

Topics in Clinical Practice

Accountable disease management of spine pain

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Abstract

The health care landscape has changed with new legislation addressing the unsustainable rise in costs in the US system. Low-value service lines caring for expensive chronic conditions have been targeted for reform; for better or worse, the treatment of spine pain has been recognized as a representative example. Examining the Patient Protection and Affordable Care Act and existing pilot studies can offer a preview of how chronic care of spine pain will be sustained. Accountable care in an organization capable of collecting, analyzing, and reporting clinical data and operational compliance is forthcoming. Interdisciplinary spine pain centers integrating surgical and medical management, behavioral medicine, physical reconditioning, and societal reintegration represent the model of high-value care for patients with chronic spine pain. © 2011 Elsevier Inc. All rights reserved.

Keywords:

Health care reform; Interdisciplinary spine pain center; Neck pain; Back pain; Accountable care organization

Introduction

The health care landscape has changed with new legislation addressing the unsustainable rise in costs in the US system. Low-value service lines caring for expensive chronic conditions have been targeted for reform; for better or worse, the treatment of spine pain has been recognized as a representative example. Exactly how this will impact the future of spine care remains to be seen. Understanding the details of the recent health care reform bill and the experiences of early reform efforts in states, such as Rhode Island, offers a preview of how sustainable care through accountable integrated organizations will develop.

The aim of this commentary is to examine recent legislation and reform efforts and their anticipated impact on spine care. It begins with an assessment of the problems in the current model of spine care from the viewpoint of health care policymakers. Next, it examines current reform

efforts and salient portions of the recent health care legislation. This is followed by a discussion of the role of interdisciplinary spine pain centers (ISPC) within the emerging health care environment. Finally, it ends with a discussion of practical goals for future success.

As the theories of health care economists have crystallized into law, change is on the horizon. If these theories are correct, the pending reform to the payment and regulatory systems will remove the barriers that have kept ISPCs from becoming the standard of care. By learning from the failures and successes of capitation in the 1990s, high-value care can be achieved while better protecting the interests of all stakeholders in the important field of spine pain.

Current problems from a policymaker's viewpoint

The statistics of spine care are well known to providers and policymakers. In this time of change, it is important to consider the following details from the viewpoint of the latter. As the single costliest chronic condition, spine pain illustrates the challenges facing the US health care system [1,2]. Increasing costs for services and exploding utilization cannot be maintained as the US population ages. Eighty percent of the population experiences spine pain at some point in their lives [3]. It is not simply the overall cost of spine care that concerns policymakers. Rather, it is the cost and value of spine care relative to other areas of health care.

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Recently, lumbar fusion surgery was identified to be the number one inpatient cost to United Health care, and outpatient data show that spine pain is the number one cost in that venue [2,4]. Spine pain is second only to upper respiratory infections as a cause of work absenteeism and is the most common industrial injury in the United States, accounting for 41% to 87% of worker's compensation costs [5]. Although 90% of spine pain resolves within 6 weeks, direct and indirect costs have been estimated as high as \$100 billion per year in the United States [6,7]. Changes in demographics are compounding this problem. Twenty percent of the population will be over the age of 65 by 2020 as the baby boomers age. Medical enrollees in Medicare/Medicaid are set to double between now and 2020 because of increasing life expectancy and expanding coverage benefits [7]. To offer high-quality care to US citizens into the future, value in service lines must be optimized.

Public policy experts have identified spine care as an area capitalizing on low-value care. Incentives inherent in the fee-for-service model have created a system that rewards treatment of recurrent episodes with a high volume of procedures providing short-term relief rather than long-term patient management. Despite evidence to the contrary, financial motivation has created a formidable industry promising identification of nociceptors and technological cures for spine pain [8]. Competition for these patients as sources of revenue has undermined physician collaboration and resulted in fragmented care. The use of pharmaceuticals, advanced imaging, injection procedures, and surgeries have all increased dramatically without demonstrating commensurate improvements in outcomes.

Medication costs have escalated as overall use has increased combined with aggressive marketing of proprietary drugs. Many of these drugs have not curbed health-care utilization or improved function [9]. Opioid use for spine pain increased from 9.42 million prescriptions in 1997 to 19.56 million in 2004 [10,11]. Evidence that these medications help spine pain is lacking, and a growing body of literature suggests that they are harmful in the long term. Michna et al. [12] found that over 45% of patients taking opioids exhibited aberrant drug-taking behaviors. Deaths from unintentional drug overdose have increased nearly 10-fold in the last 30 years [13]. Opioids may decrease immune system functions and hormone levels and can lead to an increased sensitivity to pain [14–16]. Morbidity is not unique to opiate drugs with 16,500 deaths per year occur in the United States from nonsteroidal anti-inflammatory medications [17].

Imaging costs for the assessment of spine pain have drastically increased. Lumbar spine magnetic resonance imaging charged through Medicare increased from 349,000 to 1,420,000 between 1994 and 2004 as this technology became more commonplace [10]. Defensive medicine has accounted for some of this increase. A recent article presented at the meeting of the American Academy of Orthopedic Surgery in San Diego found that over one-third of orthopedic imaging costs were attributable to

“defensive” purposes [18]. Entrepreneurial pursuits have also driven this movement with freestanding imaging facilities and office-based magnetic resonance imaging machines becoming some of the biggest revenue generators in medicine.

Injections for spine pain have seen an explosion in popularity [19]. Between 1997 and 2006, facet procedures increased by 543%. The application of this technology has not been uniform, with a 26.8 fold variability seen between Florida and Hawaii [20]. Akuthota et al. [21] examined the variability in injection treatments and found that fluctuations exist not only by location but also by provider. Physicians in the top decile of usage inject their patients 9× more than those in the lowest decile, and perform 4.5× more procedures than the median. Unfortunately, this increase has been in the face of evidence that questions their value. A recent Cochrane review concluded, “there is moderate evidence that facet joint injections with corticosteroids are not significantly different from placebo injections for short-term pain relief and improvement of disability” [22]. Although some professional societies claim that injection procedures are still justifiable for diagnostic purposes, the Guideline of the American Pain Society concludes, “there is no evidence for diagnostic or therapeutic facet joint interventions” [23].

Spine surgery trends are similar. The United States performs far more segmental spine fusion surgeries than any other country [24]. There has been a 220% increase in lumbar fusion surgery for degenerative conditions from 1990 to 2001. Between 1996, when interbody fusion cages became available, and 2001, the increase (113%) was eight times that of hip replacements (13%) and knee replacements (15%) [10,25]. More recent data on spinal stenosis surgery have shown that, although the total number of lumbar fusions plateaued, costlier and more complex approaches continued to increase between 2002 and 2007. Hospital charges for these more complex procedures are \$80,888 compared with \$23,724 for a simple decompression surgery, with evidence lacking to support the use of one procedure over the other under most circumstances [26]. Although surgery has shown benefit over nonsurgical care for spinal stenosis, trials have focused on decompression alone. In the Spine Patient Outcomes Research Stenosis Trial, for example, 89% of surgical patients were treated with standard decompression without fusion [27]. For other indications, fusion by a single approach compared with newer fusion techniques incorporating expensive implants or a combined anterior and posterior approach have been shown to have a similar effect on pain and function [26]. Some studies have shown even more tempered enthusiasm for surgical treatment of back pain. The Swedish Lumbar Spine Study showed that fusion only provided a 30% reduction in pain, and a study in Washington State revealed that zero patients returned to work after lumbar fusion surgery [28,29]. Not only are the benefits in debate, risks to patients are higher when a fusion is added to a decompression

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