

**IMPROVING PAIN MANAGEMENT
AND SUPPORT FOR WORKERS WITH
MUSCULOSKELETAL DISORDERS:**
Policies to Prevent Work Disability and Job Loss

Volume 1: Policy Action Paper





IMPROVING PAIN MANAGEMENT AND SUPPORT FOR WORKERS WITH MUSCULOSKELETAL DISORDERS: Policies to Prevent Work Disability and Job Loss

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PREFACE

The Stay-at-Work/Return-to-Work (SAW/RTW) Policy Collaborative was established by the U.S. Department of Labor's Office of Disability Employment Policy (ODEP) to support the development of policies, programs, and practices that encourage the continued employment of workers likely to leave the workforce due to injury, serious illness, or disability. The Collaborative consists of a Community of Practice to provide input and real-time feedback on specific policy topics related to SAW/RTW, and Policy Working Groups (PWGs), led by Subject Matter Experts (SMEs) and supported by IMPAQ International who explore policies and practices that curtail long-term work disability and job loss due to injury and illness, provide policy recommendations to key stakeholders, and develop resources to support policy action. The 2017 PWGs focused on three topics: (1) Replicating and Adapting the State of Washington's Centers of Occupational Health and Education (COHE) Model; (2) Musculoskeletal Conditions and Pain Management; and (3) Transition Back to Work. This Policy Action Paper is a product of the Musculoskeletal Conditions and Pain Management PWG co-led by Bill Shaw (SME Lead) and Linda Toms Barker (IMPAQ Lead). This paper is supplemented by *Volume 2: Resource Compendium for Musculoskeletal Disorders and Pain Management*, providing additional annotated resources.¹

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VISION STATEMENT

The work of the Musculoskeletal Conditions and Pain Management Policy Working Group and the recommendations presented in this paper are guided by the following vision:

To promote an effective, evidence-based, and timely approach to managing musculoskeletal pain and disability that applies a biopsychosocial treatment model to restore workplace function and prevent or minimize work disability as early as possible, including, at a minimum:

- Early screening and assessment of patients to identify personal and workplace risk factors for work disability.
- Time-limited patient counseling, education, and support to improve coping and work-related function and to promote long-term pain self-management skills.
- Employer support and communication to facilitate job accommodation efforts.
- Patient-centered decision-making and coordination among healthcare providers, payers, and employers.
- Use of a biopsychosocial pain and disability management and support approach throughout the course of care as needed, rather than as a treatment of last resort.

Achieving these goals requires that policy changes be instituted at multiple levels and involve several key stakeholders.

EXECUTIVE SUMMARY

The escalating prevalence of chronic musculoskeletal pain and its associated work disability in the United States over the past 30 years has become a public health crisis, a major source of poverty and suffering, and a financial strain on disability insurance systems. The number of Americans receiving Social Security Disability Insurance (SSDI) benefits has increased steadily, from 5.5 million in 2002 to 8.8 million in early 2017¹. Musculoskeletal pain is the chief complaint for 36.3% of SSDI beneficiaries; this represents a dramatic shift over the past few decades. In 1961, for example, only 8.2% of SSDI recipients had a chief complaint of musculoskeletal pain². The recent opioid crisis, which has led to a serious loss of life and livelihood, has highlighted the need to improve musculoskeletal pain and disability management strategies among working-age adults, especially with respect to employment and other functional health outcomes.

Although musculoskeletal pain affects quality-of-life in many respects, this paper is focused on “work disability,” which we define as the inability of working-age adults to perform essential job tasks or maintain employment due to health concerns and functional limitations. Most workers experiencing musculoskeletal pain find a way to continue working without permanent medical restrictions or formal requests for job accommodation. Still, some workers find it difficult to stay at work or return to work after treatment; this outcome is influenced by a complex set of factors involving the individual, the healthcare system, the employment setting, and the rules and policies set up by private and public disability insurance and benefit systems.

Reversing the recent trend of increasing long-term disability rates and opioid misuse will require changes in stay-at-work/return-to-work (SAW/RTW) policies at multiple levels: federal and state governments, professional and academic training institutions, healthcare providers, insurers/payers, and employers. In this paper, an interdisciplinary Policy Working Group of eight experts in musculoskeletal (MSK) disorders and pain management have identified six primary focus areas that should be the target of improved MSK pain and disability management policies: (1) drug formularies and treatment guidelines; (2) education and training; (3) reimbursement for healthcare services; (4) employer injury and disability prevention practices; (5) data collection and monitoring; and (6) federal inter-agency leadership. Within these six focus areas, the Policy Working Group provides the following 17 specific policy recommendations:

Focus Area 1: Drug Formularies and Treatment Guidelines

- 1. State governments and professional associations should ensure that treatment guidelines, claim/case management protocols, and utilization management protocols for MSK disorders preferentially recommend interventions aimed at increasing function in meaningful ways, such as everyday activities, minimizing work disruption, preserving or promptly restoring job-related functions, and preventing loss of livelihood.**
- 2. State governments and professional associations should ensure that treatment guidelines, claim/case management protocols, and utilization management protocols for MSK disorders recommend early identification of SAW/RTW challenges (especially workplace issues and dysfunctional pain-related beliefs), multi-stakeholder communications, professionally**

¹ Social Security Administration. (2017) *Disabled worker beneficiary statistics by calendar year, quarter, and month. Selected Data from Social Security's Disability Program*. <https://www.ssa.gov/oact/STATS/dibStat.html>

² Social Security Administration. (2016) *Annual Statistical Report on the Social Security Disability Insurance Program, 2015*. Washington, DC. https://www.ssa.gov/policy/docs/statcomps/di_asr/2015/di_asr15.pdf

facilitated SAW/RTW problem-solving sessions at the worksite, and patient-centered education and counseling.

3. Federal and state governments should take active steps to ensure that drug formularies are transparent, evidence-based, and broad enough to facilitate and encourage effective prevention and treatment of both chronic pain and substance abuse, including development, dissemination, and active promotion of a model formulary.
4. States should take active steps to foster collaboration and apply greater consistency/uniformity of content in the development and application of pain treatment guidelines, drug formularies, and/or Prescription Drug Monitoring Programs (PDMPs) within their jurisdictions and across adjacent jurisdictions.

Focus Area 2: Education and Training

5. Educational institutions and licensing bodies should require training for all types of providers who treat painful MSK disorders to address a broad range of issues in pain management and support, including biopsychosocial screening, the need to address potential for substance abuse, and preventing and managing work disability.
6. Educational and licensing institutions should establish standardized training and certification to distinguish providers who specialize in: (a) short-term biopsychosocial counseling and education of patients with painful conditions about how to live well despite pain, and to restore quality of life, including everyday functions and work; and (b) accurate evaluation and effective treatment of co-existing dependence/addiction to opioids, alcohol, and other psychoactive substances.
7. State and professional organizations should increase consumers', primary care providers', and medical specialists' awareness of, and access to, function- and work-oriented pain management services that use a biopsychosocial approach, especially patient education and counseling, emphasizing the health benefits of continued employment for most patients.

Focus Area 3: Healthcare Reimbursement Policies

8. The American Medical Association and other healthcare coding entities should establish dedicated billing codes and fee structures for time-limited, disability-focused, behavioral pain management interventions.
9. State, federal, and private insurance plans should encourage biopsychosocial pain assessment and disability-focused services for MSK pain and work disability lasting more than six weeks.
10. Payers should view employment as a critical health outcome indicator and provide incentives for healthcare providers to use evidence-based pain management strategies to improve job retention and reduce the risk of work disability.

Focus Area 4: Employer Disability Prevention Practices

11. State and professional organizations should promote improved employer practices for workplace communication and accommodation that are designed specifically to address long-term challenges associated with MSK pain and disability, as well as put into place primary prevention efforts, such as workplace injury and illness prevention strategies.
12. States should mandate a professionally facilitated worksite meeting for workers at risk of long-term disability or job loss, to improve communication about SAW/RTW, the need for job accommodation, and whether opioid treatment may be compatible with work.

Focus Area 5: Data Collection and Monitoring

- 13. State governments should improve the uniformity, reach, and utility of PDMPs, computerized systems designed to track and regulate opioid prescriptions for individual patients across multiple providers and pharmacies.**
- 14. The federal government should initiate a pilot funding program for states to conduct system- and patient-level outcome assessments that evaluate the effectiveness of policy changes associated with MSK disability prevention.**
- 15. Health insurance providers should view employment as a critical health outcome indicator and routinely collect work information and patients' working status to guide clinical decision-making and as a quality-of-care indicator.**

Focus Area 6: Federal Leadership for Policy Change

- 16. The federal government should initiate an internal leadership collaboration across federal agencies to foster uniformity of policies in SAW/RTW practices and to establish common research and policy priorities to prevent disability associated with MSK pain.**
- 17. The federal government should underwrite a free-standing entity or institute for mitigating the impact of MSK disorders on people's participation in life and work.**

Without policy-level changes to transform the behaviors of workers, insurers, and employers, insurers will not reimburse more effective services targeting SAW/RTW, clinicians will not be incentivized to address workplace concerns or problems, employers will not improve job accommodation efforts, and workers will not receive the screening, counseling, and education necessary to develop effective pain-coping and self-management skills necessary to remain in the workforce. Without robust policy change, the underlying factors contributing to the opioid crisis and to the growing number of working-age adults receiving SSDI benefits will remain unchanged. Adopting these policies should result in improved pain management and support, as well as organizational strategies to improve work-disability outcomes for workers experiencing MSK disorders.

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1. INTRODUCTION

Musculoskeletal (MSK) disorders are a common health concern among working-age adults. These conditions are responsible for a considerable amount of pain, activity limitation, and healthcare services throughout the world.¹ MSK disorders include a wide array of injuries, diseases, and pain conditions affecting joints, ligaments, muscles, tendons, and nerves of the human musculoskeletal system. Pain is a frequent symptom of MSK disorders, and the onset of pain can be either gradual or sudden. The most common MSK disorders include low back pain, neck pain, osteoarthritis, carpal tunnel syndrome, tendonitis, and epicondylitis. Many cases of acute MSK pain resolve within a few weeks, but others can transition to become chronic or recurring pain conditions.

For working adults who develop chronic, episodic, or recurrent MSK symptoms, one lifestyle challenge is to maintain a normal work schedule and keep up with job demands while self-managing residual pain, preventing re-injury, avoiding discouragement, and seeking alternate pain treatments. However, most workers find a way to continue working without permanent medical restrictions or formal requests for job accommodation. Qualitative interviews with workers suggest that this is possible by leveraging available job flexibility, by careful workplace planning and decision-making, by obtaining job assistance and social support in and out of work, and by communicating needs effectively and judiciously with peers and supervisors.^{2, 3} Still, some workers find it difficult to stay at work or return to work after treatment, and this outcome is influenced by a complex set of factors involving the individual, the health care system, the employment setting, and the rules and policies set up by private and public disability insurance and benefit systems.⁴

Today, the problem of chronic MSK pain and disability has become a major public health crisis in the United States, a major source of poverty and suffering, and a financial strain on medical and disability insurance systems. The number of Americans receiving Social Security Disability Insurance (SSDI) benefits has steadily increased, from 5.5 million in 2002 to 8.8 million in early 2017.⁵ Musculoskeletal pain is now the chief complaint for 36.3% of SSDI beneficiaries; this represents a dramatic shift over the past few decades. In 1961, for example, only 8.2% of SSDI recipients had a chief complaint of MSK pain.⁶

The recent opioid crisis, which has led to a serious loss of life and livelihood, has highlighted the need to improve MSK pain and disability management strategies among working-age adults, especially with

¹ Woolf, A. D., Erwin, J., & March, L. (2012). The need to address the burden of musculoskeletal conditions. *Best Practice & Research Clinical Rheumatology*, 26(2), 183-224.

² Blyth, F. M., March, L. M., Nicholas, M. K., & Cousins, M. J. (2005). Self-management of chronic pain: a population-based study. *Pain*, 113(3), 285-292.

³ Tveito, T. H., Shaw, W. S., Huang, Y. H., Nicholas, M., & Wagner, G. (2010). Managing pain in the workplace: a focus group study of challenges, strategies, and what matters most to workers with low back pain. *Disability & Rehabilitation*, 32(24), 2035-2045.

⁴ Loisel, P., Durand, M. J., Baril, R., Gervais, J., & Falardeau, M. (2005). Interorganizational Collaboration in Occupational Rehabilitation: Perceptions of an Interdisciplinary Rehabilitation Team. *Journal of Occupational Rehabilitation*, 15(4), 581-590.

⁵ Social Security Administration. Annual Statistical Report on the Social Security Disability Insurance Program, 2015. Washington, DC. https://www.ssa.gov/policy/docs/statcomps/di_asr/2015/di_asr15.pdf

⁶ Social Security Administration. *Disabled worker beneficiary statistics by calendar year, quarter, and month. Selected Data from Social Security's Disability Program*. <https://www.ssa.gov/oact/STATS/dibStat.html>

respect to employment and other functional health outcomes. Thus, this paper is focused on the specific problem of MSK-related “work disability,” which we define as the inability of working-age adults to remain gainfully employed due to health concerns. The complexity and multifaceted nature of MSK work disability suggests that significant improvements in SAW/RTW outcomes cannot occur without changes to the policies and practices affecting worker, provider, and employer decision-making and behavior. Although improving medical treatments to alleviate MSK pain is an important goal, reducing the work disability associated with MSK disorders may require a broader, biopsychosocial approach that incorporates individual, organizational, and societal influences on work disability.

2. STATEMENT OF THE PROBLEM

2.1 The Prevalence of Musculoskeletal Pain

The Institute of Medicine (IOM), in its report, *Relieving Pain in America*,⁷ highlighted the urgent need for better pain management methods because of the unsustainable trend in increasing costs of current treatment approaches. The report estimated the annual cost of chronic pain in the United States to be between \$560 and \$600 billion. The report also indicated that MSK pain is the most common type of chronic pain, with chronic low back pain the most prevalent condition in this category. Approximately 54% to 80% of Americans suffer from spinal pain at some point in their lives.⁸ About 80% of Americans will experience at least one episode of low back pain (LBP) during their lifetime,⁹ and 15% to 20% report LBP at some time in a one-year period.¹⁰ Although most cases of acute MSK pain resolve with little or no treatment, and involve no significant period of work absence, a small percentage of cases transition to chronic pain; these cases account for the large majority of health care and disability costs. The economic burden of LBP is quite large and continues to grow in the United States. Total health care costs for LBP, combining direct and indirect costs, accounts for approximately \$261 to \$300 billion annually.¹¹

Some cases of MSK pain can be attributed to occupational exposures. In 2015, MSK disorders accounted for 31% (356,910 cases) of total number of workplace injuries that resulted in at least one day of work loss time in the United States.¹² This corresponds to an incidence rate of 29.8 cases per 10,000 full-time workers in 2015, down from 31.9 cases in 2014. Private industry workers who sustained a MSK disorder in 2015 required a median of 12 days (down from 13 days in 2014) to recuperate before returning to work, compared to 8 days for all days-away-from-work cases.¹³ Although rates of injury claims for work-related MSK disorders have shown a slow, steady decline overall for several decades, there is a recent opposing trend for injured workers to experience longer absence and greater risk of long-term work disability.¹⁴

After the IOM Report of 2011, the urgency of the problem of pain was further emphasized by the National Institutes of Health's *National Pain Strategy: A Comprehensive Population Health Strategy for Pain*.¹⁵ This document highlights the need for a biopsychosocial model for the treatment of pain, as understanding the exact pathophysiology of pain is often difficult, and pain beliefs, lifestyle, and other psychosocial

⁷ Institute of Medicine of the National Academy of Science. (2011). *Relieving Pain In America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington DC. Author.

⁸ Manchikanti, L., Singh, V., Datta, S., Cohen, S. P., Hirsch, J. A., & American Society of Interventional Pain Physicians. (2009). Comprehensive review of epidemiology, scope, and impact of spinal pain. *Pain Physician*, 12(4), E35-70.

⁹ Luo, X., Pietrobon, R., Sun, X., Shawn, L., Gordon G., & Hey, L. (2004). Estimates and patterns of Direct Health Care Expenditures among Individuals with Back Pain in the United States. *Spine*, 29:1, 79-86.

¹⁰ National Research Council and Institute of Medicine. (2001). *Musculoskeletal disorders and the workplace: Low back and upper extremities*. Washington, DC.: National Academy Press.

¹¹ Gaskin, D. J., & Richard, P. (2011). *The Economic Costs of Pain in the United States*. In *Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research*. Washington, DC: National Academies Press.

¹² Bureau of Labor Statistics. (2015). *Nonfatal Occupational Injuries and Illnesses Requiring Days Away from Work, 2015*. <https://www.bls.gov/news.release/pdf/osh2.pdf>

¹³ Ibid.

¹⁴ Pransky G. S., et al. (2016). Sustaining work participation across the life course. *Journal of Occupational Rehabilitation*, 26, 465-479.

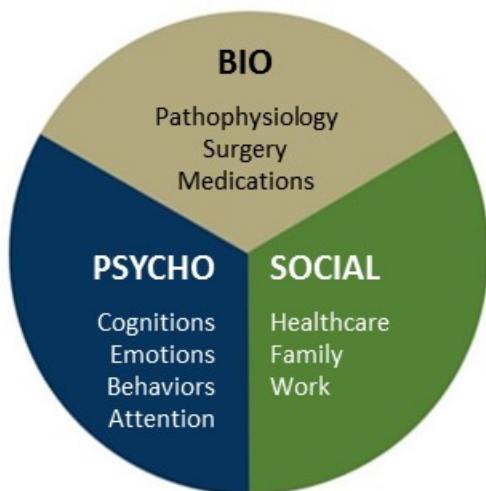
¹⁵ National Institute of Health. (2016). *National Pain Strategy: A Comprehensive Population Health Level Strategy for Pain*. http://iprcc.nih.gov/National_Pain_Strategy/NPS_Main.htm

factors are important contributors to pain chronicity and poor functional health outcomes. This biopsychosocial approach is necessary to understand the relationships among MSK pain, long-term work disability, and job loss.

2.2 Musculoskeletal Pain, Impairment and Disability

One challenge for medical management of MSK disorders is that there is no simple relationship between objectively-measured pathophysiology and pain experience, which has complicated efforts to judge the severity of MSK pain and its effect on workplace function and the ability to work.¹⁶ Pain is widely regarded as a complex phenomenon with biological inputs as well as psychosocial and socioeconomic factors such as pain beliefs, psychosocial distress, cognition and attention, expectations for recovery, and subjective perceptions of feeling disabled (see Figure 1). MSK pain symptoms are sometimes labelled as “non-specific” (not pertaining to a single anatomic structure or anomaly) and/or “medically unexplained” (occurring in the absence of a known injury, disease, or measurable defect). Whether or not a specific cause of MSK pain can be identified is just one of many factors that predict MSK work disability.¹⁷ The inherently subjective nature of MSK pain and its diagnostic challenges require that treatment strategies adopt a more biopsychosocial and patient-centered framework that allows flexibility to deal with individual factors and concerns, including SAW/RTW challenges.

Figure 1. The Biopsychosocial Model of Pain and Disability Emphasizing the Dynamic Interaction among Biological, Psychological, and Social Factors



To understand work disability associated with MSK conditions, it is important to distinguish among the concepts of *pain*, *impairment*, and *disability*. Many workers resume work while still reporting high levels of MSK pain, whereas others report low levels of pain but are hesitant to return to work because of fear of dismissal, concerns about levels of organizational support, and other psychosocial and workplace factors. If opioid use for pain management is considered in violation of a drug-free policy at work, this too

¹⁶ Gatchel, R. J., Kishino, N. D., & Strizak, A. M. (2014). Occupational Musculoskeletal Pain and Disability Disorders: An Overview. In R. J. Gatchel & I. Z. Schultz (Eds.), *Handbook of Musculoskeletal Pain and Disability Disorders in the Workplace*. New York: Springer.

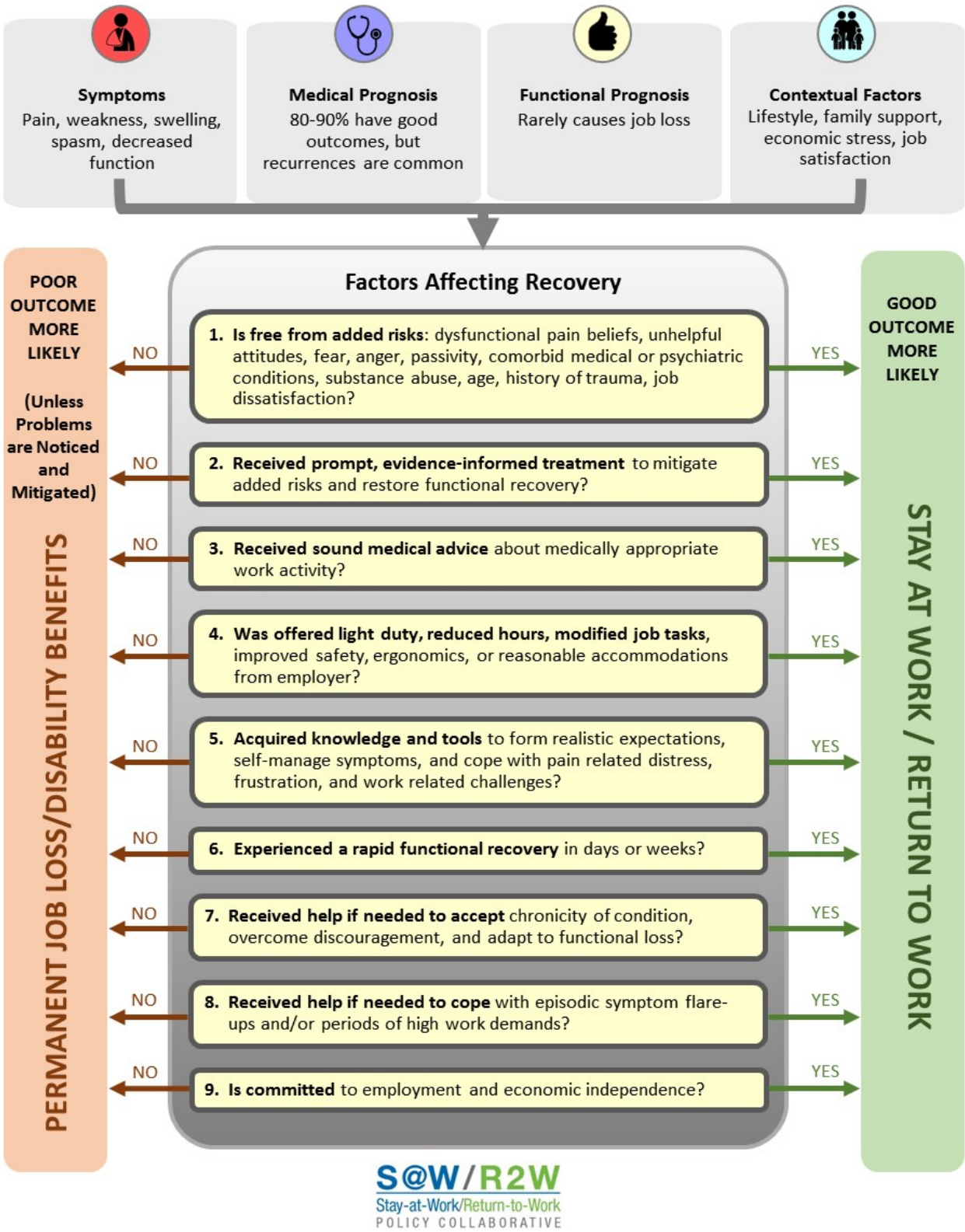
¹⁷ Chou, R., & Shekelle, P. (2010). Will this patient develop persistent disabling low back pain? *JAMA*. 303(13):1295-1302.

can present a return-to-work (RTW) barrier. Therefore, improving RTW outcomes for MSK pain requires some attention be directed to individual differences in pain beliefs, coping, and job factors.

Many definitions of pain, impairment, function, and disability have been described in the literature. *Acute pain* is typically defined as pain of less than three months' duration, and usually serves as an indication that damage to the body has occurred or is impending. *Chronic pain* is defined as persistent discomfort that has lasted several months or more. *Impairment* is a physical/medical term that refers to an alteration of usual health status (i.e., some objective anatomic or pathological abnormality). *Impairment* is traditionally seen as a medicolegal concept involving an attempt to objectively evaluate structural limitations using standard metrics. The term *disability* is used in many ways, depending on the context and perspective. As a broad concept, disability refers to diminished capacity or inability to perform certain activities of everyday living due to lost function and measurable impairment. A specific legal definition of disability that pertains to individuals applying for SSDI benefits is the inability to engage in substantial gainful activity due to medically determinable physical or mental impairment(s) which can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than 12 months. For this paper, we use the term *work disability* to refer to the "inability to perform essential job tasks or maintain employment due to a health concern."

In contrast with many other causes of disability, MSK pain is an example of an acquired disability, in which healthy individuals can experience consecutive episodes of acute pain, lost work days, and difficulties at work that can be short-term or last several years (see Figure 2). In cases of gradual onset of pain chronicity and work problems, support from employers and healthcare providers is paramount for workers to deal with pain flare-ups, temporary episodes of time off work, and an occasional need for job modification or assistance. Without this level of support, workers may choose disability insurance options rather than choose to fight an "uphill battle" with employers and insurers.

Figure 2. How Musculoskeletal Pain Can Evolve into Work Disability and Job Loss



3. UNDERSTANDING THE PROBLEM

3.1 Historical Background and Context

Scientific advancements in medicine in the 20th century led to a plethora of innovations and discoveries in our biological understanding of pain generators, sensory and affective aspects of pain, the role of the central and peripheral nervous system in pain transmission and modulation, and the discovery of new medications that alleviate pain. These innovations eventually led to the *biopsychosocial model* of pain experience that strives to integrate biological, social, and psychological contributions to pain into a single holistic model. One of the first clinical applications of the biopsychosocial model of pain was the advent of chronic pain rehabilitation programs that first appeared in the United States in the 1970s. Developers of these rehabilitation programs felt that pain sufferers were forced, due to the absence of coordinated care, to seek specialist after specialist in a search for a cure, while no treatment was focused on the lifestyle, social, and psychological aspects of pain. By including multiple pain specialties in a single clinic, and by focusing on psychosocial distress and other pain beliefs and worries, patients' quality of life could be substantially improved. This included the ability of patients to continue working or return to work.

Despite the early success of chronic pain rehabilitation programs, these programs encountered setbacks in the 1980s, including inadequate funding to support the initial high costs of establishing an interdisciplinary clinic, lack of sufficient time to train and organize clinic staff, and the absence of a unifying roadmap to integrate the various services and specialties. Later, the reluctance of payers to fund all elements of the interdisciplinary treatment program, coupled with a trend toward unbundling services to contain rapidly rising healthcare costs, further reduced the financial feasibility of interdisciplinary pain treatment programs in the 1990s.¹⁸

Another related event in the 1980s was the American Medical Association's (AMA's) campaign to address the public's concerns that doctors were undertreating acute pain, while overtreating chronic pain. In response, the AMA added pain as the *fifth vital sign* (in addition to blood pressure, respiration, pulse, and temperature), encouraging medical providers to assess pain regularly throughout a hospitalization—and treat if elevated or abnormal. This produced significant improvements in the management of acute pain among hospitalized patients, but it also had the unintended effect of encouraging more aggressive surgical and pharmacological efforts to control pain among medical outpatients, sometimes despite limited efficacy and high risks (e.g., post-surgical infections and complications), including the elevated risk of drug dependence that came with opioid use.

In 2000, the new millennium brought a renewed emphasis on pain control, as the 106th U.S. Congress designated the years 2000 through 2010 as the “Decade of Pain Control and Research.” Despite this label, federal research funding for the study of pain and pain management was slow to follow. Pharmacological treatment of pain continued to move toward more aggressive use of opioids for chronic pain conditions, further contributing to the opioid crisis. At the same time, there were negative trends in obesity, poor

¹⁸ Noe, C., Kishino, N. D., & Gatchel, R. J. (in press). Centers of Excellence in Pain Management: Past, Present, and Future Trends. *Practical Pain Management*.

health, chronic conditions, and physical activity in nearly all age groups in the United States. Since then, there has also been growing evidence that opioids contribute to prolonged work disability.^{19,20,21}

3.2 Traditional Pain Management Strategies

Altering the current trend of increasing MSK work disability requires expanding treatment to include a greater focus on potential workplace exposures, work limitations, and opportunities for job accommodation. In most primary-care settings, the range of available options for chronic pain management is limited, with the most common options being pharmacological management, specialist or surgical referrals, self-care instructions, or additional imaging and diagnostics. Other traditional treatment options include passive modalities (ice packs or heating pads); medications of many sorts (delivered as pills, pain patches, injections, pain pumps, or IV infusion containing anything from aspirin to opioids); anesthetic and steroid injections; electrical devices (such as transcutaneous electrical nerve stimulators [TENS] or spinal cord stimulators) designed to distract the brain from incoming pain signals; or various kinds of surgical procedures. For MSK disorders, physical therapy is sometimes prescribed as well, to provide temporary pain relief and/or to facilitate optimal healing.

This typical repertoire reflects a largely biomedical approach based on the assumption that the root cause of pain is a physical anomaly that can be identified and altered, and that is peripheral to the brain. Biomedical treatment options aim to:

- Correct or reduce the problem in the periphery (e.g., ice packs, heating pads, anti-inflammatory medications, steroid injections, spine fusion surgery).
- Interrupt, “jam,” or mute the delivery of incoming pain messages to the brain (e.g., anti-seizure medications, TENS, spinal cord stimulators, surgical destruction of nerves).
- Dull the brain’s interpretation of the incoming pain signals (e.g., opioid pain medications, pain pumps).

As time goes on, if the pain is not improved, a physician may increase the dose or frequency of items already in use, or prescribe additional items from the biomedical inventory. If recovery does not proceed as expected, the physician may embark on a search for a missed diagnosis or refer to a specialist, who may recommend additional courses of treatment from the same or a similar repertoire of treatment options, or additional testing to identify a physical cause for the symptoms. The predominant strategy for treating acute pain has been to find, remove, or treat the root cause of the problem in the body region suspected to be the source of the pain; take steps to minimize additional tissue damage and inflammation; and relieve any associated distress with medications while the natural process of healing solves the problem. The predominant strategy in use today for chronic pain is essentially the same, with the exception that the search for solutions unfortunately leads to progressively more aggressive treatment as the patient experiences limited pain relief or frequent pain flare-ups. The limited set of options outside this biomedical paradigm is due to lack of physician training and awareness, absence of local resources, and what payers are willing to authorize or reimburse.

¹⁹ Deyo, R. A., Mirza, S. K., Turner, J. A., & Martin, B. I. (2009). Overtreating chronic back pain: time to back off? *Journal of the American Board of Family Medicine*, 22, 62-68.

²⁰ Dowell, et al, op. cit.

²¹ Franklin, G. M., Mai, J., Turner, J., Sullivan, M., Wickizer, T., & Fulton-Kehoe, D. (2011). Bending the prescription opioid dosing and mortality curves: Impact of the Washington State Opioid Dosing Guideline. *American Journal of Industrial Medicine*, 55(4), 325-331.

For individuals with MSK pain who are eventual beneficiaries of SSDI, many would have been initially viewed as having a medically benign, routine health problem. They would most likely have begun with similar objective findings, medical work-ups, and diagnoses to patients who experienced spontaneous recovery and little or no lost work time. This is because the factors that predict poor health and disability outcomes (serious impairment and prolonged work disability) as a consequence of common MSK pain are not specifically based on diagnostic codes, objective tests, or presumed pathology, but are instead greatly influenced by pain beliefs, psychosocial distress, workplace concerns, and other personal and lifestyle factors.^{22,23,24,25}

For practitioners who are aware of the literature supporting the biopsychosocial model of chronic pain, a variety of methods exist for adopting a more multi-dimensional approach, with good results and less potential for iatrogenic effects of biomedical treatments. The biopsychosocial model includes a focus on improving the problem-solving and lifestyle adaptation skills of patients while acknowledging their workplace and functional challenges. It includes not only a sports medicine approach to physical reconditioning, but also a number of cognitive-behavioral pain management and support strategies, such as:

- Teaching patients about chronic pain and how it differs from acute pain
- Explaining the reasons why they might now be experiencing so much pain and distress
- Avoiding the false reassurance or promise of a “cure” for the pain
- Avoiding unnecessary tests and diagnostics, unless there are strong objective indications of underlying tissue pathology
- Instructing patients to self-monitor how their pain experience is affected by physical activity, thoughts, emotions, and stress
- Having patients learn to direct attention away from pain and onto something else that is more interesting or pleasurable
- Instructing patients on methods to soothe their own physical discomfort and emotional distress, by using techniques such as relaxation and biofeedback
- Providing mind-body stress management and mindfulness techniques to alter automatic pain responses and the interpretation of benign bodily sensations as pain
- Using motivational interviewing to develop cognitive dissonance between current lifestyle and long-term life goals
- Instructing patients on pain self-management strategies, and giving the patient a role in clinical decision-making, including medication regimens, in partnership with the physician
- Weaning patients off medications that have added health risks or limit life participation.

²² Caruso, G.M. (2013). Biopsychosocial Considerations in Unnecessary Work Disability. *Psychological Injury and Law*, 6, 164-182.

²³ Franklin, Z., Fowler, N., & Smith, N. (2014). Defensive high-anxious individuals with chronic back pain demonstrate different treatment choices and patient persistence. *Personality and Individual Differences*, 64, 84-88.

²⁴ Franklin, G.M., and Mueller, K. (2015). Letter to NIOSH, February 15, 2015. ACOEM Public Comments. Secondary gain in pain medicine--let us stick with biobehavioral data. *APS Journal*, 3(4), 274-278.

²⁵ Nicholas M. K., Linton, S. J., Watson, P. J., Main, C. J., et al. (2011). Early identification and management of psychological factors (“yellow flags”) in patients with low back pain: A reappraisal. *Physical Therapy*, 91(5), 737-753.

3.3 Traditional Work Disability Prevention Efforts

Efforts to help workers with MSK disorders to stay at work or return to work are scattered across a variety of systems, but currently most of the responsibility lies with healthcare providers and employers. Many problems abound, however, including poor communication between providers and employers, lack of worker participation in RTW planning and coordination efforts, providers lacking detailed information about physical job demands, employers unable to provide needed job modifications, and no clear designation of a responsible person to coordinate RTW assistance.²⁶ Thus, workers may feel unsupported in their efforts to overcome RTW barriers in the workplace. This is due, in part, to a lack of incentives for employers and healthcare providers to invest time engaging in RTW coordination and planning.

The current disability insurance system places a great deal of responsibility on treating physicians to judge the level of impairment experienced by patients, specify the need for time off work, and specify medical restrictions. Research has shown that being out of work for an extended time has negative consequences for worker health and well-being,²⁷ and there is a growing body of evidence that non-medical (psychosocial and workplace) factors are more important than medical ones in predicting successful RTW and functioning for common MSK disorders.^{28,29} Some of the factors that predict poor outcomes are unalterable (such as age, past medical history, work history, and geographic location). Other factors can potentially be influenced, such as elapsed time out of work,^{30,31,32} uncertainty and distrust due to lack of communication or information,^{33 34} uncoordinated or inappropriate medical care and advice,³⁵ low expectations of recovery,^{36,37} excessive vigilance, catastrophic thinking, false beliefs, fear of movement, self-limitation, perceived injustice,³⁸ and lack of employer support.³⁹ Today, many who treat MSK pain

²⁶ MacEachen, E., Clarke, J., Franche, R. L., Irvin, E., & Workplace-based Return to Work Literature Review Group. (2006). Systematic review of the qualitative literature on return to work after injury. *Scandinavian Journal of Work, Environment & Health*, (4), 257-269.

²⁷ Waddell, G., & Burton, A. K. (2006). *Is work good for your health and well-being?* London: The Stationery Office.

²⁸ Nichols, et al., op. cit.

²⁹ Shaw, W.S., van der Windt, D. A., Main, C. J., Loisel, P., Linton, S. J., et al. (2009). Early patient screening and intervention to address individual-level occupational factors (“blue flags”) in back disability. *Journal of Occupational Rehabilitation*, 19(1), 64-80.

³⁰ McLaren, C., Reville, R., and Seabury, S. (2010). *How Effective are Employer Return to Work Programs?* Santa Monica, California: Rand Corporation.

³¹ Loisel, P., & Anema, J. (2013). *Handbook of Work Disability Prevention: Prevention and Management*. Springer, New York.

³² Wickizer, T. M., et al. (2011). Improving quality, preventing disability and reducing costs in workers’ compensation healthcare: a population-based intervention study. *Medical Care* 49(12), 1105-11.

³³ Bowling, A., & Redfern, J. (2000). The process of outpatient referral and care: the experiences and views of patients, their general practitioners, and specialists. *British Journal of General Practice*, 50, 116-120.

³⁴ Loisel, et al., op. cit.

³⁵ Franklin, G.M., et al., (2014). op. cit.

³⁶ Cornelius, L., van der Klink, J., Groothoff, J., & Brouwer, S. (2011). Prognostic factors of long term disability due to mental disorders: A systematic review. *Journal of Occupational Rehabilitation*, 21(2), 259-27

³⁷ Sullivan, Michael J. L., Feuerstein, M., Gatchel, R., Linton, S. J., & Pransky, G. (2005). Integrating Psychosocial and Behavioral Interventions to Achieve Optimal Rehabilitation Outcomes. *Journal of Occupational Rehabilitation*, 15(4), 475-89.

³⁸ Ibid.

³⁹ Cornelius, et al., op. cit.

patients do not typically look for and address any of these solvable problems, because of lack of training in the biopsychosocial model.⁴⁰

Most medical school and residency programs do not teach students how to address workplace functioning as an integral part of clinical care, most likely because employment is not viewed as an important health outcome. As a result, few physicians are taught the importance of treatment plans that include interventions to maximize functional recovery, evaluate and minimize occupational risks, and prevent needless work disability. Despite this lack of formal training in work disability management, the average physician who treats working-age adults can sign several work-related letters or notes to employers and payers per week, and thus is, by definition, a regular participant in the SAW/RTW process. If fitness-for-work issues are not well understood, physicians may recommend RTW too early or (more likely) too late.

For MSK disorders, most work restrictions provided by physicians are intended to minimize pain or reduce pain flare-ups. This is appropriate during the recovery period of an acute injury, illness, or surgical procedure because pain is a reasonably good indicator of the healing process. The physician's goal is to protect healing tissues when they are weakened, to avoid additional tissue damage, or to compensate for the effects of active disease processes under way (such as numbness, weakness, and fatigue). Restrictions of this type are usually necessary for only a few days or weeks after the onset of an injury or illness until tissue strength has returned, typically six or eight weeks (although sometimes longer).⁴¹ For patients whose pain persists after several weeks, providers have a dilemma about RTW if there is no pathophysiological reason that increased activity would represent a risk to MSK structures but, nonetheless, the patient is reporting increased pain with activity. Finding the right blend of care, reassurance, and encouragement is a skill that many providers develop over time in order to gently push a patient back to work, realizing that this may produce a temporary increase in pain, but also offering longer-term rewards in terms of ultimate functional recovery and the ability to stay employed.⁴² If physicians neither look for solvable psychosocial problems nor help overcome workplace barriers, this may result in some workers finding themselves permanently unable to work.

Most medical practitioners who treat working-age adults are regularly asked to address questions about work, either by patients, employers, or payers/insurers. Practitioners are asked about work because, under the law, insurance policy terms, common business practices, and historical tradition, the medical professional is presumed to be in the best position to know when to take workers off work, how to predict the duration of any resulting work absence, how to design effective work restrictions, and how to corroborate the existence of a medical condition and functional limitations when asked to complete various disability-benefit forms that are part of the medicolegal system. However, although physicians care about the health and well-being of their patients, the medicolegal system itself and the payment structure for MSK pain tend to be focused on a detailed diagnostic work-up, an appropriate exam and treatment plan, and documentation of various aspects of the medical encounter. If they are unfamiliar with the biopsychosocial model, physicians tend to overlook the everyday consequences of MSK pain, including its impact on family life, social events, and workplace function. Therefore, current medical

⁴⁰ Margalit, A., Glick, S., Bengassat, J., Cohen, A., & Margolis, C., (2007). A practical assessment of physician biopsychosocial performance. *Medical Teacher*, 29(4).

⁴¹ Artus, M., van der Windt, D., Jordan, K.P., & Croft, P.R. (2014). The clinical course of low back pain: a meta-analysis of outcomes in randomised clinical trials (RCTs) and observational studies. *BMC Musculoskeletal Disorders*, 15, 68.

⁴² Jurisic, M., Bean, M., Harbaugh, J., Cloeren, M., Hardy, S., Liu, S., Nelson, C., & Christian, J. (2017). The Personal Physician's Role in Helping Patients with Medical Conditions Stay at Work or Return to Work. *Journal of Occupational and Environmental Medicine*, 59(6), e125-e131.

training and practice are not well equipped to identify and address individual psychosocial and workplace concerns that are very evident in cases of persisting MSK pain and disability.

Employers also have a substantial role in the SAW/RTW process. Employers can decide how to respond during critical time points such as when workers report a MSK problem, when workers are out of work for some time, and when workers return to full or modified duty. In each case, employers can choose to ignore, encourage, informally support, or formally accommodate a worker. Immediate supervisors are especially important for maintaining communication, arranging job modifications or alternate duty, addressing organizational barriers, and solving operational issues.⁴³ Some employers are extremely proactive, whereas others fail to communicate effectively with workers who are out of work or fail to provide temporary job modifications to facilitate SAW/RTW. There is growing research support that employers who institute more proactive efforts to help workers with illnesses and injuries have improved disability and cost outcomes.^{44,45}

It should be acknowledged that both physical and psychosocial work environment can affect workers' ability to RTW or manage chronic pain, and hence employers can play a significant role in the prevention of MSK pain and disability. One recent federal government initiative by the National Institute of Occupational Safety and Health (NIOSH) is to encourage employers to take an integrated view of worker health that includes not only protection against injury, but also health promotion and other health-directed services, including disability management. This Total Worker Health[®] framework⁴⁶ is an example of the government's efforts to recognize and encourage the positive efforts of employers to improve employee health. These organizational influences, at least within large employers, are a key element to both preventing MSK injuries in the workplace and reducing the work disability resulting from MSK disorders.

Employers' decisions are often influenced by the legal and economic environment in which a particular business operates. For example, employers are much more likely to make temporary adjustments to jobs during recovery for workers' compensation injuries than for other kinds of health problems because a longer duration of disability payments for lost work time is at stake. Very small companies (those exempted from the requirements of the Family Medical Leave Act [FMLA] and Americans with Disabilities Act [ADA]) may not provide health insurance, paid sick leave, or private disability insurance. Most employers do not like to lose highly skilled workers, especially in scarce trades and professions, but low-wage and low-skilled workers may be easier to replace. Job modification efforts in the workplace are an important predictor of work disability outcomes.^{47,48}

⁴³ Shaw, W. S., Robertson, M. M., Pransky, G., & McLellan, R. K. (2003). Employee Perspectives on the Role of Supervisors to Prevent Workplace Disability After Injuries. *Journal of Occupational Rehabilitation*, 13(3), 129-142.

⁴⁴ Franche, R. L., Cullen, K., Clarke, J., Irvin, E., Sinclair, S., & Frank, J. (2005). Workplace-Based Return-to-Work Interventions: A Systematic Review of the Quantitative Literature. *Journal of Occupational Rehabilitation*, 15(4), 607-631.

⁴⁵ Cullen K. L., et al. (2017). Effectiveness of Workplace Interventions in Return-to-Work for Musculoskeletal, Pain-Related and Mental Health Conditions: An Update of the Evidence and Messages for Practitioners. *Journal of Occupational Rehabilitation*, 1-15.

⁴⁶ NIOSH (2012). *Research Compendium: The NIOSH Total Worker Health[®] Program: Seminal Research Papers 2012*. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2012-146, 2012 May:1-214.

⁴⁷ Franche, et al., op. cit.

⁴⁸ Cullen, et al., op. cit.

3.4 Key Stakeholders in Pain Management

Multiple stakeholders are involved in the SAW/RTW process for MSK disorders. Some play a direct role, whereas others have more of a policy role (see Figure 3). Those in direct roles are the three professionals who are responsible for managing various parts of the worker's situation: (1) the treating medical professional; (2) the employer or workplace supervisor; and (3) the insurance claims handler. Many times, the affected worker will be involved with many different healthcare professionals, either simultaneously or in sequence. Physical therapists, for example, can see a patient at any time during the care process, whereas a specialist physician (such as an orthopedist, physiatrist, or pain physician) will not usually get involved until several months or years have passed since pain onset.

The behavior of each of the three frontline professionals is strongly affected by the others' behavior, as well as that of other parties. This includes their own co-workers, supervisors, and executives in the organizations where they work. Medical professionals' choices of treatments, for example, are strongly influenced by what services payers will authorize, and the incentives posed by the design of fee schedules. They are also influenced by their local medical community and hospitals, as well as pharmaceutical and medical device companies. Employers' behavior is often heavily influenced by their vendors, such as lawyers, insurance brokers, and benefits providers; this is especially true for small employers who must turn to others for help because they lack internal expertise in these matters. Insurers and their vendors (e.g., case management companies, RTW specialists) are, in turn, heavily influenced by the expectations of their customers (the employers) and the insurance distribution system (i.e., brokers) that brings them business. Insurers and SAW/RTW coordination consultants would be glad to provide more proactive SAW/RTW services, but market competition in the insurance industry may produce premiums that are insufficient to offset the extra administrative cost burden of providing a higher level of service.

Health plans, workers' compensation, and private disability insurance companies all interact directly with affected workers or with their doctors or employers, sometimes by telephone but more commonly by email, fax transmission, or completed forms. Health plans define the services they authorize and the amounts that will be paid for them. Workers' compensation and private disability insurance companies decide what kind of rehabilitative or SAW/RTW services to offer, and when to offer them. The frontline professionals who make decisions on behalf of these payers vary in their personal qualities, knowledge, skills, and priorities, and are also influenced by the culture, business rules, priorities, and legal obligations of their organizations. There is a wide range of subject matter expertise and performance in these industries, within and across organizations.

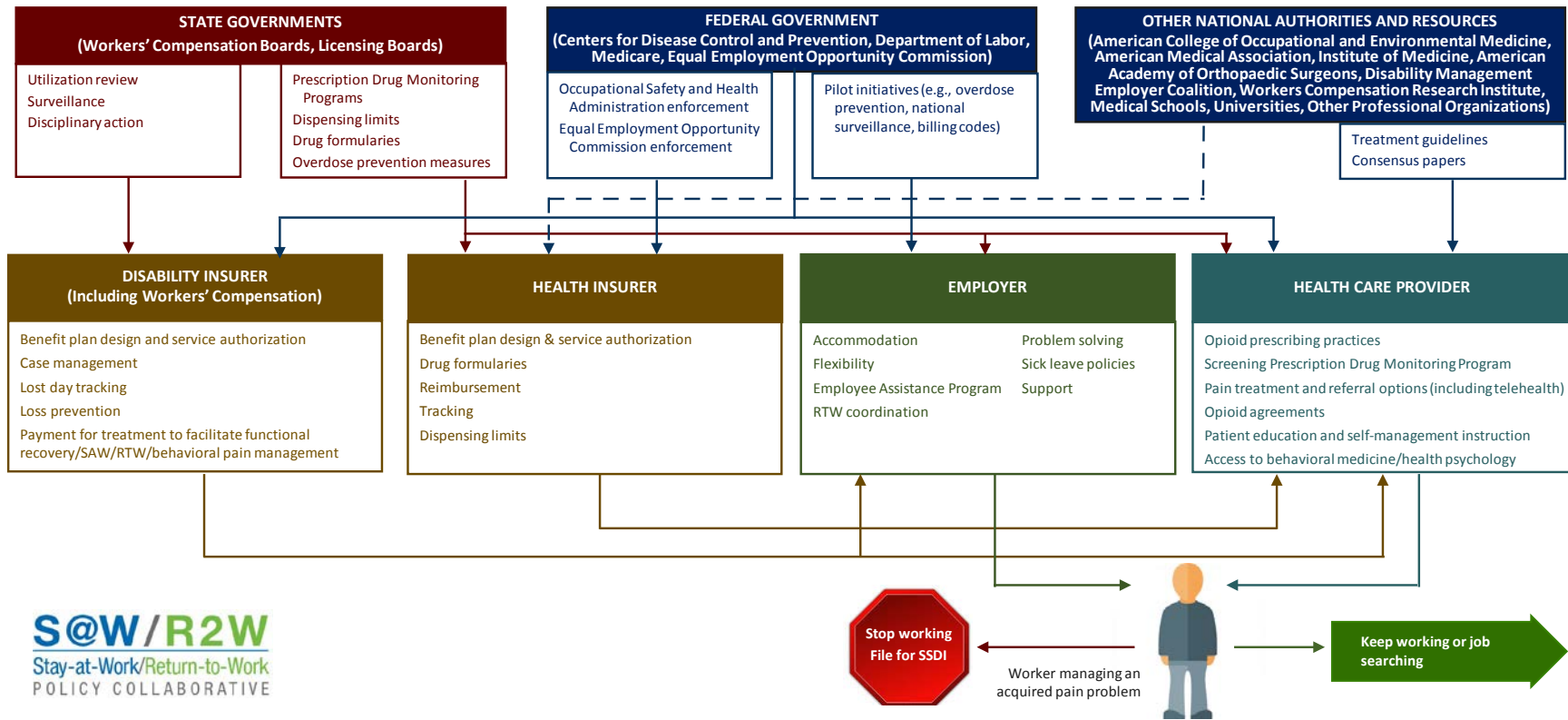
Workers themselves are also key stakeholders in the SAW/RTW process. It is well known that the longer an injured worker is out of work, the less likely an RTW outcome will occur.⁴⁹ For example, an injured worker with two months of disability has a 70% probability of ever returning to work; after six months of disability, this probability drops to 50%; after 12 months to 30%; and, after two years, to 10%. Therefore, prioritizing the early identification of potential RTW barriers within the rehabilitation setting is important.^{50,51}

⁴⁹ Waddell, G. (1992). Biopsychosocial analysis of low back pain. *Balliere's Clinical Rheumatology*, 6(3), 523-557.

⁵⁰ Gatchel, R. J. (1996). Psychological disorders and chronic pain: Cause and effect relationships. In R. J. Gatchel & D. C. Turk (Eds.), *Psychological Approaches to Pain Management: A Practitioner's Handbook* (pp. 33-52). New York: Guilford.

⁵¹ Patel, S., Greasley, K., & Watson, P. J. (2007). Barriers to rehabilitation and return to work for unemployed chronic pain patients: A qualitative study. *European Journal of Pain*, 11(8), 831-840.

Figure 3. Key Pain Management/RTW Stakeholders and Policymaking Opportunities



Civil and regulatory authorities, government agencies, attorneys and judges, the U.S. Congress, and state legislatures all influence one or more aspects of the cultural, economic, social, and legal environment in which the frontline players operate, affecting their decisions and, indirectly, the outcomes. At all levels of government, among influential non-governmental organizations, and in the charity sector, there has been little response to date in recognition of the fact that so many new entrants to SSDI are people who have had unexpectedly poor outcomes of MSK disorders. These unfortunate outcomes, though, are potentially preventable.

3.5 Multiple Healthcare and Disability Insurance Systems

In addition to the role of employers and clinicians, SAW/RTW processes for workers with MSK disorders are also governed or influenced by healthcare and public and private disability payer systems. For the early stages of SAW/RTW, these involve either the state-regulated workers' compensation systems, in which states exercise the greatest regulatory control over provider and insurer practices, and private disability insurance, for which there is less regulatory oversight. Workers' compensation systems can provide an important testing ground for new SAW/RTW policies, as changes to state-based policies can act as a "natural experiment," and there are numerous policy levels that can be adjusted, including provider training and certification, drug formularies and guideline adherence, insurance reimbursement, utilization review, managed care provisions, and, to some extent, employer practices.

Workers' Compensation

Workers' compensation systems had their origins in 19th century Europe,⁵⁵ but it was not until the early 20th century that reforms were adopted in the United States to allow workers who were injured at work to receive wages and healthcare for their job-related injuries. In exchange, employers were protected from certain types of lawsuits brought by workers. The federal government passed legislation to protect injured workers in 1906, and most states enacted similar laws over the next 50 years. Today, workers' compensation is one of the largest social "safety net" systems available to employees in the United States. Workers' compensation programs spent \$57.6 billion in wages and medical care in 2008, with \$28.6 billion in wages or other benefits, and \$29.1 billion in medical expenses.⁵⁶ Typically, income support is about 66% of the employees' standard wages, although actual wage replacement rates and conditions vary by state.

In most states, once workers have been injured, they are placed on *temporary or partial disability* that continues until they are able to return to work. However, most states also have time constraints for Temporary Partial Disability (TPD) or Temporary Total Disability (TTD) payments; if the employees still cannot return to work when the allotted time has expired, they undergo an examination, and a medical determination is made regarding the level of disability and impairment. Finally, an injured worker's treating physician may decide prior to the end of the allotted time for temporary or partial disability benefits that a worker has achieved "maximum medical improvement," and then assess the individual's disability level. For eligibility for disability benefits, once the *maximum medical improvement* or expiration of *temporary or partial disability* has been determined, a decision regarding the level of disability falls into one of two broad categories: *permanent partial disability* (PPD) or *permanent total disability* (PTD). For individuals with PPD, most state programs calculate benefits based on earnings prior to the work-related

⁵⁵ Robinson, R., & Garofalo, J. (2014). Workers' Compensation and Other Disability Insurance Systems Involved in Occupational Musculoskeletal Disorders. In R. J. Gatchel & I. Z. Schultz (Eds.), *Handbook of Musculoskeletal Pain and Disability Disorders in the Workplace* (pp. 273-286). New York: Springer.

⁵⁶ Sengupta, I., Reno, V., & Burton, J. (2010). *Workers' compensation: benefits, coverage and costs, 2008*. Washington, DC: National Academy of Social Insurance.

injury. Although there are many differences across states, most have a payment schedule that specifies the amount of compensation for specific injuries, such as the loss of a leg, or that establishes payments on the amount of the body that is damaged. Other states provide injured employees with lump-sum settlements, rather than regular payments over a fixed duration. In contrast to permanent partial disability, permanent total disability accounts for less than 1% of all workers' compensation cases.

Group or Private Disability Insurance

When MSK pain is not claimed as an occupational injury or illness, or the claim it is determined to be ineligible for workers' compensation coverage, then wage replacements for lost time can be covered under group disability insurance (GDI) coverage (usually sponsored or subsidized through employers, labor unions, or other affiliative groups), or through private disability insurance (PDI), which is available for individuals to purchase on the open market. Unlike workers' compensation systems, which are governed by employer regulatory requirements in most states, GDI is required of employers in only five states (California, Hawaii, New Jersey, New York, and Rhode Island) and Puerto Rico. In GDI plans, costs are usually divided between the employer (as an employee benefit) and the employee. That is, GDI or PDI costs for lost time away from work represent a paid benefit rather than a legislated mandate. GDI usually provides for up to six months of wage replacement, and employees with many larger companies can also elect to pay for additional long-term disability coverage (usually up to 5 years) through regular payroll deductions.

Private Health Care Systems

The large number of private health care systems also presents challenges for the adoption of uniform health care provider practices around SAW/RTW. There is no single uniform procedure for evaluating RTW readiness or work ability, for understanding physical and psychosocial aspects of work, for recommending temporary job modifications, for providing patients reassurance and reasonable expectations, or for coaching workplace self-management strategies. Because healthcare insurance organizations do not tend to recognize work absence or long-term disability as an important quality-of-care indicator or critical patient outcome measure, efforts to facilitate SAW/RTW are spotty, and few policy changes are enacted by health care systems to focus specifically on improving the employment outcomes of their insureds.

As described in the preceding sections, the multiplicity of healthcare and disability systems in place today in the United States can present major barriers when attempting to develop greater uniformity and pain/disability treatment guidelines across these different federal, state, and private payer systems.

3.6 Reimbursement and Payment Factors

Recent research has revealed cost savings for employers and payers for getting employees back to work. For example, Theodore, Mayer and Gatchel⁵⁷ evaluated more than 1,000 patients who were classified according to duration of disability at entry into a functional restoration (FR) program. This study revealed that at one-year post-FR, all three groups displayed comparable outcomes in various areas, such as RTW (88%); work-retention (80%); and additional healthcare utilization. The cost savings for the early FR group were 64% for medical costs and 80% for disability benefits paid. The implication of studies like this one is that the use of early biopsychosocial screening and intervention methods can significantly decrease work

⁵⁷ Theodore, B., Mayer, T., & Gatchel, R. (2015). Cost-Effectiveness of Early Versus Delayed Functional Restoration for Chronic Disabling Occupational Musculoskeletal Disorders. *Journal of Occupational Rehabilitation*, 25(2), 303-315.

disability costs. This type of evidence, however, has not been absorbed into the care reimbursement decisions of most payers, so early biopsychosocial intervention programs targeting functional restoration and RTW are not easily reimbursed, despite positive outcomes. Noe, Kishino, and Gatchel⁵⁸ have delineated several potential steps to improve the availability of such pain management programs, and these provide some examples of proposed policy changes:

- **Develop reliable metrics related to the concept of “pay for performance.”** There are two potential metrics that can be used for this purpose. First, the NIH invested approximately \$60 million in developing the Patient-Reported Outcomes Measurement Information System (PROMIS), which involves self-report measures that are often associated with chronic pain (e.g., pain intensity, pain quality, pain interference, pain behavior, physical function, depression, fatigue, sleep disturbance). The PROMIS is psychometrically sound, and has been demonstrated to be both reliable and valid after large-scale testing. Moreover, the measures are anchored to a representative U.S. population, and a statistical platform was developed to score and feed back the results of patient responses.⁵⁹
- **Include more objective outcome measures in required metrics.** These could include RTW rates, medication reduction, reduction in surgeries, resolution of workers’ compensation/litigation cases, and subsequent reduction in healthcare utilization rates associated with the original injury that produced the pain and disability. There are now reliable statistics in the scientific literature documenting such rates after effective interdisciplinary pain management.⁶⁰ Based on these data, the development of contracts between third-party payers and healthcare providers can establish levels of improvement that would need to be obtained to receive full reimbursement.
- **Reinstitute the certification practices of the Commission on Accreditation of Rehabilitation Facilities (CARF).** This process needs to include more regular surveillance of those programs once they are accredited. In the past, CARF was viewed as a “Good Housekeeping Seal of Approval” for pain management programs. Unfortunately, many CARF-accredited programs had the full complement of interdisciplinary pain management personnel required during the original CARF accreditation process and visit, but then decreased the number of required personnel after accreditation, regressing back to single-modality pain clinics to save personnel costs. As a result, the outcomes from these “diluted” programs were poor, reinforcing many third-party payers’ perceptions of clinical ineffectiveness. Going forward, it is essential that, after the programs have been accredited, CARF make routine, unannounced visits to programs to ensure compliance with the demands of true interdisciplinary pain management.
- **Promote a major education campaign directed at payers.** This education would target insurance companies as well as state workers’ compensation boards, to demonstrate the positive outcomes of interdisciplinary pain management programs.

These strategies would require cooperation across the many payers and administrators involved in the healthcare reimbursement payment process.

⁵⁸ Noe, C., Kishino, N., & Gatchel, R. (in press). Centers of Excellence in Pain Management: Past, Present, and Future Trends. *Practical Pain Management*.

⁵⁹ Licciardone, J., Whitney, W., Hartzell, M., Kishino, N., & Gatchel, R. (2017). An Overview of the Patient-Reported Outcomes Measurement Information System (PROMIS) for Assessing Chronic Low Back Pain Patients. *Journal of Applied Biobehavioral Research*, 22(2).

⁶⁰ Gatchel, R., McGeary, D., McGeary, C., & Lippe, B. (2014). Interdisciplinary Chronic Pain Management: Past, Present and the Future. *American Psychologist*, Special Issue on "Psychology and Chronic Pain", 69(2), 119-130.

3.7 Workplace Social Relations and Disability

Tjulín and MacEachen⁶¹ have provided an insightful review of how workplace social interactions among injured workers, co-workers, and supervisors can help “make or break” the RTW process, as well as the importance of viewing the RTW process as a dynamic one over time. For example, the RTW process can be affected by how clear an understanding supervisors and coworkers have about their role, the extent of contact between coworkers and the ill or injured worker during the recovery process, and the extent to which coworkers adopt a “helping hand” to help coordinate the return and a “goodwill” relationship once the worker has returned. Much of this will depend on the nature of the personal relationship between the re-entering worker and his/her supervisor and coworkers prior to the illness or injury, the extent of contact while the ill or injured worker is in recovery, and the extent to which coworkers have concerns or anxiety about whether the returning worker will be able to carry a full burden upon return. Other research studies have also suggested the importance of social relations at the workplace.^{62,63} However, to date, most workplace RTW research has focused primarily on physical and psychosocial conditions that facilitate RTW from the perspectives of the sick-listed worker and/or the supervisor,⁶⁴ with only minor attention to workplace social relations.

Some studies have focused on individual-level psychosocial factors to better understand variability in SAW/RTW outcomes. These factors are often mentioned as individual work-disability determinants, or psychosocial/behavioral factors that affect a worker’s decision whether to return to work.^{65,66} As far as the re-entering workers are concerned, motivating factors for the RTW process include protection of their financial security, staying healthy and not having setbacks in their RTW efforts,⁶⁷ preserving their dignity when re-entering the workplace as workers, being counted on when performing the work tasks (i.e., preventing feelings of job insecurity), and being respected for the fact that they still have health problems (i.e., perceiving trust and legitimacy for their health condition).^{68,69} Other studies also mention fear

⁶¹ Tjulín, A., & MacEachen, E. (2016). The Importance of Workplace Social Relations in the Return to Work Process: A Missing Piece in the Return to Work Puzzle? In I. Z. Schultz & R. J. Gatchel (Eds.), *Handbook of Return to Work* (pp. 81-97). New York: Springer.

⁶² Ekbladh, E., Thorell, L. H., & Haglund, L. (2010). Perceptions of the work environment among people with experience of long term sick leave. *Work*, 35(2), 125-136.

⁶³ Svensson, T., & Bjorklund, A. (2010). Focus on health, motivation, and pride: A discussion of three theoretical perspectives on the rehabilitation of sick-listed people. *Work*, 36(3), 273-282

⁶⁴ Shaw, et al., (2003) op. cit.

⁶⁵ Loisel, P. (2009). Developing a new paradigm: Work disability prevention. *Occupational Health Southern Africa*, 15(2), 56-60.

⁶⁶ Shaw, W. S., & Huang, Y. H. (2005). Concerns and expectations about returning to work with low back pain: Identifying themes from focus groups and semi-structured interviews. *Disability and Rehabilitation*, 27(21), 1269-1281.

⁶⁷ Franche, R. L., & Krause, N. (2002). Readiness for return to work following injury or illness: Conceptualizing the interpersonal impact of health care, workplace, and insurance factors. *Journal of Occupational Rehabilitation*, 12(4), 233-256.

⁶⁸ Franche, R., Baril, R., Shaw, W. S., Nicholas, M., & Loisel, P. (2005). Workplace-based return-to-work interventions: Optimizing the role of stakeholders in implementation and research. *Journal of Occupational Rehabilitation*, 15(4), 525-542.

⁶⁹ MacEachen, E., Kosny, A., Ferrier, S., Lippel, K., Neilson, C., Franche, R. L., & Pugliese, D. (2012). The ‘Ability’ Paradigm in Vocational Rehabilitation: Challenges in an Ontario Injured Worker Retraining Program. *Journal of Occupational Rehabilitation*, 22(1), 105-117.

avoidance and pain,^{70,71} satisfaction with treatment and reassurance regarding diagnosis and recovery,⁷² and aspects of the workplace itself⁷³ as being important for the worker's decision to return. Recovery expectations,⁷⁴ motivation and intentions to return to work,⁷⁵ self-efficacy,^{76,77} perception of fairness,⁷⁸ and social support⁷⁹ are also considered as predictors for the re-entering worker's health recovery and ability to resume and sustain the ability to work.

Recent studies have also highlighted that individual efforts to re-enter work cannot be studied in isolation from compensation systems, healthcare delivery systems, or the workplace.^{80,81} Studies related to facilitating patient satisfaction in the RTW process have shown the importance of communication between the healthcare provider and the re-entering worker.⁸² The importance of communication between healthcare services and the workplace has also been emphasized,^{83,84} as has coordination with insurer requirements (Kosny, MacEachen, Ferrier, & Chambers, 2011).⁸⁵ For re-entering workers, communication needs to include discussion of the realistic potential for sustainability of their work ability, including identification of possible interventions for avoiding a setback when re-entering the workplace.⁸⁶ ⁸⁷ Unfortunately, knowledge gaps still exist about how psychosocial factors actually affect RTW, especially

⁷⁰ Chronic Low Back Pain Patients. *Journal of Applied Biobehavioral Research*, 22(2).

Linton, S. J. (2000). A review of psychological risk factors in back and neck pain. *Spine Journal*, 25(9), 1148-1156.

⁷¹ Neblett, R., Mayer, T. G., Hartzell, M. M., Williams, M. J., & Gatchel, R. J. (2015). The Fear-avoidance Components Scale (FACS): Development and Psychometric Evaluation of a New Measure of Pain-related Fear Avoidance. *Pain Practice*, 16(4), 435-450.

⁷² Verbeek, J., Sengers, M. J., Riemens, L., & Haafkens, J. (2004). Patient expectations of treatment for back pain: a systematic review of qualitative and quantitative studies. *Spine*, 29(20), 2309-2318.

⁷³ Shaw et al., op. cit.

⁷⁴ Reme, S. E., Hagen, E. M., & Eriksen, H. R. (2009). Expectations, perceptions, and physiotherapy predict prolonged sick leave in subacute low back pain. *BMC Musculoskeletal Disorders*, 10(1), 139.

⁷⁵ De Rijk, A., Janssen, N., Van Lierop, B., Alexanderson, K., & Nijhuis, F. (2009). A behavioral approach to RTW after sickness absence: the development of instruments for the assessment of motivational determinants, motivation and key actors' attitudes. *Work*, 33(3), 273-285.

⁷⁶ Brouwer, S., Krol, B., Reneman, M. F., Bültmann, U., Franche, R. L., van der Klink, J. J. L., & Groothoff, J. W. (2009). Behavioral Determinants as Predictors of Return to Work After Long-Term Sickness Absence: An Application of the Theory of Planned Behavior. *Journal of Occupational Rehabilitation*, 19(2), 166-174.

⁷⁷ Shaw et al., op. cit.

⁷⁸ Hepburn, C. G., Kelloway, E. K., & Franche, R. L. (2010). Early employer response to workplace injury: what injured workers perceive as fair and why these perceptions matter. *Journal of Occupational Health Psychology*, 15(4), 409-420.

⁷⁹ Yound, A. E. (2010). Return to work following disabling occupational injury – facilitators of employment continuation. *Scandinavian Journal of Work, Environment & Health* (6), 473-483.

⁸⁰ Loisel, P., Buchbinder, R., Hazard, R., Keller, R., Scheel, I., van Tulder, M., & Webster, B. (2005). Prevention of Work Disability Due to Musculoskeletal Disorders: The Challenge of Implementing Evidence. *Journal of Occupational Rehabilitation*, 15(4), 507-524.

⁸¹ MacEachen, et al., op. cit.

⁸² Verbeek, et al., op. cit.

⁸³ Franche, et al., (2005) op. cit.

⁸⁴ Shaw, et al., op. cit.

⁸⁵ Kosny, A., MacEachen, E., Ferrier, S., & Chambers, L. (2011). The Role of Health Care Providers in Long Term and Complicated Workers' Compensation Claims. *Journal of Occupational Rehabilitation*, 21(4), 582-590.

⁸⁶ Shaw, et al., op. cit.

⁸⁷ Young, A. E., Roessler, R. T., Wasiak, R., McPherson, K. M., van Poppel, M. N. M., & Anema, J. R. (2005). A Developmental Conceptualization of Return to Work. *Journal of Occupational Rehabilitation*, 15(4), 557-568.

when viewing the process as a dynamic trajectory over time. The re-entry to work may involve temporal shifts in disability, and in the disability-related beliefs and behaviors of the re-entering worker.⁸⁸

Overall, it is clear that open communication and workplace social relations among the key stakeholders in SAW/RTW and disability prevention is essential. Therefore, policy changes should include a focus on coordinating the efforts of the worker/patient, healthcare providers, the worker's employer/supervisor, and the payer involved in the case. This should then lead to a more successful SAW/RTW and work retention strategy.

3.8 The Need for a Federal Mandate for Policy Change

The complexity of the MSK pain problem and its disabling effects, the contrasting views of multiple stakeholders, and the psychosocial aspects of experiencing pain and work disability have all contributed to the growing rates of permanent disability filings in the United States for MSK disorders. To stem this epidemic of pain-related work disability, policy-level changes are needed to transform the behaviors of workers, insurers, and employers. Without these changes, insurers will not reimburse more effective services targeting SAW/RTW, clinicians will not be incentivized to address workplace concerns or problems, employers will not improve job accommodation efforts, and workers will not receive the screening, counseling, and education necessary to develop effective pain-coping and self-management skills necessary to remain in the workforce. Without robust policy change, the underlying factors contributing to the opioid crisis and to the growing number of working-age adults receiving SSDI benefits will remain unchanged.

⁸⁸ Tjulin, et al., op. cit.

4. POLICY FOCUS AREAS WITH RECOMMENDATIONS

The interdisciplinary Policy Working Group of eight experts in musculoskeletal (MSK) disorders and pain management have identified six primary focus areas that should be the target of improved MSK pain and disability management policies: (1) drug formularies and treatment guidelines; (2) education and training; (3) reimbursement for healthcare services; (4) employer injury and disability prevention practices; (5) data collection and monitoring; and (6) federal inter-agency leadership. Within these focus areas, the Policy Working Group provides 17 specific policy recommendations.

4.1 Focus Area 1: Drug Formularies and Treatment Guidelines

Both national and international treatment guidelines for pain management provide an important basis for establishing best practices in clinical care. Authors of guideline documents have striven for consistency in medical decision-making and services across settings and patients, but consumers still face a dizzying array of treatment options, specialists, and procedures for the management of MSK pain. Guideline documents vary in terms of detail and evidentiary support, but most guidelines for MSK pain provide evidence ratings for individual treatments given a set of symptoms, patient preferences, pain duration, and health circumstances. Examples of pain management guidelines in the United States include those authored by the American College of Occupational & Environmental Medicine (ACOEM)⁸⁹ and the CDC.⁹⁰ The CDC guidelines, in the past, have focused on prescribing opioids for chronic pain (although this is now changing, given today's acknowledgment of the problems of opioid use), and most MSK treatment guidelines do not include specific mention of workplace challenges or interventions. The ACOEM guidelines do emphasize the need to assess psychosocial factors and the importance of supporting early RTW at various stages of the patient care continuum, but these guidelines still lack any specific approaches for facilitating SAW/RTW. Most pain management guidelines tend to be algorithmic, involving decision trees and logic diagrams to guide clinical decision-making, ordering of tests, and referrals. One important factor that is not sufficiently addressed in most guideline documents is how to assess workplace factors and how to incorporate these into patient counseling and education, clinical decision-making, and workplace communication and recommendations.

In addition to the adoption of treatment guidelines, some states have also adopted drug formularies that dictate which medications can be prescribed, at what doses, and for what specific diagnoses within their workers' compensation systems. According to a position statement from ACOEM,⁹¹ 12 states (Arizona, Arkansas, California, Delaware, Nevada, North Dakota, Ohio, Oklahoma, Tennessee, Texas, Washington, and Wyoming) have adopted, or are working on adopting, formularies for their workers' compensation systems, beginning with North Dakota in 2006. Other states are also considering doing so, partly because, according to the position statement, "studies [have] demonstrate[d] that formularies can dramatically decrease the direct costs of medications, the costs of utilization review, and the inappropriate use of certain medications including opioids, non-generics, and compounded topical medications."⁹² For

⁸⁹ American College of Occupational and Environmental Medicine (2017). OEM Essentials/Curriculum. http://www.acoem.org/uploadedFiles/Continuing_Education/OEM_Essentials_Curriculum.pdf

⁹⁰ Dowell, et al., op. cit.

⁹¹ American College of Occupational and Environmental Medicine. (2016). *Drug formularies in workers' compensation systems: A position statement from the American College of Occupational & Environmental Medicine*. Elk Grove Village, IL. Author.

⁹² Ibid

example, the adoption in 2011 of the Texas closed pharmacy formulary resulted in a 67% reduction in the number of injured workers receiving not-recommended drugs, which included some opioids. The total number of Oxycontin prescriptions to injured workers fell from more than 12,000 in 2011 to less than 2,000 in 2015. In addition, the total cost of these not-recommended drugs to the system fell 78%.⁹³ Private health insurers have also adopted drug formularies, but state-level policies have been limited to workers' compensation systems.

Thus, drug formularies may have a cost-savings benefit for payers, while improving adherence to evidence-based guidelines and guarding patient safety. On the other hand, Colorado has chosen not to adopt a formulary for its workers' compensation system. Instead, the state plans to ensure appropriate, safe prescribing in its workers' compensation cases through the institution of routine case-by-case utilization review processes before opioids can be prescribed. State-regulated drug formularies may also encourage the use of non-opioid analgesics, and limit the risk of dependency and development of opioid use disorder. One problem that remains is the variability of drug formularies and adopted treatment guidelines in adjacent states, or even within different healthcare systems within the same state.

Policy Recommendation #1: State governments and professional associations should ensure that treatment guidelines, claim/case management protocols, and utilization management protocols for MSK disorders preferentially recommend interventions aimed at increasing function, minimizing work disruption, preserving or promptly restoring job-related functions, and preventing loss of livelihood.

Existing pain treatment guidelines are focused on the important tasks of establishing diagnostic clarity, avoiding unnecessary diagnostics and treatments, reducing symptoms, preventing harm to patients, and establishing reasonable uniformity in the application of evidence-based care. The relationship between the application of pain treatment guidelines and the ability of patients to maintain employment during or after treatment is generally not explicitly addressed by policies governing pain management and support treatment. Among workers' compensation programs, ten states (Arizona, Arkansas, California, Colorado, Massachusetts, Nevada, New Hampshire, North Dakota, Ohio, and Vermont) have explicitly adopted treatment guidelines for controlled substances into standard practice rules, and one more (North Carolina) is considering the adoption of such treatment guidelines.⁹⁴ There have been efforts to disseminate information to providers about the expected time off work for various medical conditions,⁹⁵ but these guidelines do not provide tools or instructions to facilitate SAW/RTW.

Apart from treatment guidelines, which are aimed entirely at medical treatment, there are also patient-targeted resource guides that focus more on pain self-management strategies and how to communicate more effectively with an employer. For example, the American Chronic Pain Association's Resource Guide for patients explains an overarching goal to "coordinate appropriate interventions for the specific purpose of supporting the individual's effort to reach and maintain maximum functional improvement; institution of preventive measures, expectation management, education for relapse prevention, proper activity and

⁹³ Texas Department of Insurance, Workers' Compensation Research and Evaluation Group. (2016). Impact of the Texas Pharmacy Closed Formulary. Retrieved July 2017 from <http://www.tdi.texas.gov/reports/wcreg/documents/formulary16.pdf>

⁹⁴ Matrix Healthcare Services. (2017). Opioid Legislation and Regulations Impacting Workers' Compensation: 2016 Summary and 2017 Outlook. Retrieved July 2017 from <https://www.mymatrixx.com/wp-content/uploads/2017/04/Opioid-Legislation-and-Regulations-2016-Summary-and-2017-Recap-myMatrixx.pdf>.

⁹⁵ Work Loss Data Institute. (2017). Evidence-Based Medical Treatment and Return to Work Guidelines, 2017. Retrieved July 2017 from <http://www.worklossdata.com/return-to-work-guidelines.html>

work pacing, ergonomic accommodation; and when appropriate, transitional return to gainful employment with as little disruption to the work site and coworkers as possible” (American Chronic Pain Association, 2017).⁹⁶

Policy Recommendation #2: State governments and professional associations should ensure that treatment guidelines, claim/case management protocols, and utilization management protocols for MSK disorders recommend early identification of SAW/RTW challenges (especially workplace issues and dysfunctional pain-related beliefs), multi-stakeholder communications, professionally facilitated SAW/RTW problem-solving sessions at the worksite, and patient-centered education and counseling.

If preventing work disability is to become a more prominent goal in pain management, then benefit structures should be revised to incorporate workplace assessment, analysis of job demands, and workplace-centered patient education and counseling into routine pain management practices. Current structures give little attention to workplace issues, and provide little guidance or support to providers about best practices for facilitating RTW or managing MSK pain in the workplace context. Most guidelines do instruct providers to document temporary medical restrictions at work; however, support is rarely offered for patient education and counseling or employer communication to prevent long-term work disability. Thus, the line of communication between healthcare provider teams and employers is often weak, and is customarily limited to a “single page” that simply indicates, for example, weight restrictions for manual materials handling. More complicated issues of job accommodation and organizational support are rarely addressed until many months of absence have accrued, and the probability of returning an individual to work is very low.

Recommendations regarding benefit structures and employer accommodation and communication are typically accomplished by a guidelines committee established by either professional associations (e.g., ACOEM) or federal agencies responsible for healthcare standards and workplace safety (e.g., Agency for Healthcare Research and Quality [AHRQ]). Incorporating more workplace outreach and disability prevention measures would initiate a substantial change in the way that healthcare for MSK pain and safe workplace accommodation is currently provided.

Policy Recommendation #3: Federal and state governments should take active steps to ensure that drug formularies are transparent, evidence-based, and broad enough to facilitate and encourage effective prevention and treatment of both chronic pain and substance abuse, including development, dissemination, and active promotion of a model formulary.

AND, RELATEDLY:

Policy Recommendation #4: States should take active steps to foster collaboration and apply greater consistency/uniformity of content in the development and application of pain treatment guidelines, drug formularies, and/or Prescription Drug Monitoring Programs (PDMPs) within their jurisdiction and across adjacent jurisdictions.

Some inconsistencies in pain management practices occur because there are different payer systems and benefit programs under which healthcare and disability services align. This leads to problems for consumers, who are met with different formularies and pain treatment guidelines, depending on jurisdictional and administrative policies, even within the same state. For example, analgesic-prescribing

⁹⁶ American Chronic Pain Association. (2017). ACPA Resource Guide to Chronic Pain Medication & Treatment: An Integrated Guide to Medical, Interventional, Behavioral, Pharmacologic and Rehabilitation Therapies. Rocklin, CA. https://www.theacpa.org/uploads/documents/ACPA_Resource_Guide_2017.pdf

practices and the incorporation of non-pharmaceutical pain management may vary depending on whether a state employee is dealing with a workplace injury, a chronic health condition, or a non-work-related acute illness or injury.

One example of a policy-based effort to align formularies and pain treatment guidelines comes from the state of Washington, where there was an organized effort to adopt similar practice guidelines and drug formularies across several agencies of the state government. In 2004, Washington undertook a joint pharmacy-purchasing effort across the state's three largest healthcare systems (public employee plan, workers' compensation, and Medicaid), to address the rising cost of prescriptions and promote consistency and administrative simplification for providers and patients. This included an evidence-based preferred drug list (PDL) shared across the three agencies. These same state agencies, along with the Department of Health, Department of Corrections, and the regional hospitals of the U.S. Department of Veterans Affairs, also collaborated to address the opioid epidemic by developing the groundbreaking Agency Medical Directors' Group (AMDG) Opioid Dosing Guideline, which was published in 2007. This guideline was revised in 2010, and again in 2013, with increased emphasis on non-opioid alternatives, including cognitive behavior therapy to improve patient self-efficacy and address psychosocial barriers to recovery.⁹⁷ The AMDG also conducted a symposium on "Emerging Practices on Collaborative Care Management of Chronic Pain" in mid-2017.⁹⁸

The advantage of this type of approach is that consumers receive consistent messages about best practices, and treating providers can adopt similar practices regardless of insurance or benefit structures. Similar problems occur across state boundaries, where patients may encounter different standards for pain management and prescribing practices if they seek care across state lines. The dramatic differences in opioid prescribing practices between state jurisdictions has been well documented in the past.⁹⁹ This lack of consistency across healthcare programs gives consumers mixed messages about best practices, and it creates non-productive incentives for workers to cross state boundaries for opioid prescriptions.

4.2 Focus Area 2: Education and Training

Policy Recommendation #5: Educational institutions and licensing bodies should require training for all types of providers who treat painful MSK disorders to address a broad range of issues in pain management and support, including biopsychosocial screening, the need to address potential for substance abuse, and preventing and managing work disability.

AND

Policy Recommendation #6: Educational and licensing institutions should establish standardized training and certification to distinguish providers who specialize in: (a) short-term biopsychosocial counseling and education of patients with painful conditions about how to live well despite pain, and to restore quality of life, including everyday functions and work; and (b) accurate evaluation and effective treatment of co-existing dependence/addiction to opioids, alcohol, and other psychoactive substances.

⁹⁷ Washington State Department of Labor & Industries (2013). Guideline for prescribing opioids to treat pain in injured workers. <http://lni.wa.gov/ClaimsIns/Files/OMD/MedTreat/FINALOpioidGuideline010713.pdf>

⁹⁸ Information available at: <http://www.agencymeddirectors.wa.gov/collaborativecaresymposium.asp>.

⁹⁹ Webster, B. S., Cifuentes, M., Verma, S., Pransky, G. (2009). Geographic variation in opioid prescribing for acute, work-related, low back pain and associated factors: a multilevel analysis. *American Journal of Industrial Medicine*, 52(2), 162-171.

AND

Policy Recommendation #7: State and professional organizations should increase consumers', primary care providers', and medical specialists' awareness of, and access to, function- and work-oriented pain management services that use a biopsychosocial approach, especially patient education and counseling, emphasizing the health benefits of continued employment for most patients.

Changes in medical practice require not only changes in published treatment guidelines, but also substantial outreach and training. A biopsychosocial approach to pain management and support should be followed at all patient care levels, from primary to tertiary care. Provider education should be designed to teach specific interviewing techniques, apply patient-screening tools, increase knowledge of an expanded range of possible interventions, and encourage communication with employers.

One example of such education and training is offered by ACOEM, which offers continuing medical education courses as part of its OEM Essentials Curriculum to practicing physicians, with a goal to increase their expertise in the field. One particularly relevant course from that curriculum is *Work Disability Prevention for Clinicians: Mastering Your Role in the Stay-at-Work/Return-to-Work Process* (currently in transition from an on-site to an on-line course). It alerts physicians to the negative consequences of work loss, teaches them basic strategies and techniques for preventing needless work disability and formulating work restrictions, and providing helpful guidance to patients and their employers.¹⁰⁰

An example of leadership and a state-wide approach to the challenge of an undertrained provider workforce has been demonstrated by Medicaid Infrastructure Grant (MIG) grantees in Arizona and Kansas. Medicaid agencies in these two states undertook statewide provider-education initiatives between 2009 and 2012. They contracted with a vendor to deliver continuing medical education sessions, entitled "Stuff They Didn't Teach Us in Medical School: Clinical Decision-Making about Work," on the basic concepts of work disability prevention, as well as clinical decision-making in the SAW/RTW process. The MIG's strategy was to bring the education to the clinicians at their workplaces. The free sessions were arranged at the convenience of hospitals, multi-specialty clinics, and physicians' offices. The sessions were delivered at the times of day and places where each organization traditionally provided continuing medical education. Hundreds of clinicians were trained during 40 sessions in Arizona and 20 sessions in Kansas. As a result, there are now clinicians with this expertise scattered throughout these two states. Moreover, the sessions were well received and attendees reported a significant increase in confidence in addressing these issues and handling them very differently than before.¹⁰¹

For payers to be able to distinguish effective models of disability-focused pain management and support education, this will require that educational institutions and licensing boards provide unique training programs to pre-certify providers in work disability-focused methods. Examples of effective methods for motivational interviewing, work-directed counseling, job modification, and RTW coordination can be found in the research literature, but the uptake of these methods in practice has been slow to occur. Coordinated efforts need to be implemented to educate these payers, who are usually important "gatekeepers" in the treatment authorization process.

¹⁰⁰ AECOM, (2017) op. cit.

¹⁰¹ Webility Corporation (2012). *Final Report – KDHE's Physician Education Project – 2011-2012*. For Kansas Department of Health & Environment.

4.3 Focus Area 3: Healthcare Reimbursement Policies

Changes in treatment guidelines and pain management strategies are more likely to produce changes in provider behavior if payer systems are able to support and reimburse services that support SAW/RTW for patients seeking care for MSK pain. Likewise, treatments that prolong work absence or increase patient risk of long-term work disability should be given more scrutiny. Diligent cost-containment efforts by payers may be limiting the availability of early patient education and counseling services that could otherwise improve work ability and help to facilitate RTW/SAW. Instead, workplace coordination and FR efforts are too often offered only after months or years of work absence, when the chances of returning to gainful employment are slim.¹⁰² ¹⁰³ Earlier efforts to screen patients and address maladaptive pain beliefs, workplace circumstances, and other patient-specific barriers to RTW should be adopted as part of routine pain management and support services.

Policy Recommendation #8: The American Medical Association and other healthcare coding entities should establish dedicated billing codes and fee structures for time-limited, disability-focused behavioral pain management interventions.

Even though there are existing procedure codes for providers to bill for patient counseling and education, many payers place restrictions on the use of these services, and standard Clinical Procedure Terminology (CPT) codes do not include appropriate billing codes for workplace coordination, RTW planning, and patient counseling and education to improve workplace function. Virtually all healthcare professional billing is administered by coding the services delivered via CPT codes. As new services come into being, the first step in getting providers paid for delivering these services is the complex political and administrative process of creating new CPT codes. This involves the following steps: (1) assigning relative value units (RVUs) to the service; (2) Medicare assigning a dollar amount to them; (3) adding the codes to payers' electronic fee schedules and bill-review systems; (4) having each commercial payer decide whether to accept and pay for those codes; and (5) having a payer decide whether to pay for a particular code in a particular case. Today, there are several codes for services that would be helpful in chronic pain cases, such as the Health and Behavior, Patient Education, and Complex Care Coordination codes. However, not all payers authorize the services they cover, or even accept and pay for them.

With respect to the SAW/RTW process, there are currently no CPT codes that enable billing for time and effort spent on activities designed to help patients with SAW/RTW. For example, these might include assessing work capacity and formulating medical restrictions; communications with the workplace, workers' compensation, or disability payer; case management conferences to discuss obstacles to RTW; review and discussion of reasonable accommodations; and patient counseling and education to improve workplace function.

As a potential remedy for this billing code problem, ManagedComp (a former managed care workers' compensation company based in Massachusetts) developed and deployed a billing code to cover a flat fee paid to physicians for "situation management" for each of a treating physician's cases. That fee covered any efforts by the physician to facilitate SAW/RTW. By paying a flat fee per case, ManagedComp

¹⁰² Hashemi, L., Webster, B. S., Clancy, E. A., & Volinn E. (1997). Length of disability and cost of workers' compensation low back pain claims. *Journal of Occupational and Environmental Medicine*, 39(10), 937-945.

¹⁰³ Hashemi, L., Webster, B. S., Clancy, E. A., & Courtney, T. K. (1998). Length of disability and cost of work-related musculoskeletal disorders of the upper extremity. *Journal of Occupational and Environmental Medicine*, 40(3), 261-269.

signaled that the physicians had the discretionary latitude to decide which cases needed attention, how much time and effort they would spend on it, and so forth.¹⁰⁴ Another example is Washington State's Centers for Occupational Health and Education (COHE) program, which established billing codes for formulating an "activity prescription" and then discussing it with the patient, as well as for communications by phone or in writing with employers and healthcare service coordinators about RTW.

Policy Recommendation #9: State, federal, and private insurance plans should encourage biopsychosocial pain assessment and disability-focused services for MSK pain and work disability lasting more than six weeks.

Earlier identification of disability risk factors is needed to provide working adults with effective vocational assistance and RTW planning. To identify medical, psychosocial, or workplace barriers to resuming work, a biopsychosocial assessment should be required for those who have not been able to resume normal work within six weeks. This assessment would provide a basis for understanding the individual's situation, and for identifying what types of intervention might be relevant to facilitate a safe and sustainable RTW. Workers' compensation programs might provide the best environmental "testing ground" for early biopsychosocial assessment, because state workers' compensation boards may be able to mandate such an approach. Once the effectiveness of this approach is demonstrated in the workers' compensation system, it might be possible to expand this practice outside workers' compensation.

The practice of conducting a more detailed assessment for workers who fail to improve as expected is already supported by some existing clinical treatment guidelines. For example, several of the body-part-specific ACOEM occupational medicine practice guidelines (several of which have been adopted by regulatory statute in California and New York) recommend biopsychosocial evaluation if recovery does not proceed as anticipated. To streamline biopsychosocial assessment and to triage workers requiring the most help, several patient-screening instruments have been developed, with at least moderate reliability and validity for clinical use.¹⁰⁵ Reviewers of this literature have repeatedly called for more routine screening of patients with MSK disability for elevated disability risk.¹⁰⁶ As an example of an enacted policy change to encourage more detailed biopsychosocial assessment of MSK disorders, Colorado's workers' compensation laws recommend a biopsychosocial assessment at six weeks under certain circumstances. The law is designed to make continuing healthcare services contingent on screening—if no biopsychosocial assessment has been done, the payer is at a disadvantage in any later treatment authorization disputes.¹⁰⁷

Policy Recommendation #10: Payers should view employment as a critical health outcome indicator and provide incentives for healthcare providers to use evidence-based pain management strategies to improve job retention and reduce the risk of work disability.

One example of using provider incentives to change medical practice comes from Washington's workers' compensation program, where providers receive financial and non-financial incentives for participating in the COHE system. The local COHEs are run by healthcare delivery organizations such as clinics or hospitals

¹⁰⁴ Christian, J. Frontline report: the Primary Occupational Physician Program (State of the Art reviews). *Managed Care Workers' Compensation*, 1998 issue.

¹⁰⁵ Melloh, M., Elfering, A., Egli-Presland, C., Roeder, C., Barz, T., Rolli-Salathe, C., et al. (2009). Identification of prognostic factors for chronicity in patients with low back pain: a review of screening instruments. *International Orthopedics*, 33(2), 301-313.

¹⁰⁶ Nicholas, et al., op. cit.

¹⁰⁷ Bruns, D., Mueller, K., & Warren, P. A. (2012). Biopsychosocial Law, Health Care Reform, and the Control of Medical Inflation in Colorado. *Rehabilitation Psychology*, 57(2), 81-97.

(referred to as “sponsors”). COHEs enroll healthcare providers, who are asked to use occupational health best practices with all their injured workers. Sponsors give providers feedback on how well they are following best practices guidelines. Providers receive financial incentives for demonstrating use of the following best practices:

- Submitting the report of accidents to the State Department of Labor & Industries within two business days
- Completing an activity prescription form at the first visit and when the patient’s status changes
- Conducting two-way communication with the patient’s employer concerning RTW options
- Developing a plan to address barriers that prevent patients who are still off work from returning to their jobs.

When the COHEs originally started, there were more financial incentives for COHE providers using occupational health best practices, but some of the best practices have now been adopted statewide (such as completing an Activity Prescription Form on the first visit and when the patient’s status changes), and payments for them are now available to non-COHE providers as well.¹⁰⁸

4.4 Focus Area 4: Employer Disability Prevention Practices

Reducing pain-related work disability and job loss depends on the willingness of employers, both private and public, to provide needed assistance, RTW/SAW facilitation, and reasonable accommodation to workers who experience MSK pain. There is compelling evidence that workplace factors influence job retention for workers with MSK disorders; this includes not only physical and psychosocial job demands,¹⁰⁹ but also organizational support and a variety of proactive employer policies and practices designed to reduce the risk of long-term disability.¹¹⁰ There is evidence that adding workplace assistance to medical rehabilitation efforts significantly improves RTW rates.¹¹¹ Although many employers strive to apply best practices in disability management, and to meet the legal mandate for reasonable job accommodation under the ADA, workers with pain report mixed experiences obtaining job-related assistance.¹¹² Furthermore, a majority of working-age Americans are self-employed or work in small business settings, where systematic RTW planning and support services are unavailable. Engaging employers, regardless of size of the business, in the support and accommodation of workers with persistent pain is an important focus area for new policy directives.

There are currently significant barriers and challenges for policymakers to influence the disability management practices of employers. Apart from the need to comply with the ADA mandate for

¹⁰⁸ Washington State Department of Labor & Industries. (2016). *Implementation of the Medical Provider Network & Expansion of the Centers for Occupational Health and Education: 2016 Report to the Legislature*. Retrieved July 2017 <http://www.lni.wa.gov/Main/AboutLNI/Legislature/PDFs/Reports/2016/ImpMPNexpCOHE.pdf>

¹⁰⁹ Shaw, et al., (2009), op. cit.

¹¹⁰ Main, C. J., Shaw, W. S., et al. (2016). Employer policies and practices to manage and prevent disability: Conclusion to the Special Issue. *Journal of Occupational Rehabilitation*, 26(4), 490-498.

¹¹¹ Williams-Whitt, K., Bultmann, U., Amick, B. 3rd, Munif, F., Tveito, T. H., Anema, J. R., et al. (2016). Workplace interventions to prevent disability from both the scientific and practice perspectives: A comparison of scientific literature, grey literature, and stakeholder observations. *Journal of Occupational Rehabilitation*, 26(4), 417-433.

¹¹² Huang, Y. H., Pransky, G. S., Shaw, W. S., Benjamin, K. L., & Savageau, J. A. (2006). Factors affecting the organizational responses of employers to workers with injuries. *Work*, 26(1), 75-84.

reasonable accommodation and the threat of discrimination lawsuits brought on by workers, employers currently have few material incentives or penalties influencing their disability management practices. Failed RTW efforts increase insurance premiums and the expense of rehiring and retraining, but considerable efforts are still being made to demonstrate the value to employers of a proactive RTW and modified duty program. A study by the RAND Corporation found that workers in a formal RTW program returned to work 1.4 times sooner; this corresponded to a reduction of between three and four weeks in median lost time for all workers reporting injuries.¹¹³

Another challenge is that MSK pain often develops slowly and episodically over the course of years of employment; thus, short-term RTW programs may be inadequate to curtail an insidious decline in function at work. A third barrier is the high rate at which MSK pain problems are medically unexplainable or of non-specific origin, as this presents a problem for employers and payers who rely on objective medical data to adjudicate the need for accommodation and to distribute fair and equitable benefits. Standard RTW procedures that are effective for other discrete and short-term medical conditions may be inadequate to deal with the subjective, recurrent, and fluctuating nature of MSK pain.

Policy Recommendation #11: State and professional organizations should promote improved employer practices for workplace communication and accommodation that are designed specifically to address long-term challenges associated with MSK pain and disability, as well as put into place primary prevention efforts, such as workplace injury and illness prevention strategies.

Employer policies and practices in disability prevention might be improved if they receive consistent guidance of best practices from state governments, consultants, insurers, employer disability management coalitions, human resources professional organizations, and other entities that routinely advise employers on disability concerns from a peer and/or regulatory standing. There is consistent research evidence of improved disability outcomes when employers are proactive and engage in RTW planning and support.¹¹⁴ However, many employers view disability prevention efforts through the perspective of legal compliance, rather than as potentially cost saving or beneficial to their workforce. One exception occurs with workers' compensation injuries and illnesses, for which employers risk a high cost of long-term disability if only token efforts to modify work and facilitate RTW are made. In workers' compensation programs (and possibly in other state- and federally controlled single-payer systems), there is a potential opportunity to institute stronger linkages between clinical care and workplace support and accommodation.

Oregon's Preferred Workers Program helps workers who are not able to return to their regular employment because of permanent disabilities from on-the-job injuries. Among other financial incentives, the Preferred Workers Program (1) reimburses employers for 50% of the injured workers' wages for up to 183 days; (2) makes exceptions on workers' compensation insurance premium and premium assessments for the preferred worker for up to three years; (3) makes exceptions on subsequent claims filed during the premium exemption period; and (4) grants up to \$5,000 for worksite creation costs when an employer creates a new job.¹¹⁵ Similarly, employers in New York are entitled to reduced workers' compensation premiums through the state or private workers' compensation insurance if they institute a Safety Incentive Program, a Drug and Alcohol Prevention Program, and/or a RTW Program. The New York Department of Labor has developed a RTW Model Program that employers can use, which includes

¹¹³ McLaren, et al., op. cit.

¹¹⁴ Cullen, et al., op. cit.

¹¹⁵ More information on the Preferred Workers Program is available at <http://wcd.oregon.gov/rtw/Pages/pwp.aspx>.

detailed instructions, policies and procedures, ways to promote the program, how to evaluate the program, and a set of forms and templates including a physical demands assessment and individual RTW plan worksheet, among other items.¹¹⁶

In addition, the Texas State Office of Risk Management provides guidance for employers on how to establish and operate a successful RTW program,¹¹⁷ which includes goals and objectives; a step-by-step process for establishing a program; a statement of the responsibilities of the employer, the employee, the claims adjuster, and the healthcare provider; RTW forms, including an [Injury/Illness Management Checklist](#), a sample [RTW policy](#), and a template and instructions for an offer of [transition/light-duty employment](#).

Policy Recommendation #12: States should mandate a professionally facilitated worksite meeting for workers at risk of long-term disability or job loss, to improve communication about SAW/RTW, the need for job accommodation, and whether opioid treatment may be compatible with work.

One critical link in the disability prevention system is the level of organizational support provided by employers and their willingness to offer temporary or permanent job accommodations after the onset of an injury or illness. Apart from the ADA's legislated requirement for reasonable accommodation, few other government regulations encourage employer support to keep workers with MSK injuries and persistent pain on the job. One possible policy change in state-regulated workers' compensation systems is to require more diligent efforts of employers to arrange for needed assistance, provide job modifications, and help to coordinate and facilitate SAW or RTW programs. For workers with MSK pain, the ability of employers to help workers manage pain problems and flare-ups is an important area for new policy directions.

A fundamental approach to keeping workers at work is to be sure that basic health and safety principles are being met in the workplace. Primary prevention approaches have two advantages: (1) preventing pain in the first place; and (2) allowing workers with MSK disorders to stay at work by not exacerbating the pain with overly strenuous work demands.¹¹⁸ In 2001, the National Research Council documented that there was enough evidence for workplaces to implement preventive programs around MSK disorders.¹¹⁹ More recently, the Total Worker Health® approach recommended by the National Institute of Occupational Safety and Health¹²⁰ addresses the issues associated with the interaction of MSK disorders with risk factors associated with non-communicable diseases, where conceptual frameworks target the conditions, including the physical, the psychosocial, and the organization of work.¹²¹ The evidence of these different factors affecting MSK pain has been reported by the NIOSH Total Worker Health® research and

¹¹⁶ See http://www.ppsa.org/assets/Programs/return_to_work_model_sample.pdf.

¹¹⁷ See <https://www.sorm.state.tx.us/claims-coordinator-overview/return-to-work-program>

¹¹⁸ Snook, S. H. Work-related low back pain: secondary intervention (2004). *Journal of Electromyography and Kinesiology*, 14(1), 153-160.

¹¹⁹ National Research Council, op. cit.

¹²⁰ NIOSH (2012), op. cit.

¹²¹ Sorensen, G., McLellan, D. L., Sabbath, E. L., Dennerlein, J. T., Nagler, E. M., Hurtado, D. A., Pronk, N. P., & Wagner, G. R. (2016). Integrating worksite health protection and health promotion: A conceptual model for intervention and research. *Preventive Medicine*, 91, 188-196.

training centers^{122,123} and elsewhere.¹²⁴ Many employers are adopting integrated approaches to targeting a range of health issues based on traditional and best practices for injury and illness prevention and programs. These approaches are also summarized by the Occupational Safety and Health Administration's Injury and Illness Prevention Programs, or I2P2,¹²⁵ as well as the National Institute for Occupational Safety and Health's Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing.¹²⁶

4.5 Focus Area 5: Data Collection and Monitoring

One policy challenge for improving SAW/RTW is that work outcomes are not generally considered an important quality-of-care indicator or a primary health outcome measure for comparing the beneficial effects of medical treatment and rehabilitation. Furthermore, the potential health benefits of maintaining full-time employment are similarly undervalued by medical care and insurance systems. Creating more available data on work outcomes is a critical need if future policy changes are to be evaluated and compared on this basis. Because the work disability outcomes of patients are not routinely collected or analyzed, this health outcome, which is of extreme importance to patients and their families, is given very little emphasis in clinical care.¹²⁷ Thus, providers often fail to incorporate work-related concerns of patients in pain management plans, and there is also little accountability of the health care system to track work disability as an important quality-of-care indicator.

Many states have chosen to enact Prescription Drug Monitoring Program (PDMP) legislation and regulations, partly because these programs are easier to implement and control relative to other options for managing use of opioids and other controlled substances. In a state or territory with a PDMP, doctors and/or pharmacies are required to report on what they prescribe and dispense. This information goes into a database, which prescribers, pharmacists, health insurers, and medical boards can then use for monitoring and controlling prescription drug use by individuals, and for tracking the prescribing practices of individual providers. This prevents patients from going from one doctor to another to get multiple prescriptions, and allows for doctors to be contacted and advised if their prescribing practices seem excessive and not in the best interests of the patient. The data may also be used by state public health officials as a surveillance tool to understand prescribing practices and trends across the state.

Because the work disability outcomes of patients with MSK pain are not routinely collected or maintained at the level of healthcare systems and insurers, the true effect of PDMPs and other policy-level changes are difficult to evaluate in terms of job loss and sickness or disability absence. One exception can be found in workers' compensation insurance systems, where payers routinely track administrative payment information for both paid clinical encounters and treatments as well as payments for lost work time. Thus,

¹²² Dennerlein, J. T., Hopcia, K., Sembajwe, G., Kenwood, C., Stoddard, A. M., Tveito, T. H., Hashimoto, D. M., & Sorensen, G. (2012). Ergonomic practices within patient care units are associated with musculoskeletal pain and limitations. *American Journal of Independent Medicine*, 55(2), 107-116.

¹²³ Sorenson, et al., op. cit.

¹²⁴ National Research Council, op. cit.

¹²⁵ Occupational Safety and Health Administration (2012). Injury and illness prevention program. Retrieved July 2017 from <https://www.osha.gov/dsg/topics/safetyhealth/OSHAwhite-paper-january2012sm.pdf>

¹²⁶ NIOSH (2008). Essential Elements of Effective Workplace Programs and Policies for Improving Worker Health and Wellbeing, Centers for Disease Control, DHHS. <https://www.cdc.gov/niosh/docs/2010-140/pdfs/2010-140.pdf>

¹²⁷ Christian, J. (2015). Establishing Accountability to Reduce Job Loss After Injury or Illness. Mathematica Center for Studying Disability Policy. https://www.dol.gov/odep/topics/pdf/SAW-RTW_Est.%20Accountability_2015-10.pdf

workers' compensation systems may be an important source of information about pain management strategies and their effect on work disability, as well as a means of evaluating policy changes that are adopted by insurers, state workers' compensation boards, or legislated changes in benefit structures.

Policy Recommendation #13: State governments should improve the uniformity, reach, and utility of PDMPs, computerized systems designed to track and regulate opioid prescriptions for individual patients across multiple providers and pharmacies.

Although PDMPs have been widely implemented, these systems could be improved to generate more real-time information for prescribing physicians at the point of contact, and to monitor a consistent range of scheduled drugs. In addition, states could exchange information more readily to avoid patients traveling across state boundaries to access providers outside the PDMP. There is growing evidence that prescription drug abusers are crossing state lines to circumvent state-based PDMPs,¹²⁸ and interstate sharing of PDMP information has begun to be considered by neighboring states.¹²⁹ Policy changes at the state level may improve the effectiveness of PDMPs to regulate opioid misuse and its presumed negative effect on work disability.

Policy Recommendation #14: The federal government should initiate a pilot funding program for states to conduct system- and patient-level outcome assessments that evaluate the effectiveness of policy changes associated with MSK disability prevention.

Whether policy changes in MSK disabilities and pain management are focused on employer practices, fee schedules, drug formularies, or RTW coordination, states currently lack the infrastructure for data collection and analysis that would enable accurate assessment of the resulting outcomes. In order to encourage a more systematic and multi-level assessment of disability policy changes, the federal government should initiate a pilot funding program for states to adopt policy changes and evaluate their success based on a number of key indicators. These should include patient-level data on MSK-related pain, function, work ability, and satisfaction with care, as well as administrative records showing healthcare utilization, disability days, and total costs.

A health-related example of such a data infrastructure pilot-funding program is the Patient Protection and Affordable Care Act (ACA) mandate to build data capacity for comparative effectiveness research using clinical registries, research data networks, and other data sources.¹³⁰ This legislation has allowed pilot funding of cancer registries, the creation of virtual data warehouses for electronic medical record data, improving access of providers to needed prescription drug event data, and creating a chronic condition warehouse. A similar strategy could be used to develop a data warehouse to assess the effectiveness of various interdisciplinary pain management and RTW strategies on long-term disability.

¹²⁸ Millman, J. (December 8, 2014). How prescription drug abusers are cheating the system by shopping across state lines. *Washington Post*. https://www.washingtonpost.com/news/wonk/wp/2014/12/08/how-prescription-drug-abusers-are-cheating-the-system-by-shopping-across-state-lines/?utm_term=.727bb2e6a554

¹²⁹ Council of State Governments. (2010). Interstate Information Sharing: Prescription Drug Monitoring Programs. http://knowledgecenter.csg.org/kc/system/files/CapitolResearch_PDM.pdf

¹³⁰ <https://aspe.hhs.gov/meeting-aca-mandate-build-data-capacity>. The authorizing legislation is as follows:

“The Secretary shall provide for the coordination of relevant Federal health programs to build data capacity for comparative clinical effectiveness research, including the development and use of clinical registries and health outcomes research data networks, in order to develop and maintain a comprehensive, interoperable data network to collect, link, and analyze data on outcomes and effectiveness from multiple sources, including electronic health records.”

Policy Recommendation #15: Health insurance providers should view employment as a critical health outcome indicator and routinely collect work information and patients' working status to guide clinical decision-making and as a quality-of-care indicator.

Detailed occupational information and effects of symptoms and treatments on work ability are infrequently discussed as elements of medical decision-making, and these issues are rarely documented in routine clinical electronic medical record systems. Work disability is seldom recognized as a key quality-of-life indicator for comparing the benefits of medical treatment. Opportunities for job accommodation and workplace communication are missed, and patients are unlikely to receive care that is focused on job retention and minimal work absence. One way to better integrate occupational concerns and disability risk factors into medical practice is to add routine assessment of work information and working status into electronic medical records, health insurance claims records, and other related data collection and decision-making systems. This is particularly a problem for non-work-related injuries and illnesses, where payers and providers have very little incentive to counsel patients on issues related to the workplace and the possible need for workplace accommodation. Over time, the availability of such data would also allow for pilot testing of innovative disability prevention strategies within insurance systems, and more accurately assessing the effects of policy changes on work disability outcomes.

One example can be drawn from the VA's healthcare delivery model, which has a robust quality matrix; the pieces of the system provide an example of collecting data on pain, function, work ability, and satisfaction with care. In the VA system, it is possible to query a patient's records by health diagnostic factors, such as a MSK condition or a cognitive diagnosis. For example, it is conceivable that records could be electronically searched for those patients who are employed or working and who have a MSK condition. The VA has two methodologies that capture patient satisfaction with quality of care. First, veterans can respond to the quality-of-care survey they receive through either letter or encrypted email they receive from the VA after each visit. Veterans can also fill out "comment cards" given to them by nurses at every visit. These data are not attached to the patient's record. They are kept at the hospital level, and then sent nationally as aggregate data.

The VA produces the *Primary Care Almanac*, a set of population reports generated from VA databases and data sources designed to support the management of Patient Aligned Care Teams (PACT) patient panels. The Almanac allows a PACT team to look across its entire panel of patients with various chronic diseases and demographic characteristics and assess risk. It also provides information about teams' practice habits, and how they compare to other teams at their site, the Veterans Integrated Service Network, and the nation, as well as relating success with performance measures. One of the assessment scores the VA generates from its patient data is the [Care Assessment Need \(CAN\)](#) score. A CAN score reflects estimated probability of admission or death within a specified time period (90 days or one year). It indicates how a given veteran compares with other individuals in terms of likelihood of hospitalization or death.

Two other data innovations in the VA system are the Joint Legacy Viewer and the Virtual Lifetime Electronic Record. The VA's *Joint Legacy Viewer* provides an integrated, read-only view of health data from the VA, Department of Defense, and community partner sources in a single place. It provides patient-level data for prospective issues and access to CAN scores. The VA also has the [Virtual Lifetime Electronic Record \(VLER\)](#), which is a Health Information Exchange program that gives VA and participating community care providers secure access to certain parts of a patient's electronic health record.

4.6 Focus Area 6: Federal Leadership for Policy Change

Several federal agencies share overlapping interests in disability, SAW/RTW policies, and the ability of working adults to manage pain effectively and prevent job loss. These include the Office of Disability Employment Policy at the U.S. Department of Labor as well as agencies supporting federal workers (Office of workers' compensation Programs at the U.S. Department of Labor); agencies supporting veterans (Department of Veterans Affairs); agencies funding research (National Institutes of Health; the National Institute for Disability, Independent Living and Rehabilitation Research; the National Institute of Occupational Safety and Health, all within the U.S. Department of Health and Human Services); regulatory agencies (the Occupational Safety and Health Administration at the U.S. Department of Labor); the Rehabilitation Services Administration within the U.S. Department of Education, the Social Security Administration, public health agencies (Centers for Disease Control and Prevention at the U.S. Department of Health and Human Services); and other federal agencies employing large numbers of employees who may be facing issues of aging and/or chronic MSK pain. Although many of these agencies have participated in interagency collaborative efforts, at present, there is no formal ongoing collaboration structure to coordinate RTW/SAW initiatives, recommendations, and practices across these federal agencies. For the federal government to be a leader in the adoption of evidence-based workplace disability prevention efforts, this would require that more formal and longer-term collaboration across federal agencies be pursued.

Policy Recommendation #16: The federal government should initiate an internal leadership collaboration across federal agencies to foster uniformity of policies in SAW/RTW practices and to establish common research and policy priorities to prevent disability associated with MSK pain.

Interagency collaboration agreements at the federal level have been successful in bringing greater attention to many complex public health and safety problems (e.g., the HIV epidemic, homelessness, environmental asthma, homeland security, disaster awareness, cyber security, and drug abuse). Interagency collaboration can include a two-way exchange of information and expertise, coordination of co-occurring federal programs, integration or merging of activities, and the establishment of networks or partnerships. Any redundancies among agencies can also be identified through these collaborative arrangements so that efforts can be centralized in the agencies with the greatest potential for implementing important policy changes. Interagency coordinative arrangements and activities established by public laws, executive orders, and administrative directives have been growing in recent years. For addressing complex public problems with multiple factors, such interagency collaboration may produce more uniformity in policies and procedures, and the desired changes in policy may have a larger impact if implemented across multiple agencies.

An existing example of such a collaborative arrangement was set up by the Centers for Medicare and Medicaid Services (CMS) to develop an opioid misuse strategy, but the scope of this collaboration did not include work disability.¹³¹ Another related example is the Interagency Pain Research Coordinating Committee (IPRCC), which was established to create a National Pain Strategy,¹³² but the scope of this effort also did not include work disability as a subject of collaboration.

If an interagency coordination arrangement were to be established to address workforce disability prevention efforts, this would serve as an example to private industry and would produce added public

¹³¹ Centers for Medicare and Medicaid Services. (2016). Opioid Misuse Strategy 2016. Retrieved July 2017 from <https://www.cms.gov/Outreach-and-Education/Outreach/Partnerships/Downloads/CMS-Opioid-Misuse-Strategy-2016.pdf>

¹³² Institute of Medicine, op. cit.

value by reducing disability among federal workers. To start this federal-wide collaboration, a lead agency would need to be established, and regular meetings could be scheduled with a representative from each of the designated federal agencies. Products of such meetings could include a list of potential factors contributing to disability, a comparison of policies and practices across organizations, and, ultimately, new guidelines and protocols for responding to gradually worsening MSK conditions in the workforce, whether work-related or non-work related.

Policy Recommendation #17: The federal government should underwrite a free-standing entity or institute for mitigating the impact of MSK disorders on people’s participation in life and work.

A new or existing institute should be chartered to mitigate the impact of MSK disorders on work disability. The agency or institute could serve as an umbrella organization and foster dialogue among stakeholders, support interdisciplinary and biopsychosocial approaches to work disability prevention, consolidate research that has been done, and conduct or fund original research. A new institute might be modeled after the Institute for Work and Health in Toronto or (a smaller version of) the Robert Wood Johnson Foundation. Another possibility would be to establish a cross-divisional agency within the National Institutes of Health or create a something like “Improving Chronic Illness Care,” the organization associated with the MacColl Chronic Care Model.

At present, no single profession, stakeholder group, social sector, governmental agency, or major charitable organization has explicit accountability for helping workers mitigate the impact of MSK disorders and other medical conditions on work disability. Because the SAW/RTW process involves multiple stakeholders and requires an interdisciplinary and biopsychosocial approach, this responsibility currently falls outside the scope of any one organization. A newly created or chartered organization could sponsor a variety of activities, research programs, and demonstration projects with the clear purpose of going beyond scientific understanding and to also serve as a source of expertise and resources for efforts to drive actual improvements in service delivery and outcomes.

Following are examples of projects that the new organization’s mission might undertake, coordinate, organize, obtain funding for, or oversee. Some roles are in the policy realm, whereas others aim at informing or educating various groups, conducting research, or facilitating changes in health care and employment policies. Examples of possible activities include:

- Build awareness and obtain buy-in from important stakeholder groups by holding multi-stakeholder conferences, speaking at healthcare professional, public policy, and industry conferences, ambassadorial outreach to leadership, and the like.
- Advocate for better public policy and supporting stronger governmental efforts at the federal and state levels.
- Conduct outreach to private commercial and charitable organizations to build relationships, encourage engagement, and raise funds to support these efforts.
- Build effective working relationships at the service delivery level among organizations in sectors that are now siloed, but must collaborate to help workers stay in the workforce.
- Educate and train specific stakeholder groups that now lack the awareness, basic concepts, and practical skill to play their role effectively in this arena.
- Build and operate an online resource center for workers who are looking for help in dealing with the disruptive impact of a health condition on their lives and livelihoods.

- Build and operate an online resource center for professionals who are looking for help in responding to the needs of workers with life-disrupting health conditions.
- Conduct practical research to build the evidence needed to convince public agencies and the private marketplace to increase the availability of specific services that are not readily available currently, and to increase access to support for struggling workers at critical junctures. This might include demonstrating the value of evidence-based innovative approaches, studying marketplace and operational challenges that are currently impeding widespread adoption and how to address them, and testing various SAW/RTW interventions to encourage their adoption, including regulatory, policy, administrative, business practices changes, and financial incentives.

5. CONCLUSION

MSK disorders are the chief health complaint for a large percentage of workers who file for SSDI benefits, and this proportion is growing. This problem has been further magnified by the current opioid crisis, and better pain management policies to facilitate SAW/RTW are now profoundly needed. Work disability, however, is a complex and multifactorial problem involving many stakeholders, and new or revised policies need to consider the personal, clinical, organizational, medicolegal, and societal factors that can influence the ability to maintain or resume paid work.

One important policy change is to revise treatment guidelines for MSK pain management to include more biopsychosocial pain management alternatives for work disability prevention and to reduce the exclusive use of strictly biomedical approaches for the medical management of MSK pain. Psychosocial patient screening, psychologically-informed interventions, and workplace outreach and communication have shown to prevent MSK work disability in research trials, but such practices have not been widely implemented, and traditional care regimens based on biomedical models of pain and injury may have iatrogenic effects and hinder SAW/RTW efforts. More effective safeguards for the effective use of opioids is another important pain management concern. Any changes to guidelines and formularies should be accompanied by educational outreach and training.

Another reason that healthcare services have not been expanded to address SAW/RTW more effectively is the lack of authorizations by payers to reimburse providers for these additional services. Therefore, changes in billing codes and structures, especially to allow biopsychosocial pain management, are needed. This is a fundamental problem that is a major barrier to the introduction of any new SAW/RTW initiatives in the private health insurance system.

Employer policies and practices are clearly an integral part of improving SAW/RTW outcomes for MSK disorders, although there are few legislated requirements guiding employer disability management practices apart from the mandate for reasonable accommodation under the Americans with Disabilities Act. Nevertheless, there is compelling evidence that employer practices have a major impact on SAW/RTW outcomes, and continuing efforts should be made at all levels to encourage more proactive RTW facilitation and job modification practices among employers.

One significant barrier to policy change has been the lack of available data on SAW/RTW outcomes within the daily administration of healthcare insurance systems. This has prevented the comparison of healthcare treatment alternatives in relation to work outcomes, and there is a lack of large-scale datasets to support the efficacy and cost-effectiveness of health care services to return individuals to paid work. Understanding which treatments are associated with better work outcomes has been limited to research protocols and to workers' compensation systems, where data on healthcare costs and disability costs are maintained by the same payer.

An initial step toward improved policies is to create more interagency collaboration and leadership at the federal level. Several agencies and departments representing health, disability, and employment concerns could create a unified vision and adopt greater consistency across the federal system and, at the same time, serve as a model for private and state disability insurance systems in SAW/RTW practices. Chartering a new or existing agency with a clear responsibility for SAW/RTW research and practice would provide an important catalyst for policy change in this area.

Without policy-level changes to transform the behaviors of workers, insurers, and employers, insurers will not reimburse more effective services targeting SAW/RTW, clinicians will not be incentivized to address workplace concerns or problems, employers will not improve job accommodation efforts, and workers will not receive the screening, counseling, and education necessary to develop effective pain-coping and self-management skills necessary to remain in the workforce. Without robust policy change, the underlying factors contributing to the opioid crisis and to the growing number of working-age adults receiving SSDI benefits will remain unchanged.

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GLOSSARY OF TERMS AND ACRONYMS

Term	Definition
Acute pain	Pain that typically lasts less than 3 to 6 months and is usually an indication that damage to the body has occurred or is impending.
Analgesic	A member of the group of drugs used to achieve relief from pain that acts on the peripheral and central nervous systems. Analgesics include acetaminophen, nonsteroidal anti-inflammatory drugs (NSAIDs), and opioids.
Biopsychosocial	Involving a combination of biological, psychological and social factors.
Biopsychosocial pain model	A model of pain management that presumes a dynamic interaction among biological factors (genetic, biochemical, etc.), psychological factors (mood, personality, behavior, etc.), and social factors (cultural, familial, socioeconomic, medical).
Chronic pain	Pain that lasts more than 3 to 6 months and is sometimes medically unexplainable using available tests and observations.
Concept of gains	Gains are achieved when a physical symptom relieves one's feelings of anxiety, ambivalence, or inner conflict about not performing some necessary activities.
Disability	A restriction, diminished capacity, or inability to perform certain activities of everyday living and life participation because of a health condition or impairment.
Economy of gains and losses	A clear awareness of the complex balance between gains and losses is essential for understanding the motivation for return-to-work.
Iatrogenic	Illness or injury that is caused by medical examination or treatment.
Impairment	A problem in body function or structure. An alteration of the individual's usual health status (i.e., some objective anatomic or pathological abnormality) that is evaluated in physical and medical terms to determine structural limitations.
Activity limitation	A difficulty encountered by an individual in executing a task or action.
MacColl Chronic Care Model	<p>A primary care model for patients with chronic health conditions. The model is outcome-driven rather than cure-driven and focuses on practical, supportive, evidence-based interactions between an informed, activated patient and a prepared, proactive practice team.</p> <p>*An approach to caring for people with chronic disease in a primary care setting. The model creates practical, supportive, evidence-based interactions between an informed patient and a prepared, proactive practice team. The essential elements of quality care are a health system, a well-designed delivery system, and support for decisions, clinical information systems, self-management support, and the community.</p>

Term	Definition
Maximum medical improvement (MMI)	A medicolegal term referring to the health state at which an individual's symptoms have stabilized and there is little or no expectation for further improvement and healing.
Medicolegal	Involving both medical and legal aspects, mainly medical jurisprudence.
Musculoskeletal disorders	A broad category of health conditions involving injury or pain to joints, ligaments, muscles, nerves, tendons, and other structures supporting the limbs, neck, and back.
Multi-dimensional approach to pain	A focus on improving the problem-solving and lifestyle adaptation skills of patients while still acknowledging the workplace and functional challenges of the patient to cope with an episodic, persistent, and unpredictable pain problem.
Opioids	A class of drugs that include the illegal drug heroin, synthetic opioids such as fentanyl, and pain relievers available legally by prescription, such as oxycodone, hydrocodone, codeine, morphine, etc. these drugs are chemically related and interact with opioid receptors on nerve cells in the body and brain to reduce pain.
Pay for performance	A provider reimbursement strategy where payments are based exclusively on quantifiable improvements in patient outcome and not on fee-for-service.
Pathophysiology	The physiology of abnormal or diseased organisms or their parts; the functional changes associated with a disease or syndrome.
Permanent partial disability (PPD)	An insurance classification of indemnity payments made to reimburse a fractional loss in occupational function as the result of an injury or disease where MMI has been reached and impairments are expected to be life-long.
Permanent total disability (PTD)	An insurance classification of indemnity payments made to reimburse for a complete loss in occupational function as the result of an injury or disease, where MMI has been reached and impairments are expected to be life-long.
Psychosocial factors	Individual, organizational, demographic, and situational factors that can influence health outcomes for an individual above and beyond that predicted by medical diagnosis alone.
Policymakers	In the context of pain and disability, key policymakers include the federal government, state governments, national authorities, disability insurers, health insurers, employers, and health care providers.
Temporary Total Disability (TTD)	An insurance classification of indemnity payments paid to reimburse a short-term but complete loss in occupational function as the result of an injury or disease, where MMI has not yet been reached and the condition is expected to improve.
Temporary Partial Disability (TPD)	An insurance classification of indemnity payments paid to reimburse a short-term and only partial loss in occupational function as the result of

Term	Definition
	an injury or disease, where MMI has not yet been reached and the condition is expected to improve.
Tolerance	The ability or willingness or intention to endure activities at a given level of discomfort.
Work disability	The inability of working-age adults to perform essential job tasks or maintain employment due to health concerns and functional limitations

Acronyms

Term	Definition
ADA	Americans with Disabilities Act
ACOEM	American College of Occupational and Environmental Medicine
AHRQ	Agency for Healthcare Research and Quality
AMA	American Medical Association
AMDG	Agency Medical Doctors' Group
CARF	Commission on Accreditation of Rehabilitation Facilities
CDC	Centers for Disease Control and Prevention
CMS	Centers for Medicare & Medicaid Services
COHE	Centers of Occupational Health and Education in Washington State
CPT	Clinical Procedure Terminology
FMLA	Family Medical Leave Act
FR	Functional restoration
ICER	Institute for Clinical and Economic Review
IOM	Institute of Medicine (now known as the National Academy of Science)
IPRCC	Interagency Pain Research Coordinating Committee
LBP	Low back pain
MIG	Medicaid Infrastructure Grant
MMI	Maximal medical improvement
MSK	Musculoskeletal
ODEP	The U.S. Department of Labor's Office of Disability Employment Policy
OEM	Occupational and environmental medicine
PDI	Private Disability Insurance
PDL	Preferred drug list
PDMP	Prescription Drug Monitoring Program

Term	Definition
PMR	Physical medicine and rehabilitation
PPD	Permanent partial disability
PROMIS	Patient-Reported Outcomes Measurement Information System
PTD	Permanent total disability
RTW	Return to work
SAW	Stay at work
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
TENS	Transcutaneous Electrical Nerve Stimulation
TPD	Temporary Partial Disability
TTD	Temporary Total Disability
VA	U.S. Department of Veterans Affairs