wrote to Congressman Carl Pursell, Senator Carl Levin, and Senator Donald Riegle on behalf of the American Pain Society objecting to the Reagan administration’s plan to reduce the number of NIH grants. The proposed plan would reduce the number of NIH grants by nearly 25 percent, from around 6,500 to 5,000, ensuring that less than 30 percent of grant applications would be funded. With less funding, Casey argued, biomedical research across the nation would be greatly impacted. However, this type of letter was a normal type of political response from the APS. It was a safe opinion in that it was calling for the support of maintaining

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research grants, which was a necessary and imperative part of scientific and medical discovery.

In October 1985, Dr. Berthold Wolff wrote a letter to Dr. Casey asking if the APS would continue to have “little or no input” on relevant public decisions. He argued that the APS should gradually start becoming involved in federal policy in an effort to contribute to the public welfare. While changing the APS from being a purely “learned society with scientific meetings,” Wolff argues that the APS has a responsibility to the public that outweighs the possible dangers and pitfalls associated with becoming involved in public policy. This letter highlighted the beginning of a major change in the functioning of the APS, moving towards affecting public policy in addition to their role as a scientific and medical organization. Ultimately, the APS did adopt Wolff’s approach, although it did take a couple years to fully realize Wolff’s vision.

The Patient Self-Determination Act of 1989, also known as S. 1766, presented a different opportunity for the APS to affect policy outside of the normal support for funding research and influencing Social Security Disability Insurance. The Patient Self-Determination Act amended Medicaid and Medicaid in the Social Security Act to require hospitals, skilled nursing facilities, home health agencies, hospice programs and health maintenance organizations to inform patients of their rights to make decisions concerning their medical care. This would require physicians to “periodically inquire” whether a patient has an advanced directive, which was a written statement of
a person’s wishes in relation to their medical care. If a patient did have an advanced directive, physicians were not allowed to discriminate against people who had executed an advanced directive, ensuring that “legally valid advance directives and documented care wishes are implemented to the extent permitted by State law.” Furthermore, the Act required these organizations to provide educational programs for staff, patients, and their communities on the ethical issues concerning self-determination and advance directives. In a letter to Senator John Danforth from Robert Addison, the President of the American Pain Society, Addison wrote that he was in favor of the legislation because it would “educate people about their options with respect to the medical decisions that affect their lives and which will require states without advance directive statutes for health care to enact laws. I agree... that providers of services under Medicare and Medicaid should be required to establish procedures to apprise patients of their right to control healthcare decisions affecting them.”

Supporting this bill would push the APS into actively supporting a patient’s right to determining their own care. Addison supported the bill, but he brought S. 1776 to the APS Board of Directors for their opinion on whether they should collectively support the bill. The response to supporting it was

98 Ibid.
99 Robert Addison, M.D., “Correspondence from from Dr. Robert Addison to Senator Dansforth,” December 12, 1989, Box 1, Folder 24, American Pain Society records (Manuscript collection 123) Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
100 Ibid.
largely positive from the Board. Sridhar V. Vasudevan wrote that as the APS “represents the quality of care delivered to those with pain, it becomes essential for us to support legislation that would provide people the right to control the medical decisions that affect their lives.”101 Other board members, like Russell K. Portenoy and John Liebeskind, actively supported the APS endorsing the bill as well. Board member Robert L. Rosomoff, D.Med.Sc, wrote that he dealt with this problem regularly in neurological surgery, and therefore clearly supported the bill as a “right which patients do have.”102 However, not everyone on the APS board enthusiastically supported the bill. Dr. Ronald A. Sternback objected to the APS taking “any stand” on proposed legislation.” He argued that it was not proper for Addison to even ask the board to “consider matters like this, which makes us appear politically involved and which threaten our tax-exempt status as a research organisation (sic).”103 While Dr. Sternback strongly objected, the support of the Patient Self-Determination Act, which was signed into law in 1990, was a turning point for the APS, signifying its active participation in shaping the role of pain in public policy.

101 Sridhar V. Vasudevan M.D., “Correspondence from Sridhar V. Vasudevan M.D. to Robert G. Addison,” December 19, 1989, Box 1, Folder 24, American Pain Society records (Manuscript collection 123) Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
103 Richard A. Sternbach, Ph.D, “Correspondence from Richard A. Sternbach, Ph.D to Robert Addison, M.D.,” December 19, 1989, Box 1, Folder 24, American Pain Society records (Manuscript collection 123) Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
In 1988, the American Academy of Pain Management (AAPManagement) was founded, growing to be the largest society of pain practitioners in the United States in the 1990s. Riding the wave of increased interest in chronic pain from the 1980s, the AAPManagement took on a political role as a physician advocacy organization in addition to its education efforts and its promotion of quality standards. Pain management advocacy organizations were about to enter a new era. With the creation of institutions focused on education and accreditation, the specialty could focus on providing answers to the questions raised by the SSDI reform process and the IOM report. The government found that there was a clear need for increased pain research, better physician education, and clear standards and guidelines for treating pain. The 1980’s proved that the goals and efforts of the pain management specialty were not limited to the medical sphere.

The 1990s, therefore, marked the beginning of the renaissance of physician pain advocacy organizations. These organizations transitioned from playing the role of consultants for existing institutions like the SSA or the IOM to lobbying for direct change through legislation. In a letter from the Secretary of Health and Human Services (HHS) to President Richard S. Weiner of the AAPManagement in 1990, the secretary writes “on the behalf of President George Bush” to inform Weiner about the issuance of pain management guidelines through the HHS’s new Agency for Health Care

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104 Richard S. Weiner, “Correspondence from Richard S. Weiner Ph.D. to Dr. Carol L. Bobby,” December 27, 1990, Box 3, Folder 2, American Academy of Pain Management records (Manuscript collection 125). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles.
Policy and Research. The release of the IOM report about chronic pain and SSDI in 1987 prompted the federal government to act upon the pressing need for guidelines and clarifications regarding the diagnosis and treatment of chronic pain. Having already established themselves as experts with SSDI, pain management organizations provided the knowledge to guide these efforts. These new guidelines, officially released in 1992, were part of a “federally sponsored medical effectiveness effort” focusing on relieving pain in clinical settings. The guidelines focused on issues like postoperative pain, pain in the elderly, pediatric pain, cancer pain, and chronic pain. The last chapter, titled “Responsibility for Effective Pain Relief,” explored how providers could provide the optimal level of pain relief for their patients by developing “formal means...to assess pain and obtain patient feedback to gauge the adequacy of its control.” This sentence in the text referenced the American Pain Society’s Quality Assurance Standards for monitoring the quality of analgesic treatment of acute pain and cancer pain. In fact, the APS was cited three times in this chapter of the guidelines. The IASP was cited twice in the guidelines. The guidelines illustrated that there was an “institutional process” to treating pain that “begins with an affirmation that

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106 Ibid.

patients should have access to the best level of pain relief that may safely be provided.”

Looking back at the history of pain, a patient’s pain was not always treated or taken seriously. With the influence of these pain societies, pain was now a serious issue that required training, effective communication and collaboration to treat effectively. Pain management physicians believed that the best way to achieve that level of care was to encourage and maintain a system that prioritized interdisciplinary, inter-provider collaboration. The guidelines outlined that the common purpose was to relieve the patient’s pain, which could be achieved because of “each health professional’s diverse and complementary skills and contributions.” Treating pain was no longer one sole physician’s conquest, but instead the goal of a team of physicians working together. The Agency’s guidelines highlighted this milestone achievement, which had been 30 years in the making.

Furthermore, the Secretary noted that this new age of biomedical discovery was being commemorated through the establishment of the 1990s as the “Decade of the Brain.” This decade, the Secretary wrote, “provides you, the members of the American Academy of Pain Management with a national focus for your efforts.” Finally, pain was beginning to be recognized as a national health issue by the federal government, almost 30 years after Bonica established the first multidisciplinary pain clinic at the

108 Ibid.
109 Ibid.
110 Ibid.
111 Louis Sullivan, “Correspondence from Louis Sullivan to Richard Weiner.”
112 Ibid.
University of Washington. However, this national focus was not limited just to the AAPM or other pain advocacy organizations. Pain was a national issue in the medical world, in the political world, and in media and culture.
The Renaissance of Pain Management

Building upon the pain management organizations created in the 1970’s, the early advocacy efforts and expertise of these organizations in the 1980’s became the foundation for the success of the specialty. However, by the end of the 1980’s, it was clear to these organizations that there were structural issues with how healthcare was delivered and regulated that hindered the multidisciplinary pain management movement. The advocacy efforts of the APS, AAPManagement and AAPMedicine directly responded to these obstacles by mobilizing campaigns, such as Pain as the Fifth Vital Sign, and coordinating lobbying efforts aimed at decreasing barriers to pain medications, such as intractable pain treatment laws. Furthermore, these organizations released guidelines and standards for the medical community. This renaissance of pain advocacy culminated in national and federal recognition of the specialty and of the importance of pain management. However, the 1990’s also coincided with the introduction of the opioid Oxycontin and the rise of the opioid epidemic in the early 2000’s. By tracing the history of the rise of pain management in the United States alongside the beginning of the opioid crisis, I aim to ascertain if and how the renaissance of pain management influenced the rise of opioids.
Who’s Paying for Pain Treatment?

In the 1980’s, the American Medical Association’s current procedural terminology (CPT) codes were required for reimbursement of health services.¹ CPT codes were initially designed to describe a medical intervention in patient health records but they hindered the progress of multidisciplinary pain clinics as they prioritized the fee-for-service model of health care which provided greater reimbursement for treatments being provided on an individual basis over the course of multiple days rather than bundled procedures.² Multidisciplinary pain management clinics used bundled procedures where physicians provided coordinated and related services in the same practice during one practice visit. Reimbursement rates for multidisciplinary clinics were reduced, as insurance companies increasingly “carved out” specific pain management services as reimbursable only if performed in certain types of facilities or locations.³ For example, Tompkins, Hobelmann and Compton pointed out that physical therapy would not be reimbursed by insurance if it was performed at a multidisciplinary pain clinic, but would be reimbursed at an alternate clinic.⁴ They argued that studies had shown decreased cost savings and worse pain treatment with this carved out

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² Ibid.
³ Ibid.
⁴ Ibid.
approach, as providing a “package of services” was necessary for “optimal patient outcomes.”

Many multidisciplinary clinics were housed in academic medical centers that increasingly focused on maintaining the highest profit margins with specialties like orthopedics, cardiology and plastic surgery, with which pain management clinics could not keep up. With this evidence, Tompkins, Hobelmann and Compton argued that multidisciplinary pain treatment programs brought in “significantly less revenue after the advent of managed care.” Managed care, which started to grow significantly in the late 1980’s in certain geographic regions of the United States, made bundled treatments difficult because the model generally only paid for a limited number of treatments received on the same date at the same location. Therefore, pain clinics failed to function like primary care physicians who saw patients either very frequently for one specific issue or like hospitals where inpatients receive round-the-clock observation and treatments for a finite amount of time. Vasudevan argued that this type of “expensive and uncoordinated” care and treatments like surgery and opioids had superseded multidisciplinary care “under the erroneous view of cost-effectiveness.” Therefore, the preferred multidisciplinary treatment approach was under financial pressure, leaving the multidisciplinary clinics to look to see whether relief could be found from federal payment programs like Medicare and Medicaid.

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5 Ibid.
6 Ibid.
7 Ibid.
While Medicare and Medicaid did pay for some aspects of pain management, health lawyer Timothy S. Jost wrote that the programs often failed to facilitate adequate pain management. Jost argued that the U.S. was made up of “leaky umbrellas and ragged safety nets,” leaving behind many people who suffered from debilitating pain who were not covered by private insurance but also failed to be eligible for Medicare or Medicaid or any other public health insurance program. Even those covered by Medicare and Medicaid faced large gaps in benefits as well, especially relating to coverage of drugs. For example, Medicare did not cover oral prescriptions for pain medications for most non-institutionalized beneficiaries. For those in states lucky enough to cover prescription medications through Medicaid, there were still significant restrictions on what drugs are covered and in what quantities. This was partly due to drug utilization reviews, where, under federal law, state Medicaid programs were responsible for guaranteeing that drugs were not “overused, abused, or misused.” The increasing numbers of inquiries from drug utilization reviews to physicians questioning their prescribing practices deterred physicians from prescribing high doses, even when the situation called for it. With more scrutiny into physicians’

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11 Ibid.
12 Ibid.
prescribing practices, pain continued to be inadequately treated well into the 1990’s.

These state and federal regulations threatened pain management physicians’ abilities to effectively prescribe therapeutic opioids and therefore effectively treat pain. Pain management was a burgeoning specialty, but the then current practices of funding, insurance reimbursements and prescribing hindered the ability of the specialty to succeed in its goals. In order to make better use of the educational infrastructure that the specialty had set up in the 1980’s, pain management organizations needed to find a way to make their cause heard. This was one of the main differences between pain management advocacy in the 1980’s and the 1990’s. In the 1980’s, their advocacy was focused on changing existing political infrastructures like SSDI and endorsing legislation that pertained to issues like patients’ rights. However, this type of advocacy, while effective, was not enough. The specialty needed to make a bigger impact. In order to change how physicians, politicians and the general public viewed and prioritized pain and pain management, the pain management specialty needed to convince them of its importance and of the pressing need to fix these issues. Rather than limiting their advocacy to modifications of existing programs, these organizations needed to consider and advocate for new legislation and approaches that would facilitate pain management. Pain management specialists had found their voice, and now they were going to make the world listen to their cause and their solutions.
Advocacy and Pain Standards in the 1990s

In 1990, Mitchell Max, the President of the American Pain Society, wrote an editorial in the *Annals of Internal Medicine* about the failure to make an impact on medical practices through education, advocacy and guidelines from the U.S. Agency for Health Care Policy and Research, the American Pain Society, and the World Health Organization. This failure, Max argued, was due to patients not disclosing their pain to doctors and nurses, who were reluctant to provide opioids or adjust doses in the cases of inadequate relief. In an effort to ameliorate the current approach to pain, Max proposed some recommendations. His first proposal was to make pain “visible,” because unlike “vital signs,” pain did not have a set place on medical charts or clinical conversations unless the patient brought it up. Max believed that giving patients an active and required role in helping physicians appropriately chart their pain would help increase clinicians’ understanding of their patients’ pain. Furthermore, Max wanted to develop bedside tools and quality assurance guidelines to ameliorate initiating and modifying pain relieving treatments, care systems and patient satisfaction. Politically, Max wanted to work with narcotic regulators in an effort to encourage the therapeutic uses of opioids, emphasizing that when used correctly, opioids rarely resulted in addiction. With these goals in mind, the American Pain

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15 Ibid.
16 Ibid.
Society sought to improve the quality and standards of pain management and remove regulatory barriers so practitioners could effectively relieve pain.

In 1991, the American Pain Society published quality assurance standards for acute and cancer pain as a follow-up to Max’s 1990 recommendations. The standards called for the charting and display of pain and relief, a “simple, valid measure of pain intensity, and identifying values for pain intensity rating and pain relief rating” in each clinical unit.\(^{18}\) This was the beginning of pain management advocacy pushing to make pain a national health issue and effect real change inside and outside of physicians’ offices.

The American Academy of Pain Management continued their advocacy in the 1990’s in California. The AAPManagement sponsored AB-2180, also known as Felando’s law, in response to SB-2036, which required physicians and medical specialties who advertise themselves as board certified to be certified by the ABMS or deemed “equivalent” by the Medical Board of California.\(^{19}\) SB-2036, which was passed in 1990, regulated advertising in an effort to eliminate bogus certification boards. The AAPManagement did not qualify for either of the ABMS or Medical Board of California board certification options, since certifications were only available for single specialties and not multidisciplinary specialties. The introduction of AB-2180 proposed a legislative solution to this issue. Pain management physicians who completed a certification program offered by the AAPManagement would

\(^{18}\) Ibid.
be exempted from the restrictions of SB-2036 and could advertise their pain management specialty. In a letter to California Senator Dan McCorquodale, AAPManagement President Richard Weiner reiterated that while pain management was an emerging discipline, it had “solid building blocks,” like post-graduate training, practice parameter outcome studies, and a “rigorous credentialing process” through its partnership with University of the Pacific.\textsuperscript{20} Weiner argued that chronic pain was an epidemic, and that “the public benefits through advertising when they can locate properly trained and credentialed sources for relief.”\textsuperscript{21} Allowing the public to know that doctors were credentialed in pain management, even if it is not with “Board Certified” credentials, ameliorated the issue of the proliferation of pain management clinics that did not adopt the ethical codes of conduct, the patient bill of rights, or the special training in pain management that professionals who had been credentialed through the Academy’s review process underwent.

Furthermore, the Secretary of the federal Department of Health and Human Services (HHS), Louis Sullivan, praised the AAPManagement for maintaining “stringent certification standards.”\textsuperscript{22}

While AB-2180 was a bill that dealt with advertising, it represented much more than that to the pain management specialty as it presented a “historic opportunity to develop an integrative model.” If AB-2180 passed, it would mark the first time that the “multidisciplinary movement, and in

\textsuperscript{21} Ibid.
particular, the pain movement, will have been codified with protection in a state statute.”  

The bill passed 13 to 2 in the Assembly Health Committee, and then passed the Assembly. The bill, which formally recognized and protected advertisements by multidisciplinary professionals, was signed into law on September 20, 1992, by Governor Pete Wilson.

AAPManagement’s California advocacy did not stop there. In 1992, an Action Alert was issued by AAPManagement due to the threat of possible cuts to the pharmaceutical services of Medi-Cal patients during budget deliberations of the California legislature. One of the proposals limited the medicine a Medi-Cal patient could obtain to one specific drug chosen for a specific condition, prioritizing the cheapest, but not necessarily the best, drug available. This could hinder the ability of physicians to prescribe the medicine that a patient needed, as the bill assumed that drugs that were chemically different would work the same way. Physicians, the Action Alert argued, were the best judge of what medication their particular patients needed. The decision of what medications physicians were allowed to prescribe was “too important to leave to a bureaucrat who doesn’t know the

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24 Ibid.
26 Richard S. Weiner, “Correspondence from Richard Weiner to David B. Swoap,” June 8, 1992, Box 4, Folder 16, American Academy of Pain Management records (Manuscript collection 125). Louise M. Darling Biomedical Library, History & Special Collections Division, University of California, Los Angeles. 2.
27 Ibid.
patient’s condition or medical history.”

This sentiment ran deeply in the advocacy efforts of the 1990’s. Politicians held the key to influencing legislation and appropriating pain research funds. Pain management organizations argued that when legislators make uninformed decisions, it adversely affected physicians and patients. The best way to make sure that the interests of the public and pain management physicians were heard was to become lobbyists and influence those in power to make the ‘right’ decisions.

With this political strategy, pain management advocacy organizations focused their advocacy efforts on decreasing federal and state prescribing practices regulation and on increasing the medical community’s and the public’s understanding of pain, as well as the necessity of effectively treating pain. These organizations influenced public policy on a state-wide and national level. In the early 1990’s, there were multiple high-profile cases where physicians were disciplined by medical regulatory boards for over-prescribing medication to their chronic pain patients. A 1992 article in Pain Digest written by Rudolph de Jong stated that the “increasing impact of governmental control over, and regulation of, medical practice is felt throughout the United States.” He argued that the lack of recognition of pain management, due to a “variety of spokesmen” and the “perceived lack of appreciation for the complex interdisciplinary approach to pain

\[\text{28 Ibid.}
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\[\text{29 Ann M. Martino, Ph.d, “What Can Medical Boards Do to Change the Ethic of Under-Prescribing?” n.d., Box 1, Folder 9, Mayday Fund collection of training materials for educational workshops in pain management (Manuscript collection 279). Louise M. Darling Biomedical Library History and Special Collections Division, University of California, Los Angeles. 1.}\]
management,” placed the burgeoning specialty in a precarious position for administrators to judge the value of pain management.\textsuperscript{31} However, he noted that the recent growth of vocal and coordinated pain management organizations allowed them to present a stronger and more unified front to regulatory agencies, like the Department of Health and Human Services, who would take official and public note that the proper management of pain is a pressing health policy issue to solve.\textsuperscript{32} de Jong acknowledged that the guidelines released by HHS on pain were truly an “endorsement” of what the pain management field was trying to accomplish. However, this governmental endorsement did not fully deal with the political and social issues surrounding opioid prescriptions. The “War on Drugs” and “Drug-Free Society” public policy campaigns perpetuated for patients and their families the societal conceptions of failure and guilt associated with the use of opioids. Additionally, physicians also potentially could have felt the same sense of failure and guilt, as well as the fear of increasing regulation and the possibility of suspension for overprescribing opioids. Given these campaigns, the hesitation of physicians to prescribe opioids was completely understandable.\textsuperscript{33} Medical providers, however, needed to educate the public about the difference between the “drug abuser” and the “drug needer,” so

\textsuperscript{31} Ibid.
\textsuperscript{32} Ibid.
\textsuperscript{33} Ibid, 286.
patients “in agony” could be prescribed adequate relief and be cleared from
the “cloud of illegitimacy” of regulated prescribing.34

As pain management physicians called for adequate pain management
across the country, their focus quickly turned to policies on the medical use of
opioids by people with chronic pain, especially intractable pain. Intractable
pain was defined as a “pain state in which the cause cannot be removed or
otherwise treated, and no relief or cure has been found after reasonable
efforts.”35 The major issue with intractable pain was that there was existing
legislation which restricted and varied the degree to which opioids could be
used to treat it. To further address this, pain management specialists believed
there needed to be policy statements that controlled substances can be used to
treat patients with chronic intractable pain.36 In an American Pain Society
Bulletin from March/April 1995, David E. Joranson, argued that the
development and adoption of Intractable Pain Treatment Acts (IPTAs) gave
“much-needed recognition to the necessity for better treatment.”37

The ultimate goal of influencing public policy, Joranson argued, should
be to “harmonize medical and drug relation (sic) with clinical practice so that
physicians are free to use treatment with opioids according to good medical
judgement.”38 In his 1995 APS Presidential Address, James Campbell
unveiled the new Public Affairs Committee, which was created to address the

34 Ibid.
35 David E. Joranson, MSSW, “Intractable Pain Treatment Laws and Regulations,” American
36 Rudolph H. de Jong, M.D., “Impact of Government and Regulatory Agencies on The
Practice of Pain Medicine,” 286.
38 Ibid, 277.
concerns of opioids, managed care, and access to care. The Committee identified three targets: the public, the government, and payors. The goal with the public was to enhance the public’s awareness of pain and to advocate for patients who suffer from pain. Payors needed to understand that effective pain management could decrease long-term treatment costs. At the federal level, HHS was beginning to understand the importance of diagnosing and treating pain effectively. However, the APS needed a captivating and convincing way to have further achieve with their goals.

In order to make pain visible, and improve its treatment, the American Pain Society created the “Pain as the Fifth Vital Sign” campaign in 1995, aimed at increasing awareness of pain and its undertreatment. Campbell argued that chronic pain could be measured on a 0-10 scale just as easily as acute pain. By measuring pain and including it as a vital sign, doctors and nurses could provide quality care to their patients. This argument and campaign caught on rapidly, with the Joint Department of Veterans Affairs and the Joint Commission supporting the campaign and conversations about improving pain care.

In 1996, California Representative Bob Filner recognized and commemorated the AAPManagement and the field of multidisciplinary pain management in the 104th Congress. Until recently, he said, pain had been poorly understood and undertreated even though it was the “number one

40 Ibid.
41 Ibid.
reason that individuals seek healthcare.” Multidisciplinary organizations like the AAPManagement brought together the “previously fragmented clinical disciplines and have raised standards for the delivery of pain management.” Filner recognized that due to the dedicated efforts of organizations like the AAPManagement, physicians and legislators were able to take more steps to reduce pain and suffering and provide quality care to more patients. This recognition of the AAPManagement highlighted the impact that pain management advocacy organizations had achieved by the mid-1990’s through the creation of standards, accreditation programs, and advocacy efforts. Pain management was experiencing a renaissance, encouraged by Congressional recognition. Coupled with the rise of the APS’s Pain as the Fifth Vital Sign campaign, the specialty was highly visible and it was not long until other organizations began to take notice.

In 1998, the federal Veterans Health Administration launched the National Pain Management Strategy to develop a “system-wide” approach to pain management that would reduce pain and suffering for veterans, continuing the legacy of acceptance of pain management strategies in treating soldiers. In the first key element of the strategy, pain assessment and treatment, the VHA implemented pain as the fifth vital sign in “all clinical

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43 Ibid.
44 Ibid.
settings to assure consistent assessment of pain.” The strategy also acknowledged that having only one provider was not conducive to the adequate treatment of pain. Instead, primary care providers should have “ready access to resources such as pain specialists and multidisciplinary pain clinics” to evaluate and manage the complexities of chronic pain.\footnote{Ibid.} The VHA was vocally recognizing the importance of pain and multidisciplinary pain treatment, a major win for the pain management specialty.

In 1999, the California Legislature passed Assembly Bill 791. This bill required every health facility licensed by the Health and Safety Code to include and consider pain as a vital sign as a condition of their licensure.\footnote{Ibid.} In 1997, the Robert Wood Johnson foundation funded the Joint Commission on Accreditation of Healthcare Organizations (hereafter Joint Commission) to develop pain standards with the University of Wisconsin-Madison School of Medicine and pain experts in the U.S.\footnote{Ibid.} The Joint Commission adopted the Pain as the 5th Vital Sign campaign in 2000, recommending that pain should be assessed in all patients.\footnote{Ibid.} In 2001, the Joint Commission introduced pain assessment and treatment standards that called for organizations to quantify a patient’s pain on a 10-point scale.\footnote{Natalia E. Morone and Debra K. Weiner, “Pain as the Fifth Vital Sign: Exposing the Vital Need for Pain Education,” \textit{Clinical Therapeutics} 35, no. 11 (November 1, 2013): 1728. https://doi.org/10.1016/j.clinthera.2013.10.001.}

The rise in opioid usage was concurrent with the removal of barriers to treatment and the Pain as the 5th Vital Sign campaign. Between 1988 and
1997, 33 states enacted laws (like intractable pain treatment laws), adopted administrative rules, and established guidelines for the use of narcotic analgesics to treat chronic pain. One report, conducted in 1999 by Roper Starch Worldwide Inc. for the American Pain Society, The American Academy of Pain Medicine, and Janssen Pharmaceutica, titled “Chronic Pain in America: Roadblocks to Relief,” surveyed individuals regarding their experiences with pain. A national mail panel was sent to 500,000 households that agreed to participate in opinion research, who then were screened through a questionnaire. 35,000 households met the initial qualifications and received screening questionnaires. Of these 35,000 households, 29,474 surveys were completed. \(^{52}\) 2,642 individuals satisfied the criteria. They were at least 18 years of age and had pain that was constant or flared up frequently. They experienced non-cancer related pain for at least 6 months or more and described their pain as a 5 or higher on a 1-10 pain. \(^{53}\) The report clearly illustrated the ineffectiveness of current (as in the 1990’s) pain management. 94 percent of people with moderate to severe chronic pain had consulted a doctor to treat their pain. \(^{54}\) 47 percent of those who saw physicians changed their doctors at least once, and 22 percent switched physicians 3 or more times. \(^{55}\)

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\(^{53}\) Ibid.
\(^{54}\) Ibid.
\(^{55}\) Ibid.
The issue was not just finding a doctor, but finding one who was knowledgeable about pain, took pain seriously, and treated it aggressively. One-fourth of all chronic pain sufferers waited at least 6 months before going to the doctor because they underestimated the seriousness of their pain and thought they could “tough it out.” However, among 50 percent of individuals in severe pain, it took over a year and a half to reach a point where their pain was adequately under control, not including the time they suffered before being seen by a professional. The reality that this report highlighted, at least from the patient perspective, was that patients were worried that doctors either would not take their pain seriously and/or that doctors would not treat it effectively or aggressively enough. Per the report, family practitioners or internists (and not trained specialists in treating complex pain) treated 49 percent of the people in severe pain. Furthermore, 68 percent of those patients seeing a family practice doctor or internist had never been referred to a specialized pain program or clinic. Given that the AAPMedicine and APS funded the study, the suggestion of sending these patients to multidisciplinary pain centers and to doctors which specialized in pain management was not surprising.

The second part of the study focused on the methods of effective pain relief. One of the questions of the study asked patients to rate the opioids, prescription NSAIDS (non-steroidal anti-inflammatory drugs like Indomethacin, Toradol, and Celebrex) and OTCs (over-the-counter

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56 Ibid, 3.
57 Ibid, 2.
medications) on their effectiveness on a scale of 1-10 with 10 representing complete relief. Opioids were rated as a 7.6, prescription NSAIDS as a 6.2, and OTC medication as a 5.2. However, the report noted that the gap between these ratings varied from person to person with severe pain. Regardless of pain severity, 63 percent of patients used OTCs, with only 29 percent taking prescription NSAIDS and only 16 percent taking opioids. Patients may have used more than one analgesic, leading to overlapping statistics totaling 108 percent. Given the information that many patients waited to see doctors or struggled to get adequate or aggressive pain treatments, OTCs were the easiest and most affordable option for many patients. Furthermore, among patients with severe pain, the use of opioids was marked at 26 percent which was slightly lower than the usage of prescription NSAIDS which was at 31 percent. 49 percent of respondents who had taken opioids reported concerns about addiction, but the report noted that these were “fears that experts believe are often exaggerated or misplaced.”

These beliefs were formed in the 1980’s after multiple pain management physicians erroneously downplayed the addictive qualities of opioids after a series of small-sampled studies claimed that opioid addiction was rare. The Boston Collaborative Drug Surveillance Program published a one paragraph overview in the New England Journal of Medicine of a hospital records retrospective analysis that reviewed opioid addiction rates in hospitals. Out of the 11,882 hospitalized patients who received opioid

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58 Ibid.
59 Roper Starch Worldwide Inc. Conclusions, 3.
treatments, the Program found that only four patients reported cases of addiction in the hospital setting.\textsuperscript{60} The letter, however, was only five sentences long, not peer reviewed and did not pertain to opioid use outside of the regimented inpatient hospital setting. Despite these shortcomings, a 2017 bibliographic study showed that the letter has been cited over 600 times.\textsuperscript{61} 491 citations out of the 608 failed to note that the patients in the study were hospitalized and many authors “grossly misrepresented” the conclusions of the letter.\textsuperscript{62} Leung et. al. argued that this citation pattern contributed to the rise of the opioid epidemic by assuaging concerns of addiction with long-term opioid treatment.\textsuperscript{63} At the time, however, this letter provided the seminal evidence that opioids were both safe and effective for long-term pain treatment, setting an unchallenged precedent that would inform how pain management professionals prescribed opioids for three decades after its publication.

Building up the 1980 \textit{NEJM} article, Russel Portenoy and Kathleen Foley, both members of the APS, wrote that long-term opioid use was safe and effective in the Journal \textit{PAIN} in 1986.\textsuperscript{64} Portenoy and Foley’s studied 38 patients with non-malignant conditions who had been treated with opioids. Of the small sample size, only two patients developed a “management”

\textsuperscript{62} Ibid.
\textsuperscript{63} Ibid.
problem with opioids. Both patients, however, already had a history of drug abuse. Portenoy and Foley concluded that long-term opioid maintenance can be a “safe, salutary and more humane alternative to the options of surgery or no treatment in those patients with intractable non-malignant pain and no history of drug abuse.” Patients with no history of drug abuse therefore had almost no risk of opioid addiction. In 1990, Ronald Melzack cited Portenoy and Foley’s study in *Scientific American*, arguing that patients suffered because physicians were reluctant to prescribe morphine. He argued that the development of morphine addiction from medical treatment was rare. Portenoy furthered this belief by calling the risk of opioids misuse a “medical myth.” Leading physicians in the pain management specialty believed that when used correctly and with patients who had no history of drug abuse, opioids were safe and necessary to effectively treat chronic non-malignant pain.

Oxycontin, the sustained-release opioid from Purdue Pharmaceuticals, was also released in 1996. The FDA had approved labeling saying that iatrogenic addiction, meaning addiction stemming from medical illness or treatment, was “very rare” and that the “delayed absorption of OxyContin reduced the abuse liability of the drug.” In 2001, however, the FDA removed

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65 Portenoy and Foley. 171.
66 Ibid.
69 Ibid.
70 Ibid.
these claims from Oxycontin’s labelling.\textsuperscript{72} With reports and advertising downplaying the possibilities of addiction, it was not surprising that the number of opioid prescriptions rose from 76 million in 1991 to 87 million in 1995, when the 5\textsuperscript{th} Vital Sign campaign started.\textsuperscript{73} After Oxycontin was released in 1996, between 1996 and 2002, opioid prescriptions rose from 94 million to 142 million annually.\textsuperscript{74} In 1996, 316,000 prescriptions of Oxycontin were dispensed in the U.S., creating $44 million in revenue for Purdue.\textsuperscript{75} By 2001, Oxycontin became the most frequently prescribed brand-name opioid for treating moderate to severe pain.\textsuperscript{76} The 2001 and 2002 combined sales of the drug totaled nearly $3 billion with over 14 million prescriptions dispensed.\textsuperscript{77}

Between 1996 and 2001, Purdue held more than 40 national pain-management and speaker-training conferences across the U.S, where more than 5,000 physicians, pharmacists, and nurses were recruited to attend the symposia.\textsuperscript{78} Another crucial part of Purdue’s marketing plan was the creation of a database that would target physicians who were high prescribers of opioids nationally, so they could identify the physicians with the largest number of chronic pain patients.\textsuperscript{79} In addition to these efforts, Purdue also funded more than 20,000 pain-related educational programs through sponsorship or financial grants, directly influencing physician prescribing

\begin{itemize}
\item\textsuperscript{72} Ibid.
\item\textsuperscript{73} David Baker, “The Joint Commission’s Pain Standards: Origins and Evolution,” 5.
\item\textsuperscript{74} Baker. 5.
\item\textsuperscript{76} Ibid, 225.
\item\textsuperscript{77} Ibid, 223.
\item\textsuperscript{78} Ibid, 221.
\item\textsuperscript{79} Ibid.
\end{itemize}
across the country.\textsuperscript{80} Between 2001 and 2002, Purdue funded nine programs to educate hospitals on how to comply with the Joint Commission’s pain standards for hospitals. As one of only two companies that the funded the Joint Commission’s pain management educational programs, Purdue separated itself by facilitating an agreement that it would be the only pharmaceutical company allowed to distribute educational videos and pain management materials available for sale on the Joint Commission’s website.\textsuperscript{81} 

While Purdue and other pharmaceutical companies like Janssen Pharmaceuticals had been funding pain research at places like the University of Washington Multidisciplinary Pain Clinic since the 1980’s, the late 1990’s saw a new level of involvement between pharmaceutical companies and the pain management specialty.\textsuperscript{82} In 1996, a consensus statement from the American Pain Society and the American Academy of Pain Medicine claimed that opioids were safe and effective for non-cancer chronic pain treatment, arguing that studies indicated that development of addiction during the correct opioid treatment is low.\textsuperscript{83} Furthermore, the statement claimed it was imperative that the statement “not be misconstrued as advocating the

\begin{thebibliography}{99}
\bibitem{80} Ibid, 225.
\end{thebibliography}
imprudent use of opioids.” Instead, the APS and AAPMedicine claimed that this statement should serve as a guide for practitioners and regulators “with regard to the judicious use of these drugs in the course of medical practice.”

However, this consensus statement did not include or disclose the ties from Purdue to the APS and the AAPMedicine. The American Pain Society listed Purdue as one of 28 corporate donors. To Russell Portenoy, who was a consultant on the consensus statement and President of the APS at this time, the APS’s and his own personal relationship with pharmaceutical manufacturing and distribution companies was a non-issue. In his mind, he believed that he could have these relationships because they benefited his educational and research missions as well as his “own pocketbook” without producing “any tendency to engage in undue influence or misinformation.”

Purdue also provided funding for website development and financial support for the AAPMedicine. President of the AAPMedicine David Haddox was the first listed author on the consensus statement as well as one of the spokesmen for the AAPMedicine and a paid speaker for Purdue. In 1998, the Federation of State Medical Boards recommended a policy that reassured doctors that there would be no threat of regulatory action for prescribing large amounts of opioids as long as they were part of the “course of medical

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84 Ibid, 78.
85 Ibid, 77.
treatment.” Haddox was involved in the creation of this policy as were other people with links to opioid pharmaceutical companies. A year later, Haddox became a Purdue executive. Purdue Pharma, Endo Health Solutions, and other opioid makers spent $280,000 to fund these policies. However, despite the pharmaceutical company funding, the Federation was adamant that its “model policy” did not contribute to increased prescriptions and that pharmaceutical companies did not influence its guidelines.

With this evidence, it was clear that Purdue contributed to and capitalized on the pain management movement’s successful medical and political advocacy for its own gains. The development of opioids like Oxycontin fundamentally changed the relationship between pharmaceutical companies and the pain management specialty. Previously, Purdue used the pain management specialty to fund research and development studies, like the $76,153 Codeine-Contin Comparative Study they funded at the University of Washington Multidisciplinary Pain Center in 1989. Purdue developed Contin, a chemical method that controlled the long-acting release of active ingredients in drugs, in 1972. The development of Oxycontin in the early 1990s coincided with the political rise of pain management organizations. Once the pain management specialty had political clout from the work of the advocacy organizations, they were of more use to the pharmaceutical

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88 Catan and Perez, “A Pain-Drug Champion Has Second Thoughts.”
89 Ibid.
90 Ibid.
91 Ibid.
companies. For example, Portenoy and Haddox both held highly influential positions in their advocacy organizations, but they also were linked to and deeply involved with Purdue. Pain management advocacy organizations had the ear of the federal Department of Health and Human Services, regulatory boards, legislators, and healthcare systems and the infrastructure to organize politically. The call for effective pain management was complimented by the presence of opioids, which were a way to quickly treat and relieve pain, especially in light of the growing pressure to be responsive to pain as required by the Joint Commission, the Pain as the Fifth Vital Sign campaign and the Veteran’s Administration initiatives. As a result of this partnership, pain management advocacy organizations downplayed both the addictive qualities of opioids and the resulting deaths that occurred while seeking to relax prescribing enforcement. This then set the stage for the next decade of increasing pain management advocacy and continuing opioid abuse issues.

The Decade of Pain Control and Research

With all of the emphasis and excitement surrounding pain management and treating pain in the 1990’s, Congress, on October 31, 2000, passed H.R. 3244, which established the 2000’s as the “Decade of Pain Control and Research” on October 31, 2000, as part of the Pain Relief Promotion Act.94 The establishment of a decade committed to pain control illustrated that it had become a national priority for American public health, encouraging an increase in pain research, pain intervention, and pain

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The advocacy efforts of the APS, AAPManagement, and others had a tangible effect. Pain was now officially a national issue for the next 10 years.

However, while a major landmark in recognition, the decade failed to live up to its expectations. While pain research was supposed to increase during this decade, one study found that between 2003 and 2007, NIH funding for pain research decreased by 9.4 percent annually.\footnote{Gatchel et al. 122.} Between 2004 to 2007, pain research represented less than 1 percent of the NIH budget. Despite having a national platform, pain research continued to be underfunded and undervalued, with no new information about pain mechanisms developed nor possible alternatives to opioids being explored. Furthermore, legislation that attempted to increase resources for pain management research, access to care, and education failed to launch as well. Most notably, the National Pain Care Policy Act “died in committee” in both 2003 and 2008.\footnote{Ibid, 123.} The 2008 iteration of the bill required that the Secretary of HHS should design a public awareness campaign to educate consumers and patients about the incidence and importance of pain as a national public health problem, as well as the role of “credentialed pain management specialists...and of comprehensive interdisciplinary centers of treatment expertise.”\footnote{In addition to the education, Section 401(c)(2) mandated that the Director of the NIH should establish a division known as the Pain...}
Consortium that would create and maintain a national agenda for basic and clinic research on the causes of and effective treatments for pain.99 While the 2008 bill “died” in the Senate, it was reintroduced in the House as H.R. 756 and passed the house in March 2009, authorizing appropriations in Fiscal Years 2010-2011. However, H.R. 756 also failed to pass the Senate once it was introduced there as well.100 Legislatively, the Decade of Pain Control and Research failed to deliver on its promises.

The mid-2000s brought concerns about the over-prescription of opioids. In 2002, the Joint Commission’s Example of Implementation Standards changed and no longer considered pain to be the fifth vital sign.101 By 2004, all Examples of Implementation were completely eliminated due to safety concerns about misinterpretation of the examples and overreliance on opioids to treat pain.102 In 2003, the Institute for Safe Medication Practices linked “overaggressive pain management to an alarming increase in over sedation and fatal respiratory depression events.”103 By 2004, pain as the fifth vital sign had disappeared from the Joint Commission’s Accreditation Standards Manuals and was completely eliminated from all Examples of Implementation a few years later.104 In 2007, neurologist Charles Lucas, in a paper titled “Kindness Kill: The Negative Impact of Pain as the 5th Vital Sign,” argued that pain advocacy groups and pain specialists had “lobbied” the Joint

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99 Ibid.
100 Gatchel et al., “Interdisciplinary Chronic Pain Management.” 123.
102 Ibid.
103 Ibid, 3.
Commission to institute the screening of pain as the 5th vital sign. This lobbying led to what he called the “current emphasis” on pain assessment led to the use of “unscientific pain scales...causing serious injury and death from overmedication.” Lucas’s article led many others to blame the Joint Commission and the pain advocacy groups for being one of the “root” causes of the American opioid epidemic. One question remained though: if Oxycontin had not been aggressively marketed and become the leading opioid at the same time as the 5th vital sign campaign and the Joint Commission’s Standards, would the opioid epidemic have been so severe? While there may be correlation, the PAINS Project, a campaign by the American Academy of Pain Management, pointed out that the campaign and standards were not the problem. For most non-pain management physicians, the increased attention to the diagnosis and treatment of pain led to a hyper-vigilant attitude towards treating pain. Coupled with the advertising of opioids as the best, and only, treatment for pain by pharmaceutical companies, the implementation of standards convinced many physicians to increase the prescription of opioids in response to any pain.

While the Pain as the 5th Vital Sign campaign died a slow death, pain management specialists continued to advocate for pain research and for coverage of interdisciplinary pain programs. Several studies in the 2000’s documented the cost-effectiveness and success of treatment in

104 Ibid, 6.
interdisciplinary pain management programs. One study in 2009 by Oslund et. al. found that patients reported improved outcomes in pain severity and interference of pain with functioning after treatment at an interdisciplinary pain management program. These improvements were documented as long-term gains at the one-year follow-up with the patients.\textsuperscript{107} Another study in 2007 found that comprehensive pain clinic patients had significantly fewer emergency room visits, primary care visits, and medication use for pain management than patients treated in primary care clinics.\textsuperscript{108} Payors, however, to the detriment of the interdisciplinary clinics continued to practice “carving out” as they believed it was more cost-effective.

Even though the specialty struggled to convince payors of its importance, the advocacy of the APS, AAPManagement, and AAPMedicine continued to thrive well into the 2000’s, focusing largely on increasing research funding for pain. One article from 2008 in the \textit{Journal of Pain} (the APS’s publication) titled “Addressing the Decline in NIH Pain Research Funding” highlighted the importance of compiling good data on funding so pain management physicians could “more effectively manage our experiments in nurturing pain research.”\textsuperscript{109}

Chronic pain was and is still a major issue in the United States. However, the tale of the rise of pain management highlights a specialty that, against all odds, managed to position itself to have political and medical

\textsuperscript{107} Gatchel et al., “Interdisciplinary Chronic Pain Management.” 123.
\textsuperscript{108} Ibid, 123.
recognition and change the way that pain was treated in America. The reality was that these organizations positioned themselves to be important and invaluable resources to the federal government when it came to regulating prescribing practices, funding pain research, and illustrating the importance of effectively diagnosing and treating pain. Bonica’s dream of a pain specialty blossomed not only into a medical community and practice, but into a highly influential public policy lobbying entity. Pain relief used to be “nobody’s job,” but now it was finally a national health problem that everyone needed to fix.110

Conclusion

The field of pain management underwent a renaissance in the 1990’s and early 2000’s, building from the foundation of pain management organizations in the 1970’s and early 1980’s into national campaigns focused on improving pain treatments. These organizations, like the IASP, AAPManagement, AAPMedicine and APS, were the drivers of this change. By successfully influencing HHS guidelines, the VA Pain Management National Strategy, and the Joint Commission Standards, these organizations changed how physicians across the country thought about and treated pain conditions. The standards and guidelines that were released in the 1990’s and early 2000’s illustrated a stark difference in pain theory and practice from the earlier approaches of mind-body dualism and psychological dismissal of unexplained pain that ruled medical theory for a long time. With the introduction of Gate Control Theory and the rise of multidisciplinary pain clinics, understanding and treating pain in the latter part of the twentieth century became focused on comprehending the patient and their pain holistically. With accreditation and education efforts, campaigns like Pain as the Fifth Vital Sign emphasized the impact that pain management organizations had on how physicians, governmental organizations, and the general public assessed and prioritized effectively treating pain.

These organizations also had a major impact in the political sphere in addition to the medical guidelines and standards. The evolution of the role of pain management organizations has changed along with the specialty. The
APS, AAPManagement, and AAPMedicine evolved into advocacy organizations due to the realization that educating the medical community was not enough to highlight the importance and urgency of accurately diagnosing and effectively treating pain. Bonica began this call to action by calling chronic pain a national health problem, which was further highlighted by the necessity of pain professionals functioning as experts in SSDI hearings. With these hearings, pain became further politicized, leaning towards either a liberal or conservative pain standard depending on the sociopolitical view of the people in pain. It was this politicization that highlighted the need and the opportunity for pain management organizations to influence legislation and pain research, as seen by the 1987 IOM report that included a call to action for data and research about chronic pain and educating professionals to diagnose and treat it.

From 2010 on, the efforts of the pain management specialty became increasingly focused on the opioid epidemic. In 2013, the American Academy of Pain Medicine released a position statement about the use of opioids for the treatment of chronic pain. Citing an Institute of Medicine report, the AAPMedicine noted that pain is one of the most common reasons why people go to the doctor, but that frequently it is “inappropriately treated.” Federal and state policies surrounding opioids were beginning to undergo revisions, prompting the policy statement from the AAPMedicine to remind legislators that limits on inappropriate opioid prescribing should not “discourage or
prevent prescription of opioids where medically indicated and appropriately managed.” Given the increasing trend of legislating access and prescribing practice of opioids, the AAPMedicine was steadfast in the belief that chronic pain sufferers deserve adequate treatment, and if that necessitates opioids they should be able to use them safely and appropriately. Physicians should “act responsibly” to reduce the risks of addiction, and the use of opioids should occur only after a thorough patient evaluation, discussion of alternatives, and development of a treatment plan with ongoing monitoring and documentation.³

A position paper from the American Pain Society in 2014 argued that chronic pain was the “most prevalent, disabling, and expensive public health condition in the United States,” affecting more than 100 million people and costing $635 billion to society annually.⁴ Despite this enormous socio-economic impact, in 2012, less than 1.2 percent of the $396 million allocated for the NIH research budget was devoted to pain research.⁵ To put this into perspective, the six major chronic conditions that are funded by the NIH are heart disease, diabetes, HIV/AIDS, Alzheimer’s disease and cancer. The NIH spends $48 per affected person for heart disease in research, $41 for diabetes, $2,562 for HIV/AIDS, $97 for Alzheimer’s, and $431 for cancer.⁶ For chronic

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2 Ibid.
3 “Use of Opioids for the Treatment of Chronic Pain.”
6 Ibid.
pain, the NIH shells out a meager $4 per affected person. Yet, according to an Institute of Medicine (IOM) report in 2011, annual government expenditures for chronic pain care are $99 billion.

The APS position paper argued that limited funding for pain research has created a lack of new pain treatments and an inadequate amount of information regarding the long-term safety of opioids which detrimentally affected the ability of clinicians to provide evidence-based care and pain treatment to their patients. The APS alleged that the opioid crisis “emerged in the context of limited availability of alternative treatments and insufficient data regarding the long-term safety and efficacy of long-term opioid therapy for chronic pain.” In 2016, the American Medical Association, in a reaction to the opioid crisis, publicly recommended that pain should be removed as the fifth vital sign. The AMA passed a resolution imploring the Joint Commission to stop requiring pain as the 5th vital sign in accredited hospitals. The same resolution also encouraged HHS to remove pain assessment scores from the Hospital Consumer Assessment of Healthcare Providers and Systems survey which included three questions to assess pain management that they felt pressured physicians to prescribe opioids. Treating pain had become a priority in medical practice, but without adequate pain management education, the first line of aggressive pain defense was and continues to be opioids.

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7 Ibid.
8 Ibid.
9 Ibid.
10 Gereau et al. 1204.
The IOM report stated that a “cultural transformation in the way pain is understood, assessed, and treated” was the only way that the nation could begin to address the “enormous burden of pain.”\textsuperscript{12} The APS, in their 2014 position statement, stated that they will continue to advocate for increased pain research funding in the twenty-first century. The Pain as the Fifth Vital Sign advocacy campaign may have ended, but the effects of the campaign and the advocacy efforts of the American Pain Society, American Academy of Pain Management, and American Academy of Pain Medicine during the 1990’s and 2000’s are still tangible today.

In 2016, the Department of Health and Human Services released a National Pain Strategy that called for a plan to reduce the burden of chronic pain in the United States. The strategy recognizes that interdisciplinary approaches to pain management produces the best results in patients with the most severe and persistent pain problems.\textsuperscript{13} With wide variation in clinical practices and the inappropriate and/or repeated use of ineffective and risky single-modality treatments, the NIH argued that these practices have been linked to poor quality outcomes and high costs of pain treatment.\textsuperscript{14} Therefore, federal focus shifted to improving pain assessment through developing and enhancing the delivery of integrated, multimodal and interdisciplinary care. In order to achieve this, the strategy calls for consistent pain assessments,
payment reform to foster interdisciplinary care, and greater support for primary care physicians to consult with pain specialists to deliver safe, effective, and timely care.\textsuperscript{15} Unlike the early days of the pain management specialty where there were few pain management physicians or treatment centers available for consultation or referral, there are now many specialized physicians and centers available to consult with primary care physicians. In 2015, there were 4,607 active pain management physicians practicing in the United States.\textsuperscript{16} The American Pain Society website lists more than 40 well-recognized multidisciplinary pain medicine centers across the country.\textsuperscript{17}

The 2016 National Pain Strategy also called for more pain research, but until recently, Congress had not made an appropriation to specifically fund chronic pain. This finally changed in 2018 with the Opioids and STOP Pain Act when Congress appropriated $1 billion for fiscal years 2018 and 2019 for NIH opioid and pain research, also known as the HEAL initiative.\textsuperscript{18} The Alliance for Headache Disorders Advocacy led this lobbying effort with the annual Headache on the Hill (HOH) event. I participated in this effort as a patient lobbyist alongside physicians, some of whom practice pain medicine and hold memberships in the American Pain Society. These appropriations, however, are only the beginning of tackling the problem of pain.

\textsuperscript{15} Ibid.
The growth of the multidisciplinary pain management movement provided the institutions and standards to effectively treat pain. However, the underfunding of pain research, overreliance on opioids and the carving out of insurance reimbursement threatened the ability of multidisciplinary clinics to provide necessary care. In 2019, there is a major push to adopt the multidisciplinary model for other specialties, especially as the country begins to transition to bundled payments and value-based and risk-based reimbursement systems that encourage coordinated care and multidisciplinary approaches. The multidisciplinary pain movement provided the foundation and the evidence that value-based holistic care worked. Major health systems like Geisinger and the Mayo Clinic have multidisciplinary pain management programs that take a holistic approach to managing pain.19 Geisinger claims that their program offers new hope for chronic pain patients, with initial data from the program highlighting an increase in quality of life, decreased pain, and improved functionality.20

Furthermore, the Geisinger pain management program aims to reduce patient dependence on opioids and pain medicine by providing other treatment modalities.21 A recent study from Geisinger physicians found that using opioids to treat long-term chronic pain interferes with the body’s ability to resolve pain naturally, increasing risks of addiction, depression, and

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21 “Multidisciplinary Pain Management.”
malfunction of the pituitary gland and hypothalamus.\textsuperscript{22} The program has shown an overall reduction in their patient’s pain levels while also reducing opioid usage by over 20 percent.\textsuperscript{23}

In a further affirmation of the benefits of a multidisciplinary approach, the United States Army in recent years implemented the Army Comprehensive Pain Management Program focusing on effective treatment of acute and chronic pain by minimizing opioids and optimizing the use of non-pharmacological therapies through comprehensive, holistic and multidisciplinary pain plans. The Army Medicine Pain Management is centered on the concept of the Military Health System Stepped Care Model for Pain that allows primary care teams to have pain champions, internal behavioral health consultants, and clinical pharmacists to assist in managing patients with pain that isn’t responding to initial treatment. Patients that are not improving or responding to treatment in the primary and secondary levels of the Stepped Care Model, may receive additional care from one of the 12 Interdisciplinary Pain Management Centers that deliver therapies for patients with complex, chronic pain.”\textsuperscript{24} The Army reported 198,000 visits in 2017 to such interdisciplinary centers and a decrease in opioid addition rates.\textsuperscript{25}

\textsuperscript{23} “Multidisciplinary Pain Management.”
\textsuperscript{25} “U.S. Army Sets Its Sights on Chronic Pain.”
The cultural transformation that the IOM report called for in 2011 is occurring as many organizations and physicians are realizing that pain can be treated effectively in a multidisciplinary setting without opioids. However, there is still a need to reform multiple systems to increase the effectiveness of the multidisciplinary pain management infrastructure. Pain research needs to be funded. With an over-reliance on opioids from the 1990’s until now, very little research has been funded to research pain mechanisms and novel pain treatments. Secondly, the United States needs to move from the fee-for-service model to a value-based care model. Multidisciplinary approaches have been proven to reduce costs and improve patient outcomes; however the reimbursement practices of “carving out” and only reimbursing single-modality treatments only furthers ineffective and costly healthcare. By funding pain research and implementing payor reform, pain management can immensely help millions of Americans who suffer from chronic pain. The development of the pain management specialty began because physicians failed to prioritize and treat complex pain. With the efforts of pain management advocacy organizations, pain became a national medical issue in the 1990’s and 2000’s. The full potential of the specialty was never achieved due to reimbursement practices that hindered multidisciplinary treatment, over-reliance on opioids, and a failure to fund alternative pain research. The future of the pain management specialty is at a crucial moment. In order to make an even larger impact than the multidisciplinary pain management movement has already made, pain research needs to be funded and payment reform must happen so chronic pain sufferers can receive life-changing care.
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