Future Directions for Pain Management

Lessons from the Institute of Medicine Pain Report and the National Pain Strategy

Sean Mackey, MD, PhD*

KEYWORDS

• Precision medicine • Learning health systems • National Pain Strategy • Chronic pain
• Institute of Medicine

KEY POINTS

- Chronic pain affects 100 million Americans and costs our country half a trillion dollars per year.
- Chronic pain can be a disease in itself. We need to better understand the complex mechanisms of pain and translate these mechanisms into safe and effective therapies.
- We need to increase and incentivize the use of interdisciplinary, team-based assessment of chronic pain, particularly in complex cases.
- For a precision pain medicine approach, we need improved data that characterizes the individual pain experience and the outcomes of treatments.

INTRODUCTION

Perioperative and chronic pain management has advanced significantly during the past several decades. We are moving beyond the Cartesian notion of pain in which stimulus or injury is directly related to pain. Instead, we have learned that pain is a uniquely individual and subjective experience that involves not only biological but also psychological and social factors. **Fig. 1** illustrates the multidimensional nature of the pain experience.

Our increasing knowledge of the mechanisms and factors related to the multidimensional nature of pain has translated into improved understanding of the care for the patient in pain. We have improved surgeries, interventional procedures, medications, psychologic interventions, physical therapy, and complementary approaches. We also have greater appreciation for the need for an interdisciplinary, team-based approach to optimize pain care, particularly for more complex cases. This increase in our treatment approaches is particularly important in light of our country's current prescription opioid epidemic. In fact, opioids are continuing to be moved down the list of approaches as more efficacious treatments are identified and the deleterious effects of opioids on some patients better appreciated.

Despite these advances, we still have millions of people suffering from pain with a cost in the billions to society. Where do we go from here? Two recently released national publications outline a clear path forward for the future of pain assessment, prevention, management, and research. The first of these, the *Relieving Pain in America*: *A Blueprint for Transforming Prevention*, *Care*, *Education*, *and Research* report from the Institute of Medicine (IOM), provides the vision and high-level view of

The author has nothing to disclose.
Departments of Anesthesiology, Perioperative and Pain Medicine, Neurosciences and Neurology, Stanford University School of Medicine, Palo Alto, CA 94304, USA
* Stanford University, 1070 Arastradero, Suite 200, Palo Alto, CA 94304.
E-mail address: smackey@stanford.edu

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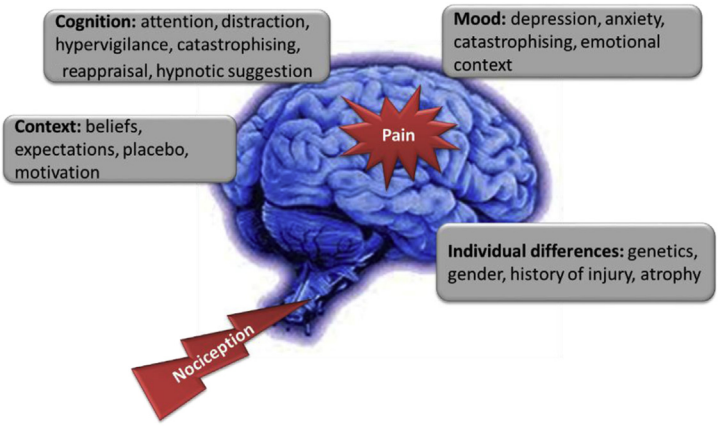

Fig. 1. Multidimensional aspects of pain. Pain is an integrative sum of nociceptive input (ie, signals from periphery during injury or surgery) combined with multiple factors that modulate this input to generate the complex and individual experience of pain.

the path forward. The second, the *National Pain Strategy* (NPS), shows us how to achieve the vision of optimal pain assessment, prevention, and care. This discussion emphasizes information relevant for the readers of this journal.

Relieving Pain in America: a Blueprint for Transforming Prevention, Care, Education, and Research

As part of the 2010 Patient Protection and Affordable Care Act, the IOM was charged "to increase the recognition of pain as a significant public health problem in the United States." Accordingly, Department of Health and Human Services (HHS), through the National Institutes of Health (NIH), requested that the IOM conduct a study to assess the state of the science regarding pain research, care, and education and to make recommendations to advance the field. The efforts of the multidisciplinary committee that was formed, in which I was honored to be a member, resulted in the IOM report, *Relieving Pain in America*. This report was guided by several underlying principles noted in **Box 1**.

One of the charges to the IOM Pain Committee was to "review and quantify the public health significance of pain." We commissioned an econometric study that estimated that an astounding 100 million American adults are affected by chronic pain, exceeding the numbers of those affected by diabetes, cancer, and heart disease combined.[1] These estimates of chronic pain are an overall underestimate because they do not include adults affected by acute pain, children with either acute or chronic pain, or adults living in long-term care facilities, in the military, or in prison.[2] Furthermore, pain affects millions of Americans throughout their lifetime, increases disability, consumes resources in the health care system, and results in a significant economic burden for the entire nation. The staggering socioeconomic burden of pain is thought to exceed half a trillion dollars per year. Overall, chronic pain has significant effects on the individual in relation to physical functioning, quality of life, and psychological well-being.

To address the problem of pain, we put forward that our nation should adopt a population-level prevention and management strategy and tasked HHS with developing a comprehensive plan with specific goals, actions, stakeholders, and timeframes. This plan should:

- Heighten awareness about pain and its health consequences
- Emphasize the prevention of pain
- Improve pain assessment and management in the delivery of health care and financing programs of the federal government
- Use public health communication strategies to inform patients on how to manage their own pain
- Address disparities in the experience of pain among subgroups of Americans.

One of the key messages was that better data on pain are needed, including data on pain prevalence, incidence, and treatments. This includes data on characteristics of both acute and chronic pain, as well as factors that cause pain after surgery to develop into chronic pain. We are only starting to better understand the factors that lead patients to develop persistent postsurgical pain and persistent use of opioids.[3–5] Much of that knowledge points to factors that patients bring to the operating room (eg, catastrophizing, early adverse life events, depression, anxiety) or an