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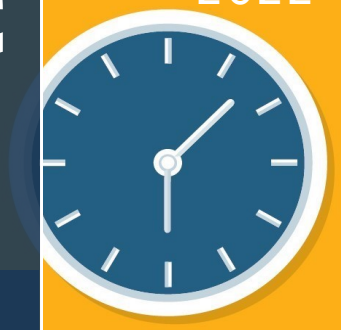
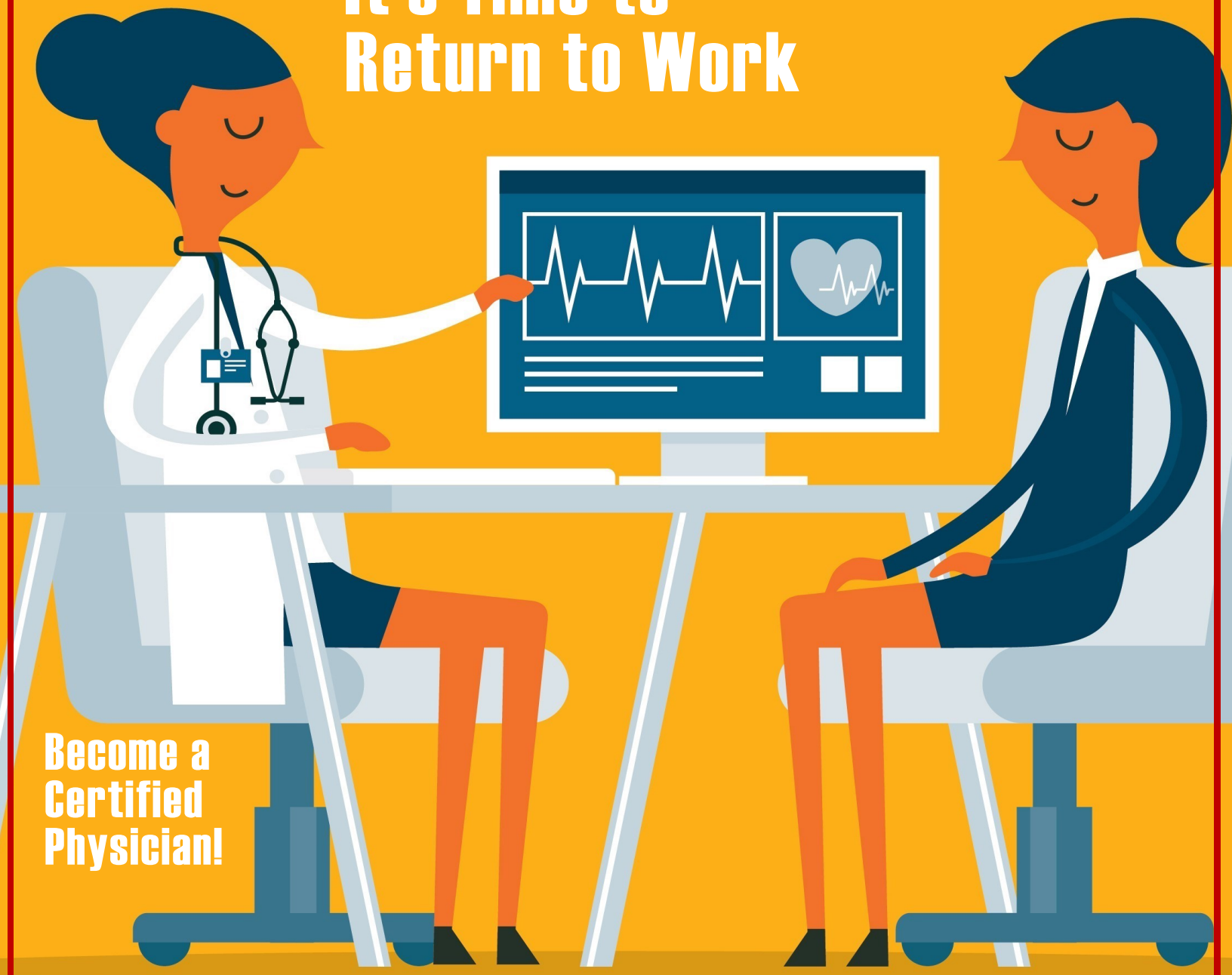


It's Time to Return to Work



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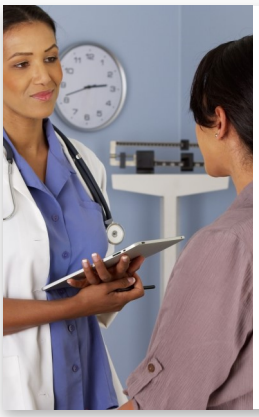

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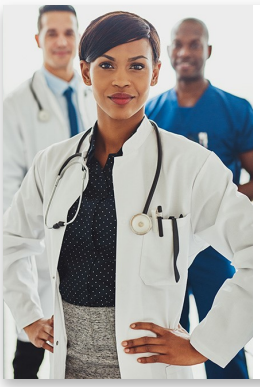

OPPORTUNITIES

Bureau Seeks Board-Certified Physicians **Consider the MIR Registry**

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MIR Physician Spotlight:
Patrick Bolt, MD

Dr. Patrick Bolt is a native to Knoxville, Tennessee, who has been practicing orthopedic surgery at Tennessee Orthopedic Clinics in Knoxville since 2007. His father was an administrator at the Knox County Health Department, eventually serving as director. His mother was a special education supervisor for Knox County schools. Dr. Bolt attended the University of Tennessee, Knoxville for his undergraduate degree. He then traveled to New York City for medical school at Columbia College of Physicians and Surgeons. He completed residency in orthopedic surgery at the University of Chicago and an orthopedic spine fellowship at the San Francisco Spine Institute. He then returned to Knoxville, Tennessee where he has been in practice with Tennessee Orthopedic Clinics, now a division of Tennessee Orthopedic Alliance.

He has been active in the North American Spine Society (NASS), serving as director of the patient education committee, authoring articles and texts for the NASS website and various patient brochures, and currently serves on the NASS audit committee. Dr. Bolt has also served the medical staff of Fort Sanders Regional Medical Center (FSRMC) as Chief of Orthopedic Surgery and is the FSRMC Chief-of-Staff Elect for the upcoming year.

Dr. Bolt feels that a primary function of the doctor-patient relationship is education. Many medical disorders, particularly spinal disorders, have only limited or partial treatment options. Educating the patient regarding their diagnosis, prognosis, and treatment options is a vital step in the shared decision-making of orthopedic treatment. Patients experiencing joint or spine pain, particularly in the setting of workplace injuries, must navigate a complicated sea of options. Education gives the patient the power to make the decision that best fits their situation and expectations.

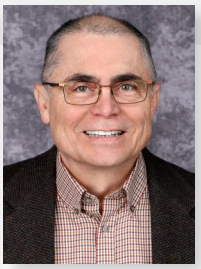
Participating in the Tennessee Medical Impairment Rating Registry has been valuable to Dr. Bolt. “I enjoy the challenge! Every case is a chance to understand the rating system better. Workman’s compensation

impairment ratings can be straightforward, or they can be extremely complicated. I find that a careful history and physical examination of the patient, with an eye for the details that key decision-making, is vital to arriving at a logical conclusion. I feel that the Medical Impairment Rating Registry could potentially be a model for providing an impartial opinion in other medical-legal areas in the future, such as causation analysis or permanent work restrictions."

Dr. Bolt is married to the Reverend Michelle Warriner Bolt, and they have four active boys to keep them busy! They enjoy swimming, paddling, fishing, playing music, soccer, basketball, and travelling!

Physician Strategies Used to Improve Return-to-Work Expectations of Injured Workers:
A Systematic Literature Review

Jay Blaisdell, MA, James B. Talmage, MD



Abstract

A systematic review was undertaken to identify valid and reliable physician strategies for raising patient return-to-work (RTW) expectations. The review found that physicians who shared published outcome data with patients in a consistent, evidence-based way could help their patients form accurate or realistic return-to-work expectations. Also, evidence suggested physicians who proactively communicated with their patients and their patients' employers had better return-to-work outcomes than those who did not. By implication, patients who, at the onset of treatment, have unrealistic return-to-work expectations, whether lower or higher than their injury or disease warrants, may benefit from timely physician communication strategies that emphasize published outcome data and evidence-based guidelines relevant to the injury in question.

Introduction

Rationale

Workplace injuries that result in permanent disability and unemployment have detrimental effects for employees, employers, insurance companies that pay disability claims, and government agencies that administer workers' compensation systems. Given the strong correlation between an injured worker's expectation of returning to work and the actuality of returning to work (Heymans, 2006; Iles, 2008; Iles, 2009; Sandström & Esbjörnsson, 1986; Kapoor et al., 2006), the ability to raise a patient's return-to-work expectations may result in marked improvements in employment and medical outcomes. Some return-to-work-programs are predicated, in part, on the assumption that treating physicians can help shape patient expectations, thereby decreasing the number of days the patient will be out of work. Studies have consistently demonstrated that a quicker return to work will improve medical outcomes and reduce disability claims (Carlier et al, 2013; Jurisic et al., 2017; Kroll et al., 2009; Morris et al., 1994; Reuda et al., 2012; Roelfs et al, 2011; Shiri et al., 2013; Waddell et al., 2007).

Objectives

This systematic review was undertaken to identify valid and reliable physician strategies for improving patient expectations regarding their return to work.

Methods

Eligibility Criteria

Peer reviewed qualitative, quantitative, randomized controlled, and meta-analytical studies were all eligible for consideration in this study, as well as such studies conducted outside of the United States. Studies were limited to those published in English from 2001 to 2021.

Information Sources

All studies were found in two databases: PubMed and Medline.

Search Strategy

For each database, three groups of keywords surrounded by parentheses and combined by the Boolean operator *and* were used. These word groups were 1. "(physician OR doctor)," 2. "(return to work)," and 3, "(patient expectations)."

Selection Process

The search strategy yielded a total of 109 studies, of which 22 were deemed relevant to the current study question. The search strategy yielded 98 studies in PubMed, of which 17 were deemed relevant to the current study question. The search strategy yielded 11 studies in Medline, of which five were deemed relevant. Studies were determined to be relevant if they reported physician interventional strategies used to affect outcome of return-to-work expectations of their patients. Studies focusing on cancer patients' expectations and their treating specialist(s) were also included.

Data Analysis

Data Collection Process

Data was collected from the "Abstract," "Results," "Discussion" and "Conclusion," sections of the 22 relevant studies.

Data Items

Results of the 22 relevant studies were further divided into "strategies," allowing for the type of interventions described, and results of strategies, allowing for a discussion as to whether the strategy was effective, not effective, or not scientifically verified for effectiveness.

Synthesis Methods

The 22 relevant articles were analyzed and categorized into one of four overarching physician strategies used to affect return-to-work expectations of injured workers: (1) return-to-work physician training, (2) communication techniques, (3) patient encouragement, and (4) screening for triage purposes.

Table 1. Literature Synthesis Summary

	RTW Physician Training	Physician Communication Techniques	Physician-to-Patient Encouragement	Screening for Triage Purposes
Not Effective	1 Study	1 Study	0 Studies	1 Study
Not Verified for Effectiveness	2 Studies	3 Studies	4 Studies	4 Studies
Effective	0 Studies	5 Studies	1 Study	0 Studies
Total Relevant Studies	3 Studies	9 Studies	5 Studies	5 Studies

Return-to-Work (RTW) Physician Training

Three studies fit into the "Return-to-work physician training" category. Of these, a Dutch study concluded that five hours of additional return-to-work training for general practitioners did not improve patient return-to-work expectations (De Kock et al., 2018). An American article advocated that additional training for family physicians would lead to enhanced expectations and better outcomes but gave no evidence for this (Vanichkachorn et al., 2014). Finally, one Dutch study simply said that physicians were "well aware of the relation between work and health but need[ed]

more knowledge, communication skills and better cooperation with occupational physicians to manage work-related problems" (De Kock et al, 2016).

Physician Communication Techniques

Of the nine studies that fell into the "communication techniques" category, one focused on first "building an alliance" with the injured worker, then conveying the benefits of employment to the injured worker, and finally cooperating with "stakeholders" (Nilsen et al., 2015). This study acknowledge that the results of these strategies were not known, as measuring such results was very "difficult." Another study in this category showed a correlation between the physician's return-to-work expectations for the injured worker and the injured worker's own return-to-work expectations, but it did not show how the physician's expectations were conveyed to the injured worker or why, making it unclear whether physicians can effectively raise their patients' expectations (Claréus & Renström, 2019). One study showed that the more physicians described the ill effects of cancer treatment and were not available to answer questions, the less likely the injured worker would return to work (Ganem et al, 2016).

Two studies concerning outcomes of spine injuries concluded that by "providing consistent, accurate information" physicians could help patients form "realistic expectations and potentially optimize outcomes" (Schouten et al, 2015). These expectations are informed by "published outcome data" to create evidence-based guidelines to "reduce the variability in the information given to patients" (Lewkonia et al, 2012). Results were similar for brachial plexus avulsion injuries in that physicians who educated their patients before surgery helped form "realistic" outcome expectations (Franzblau et al., 2014). In one study, disagreement between the physician and the patient as to how to manage lower-back pain did not result in "greater time off work" (Azoulay et al., 2005).

An American article (Vanichkachorn et al., 2014) cited a Canadian study (Kosney et al., 2006) that showed that health care providers who "proactively communicated" with their patients and their patients' employers had a positive influence on early RTW. Finally, a Japanese study recounted two successful mental health case studies where the treating physician first sought to build trust with her patient and then, as a team with the patient, agree on recovery goals (Zhao, 2011). This study was limited to severe mental health cases requiring hospitalization with the end goal not being a return to work but a return to home. And it did not mention a control group.

Physician Encouragement

Of the studies that showed the physician did not believe it was his or her role (or was unclear as to his or her role) to influence the injured worker's return-to-work expectations, one study showed either a delayed return to work or a failed return to work when the physician failed to encourage the injured worker (Seyedmehdi, 2015) while the other studies recorded no results (Lamort-Bouché et al., 2021; Lundberg et al., 2019; Tiedtke et al., 2012; Yanar et al., 2019).

Screening for Triage Purposes

Within the triage category, one study showed that emergency physicians did not accurately predict the time the injured worker would be away from work (Beach et al., 2012). Another study tested for the ability of a screening questionnaire to predict long-term absence from work, but this study was ongoing (Goorts et al., 2018). Another study developed a "prediction model" that could predict "intermediate" and "high-risk" injured workers who were liable not to return to work (Jensen et al., 2013). Finally, one study showed that prostate cancer rehabilitation programs helped get patients back to work, further underscoring the need to identify high-risk individuals so that these patients might be selected for "intensified occupational support during cancer rehabilitation" (Ulrich et al., 2018). The particulars of rehabilitation varied across programs, but some included "psychological support/therapy, social counseling as well as patient education," though it was not clear if any physicians provided these services. Incidentally, one study showed that the patients were indeed triaged for rehabilitation, with those being more affluent receiving higher priority (Sennehed et al., 2017).

Discussion

Interpretation of Results

Physician and patient expectations regarding return to work are weakly correlated. Patients who, at the onset of treatment, have unrealistic return-to-work expectations, whether lower or higher than their injury warrants, may benefit from physician communication strategies that emphasize published outcome data relevant to the injury in question. A physician's lack of encouragement and availability may negatively affect an injured worker's prospects of returning to work. Proactive physician communication with the patient and the patient's employers will likely have a positive impact on the patient's early return to work and, thus, the patient's health. Prognosis tools can accurately predict a patient's risk of not returning to work.

While such tools may help predict risk, they themselves offer no guidance as to how physicians might intervene with high-risk patients.

Strengths and Limitations

This review adopts revised PRISMA standards (Page et al., 2021). Reviewers conducting a literature review using the exact methods described herein might get different results, as relevancy criteria may be interpreted differently. Since the conclusions of other systematic reviews were included as evidence, this review is vulnerable to the same weaknesses of these studies. Furthermore, this review was limited to two databases, PubMed and Medline. Other search word groups and Boolean operators used in conjunction with other databases may identify different studies leading to different results.

Implications

For the best possible return-to-work outcomes, physicians must both educate their patients and proactively communicate with patients and their employers. Physicians should consider familiarizing themselves with published outcome data for the injury types and illnesses that they routinely treat and should consider sharing these results with their patients to help them form more accurate return-to-work expectations. Physicians may also consider, as a matter of routine, personally following up with their patients to offer encouragement and answer any questions their patients might have. Further research should be considered to help create the type of physician education necessary to improve patient expectations regarding return to work, especially when screening tools show that a patient is at risk for delayed return to work. The ideas of "alliance building" and "goal setting" as physician strategies to raise patient expectations appear promising and require further exploration through randomized, controlled studies.

"Physicians should consider familiarizing themselves with published outcome data for the injury types and illnesses that they routinely treat and should consider sharing these results with their patients to help them form more accurate return-to-work expectations."

References

Azoulay, L., Ehrmann-Feldman, D., Truchon, M., & Rossignol, M. (2005). Effects of patient-clinician disagreement in occupational low back pain: a pilot study. *Disability and Rehabilitation*, *27*(14), 817–823. https://doi.org/10.1080/09638280400018684

Beach, J., Benoit, M., Rowe, B. H., & Cherry, N. (2012). Can emergency physicians predict severity and time away from work?. *Occupational medicine (Oxford, England)*, *62*(8), 648–650. https://doi.org/10.1093/occmed/kqs174

Carlier, B. E., Schuring, M., Lötters, F. J., Bakker, B., Borgers, N., & Burdorf, A. (2013). The influence of re-employment on quality of life and self-rated health, a longitudinal study among unemployed persons in the Netherlands. *BMC public health*, *13*, 503. https://doi.org/10.1186/1471-2458-13-503.

Claréus, B., & Renström, E. A. (2019). Patients' return-to-work expectancy relates to their beliefs about their physician's opinion regarding return to work volition and ability. *Journal of pain research*, *12*, 353–362. https://doi.org/10.2147/JPR.S179061

De Kock, C. A., Lucassen, P., Bor, H., Knottnerus, J. A., Buijs, P. C., Steenbeek, R., & Lagro-Janssen, A. (2018). Training GPs to improve their management of work-related problems: results of a cluster randomized controlled trial. *The European journal of general practice*, *24*(1), 258–265. https://doi.org/10.1080/13814788.2018.1517153

De Kock, C. A., Lucassen, P. L., Spinnewijn, L., Knottnerus, J. A., Buijs, P. C., Steenbeek, R., & Lagro-Janssen, A. L. (2016). How do Dutch GPs address work-related problems? A focus group study. *The European journal of general practice*, *22*(3), 169–175. https://doi.org/10.1080/13814788.2016.1177507

Franzblau, L. E., Shauver, M. J., & Chung, K. C. (2014). Patient satisfaction and self-reported outcomes after complete brachial plexus avulsion injury. *The Journal of Hand Surgery*, *39*(5), 948. https://doi.org/10.1016/j.jhsa.2014.01.022

Ganem, G., Antoine, E. C., Touboul, C., Naman, H., Dohollou, N., Facchini, T., Coscas, Y., Lortholary, A., Catala, S., Jacquot, S., Lhomel, C., & Eisinger, F. (2016). Maintaining professional activity during breast cancer treatment. *European journal of cancer care*, *25*(3), 458–465. https://doi.org/10.1111/ecc.12460

Goorts, K., Vandenbroeck, S., Rusu, D., Bois, M. D., & Godderis, L. (2018). Screening for the risk on l ong-term sickness absence. *Journal of public health research*, *7*(2), 1419. https://doi.org/10.4081/jphr.2018.1419

Heymans, M. W., De Vet, H. C. W., Knol, D. L., Bongers, P. M., Koes, B. W., & Van Mechelen, W. (2006). Workers' Beliefs and Expectations Affect Return to Work Over 12 Months. *Journal of Occupational Rehabilitation*, *16*(4), 685–695. https://doi.org/10.1007/s10926-006-9058-8

Iles, R. A., Davidson, M., & Taylor, N. F. (2008). Psychosocial predictors of failure to return to work in non-chronic non-specific low back pain: a systematic review. *Occupational and environmental medicine*, *65*(8), 507–517. https://doi.org/10.1136/oem.2007.036046

Iles, R. A., Davidson, M., Taylor, N. F., & O'Halloran, P. (2009). Systematic review of the ability of recovery expectations to predict outcomes in non-chronic non-specific low back pain. *Journal of occupational rehabilitation*, *19*(1), 25–40. https://doi.org/10.1007/s10926-008-9161-0

Jensen, O. K., Stengaard-Pedersen, K., Jensen, C., & Nielsen, C. V. (2013). Prediction model for unsuccessful return to work after hospital-based intervention in low back pain patients. *BMC musculoskeletal disorders*, *14*, 140. https://doi.org/10.1186/1471-2474-14-140

Jurisic, M., Bean, M., Harbaugh, J., Cloeren, M., Hardy, S., Liu, H., 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. https://doi.org/10.1097/JOM.0000000000001055

Kapoor, S., Shaw, W. S., Pransky, G., & Patterson, W. (2006). Initial patient and clinician expectations of return to work after acute onset of work-related low back pain. *Journal of Occupational and Environmental Medicine*, *48*(11), 1173–1180. https://doi.org/10.1097/01.jom.0000243401.22301.5e

Kosny, A., Franche, R. L., Pole, J., Krause, N., Côté, P., & Mustard, C. (2006). Early healthcare provider communication with patients and their workplace following a lost-time claim for an occupational musculoskeletal injury. *Journal of occupational rehabilitation*, *16*(1), 27–39. https://doi.org/10.1007/s10926-005-9009-9

Kroll, L. E., & Lampert, T. (2011). Unemployment, social support and health problems: results of the GEDA study in Germany, 2009. *Deutsches Arzteblatt international*, *108*(4), 47–52. https://doi.org/10.3238/arztebl.2011.0047

Lamort-Bouché, M., Péron, J., Broc, G., Kochan, A., Jordan, C., Letrilliart, L., Fervers, B., Fassier, J. B., & FASTRACS Group (2020). Breast cancer specialists' perspective on their role in their patients' return to work: A qualitative study. *Scandinavian journal of work, environment & health*, *46*(2),177–187. https://doi.org/10.5271/sjweh.3847

Lewkonia, P., Dipaola, C., Schouten, R., Noonan, V., Dvorak, M., & Fisher, C. (2012). An evidence-based medicine process to determine outcomes after cervical spine trauma: what surgeons should be telling their patients. *Spine*, *37*(18), E1140–E1147. https://doi.org/10.1097/BRS.0b013e31825b2c10

Lundberg, T., & Melander, S. (2019). Key Push and Pull Factors Affecting Return to Work Identified by Patients With Long-Term Pain and General Practitioners in Sweden. *Qualitative health research*, *29*(11), 1581–1594. https://doi.org/10.1177/1049732319837227

Morris, J. K., Cook, D. G., & Shaper, A. G. (1994). Loss of employment and mortality. *BMJ (Clinicalmresearch ed.)*, *308*(6937), 1135–1139. https://doi.org/10.1136/bmj.308.6937.1135

Nilsen, S., Malterud, K., Werner, E. L., Maeland, S., & Magnussen, L. H. (2015). GPs' negotiation strategies regarding sick leave for subjective health complaints. *Scandinavian journal of primary health care*, *33*(1), 40–46. https://doi.org/10.3109/02813432.2015.1001943

Page, M., McKenzie, J. E., Bossuyt, P., Boutron, I., Hoffmann, T. C., Mulrow C D et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews *BMJ* 2021; 372 :n71 doi:10.1136/bmj.n71

Roelfs, D. J., Shor, E., Davidson, K. W., & Schwartz, J. E. (2011). Losing life and livelihood: a systematic review and meta-analysis of unemployment and all-cause mortality. *Social science & medicine (1982)*, *72*(6), 840–854. https://doi.org/10.1016/j.socscimed.2011.01.005

Rueda S., Chambers L, Wilson M., et al. (2012). Association of Returning to Work with Better Health in Working- Aged Adults: A systematic review. Am J Public Health, 102 (3): 541-556. doi: 10.2105/AJPH.2011.300401

Sandström, J., & Esbjörnsson, E. (1986). Return to work after rehabilitation. The significance of the patient's own prediction. *Scandinavian journal of rehabilitation medicine*, *18*(1), 29–33.

Schouten, R., Lewkonia, P., Noonan, V. K., Dvorak, M. F., & Fisher, C. G. (2015). Expectations of recovery and functional outcomes following thoracolumbar trauma: an evidence-based medicine process to determine what surgeons should be telling their patients. *Journal of Neurosurgery. Spine*, *22*(1), 101–111. https://doi.org/10.3171/2014.9.SPINE13849

Sennehed, C. P., Holmberg, S., Stigmar, K., Forsbrand, M., Petersson, I. F., Nyberg, A., & Grahn, B. (2017). Referring to multimodal rehabilitation for patients with musculoskeletal disorders - a register study in primary health care. *BMC health services research*, *17*(1), 15. https://doi.org/10.1186/s12913-016-1948-7

Seyedmehdi, M., Attarchi, M., Ghaffari, M., Mohammadi, S., Darnahal, M., & Sadeghi, Z. (2015). Prognostic factors for return to work after low-back disc herniation surgery. *Asia-Pacific journal of public health*, *27*(2), NP1775–NP1784. https://doi.org/10.1177/1010539512471072

Shiri, R., Kausto, J., Martimo, K. P., Kaila-Kangas, L., Takala, E. P., & Viikari-Juntura, E. (2013). Health-related effects of early part-time sick leave due to musculoskeletal disorders: a randomized controlled trial. *Scandinavian journal of work, environment & health*, *39*(1), 37–45. https://doi.org/10.5271/sjweh.3301

Tiedtke, C., Donceel, P., Knops, L., Désiron, H., Dierckx de Casterlé, B., & de Rijk, A. (2012). Supporting return-to-work in the face of legislation: stakeholders' experiences with return-to-work after breast cancer in Belgium. *Journal of occupational rehabilitation*, *22*(2), 241–251. https://doi.org/10.1007/s10926-011-9342-0

Ullrich, A., Rath, H. M., Otto, U., Kerschgens, C., Raida, M., Hagen-Aukamp, C., & Bergelt, C. (2018). Return to work in prostate cancer survivors - findings from a prospective study on occupational reinte gration following a cancer rehabilitation program. *BMC cancer*, *18*(1), 751. https://doi.org/10.1186/s12885-018-4614-0

Vanichkachorn, G., Roy, B. A., Lopez, R., & Sturdevant, R. (2014). Evaluation and management of the acutely injured worker. *American family physician*, *89*(1), 17–24.

Waddell, G., Burton, K., & Aylward, M. (2007). Work and common health problems. *Journal of insurance medicine (New York, N.Y.)*, *39*(2), 109–120.

Yanar, B., Kosny, A., & Lifshen, M. (2019). Perceived Role and Expectations of Health Care Providers in Return to Work. *Journal of occupational rehabilitation*, *29*(1), 212–221. https://doi.org/10.1007/s10926-018-9781-y

Zhao Y. (2011). *Seishin shinkeigaku zasshi = Psychiatria et neurologia Japonica*, *113*(10), 1028–1035.

Adverse Effects of Opioids, the Role of Utilization Review, on Return to Work in Workers' Compensation

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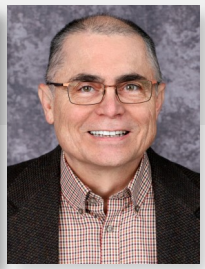


Introduction

The Spring 2021 issue of the *AdMIRable Review* has an article on the lack of science supporting chronic opioid therapy and its multiple adverse effects (Talmage, 2021). This article will review the adverse effect of opioid treatment on return to work (RTW) after injuries at work and discuss the role of utilization review in opioid treatment of work injuries. Many negative effects of opioid use are generally known, but the effect of opioid use on the rate at which workers are injured at work, and once injured the effect of opioids on the workers' RTW rates, are lesser-known.

Does Opioid Use Predispose Workers for Injuries?

The 2020 U.S. Census report indicates the population of Tennessee was then 6,916,897 (U.S. Census, 2020). The report to the Legislature by the Tennessee Controlled Substance Monitoring Database (CSMD) indicates that in 2020, there were 5,073,009 prescriptions filled for opioids for pain, and an additional 920,281 prescriptions for buprenorphine for opioid use disorder. The CSMD does not include prescriptions dispensed by the Veterans Administration. Chronic opioid users are not specifically identified in the CSMD, but since the longest prescription duration permitted for opioids is a 30-day supply, chronic users would likely be receiving 12 prescriptions or more per year (some get 24 prescriptions per year, taking both a sustained-release opioid and a quick-release opioid for "breakthrough" pain).

A 2019 study that matched patients in the state of Tennessee CSMD to the Tennessee Bureau of Workers' Compensation Report of Injury database for single injury claims 2013-2015 found 20.4% of the 132,299 injured workers were not opioid "free" on the day of injury. In other words, they were already prescribed opioids when the new injury was sustained (Durand et al, 2019).

Similarly, in British Columbia, out of 97,124 workers with new workers' compensation low-back claims, 19.7% were already taking opioids before the injury (Carnide et al, 2018).

A U.S. survey found that 4.7% of adults aged 20-39, 8.1% of adults aged 40-59, and 7.9% of adults aged 60 or over were using prescription opioids (Frenk, 2015). Thus, the 20% usage rate in workers with new work injury claims seems disproportionate. However, these data cannot tell us whether the opioid is a real risk factor predisposing to a work injury, or if opioid use identifies a "fragile population" that is more likely to be injured (Kowalski-McGraw et al, 2017). Opioid use is associated with an increased rate of falls and fractures (Yoshikawa et al, 2020).

Does Opioid Use Correlate with Lower RTW Rates?

Opioid use after injury has been shown to delay or prevent RTW. Injured workers who receive opioids after an injury have longer times off work and a lower rate of ultimate RTW. The higher the total Morphine Milligram Equivalent (MME) dose dispensed to a worker and each additional opioid refill prescription are both associated with delayed RTW and/or failure to RTW (Webster et al, 2007: CDC/MMWR, 2017; Haight et al, 2020; Carnide et al, 2019; Savych et al, 2020; Tao, 2015). The same findings are noted in studies of RTW after musculoskeletal surgery (Anderson et al, 2015; Basilico et al, 2019; Brat et al, 2018; Faour et al, 2017; Nguyen et al, 2011; O'Donnell et al, 2018; Sun et al, 2016; Yerneni et al, 2020).

Therefore, if RTW is a goal, the total opioid dose prescribed, and the number of refill prescriptions issued should be targets for the evaluation of medical necessity through utilization review.

Opioids and Utilization Review

It is now about five years into the Tennessee state-mandated limitations on opioid prescribing for physicians. Opioid-related deaths are now more associated with illegal and counterfeit drugs (Mattson et al, 2021). Injured workers who become addicted during treatment for work-related injuries are "insured" for treatment of substance use disorder (i.e., treatment is covered by the worker's compensation insurance carrier). The state maintains a listing of substance abuse treatment facilities (TN Dept of Mental Health, 2022).

Over these last five years, the evidence has advanced significantly. The efficacy of opioids (potential benefit versus potential harm) and their relative effectiveness

versus other safer analgesics (ibuprofen and acetaminophen) are not currently supported by the evidence, especially for subacute and chronic pain (Talmage, 2021; AHRQ, 2020; Chang et al, 2017; Bijur et al, 2021; Busse et al, 2018). These facts are true for the general population as well as injured workers.

The Tennessee CSMD report to the Legislature shows that mandatory checking of the database before prescribing and the 2018 law [PC 1039] limiting prescription quantities have significantly impacted opioid prescriptions in Tennessee (2021). Consider:

- The Morphine Milligram Equivalents (MMEs) prescribed and dispensed to patients in Tennessee have decreased almost 57% from 2012 to 2020.
- The MMEs prescribed by the top 50 prescribers have decreased 57% from 2013 to 2020.
- The number of potential "doctor-shoppers" has decreased 92% from 2012 to 2020.
- The number of opioid prescriptions for pain has decreased by 43% from 2012 to 2020.
- The number of cases of neonatal abstinence syndrome has decreased by 26% from 2017 to 2019.

For all of this positive news in the general population, less progress was made in workers' compensation, even with the use of utilization review being much greater in the workers' compensation population (Durand et al, 2019; Duran et al 2019; Chang et al, 2017; Klimas et al, 2019; Savych et al, 2017).

The 2021 Tennessee Medical Data Report and its opioid supplement published by the National Council on Compensation Insurance (NCCI) compares Tennessee workers' compensation case data to data from 11 surrounding states, comprising Tennessee's "region," and a total of 40 other states, comprising "countrywide" data (NCCI, 2021). For Tennessee in 2020, 34% of injury claims received at least one opioid prescription, compared with 27% in our region and 28%

> "There is no other obvious explanation for the increased frequency and potency of opioid prescriptions to injured workers in Tennessee except for provider practice patterns."

countrywide. In these claims, the average number of prescriptions per worker was 5.1 in Tennessee, 4.1 in the region, and 4.2 countrywide. The average yearly MMEs per claim with opioids was 5,802 MME in Tennessee, 4,423 in our region, and 4,753 countrywide. There is no other obvious explanation for the increased frequency and potency of opioid prescriptions to injured workers in Tennessee except for provider practice patterns.

The WCRI 2021 report on the *Effects of State Opioid Laws and Policies on Opioid Utilization in Workers' Compensation* shows that comparing the two years before the required checking the CSMD to after the implementation of this requirement, the average MMEs for all Tennessee workers' compensation claimants was 225 MMEs before and decreased to 175 MMEs after the new requirement (WCRI report, Figure 2). The 2018 law change restricting the amount of opioids dispensed per prescription was "too new" to permit reporting on the 2018 dosing limitations in the WCRI report.

On the brighter side, there has been a significant reduction in the number of appeals coming to the Bureau where the dosage prescribed exceeded the limits suggested by the Department of Health Guidelines on the Management of Chronic Pain – 100 MMEs per day. Any reduction that improves the quality of life and prevents overdose or diversion to the black market is welcome.

"It had the unintended consequence of increasing opioid overdose deaths. This increase in overdose deaths was due to non-prescription, illicit opioids (heroin and fentanyl)."

The Naloxone Initiative may have made a difference in safety, but the current evidence is mixed. Naloxone is freely prescribed and obtainable at pharmacies in Tennessee. In addition, the actual utilization by patients or families is difficult to discern. Just its presence might be beneficial.

However, the largest study of opioid access control laws in all 50 states in 23 million commercially insured adults showed that laws restricting access to opioids decreased the amount of prescription opioids dispensed but increased the number of adults receiving medication-assisted therapy (methadone or buprenorphine) for opioid use disorder. It had the unintended consequence of increasing opioid overdose deaths. This increase in overdose deaths was due to non-prescription, illicit opioids (heroin and fentanyl). State laws allowing patients and families access to naloxone were associated with a similar increase (not decrease) in opioid overdose deaths, perhaps by giving patients and families a false sense of security. Most patients get a single "at home dose" of naloxone, and many overdos-

es with fentanyl require many, many doses to rescue an overdose patient (Lee et al, 2018). Limited supplies of "legal" opioids and diversion have fueled a terrible surge in the illegal market, with overdose deaths reaching more than 100,000 in the U.S. last year (CDC, 2021). Demand for opioids or alternatives does not seem to have peaked. Until treatment catches up, this trend will likely continue.

Patients do not just quit; they turn to the illegal market, not uncommonly with bad outcomes. (Mark et al, 2019.) Consequently, care must be taken in further tightening the supply of legal, properly prescribed, and used opioids in the workers' compensation population. Satisfactory and safe treatment, alternatives, or substitutes must be available.

Utilization Review

Utilization review is the process of evaluation of the medical necessity of a treatment or medication requested by a medical provider. This is initially carried out by the insurer through the use of medical experts.

Before Utilization Review, Choice of Panel Physicians

Before even getting to utilization review, the insurers already have a valuable tool. In Tennessee, employers, through their insurers or third-party administrators, can direct the care of the injured worker when they offer a panel of physicians to the injured worker at the time of injury. Using this control, early and ongoing care can be directed to the most appropriate providers, those who follow the scientific evidence and communicate effectively with patients and the insurer. This means employers and insurers should track how often doctors on their workers' compensation panels prescribe opioids for the initial injury, how often opioid weaning is instituted early in treatment (within fewer than 20 days), and how often patients of individual doctors become chronic opioid users. Pain from injury and surgery should both decrease over time as healing occurs. Additional metrics to track are:

- If opioids were prescribed before the current authorized treating physician

(ATP) becomes involved, does the ATP begin opioid tapering as healing occurs over time?

- If opioids are prescribed after surgery, does the ATP begin tapering the opioids early in the postoperative period, as pain decreases while healing occurs?

Employers and insurers should track physician opioid prescribing habits and exercise their right to choose wisely whom to place on the three-doctor panels they offer to injured workers. As we documented in Spring 2021 in this journal, persistent opioid use is associated with a lower rate of RTW, delayed RTW in those who do return, increased surgical complication rates including an increase in second or revision surgery, and suboptimal surgical outcomes. Placing a doctor, who consistently and liberally prescribes opioids with no apparent concern for opioid weaning, on an employer's/insurer's panel of physicians might not be in the patient's best interest or a wise choice for the insurer.

General Considerations

To control medication use, utilization review is the tool most often employed. What place does it have, and how should it be used in patients covered by workers' compensation? The Tennessee Workers' Compensation Law, sections 50-6-102 and 50-6-124, and Tennessee Compilation Rules and Regulations 0800-02-06, provide for utilization review for controlled substance prescriptions at 90 days after the initial prescription. This may be misperceived as a ban on utilization review of controlled substances until the patient has been taking the controlled drug for 90 days. Instead, this is the Legislature and the Bureau suggesting to the employers and insurers that if utilization review has not already occurred, and the patient has been on opioids for 90 days, then utilization review should occur.

Tennessee law permits surgeons to prescribe up to 20 days of an opioid after major surgery. While studies show most patients having surgery do not take opioids for 20 days, a subset continues to take them (Lovecchio et al, 2017). As a result of continued prescriptions, they become chronic or long-term opioid users. The best pre-

dictors of long-term use are total opioid dose in MMEs and duration of use/number of refill prescriptions (Basilico et al, 2019; Brat et al, 2018; Webster et al, 2007).

Utilization review can be a valuable tool in the early period of opioid prescribing. In addition, the drug formulary published on the Bureau's website gives guidance on prior authorizations for opioids to be sure they are appropriate from the first prescription for the diagnosis and to learn whether they are a first-line or a second-line choice.

In workers' compensation, the only leverage available to the insurer is through denial of payment. The system does not and cannot mandate any treatment or choices made within the doctor-patient relationship. When medications are denied payment, appeals may be filed with the Bureau. When reviewing appeals for denied opioids, the Bureau's Medical Directors consider the length of time that the injured worker has been taking opioids, the diagnosis(es), the accuracy of assessment of function in the medical records, and the qualifications of the prescribers. The Medical Directors routinely observe poorly assessed functional improvement and the use of additional medications to treat opioid side effects. And this is without a clear attempt to evaluate whether the opioid is an effective analgesic or if the risks and the complications support the continuation of that medication. Medical records frequently contain self-reported questionnaires that are proposed as evaluations of the risk of harm from opioids. However, these questionnaires are not necessarily predictive of opioid misuse (Klimas et al, 2019; AHRQ, 2020).

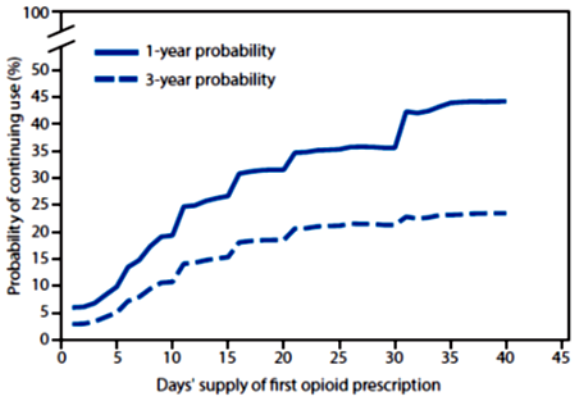
Pain management specialists have had to absorb significant changes in the evidence for their prescribing patterns. Dealing with the longer-term ("legacy claims") patients covered by workers' compensation poses a special challenge. Longstanding patterns of treatment and resistance on the part of these patients to change is a particular problem for multiple reasons. The Spring 2021 issue of *AdMIRable Review* has an article covering opioid weaning and citing the current major publications, all of which state that the longer the patient has been on opioids, the slower weaning must be scheduled, or weaning fails.

Acute and Subacute Considerations

Since the total dose prescribed in MMEs, and the total number of prescriptions correlate with chronic use, poor functional outcomes, and delayed or prevented RTW, utilization review should occur much sooner than 90 days after injury or surgery. It would be expected to see a weaning plan established early in the patient's course of treatment. Preventing patients from becoming long-term chronic opioid users improves the medical outcomes and patient function. The problem of opioids also stretches into issues of multiple prescribers and multiple drugs, including benzodiazepines, muscle relaxants, and psychoactive medications, all of which can interact negatively with opioids (Chua et al, 2021). Thus, if the ATP/surgeon is not monitoring opioid dosage and beginning weaning early after injury or after surgery, the insurer/employer may have to protect the patient from long-term opioid use by starting a conversation on opioid use through utilization review.

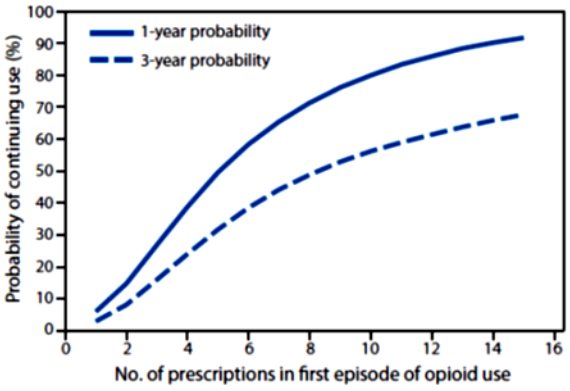
Long-Term Considerations

FIGURE 1. One- and 3-year probabilities of continued opioid use among opioid-naïve patients, by number of days' supply* of the first opioid prescription — United States, 2006–2015



* Days' supply of the first prescription is expressed in days (1–40) in 1-day increments. If a patient had multiple prescriptions on the first day, the prescription with the longest days' supply was considered the first prescription.

FIGURE 2. One- and 3-year probabilities of continued opioid use among opioid-naïve patients, by number of prescriptions* in the first episode of opioid use — United States, 2006–2015



* Number of prescriptions is expressed as 1–15, in increments of one prescription.

Shah A, Hayes CJ, Partin BC.

Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015. Morbidity and Mortality Weekly Report 2017; 66 (10): 265-9.

Finally, special considerations are given to injured workers who have been taking these medications for long periods, the "legacy claims." Even though weaning in most instances improves the quality of life and reduces morbidities, applying this approach is time-consuming, stressful on all participants, and meets with significant patient and pain specialist resistance (MacKey, 2020; Frank, 2017; Huffman, 2017). Proper and targeted utilization review advice may aid in this process. Correspondence, properly worded, can be shared with the patient, improving the effectiveness of the practitioner's advice and treatment changes. However, this must be paired with something other than fewer pills. There must be added alternative treatments to support the change such as targeted exercise, formal physical therapy aimed at re-conditioning and activity of daily living modification, cognitive behavioral therapy addressing outlook and the future; and time and effort on the part of the practitioner to reinforce the likelihood of the long-term improvement. Sometimes, inpatient detox is necessary, and this need must be successfully communicated to the insurer to assure coverage.

Conclusion

While the utilization review "hammer" may result in simultaneous denial of multiple drugs, forced weaning protocols, one-time fills, and threatening language, it serves no benefit to the practitioner or the patient in these legacy claims. Rather, it only increases the resistance and anger of the patient and the physician. And it might very well discourage the physician from treating other workers' compensation patients in the future. What to share with the patients and how to approach them is much of the art of medical practice. It is especially relevant when there seems to be so much "interference" as viewed by the injured worker/patient, who most likely has had years of conflict and suffering as a result of failed treatments at the hands of a complex and opaque worker's compensation system.

There is a place for utilization review if the intent is to give advice and encouragement and not to be punitive and threatening. It is best used early in the course of opioid treatment and not after years of opioid treatment. Communication between the providers and the payers must be open, ongoing, and positive. It must also be empathetic to the difficulties of the practice of medicine and the special needs of each patient.

References:

AHRQ. (2020). Comprehensive Effectiveness Review #229: Opioid Treatments for Chronic Pain. https://effectivehealthcare.ahrq.gov/sites/default/files/pdf/opioids-chronic-pain.pdf

Anderson, J. T., Haas, A. R., Percy, R., Woods, S. T., Ahn, U. M., & Ahn, N. U. (2015). Chronic Opioid Therapy After Lumbar Fusion Surgery for Degenerative Disc Disease in a Workers' Compensation Setting. Spine, 40(22), 1775–1784. https://doi.org/10.1097/BRS.0000000000001054

Basilico, M., Bhashyam, A. R., Harris, M. B., & Heng, M. (2019). Prescription Opioid Type and the Likelihood of Prolonged Opioid Use After Orthopaedic Surgery. The Journal of the American Academy of Orthopaedic Surgeons, 27(9), e423–e429. https://doi.org/10.5435/JAAOS-D-17-00663

Bijur, P. E., Friedman, B. W., Irizarry, E., Chang, A. K., & Gallagher, E. J. (2021). A Randomized Trial Comparing the Efficacy of Five Oral Analgesics for Treatment of Acute Musculoskeletal Extremity Pain in the Emergency Department. Annals of emergency medicine, 77(3), 345–356. https://doi.org/10.1016/j.annemergmed.2020.10.004

Brat, G. A., Agniel, D., Beam, A., Yorkgitis, B., Bicket, M., Homer, M., Fox, K. P., Knecht, D. B., McMahill-Walraven, C. N., Palmer, N., & Kohane, I. (2018). Postsurgical prescriptions for opioid naive patients and association with overdose and misuse: retrospective cohort study. BMJ (Clinical research ed.), 360, j5790. https://doi.org/10.1136/bmj.j5790

Busse, J. W., Wang, L., Kamaleldin, M., Craigie, S., Riva, J. J., Montoya, L., Mulla, S. M., Lopes, L. C., Vogel, N., Chen, E., Kirmayr, K., De Oliveira, K., Olivieri, L., Kaushal, A., Chaparro, L. E., Oyberman, I., Agarwal, A., Couban, R., Tsoi, L., Lam, T., … Guyatt, G. H. (2018). Opioids for Chronic Noncancer Pain: A Systematic Review and Meta-analysis. JAMA, 320(23), 2448–2460. https://doi.org/10.1001/jama.2018.18472

Carnide, N., Hogg-Johnson, S., Furlan, A. D., Côté, P., & Koehoorn, M. (2018). Prescription Dispensing Patterns Before and After a Workers' Compensation Claim: An Historical Cohort Study of Workers With Low Back Pain Injuries in British Columbia. Journal of occupational and environmental medicine, 60(7), 644–655. https://doi.org/10.1097/JOM.0000000000001311

Carnide, N., Hogg-Johnson, S., Koehoorn, M., Furlan, A. D., & Côté, P. (2019). Relationship between early prescription dispensing patterns and work disability in a cohort of low back pain workers ' compensation claimants: a historical cohort study. Occupational and environmental medicine, 76(8), 573–581. https://doi.org/10.1136/oemed-2018-105626

Chang, A. K., Bijur, P. E., Esses, D., Barnaby, D. P., & Baer, J. (2017). Effect of a Single Dose of Oral Opioid and Nonopioid Analgesics on Acute Extremity Pain in the Emergency Department: A Randomized Clinical Trial. JAMA, 318(17), 1661–1667. https://doi.org/10.1001/jama.2017.16190

Chua, K. P., Brummett, C. M., Ng, S., & Bohnert, A. (2021). Association Between Receipt of Overlapping Opioid and Benzodiazepine Prescriptions From Multiple Prescribers and Overdose Risk. JAMA network open, 4(8), e2120353. https://doi.org/10.1001/jamanetworkopen.2021.20353

Durand, Z., Nechuta, S., Krishnaswami, S., Hurwitz, E. L., & McPheeters, M. (2019). Prescription opioid use by injured workers in Tennessee: a descriptive study using linked statewide databases. Annals of epidemiology, 32, 7–13. https://doi.org/10.1016/j.annepidem.2019.02.001

Durand, Z., Nechuta, S., Krishnaswami, S., Hurwitz, E. L., & McPheeters, M. (2019). Prevalence and Risk Factors Associated With Long-term Opioid Use After Injury Among Previously Opioid-Free Workers. JAMA network open, 2(7), e197222. https://doi.org/10.1001/jamanetworkopen.2019.7222

Els, C., Jackson, T. D., Kunyk, D., Lappi, V. G., Sonnenberg, B., Hagtvedt, R., Sharma, S., Kolahdooz, F., & Straube, S. (2017). Adverse events associated with medium- and long-term use of opioids for chronic non-cancer pain: an overview of Cochrane Reviews. The Cochrane database of system atic reviews, 10(10), CD012509. https://doi.org/10.1002/14651858.CD012509.pub2

Faour, M., Anderson, J. T., Haas, A. R., Percy, R., Woods, S. T., Ahn, U. M., & Ahn, N. U. (2017). Prolonged Preoperative Opioid Therapy Associated With Poor Return to Work Rates After Single-Level Cervical Fusion for Radiculopathy for Patients Receiving Workers' Compensation Benefits. Spine, 42(2), E104–E110. https://doi.org/10.1097/BRS.0000000000001715

Frank, J. W., Lovejoy, T. I., Becker, W. C., Morasco, B. J., Koenig, C. J., Hoffecker, L., Dischinger, H. R., Dobscha, S. K., & Krebs, E. E. (2017). Patient Outcomes in Dose Reduction or Discontinuation of Long-Term Opioid Therapy: A Systematic Review. Annals of internal medicine, 167(3), 181–191. https://doi.org/10.7326/M17-0598

Frenk, S. M., Porter, K. S., & Paulozzi, L. J. (2015). Prescription opioid analgesic use among adults: United States, 1999-2012. NCHS data brief, (189), 1–8. https://www.cdc.gov/nchs/data/databriefs/db189.pdf

Haight, J. R., Sears, J. M., Fulton-Kehoe, D., Wickizer, T. M., & Franklin, G. M. (2020). Early High-Risk Opioid Prescribing Practices and Long-Term Disability Among Injured Workers in Washington State, 2002 to 2013. Journal of occupational and environmental medicine, 62(7), 538–547. https://doi.org/10.1097/JOM.0000000000001900

Huffman, K. L., Rush, T. E., Fan, Y., Sweis, G. W., Vij, B., Covington, E. C., Scheman, J., & Mathews, M. (2017). Sustained improvements in pain, mood, function and opioid use post interdisciplinary pain rehabilitation in patients weaned from high and low dose chronic opioid therapy. Pain, 158(7), 1380–1394. https://doi.org/10.1097/j.pain.0000000000000907

Klimas, J., Gorfinkel, L., Fairbairn, N., Amato, L., Ahamad, K., Nolan, S., Simel, D. L., & Wood, E. (2019). Strategies to Identify Patient Risks of Prescription Opioid Addiction When Initiating Opioids for Pain: A Systematic Review. JAMA network open, 2(5), e193365. https://doi.org/10.1001/jamanetworkopen.2019.3365

Kowalski-McGraw, M., Green-McKenzie, J., Pandalai, S. P., & Schulte, P. A. (2017). Characterizing the Interrelationships of Prescription Opioid and Benzodiazepine Drugs With Worker Health and Workplace Hazards. Journal of occupational and environmental medicine, 59(11), 1114–1126. https://doi.org/10.1097/JOM.0000000000001154

Lee, B., Zhao, W., Yang, K. C., Ahn, Y. Y., & Perry, B. L. (2021). Systematic Evaluation of State Policy Interventions Targeting the US Opioid Epidemic, 2007-2018. JAMA network open, 4(2), e2036687. https://doi.org/10.1001/jamanetworkopen.2020.36687

Lovecchio, F., Derman, P., Stepan, J., Iyer, S., Christ, A., Grimaldi, P., Kumar, K., Ranawat, A., & Taylor, S. A. (2017). Support for Safer Opioid Prescribing Practices: A Catalog of Published Use After Orthopaedic Surgery. The Journal of bone and joint surgery. American volume, 99(22), 1945–1955. https://doi.org/10.2106/JBJS.17.00124

Mackey, K., Anderson, J., Bourne, D., Chen, E., & Peterson, K. (2020). Benefits and Harms of Long-term Opioid Dose Reduction or Discontinuation in Patients with Chronic Pain: a Rapid Review. Journal of general internal medicine, 35(Suppl 3), 935–944. https://doi.org/10.1007/s11606-020-06253-8

Mark, T. L., & Parish, W. (2019). Opioid medication discontinuation and risk of adverse opioid-related health care events. Journal of substance abuse treatment, 103, 58–63. https://doi.org/10.1016/j.jsat.2019.05.001

Mattson, C. L., Tanz, L. J., Quinn, K., Kariisa, M., Patel, P., & Davis, N. L. (2021). Trends and Geographic Patterns in Drug and Synthetic Opioid Overdose Deaths - United States, 2013-2019. MMWR. Morbidity and mortality weekly report, 70(6), 202–207. https://doi.org/10.15585/mmwr.mm7006a4

National Council on Compensation Insurance (2021). Medical Data Report, Opioid Utilization Supplement, Tennessee, September 2021, NCCI. https://www.ncci.com/pages/industry_information.aspx.

Nguyen, T. H., Randolph, D. C., Talmage, J., Succop, P., & Travis, R. (2011). Long-term outcomes of lumbar fusion among workers' compensation subjects: a historical cohort study. Spine, 36(4), 320–331. https://doi.org/10.1097/BRS.0b013e3181ccc220

O'Donnell, J. A., Anderson, J. T., Haas, A. R., Percy, R., Woods, S. T., Ahn, U. M., & Ahn, N. U. (2018). Preoperative Opioid Use is a Predictor of Poor Return to Work in Workers' Compensation Patients After Lumbar Diskectomy. Spine, 43(8), 594–602. https://doi.org/10.1097/BRS.0000000000002385

Rivat, C., & Ballantyne, J. (2016). The dark side of opioids in pain management: basic science explains clinical observation. Pain reports, 1(2), e570. https://doi.org/10.1097/PR9.0000000000000570

ODGbyMCG, treatment guidelines and drug formulary adopted by the Tennessee Bureau of Workers' Compensation, https://www.odgbymcg.com/.

Savych B., Thumula V. (2020). Early Predictors of Longer-Term Opioid Dispensing. Workers Compensation Research Institute . https://www.wcrinet.org/reports/early-predictors-of-longer-term-opioid-dispensing

Sun, E. C., Darnall, B. D., Baker, L. C., & Mackey, S. (2016). Incidence of and Risk Factors for Chronic Opioid Use Among Opioid-Naive Patients in the Postoperative Period. JAMA internal medicine, 176(9), 1286–1293. https://doi.org/10.1001/jamainternmed.2016.3298

Szmulewicz, A., Bateman, B. T., Levin, R., & Huybrechts, K. F. (2021). The Risk of Overdose With Concomitant Use of Z-Drugs and Prescription Opioids: A Population-Based Cohort Study. The American journal of psychiatry, 178(7), 643–650. https://doi.org/10.1176/appi.ajp.2020.20071038

Talmage ,J.B., Snyder R.B., (2021). Current Considerations for Opioids in Workers' Compensation: Treatment Effectiveness, Surgical Outcomes, and Maximum Medical Improvement. AdMIRable Review Spring 2021,10007-10030. https://www.tn.gov/content/dam/tn/workforce/documents/injuries/AdMIR_SPRING_2021.pdf

Tao, X. G., Lavin, R. A., Yuspeh, L., Weaver, V. M., & Bernacki, E. J. (2015). The association of the use of opioid and psychotropic medications with workers' compensation claim costs and lost work time. Journal of occupational and environmental medicine, 57(2), 196–201. https://doi.org/10.1097/JOM.0000000000000333

Tennessee Bureau of Workers' Compensation. Drug formulary. https://www.tn.gov/workforce/injuries-at-work/bureau-services/bureau-services/medical-programs-redirect/medical-treatment-guidelines/drug-formulary.html

Tennessee Department of Health (2020). Tennessee Chronic Pain Guidelines, Clinical Practice Guidelines for the Outpatient Managementof Chronic Non-Malignant Pain. https://www.tn.gov/content/dam/tn/health/healthprofboards/pain-management-clinic/ChronicPainGuidelines.pdf

Tennessee Department of Health (2021). Tennessee Controlled Substance Monitoring Database Report to the Legislature, 2021. https://www.tn.gov/content/dam/tn/health/healthprofboards/csmd/2021-CSMD-Annual-Report.pdf

Tennessee Department of Mental Health and Substance Abuse (2022). SAPT Block Grant Treatment Providers. https://www.tn.gov/content/dam/tn/mentalhealth/documents/SAPT_Directory_FY22.pdf.

U.S. Census Bureau. (2020). Table 1. Apportionment Population and Number of Representatives by State. https://www2.census.gov/programs-surveys/decennial/2020/data/apportionment/apportionment-2020-table01.pdf.

Workers' Compensation Research Institute (2017). WCRI Research Brief: Longer-Term Dispensing of Opioids, 4th Edition. Cambridge, MA. https://www.wcrinet.org/images/uploads/files/wcri6382.pdf

Webster, B. S., Verma, S. K., & Gatchel, R. J. (2007). Relationship between early opioid prescribing for acute occupational low back pain and disability duration, medical costs, subsequent surgery and late opioid use. Spine, 32(19), 2127–2132. https://doi.org/10.1097/BRS.0b013e318145a731

Yerneni, K., Nichols, N., Abecassis, Z. A., Karras, C. L., & Tan, L. A. (2020). Preoperative Opioid Use and Clinical Outcomes in Spine Surgery: A Systematic Review. Neurosurgery, 86(6), E490–E507. https://doi.org/10.1093/neuros/nyaa050

Yoshikawa, A., Ramirez, G., Smith, M. L., Foster, M., Nabil, A. K., Jani, S. N., & Ory, M. G. (2020). Opioid Use and the Risk of Falls, Fall Injuries and Fractures among Older Adults: A Systematic Review and Meta-Analysis. The journals of gerontology. Series A, Biological sciences and medical sciences, 75(10), 1989–1995. https://doi.org/10.1093/gerona/glaa038

Addressing Mental and Social Health in Workers' Compensation

By David Ring, MD, PhD

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Abstract

Humans interpret and react to symptoms. We only seek care for a symptom when it becomes a concern (Kim et al, 2011). Variation in symptom intensity and magnitude of capability relates more to unhelpful thoughts, feelings of worry and despair regarding symptoms, and feelings of insecurity around role and livelihood (mental and social health opportunities) than pathophysiology. Work claims are meant to address pathology that results from injury. Injuries have predictable recovery trajectories. When the recovery trajectory seems off track, consider pre-existing non-trauma pathology and mental and social health opportunities. Appropriate management of new pathology under the work claim and pre-existing pathology and mental and social health opportunities outside the work claim, along with a supportive environment that anticipates these aspects of normal human illness behavior, can help people get and stay healthy in the context of workers' compensation.

Introduction

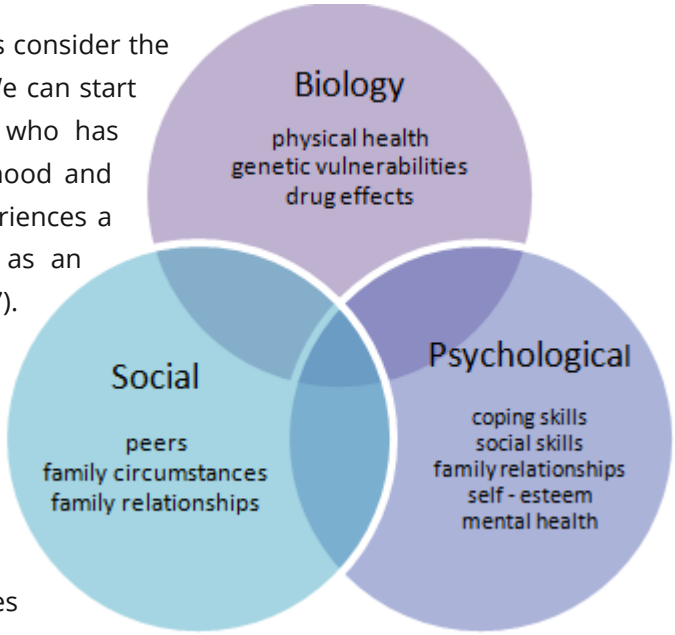
There is notable room for improvement in the care of people under a work claim. The current workers' compensation system is built around legislative and legal policy and precedent that reinforces a false mind-body dichotomy and does not account for the complexity of human illness behavior. Humans interpret and react to symptoms (Furlough et al, 2021; Lemmers et al, 2020; Miner et al, 2021). Our thoughts and feelings about symptoms are often partly inaccurate and unhelpful (Furlough et al, 2021; Lemmers et al, 2020; Mallette et al, 2007; Van Hoorn et al, 2017). Clinicians can anticipate unhelpful thoughts, symptoms of worry and despair, and feelings of stress and insecurity (Lentz et al, 2020; Miner et al, 2021).

Accurate diagnosis and effective treatment of these aspects of human illness are integral to the biopsychosocial paradigm of human illness behavior (ie, illness is the result of pathology, mindset, and circumstances), which has been scientifically established to be superior to the biomedical paradigm (ie, all symptoms can be understood in terms of pathophysiology alone). These aspects of illness seem underappreciated and inadequately treated in many work claims to the detriment of the health of the patient and society, as well as the clinician's enjoyment of their

work. There are ways to effectively and efficiently work within the biopsychosocial paradigm of illness when caring for people under any payment structure, including workers' compensation. We can evolve and improve our strategies for helping people get and stay healthy when they file a work claim.

What Happens to People in a Work Claim?

State governments legislate workers' compensation to support workers to support new pathology at work and limit contention with their employer. For example, a work machine amputates an employee's leg, and the employer pays for the care, covers lost wages, and pays financial compensation for losing a limb (permanent impairment); however, what about helping the injured employee find new work so they can support their family? And what about the symptoms of depression and anxiety, including post-traumatic stress (Jayakumar et al, 2018, 2020; Vranceanu et al, 2014)? Are those covered?



Given the example and context above, let us consider the more common scenarios in a work claim. We can start with the aging laborer. An aging laborer who has always relied on their body for their livelihood and has limited education and other skills experiences a new pain at work that they misinterpret as an injury. (Lemmers et al, 2020; Liu et al, 2017). They are worried about what will happen if they cannot continue to do heavy work. How will they manage financially? Who will help them and their family? There may be despair regarding the situation in which they find themselves, with few options and no plan. An evaluation identifies age-appropriate changes to the body and no new pathology (Liu et al, 2017). The clinicians who care for the aging worker struggle with distinguishing between new symptoms and new pathology and reinforce the laborer's sense that they are injured (Lemmers et al, 2020; Mallette et al, 2007; Van Hoorn et al, 2017). Even though the diagnosis of age-related changes is apparent on interview and examination, imaging is obtained because it feels like we "need to do something." It may be encouraged by litigation. The imaging is interpreted as showing a "tear" even when the signal changes are due to age-appropriate degeneration (Liu et al, 2017). The word "tear" refers to all signal abnormalities and is not meant to determine that trauma has created new pathology (Bossen et al,

2013). The patient and clinician receive the radiologist's report, which reinforces their false belief that there is new pathology (Lie et al, 2017)

The sense that painful activities represent damage and will prevent healing is reinforced. It may seem like the only hope is to correct the imaged pathology. The end result may be an inappropriate surgery for age-related changes that has a long recovery and may or may not relieve symptoms for a while, but cannot cure the pathology. And surgery cannot maintain a heavy work lifestyle forever. There is just a limit to what the body can do. There may be no discussion of what's next, of how to get security, or of managing the worry and loss of hope.

Designing a Better System

We might envision a different workers' compensation system scenario to achieve better outcomes in the following ways:

Correct coverage: Workers' compensation would cover new pathology caused by events at work (eg, fracture, dislocation, laceration, amputation, crush), not new symptoms without new pathology. When it is clear that the pathology is either self-limiting (eg, strain, sprain) or unrelated to work (eg, arthritis, tendinopathy), care should transition out of the work claim.

Correct activity: Work is only restricted when there is a risk of new pathology. Work is limited when objective impairments cause incapacity (eg, loss of sensibility in the fingers limits capacity for jobs using tactile assessment).

Correct diagnosis and treatment: Expressions of incapability greater than expected based on the identified pathology are understood to be strongly associated with unhelpful thoughts about symptoms (thoughts that the symptoms indicate harm; feeling that one can only assume cherished roles with zero symptoms); feelings of worry or despair regarding symptoms; and feelings of insecurity in roles, finances, housing, food, and other issues. Appropriate mental and social care is provided (Vranceanu et al, 2019).

Supportive system: Accommodation of the new impairment is made, including retraining and reassignment. Plan transitions for aging laborers.

Manifestations of Mental and Social Health in Daily Practice

Given these mental and social aspects of illness and their notable association with symptom intensity and magnitude of limitation, clinicians can anticipate thoughts and feelings about symptoms that increase the intensity of those symptoms and limit people's sense of what they are capable of (Miner et al, 2021). Humans are programmed to prepare for the worst and interpret pain as indicating harm (Dekker et al, 2021). Thoughts about symptoms are often inaccurate and unhealthy. Examples of common unhelpful thoughts about symptoms (misinterpretations) are that a new pain is caused by a new pathology and that the new pathology is an injury. Another example is that one cannot resume one's roles and activities until one is symptom-free. These are normal, expected thoughts about symptoms that are, in most circumstances, erroneous and unhealthy.

There is evidence that unhelpful thoughts are associated with feelings of worry or despair (Dekker et al, 2021). It makes sense that sources of insecurity (eg, job, role, financial, housing, food) would be associated with unhelpful thoughts and feelings, although this is less well-tested at the moment.

When a person reports greater symptom intensity and magnitude of incapability than you are expecting based on what you know about their body (pathophysiology), there are almost certainly some unhelpful thoughts, feelings, or circumstances contributing to the illness (Minter et al, 2021). Anticipate that these thoughts, feelings, and circumstances will occur and get the diagnosis correct. Look for the verbal and nonverbal signs of unhelpful thinking and distress (Bot et al, 2012; Wilkens et al, 2018). A study of clinician emotional facial expressions found that we sense mental health factors in patients, even if we are not consciously aware of it (Versluijs et al, 2021). If you are attuned to it, you might notice it more readily. Sprains and strains are associated typically with prompt initial recovery and safe return to activity. Fractures and dislocations have a known timeline. Injuries usually heal.

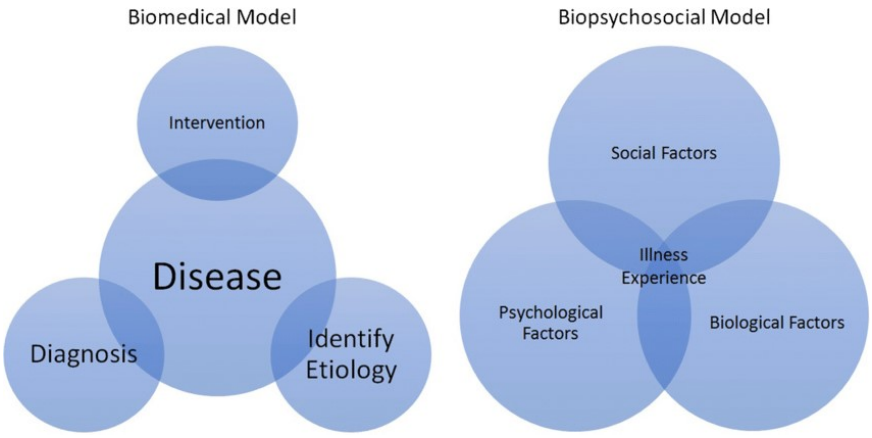
When symptoms persist, the issue is now either permanent impairment (such as

arthritis from an articular fracture), inadequate mental and social recovery, or a pathology unrelated to injury such as age-related changes in the body (eg, arthritis, tendinopathy). Clinicians can anticipate these aspects of illness and develop strategies to diagnose correctly and provide appropriate treatment.

Biomedical Paradigm

The biomedical paradigm of human illness expects all symptoms to be directly associated with underlying pathology. In this paradigm, unexpected symptom intensity and incapability are addressed with tests that look for pathology, nonspecific treatments (because the pathology is not known), and work restrictions that assume there is an elusive pathology associated with risk in work. When pathology is not identified, pretending to be ill may be considered.

One manifestation of this is the "twelve visits to a physical therapist, and afterward, you return to work" concept. Where is the objective evidence that exercises alter the natural history of the pathology? What is the objective evidence that coaching and training from a physical therapist are better than what one can do independently with some simple instruction? For example, people recovering from a fracture of the distal radius recover just as well doing the exercises on their own. (Souer et al, 2011). A recent trial from the United Kingdom found that independent exercises are comparable to a structured program with a physical therapist (Hopewell et al, 2021).



Biopsychosocial Paradigm

People do not seek care for a symptom. They seek care for a symptom that becomes a concern. The concern always has elements of unhelpful thoughts (misinterpretations) regarding symptoms; feelings of worry or despair (distress)

regarding symptoms; and feelings of stress and insecurity regarding one's roles (vocation, avocation, relationships) and livelihood (finances, home, food, etc). The evidence is solid and consistent that these factors account for most variation in symptom intensity and magnitude of incapability, much more so than the degree of pathophysiology (Furlough et al, 2021; Kim et al, 2011; Miner er al, 2021; Crijns et al, 2021).

Problems With the Legal (Policy) Framework of Workers' Compensation

Workers' compensation is legislated and often litigated. These factors create false dichotomies when health occurs on a continuum. These false dichotomies reinforce the less accurate and less helpful biomedical paradigm. They also reinforce the social stigma regarding mental and social health: that people who experience unhelpful thoughts, feelings of worry or despair, and insecure situations are "lesser than" the rest of us. These tendencies to place people in a category of "other" (other than normal, other than us) also reinforce systemic structures of power and privilege. Some of us have more robust support systems and experience more opportunities because of inequities in our society, such as skin color, gender, language, ethnicity, station, or relationships.

Strategies for Comprehensive, Whole-Person Care Within a Work Claim

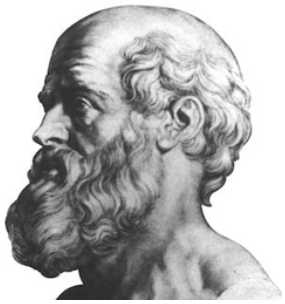
Clinicians can do several things to optimize people's health in a work claim, fulfill their commitment to society, and maintain joy in their work:

- Expect unhelpful thoughts, unhelpful feelings, and insecurities (stress) regarding symptoms early in a work claim. Diagnose (identify) the unhelpful thoughts and feelings of distress and insecurity promptly and accurately. Get help as soon as you are uneasy or unsure.
- Understand that disproportionate symptoms and incapability are uncommonly due to an unappreciated pathology and typically reflect mental and social health opportunities. Avoid medicalizing these psychosocial aspects of illness with unhelpful diagnoses, tests, and treatments. If you are unsure, admit it and get a trusted colleague, perhaps a discerning specialist, to help you.
- Be strategic, deliberate, and comprehensive in your care. Do not feel pressured to act. Unhelpful tests, treatment, and restrictions reinforce and worsen mental and social health opportunities.

- Be attentive to avoiding iatrogenic, psychological, financial, and other social harms. Identify opportunities for support, transitioning/retraining, reorientation of unhelpful thoughts, and amelioration of worry and despair. There are always ways to address mental and social health, even arranging care outside the scope of workers' compensation. Coordinate care with trusted clinicians, such as their primary care physician.

There will be a need to build a trusting relationship for people who have stayed in a work claim longer than is appropriate or healthy for them. Often there are feelings of unjust treatment when the system has ignored these human aspects of illness, not given people hope or direction, and left so much unsaid. There will likely be fixed and reinforced misconceptions and maladaptation of symptoms, and it is not easy to redirect these. Prioritize trust and relationship and strategize incremental care. There may have been iatrogenic harm in the form of diagnoses or procedures that diminish health. People will need to be supported through this

> *"The object of medical care should not be the disease but the person who should be treated as a whole and not as an organ in which the disorder appears."*
>
> Hippocrates



References

Bot, A. G., Vranceanu, A. M., Herndon, J. H., & Ring, D. C. (2012). Correspondence of patient word choice with psychologic factors in patients with upper extremity illness. *Clinical orthopaedics and related research*, *470*(11), 3180–3186. https://doi.org/10.1007/s11999-012-2436-y

Bossen, J. K., Hageman, M. G., King, J. D., & Ring, D. C. (2013). Does rewording MRI reports improve patient understanding and emotional response to a clinical report?. *Clinical orthopaedics and related research*, *471*(11), 3637–3644. https://doi.org/10.1007/s11999-013-3100-x

Crijns, T. J., Brinkman, N., Ramtin, S., Ring, D., Doornberg, J., Jutte, P., & Koenig, K. (2022). Are There Distinct Statistical Groupings of Mental Health Factors and Pathophysiology Severity Among People with Hip and Knee Osteoarthritis Presenting for Specialty Care?. *Clinical orthopaedics*

and related research, *480*(2), 298–309. https://doi.org/10.1097/CORR.0000000000002052

Dekker, A. B., Teunis, T., Schipper, I., & Ring, D. (2021). Development of a Short Form of the Negative Pain Thoughts Questionnaire (NPTQ). *The Journal of bone and joint surgery. American volume*, *103*(5), 439–444. https://doi.org/10.2106/JBJS.20.00571

Furlough, K., Miner, H., Crijns, T. J., Jayakumar, P., Ring, D., & Koenig, K. (2021). What factors are associated with perceived disease onset in patients with hip and knee osteoarthritis?. *Journal of orthopaedics*, *26*, 88–93. https://doi.org/10.1016/j.jor.2021.07.013

Hopewell, S., Keene, D. J., Marian, I. R., Dritsaki, M., Heine, P., Cureton, L., Dutton, S. J., Dakin, H., Carr, A., Hamilton, W., Hansen, Z., Jaggi, A., Littlewood, C., Barker, K. L., Gray, A., Lamb, S. E., & GRASP Trial Group (2021). Progressive exercise compared with best practice advice, with or without corticosteroid injection, for the treatment of patients with rotator cuff disorders (GRASP): a multicentre, pragmatic, 2 × 2 factorial, randomised controlled trial. *Lancet (London, England)*, *398* (10298), 416–428. https://doi.org/10.1016/S0140-6736(21)00846-1

Jayakumar, P., Overbeek, C. L., Lamb, S., Williams, M., Funes, C. J., Gwilym, S., Ring, D., & Vranceanu, A. M. (2018). What Factors Are Associated With Disability After Upper Extremity Injuries? A Systematic Review. *Clinical orthopaedics and related research*, *476*(11), 2190–2215. https://doi.org/10.1097/CORR.0000000000000427

Jayakumar, P., Teunis, T., Vranceanu, A. M., Lamb, S., Ring, D., & Gwilym, S. (2020). Early Psychological and Social Factors Explain the Recovery Trajectory After Distal Radial Fracture. *The Journal of bone and joint surgery. American volume*, *102*(9), 788–795. https://doi.org/10.2106/JBJS.19.00100

Kim, K. W., Han, J. W., Cho, H. J., Chang, C. B., Park, J. H., Lee, J. J., Lee, S. B., Seong, S. C., & Kim, T. K. (2011). Association between comorbid depression and osteoarthritis symptom severity in patients with knee osteoarthritis. *The Journal of bone and joint surgery. American volume*, *93*(6), 556–563. https://doi.org/10.2106/JBJS.I.01344

Liu, T. C., Leung, N., Edwards, L., Ring, D., Bernacki, E., & Tonn, M. D. (2017). Patients Older Than 40 Years With Unilateral Occupational Claims for New Shoulder and Knee Symptoms Have Bilateral MRI Changes. *Clinical orthopaedics and related research*, *475*(10), 2360–2365. https://doi.org/10.1007/s11999-017-5401-y

Lemmers, M., Versluijs, Y., Kortlever, J., Gonzalez, A. I., & Ring, D. (2020). Misperception of Disease Onset in People with Gradual-Onset Disease of the Upper Extremity. *The Journal of bone and joint surgery. American volume*, *102*(24), 2174–2180. https://doi.org/10.2106/JBJS.20.00420

Lentz, T. A., George, S. Z., Manickas-Hill, O., Malay, M. R., O'Donnell, J., Jayakumar, P., Jiranek, W., & Mather, R. C., 3rd (2020). What General and Pain-associated Psychological Distress Phenotypes Exist Among Patients with Hip and Knee Osteoarthritis?. *Clinical orthopaedics and related research*, *478*(12), 2768–2783. https://doi.org/10.1097/CORR.0000000000001520

Mallette, P., Zhao, M., Zurakowski, D., & Ring, D. (2007). Muscle atrophy at diagnosis of carpal and cubital tunnel syndrome. *The Journal of hand surgery*, *32*(6), 855–858. https://doi.org/10.1016/j.jhsa.2007.03.009

Miner, H., Rijk, L., Thomas, J., Ring, D., Reichel, L. M., & Fatehi, A. (2021). Mental-Health Phenotypes and Patient-Reported Outcomes in Upper-Extremity Illness. *The Journal of bone and joint surgery. American volume*, *103*(15), 1411–1416. https://doi.org/10.2106/JBJS.20.01945

Souer, J. S., Buijze, G., & Ring, D. (2011). A prospective randomized controlled trial comparing occupational therapy with independent exercises after volar plate fixation of a fracture of the distal part of the radius. *The Journal of bone and joint surgery. American volume*, *93*(19), 1761–1766. https://doi.org/10.2106/JBJS.J.01452

van Hoorn, B. T., Wilkens, S. C., & Ring, D. (2017). Gradual Onset Diseases: Misperception of Disease Onset. *The Journal of hand surgery*, *42*(12), 971–977.e1. https://doi.org/10.1016/j.jhsa.2017.07.021

Versluijs, Y., Moore, M. G., Ring, D., & Jayakumar, P. (2021). Clinician Facial Expression of Emotion Corresponds with Patient Mindset. *Clinical orthopaedics and related research*, *479*(9), 1914–1923. https://doi.org/10.1097/CORR.0000000000001727

Vranceanu, A. M., Bachoura, A., Weening, A., Vrahas, M., Smith, R. M., & Ring, D. (2014). Psychological factors predict disability and pain intensity after skeletal trauma. *The Journal of bone and joint surgery. American volume*, *96*(3), e20. https://doi.org/10.2106/JBJS.L.00479

Vranceanu, A. M., Jacobs, C., Lin, A., Greenberg, J., Funes, C. J., Harris, M. B., Heng, M. M., Macklin, E. A., & Ring, D. (2019). Results of a feasibility randomized controlled trial (RCT) of the Toolkit for Optimal Recovery (TOR): a live video program to prevent chronic pain in at-risk adults with orthopedic injuries. *Pilot and feasibility studies*, *5*, 30. https://doi.org/10.1186/s40814-019-0416-7

Wilkens, S. C., Lans, J., Bargon, C. A., Ring, D., & Chen, N. C. (2018). Hand Posturing Is a Nonverbal Indicator of Catastrophic Thinking for Finger, Hand, or Wrist Injury. *Clinical orthopaedics and related research*, *476*(4), 706–713. https://doi.org/10.1007/s11999.0000000000000089

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Nationally recognized, Dr. Ring has achieved the rank of Professor of Orthopaedic Surgery at Harvard Medical School. He has more than 700 peer-reviewed original research publications and is a deputy editor for the *Journal of Orthopaedic Trauma*. He is a board-certified orthopedic surgeon and the Upper Extremity Clinical Director of UT Health Austin's Musculoskeletal Institute. He specializes in hand to shoulder surgery.

Additionally, Dr. Ring is a professor in the Dell Medical School Department of Surgery and Perioperative Care and a courtesy professor in both the Dell Medical School Department of Health Social Work and the Dell Medical School Department of Psychiatry and Behavioral Sciences. He also serves as the Associate Dean for Comprehensive Care for the Dell Medical School Department of Surgery and Perioperative Care.

Dr. Ring earned his medical degree from The University of California, San Diego School of Medicine and his doctorate in psychosocial aspects of arm illness from the University of Amsterdam. He completed a residency in orthopedics at the Harvard Combined Orthopaedic Residency Program and a fellowship in hand and upper extremity surgery at Massachusetts General Hospital.

J Occup Rehabil. 2009 Mar; 19 (1): 25-40

Systematic review of the ability of recovery expectations to predict outcomes in non-chronic non-specific low back pain

Ross A Iles [1], Megan Davidson, Nicholas F Taylor, Paul O'Halloran

PMID: 19127345 DOI: 10.1007/s10926-008-9161-0

Objective:

The aim of the current review was to determine the predictive strength of low recovery expectations for activity limitation outcomes in people with non-chronic NSLBP.

Methods

A systematic review of prognostic studies was performed. Included studies took baseline measures in the non-chronic phase of NSLBP, included at least one baseline measure of recovery expectation, defined as a prediction or judgement made by the person with NSLBP regarding any aspect of prognosis, and studied a sample with at least 75% of participants with NSLBP.

Results:

Recovery expectations measured using a time-based, specific single-item tool produced a strong prediction of work outcome. Recovery expectations measured within 3 weeks of NSLBP onset provide a strong prediction of outcome. It is not clear whether predictive strength of recovery expectations is affected by the length of time between the expectation measure and outcome measure.

Conclusion

Recovery expectations when measured using a specific, time-based measure within the first 3 weeks of NSLBP can identify people at risk of poor outcome.

J Occup Rehabi. 2006 Dec; 16 (4): 685-95

Workers' beliefs and expectations affect return to work over 12 months

Martijn W Heymans, Henrica C W de Vet, Dirk L Knol, Paulien M Bongers, Bart W Koes, Willem van Mechelen

PMID: 17063403 DOI: 10.1007/s10926-006-9058-8

Background

Successful management of workers on sick leave due to low back pain depends on the identification by the occupational physician of modifiable prognostic factors in the early phase of sick-leave. The prognostic value of factors which influence the course of low back pain and return to work in occupational health care is unclear.

Methods

Secondary data analysis in a cohort of 299 workers on sick leave between 3 and 6 weeks due to low back pain was applied. We investigated the association of a broad set of prognostic indicators related to characteristics of worker, job, low back pain and psychosocial issues on return to work lasting at least 4 weeks (lasting-RTW) and minimally 1 day of first return to work (first-RTW). Relationships were studied using Cox regression analysis and covered a follow-up period of 12 months. The explained variation of the models was also calculated.

Results

The median time to return to work using lasting-RTW and first-RTW was 76 and 71 days respectively. In addition to individual analysis of potential predictive factors a backward selection procedure resulted in the following multivariable model: self-predicted timing of return to work, pain intensity, job satisfaction, social support, pain radiation, expectations of treatment success of the occupational physician.

Similar results were found for first-RTW. The explained variance of the multivariate model of lasting-RTW was 18%.

Conclusions

Factors concerning the expectations and beliefs of the worker affected the RTW process. Knowledge of these factors by the occupational physician in the early phase of low back pain and sick-leave may contribute to solutions to promote return to work.

J Neurosurg Spine. 2015 Jan;22(1):101-11.

Expectations of recovery and functional outcomes following thoracolumbar trauma: an evidence-based medicine process to determine what surgeons should be telling their patients

Rowan Schouten , Peter Lewkonia, Vanessa K Noonan, Marcel F Dvorak, Charles G Fisher

PMID: 25396259 DOI: 10.3171/2014.9.SPINE13849

Object

The aim of this study was to define the expected functional and health-related quality of life outcomes following common thoracolumbar injuries on the basis of consensus expert opinion and the best available literature. Patient expectations are primarily determined by the information provided by health care professionals, and these expectations have been shown to influence outcome in various medical and surgical conditions. This paper presents Part 2 of a multiphase study designed to investigate the impact of patient expectations on outcomes following spinal injury. Part 1 demonstrated substantial variability in the information surgeons are communicating to patients. Defining the expected outcomes following thoracolumbar injury would allow further analysis of this relationship and enable surgeons to more accurately and consistently inform patients.

Methods

Expert opinion was assembled by distributing questionnaires comprising 4 cases representative of common thoracolumbar injuries to members of the Spine Trauma Study Group (STSG). The 4 cases included a thoracolumbar junction burst fracture

treated nonoperatively or with posterior transpedicular instrumentation, a low lumbar (L-4) burst fracture treated nonoperatively, and a thoracolumbar junction flexion-distraction injury managed with posterior fusion. For each case, 5 questions about expected outcomes were posed. The questions related to the proportion of patients who are pain free, the proportion who have regained full range of motion, and the patients' recreational activity restrictions and personal care and social life limitations, all at 1 year following injury, as well as the timing of return to work and length of hospital stay. Responses were analyzed and combined with the results of a systematic literature review on the same injuries to define the expected outcomes.

Results

The literature review identified 38 appropriate studies that met the preset inclusion criteria. Published data were available for all injuries, but not all outcomes were available for each type of injury. The survey was completed by 31 (57%) of 53 surgeons representing 24 trauma centers . Consensus expert opinion predicts reemployment within 4-6 months. The length of inpatient stay averages 4-5 days.across North America (15), Europe (5), India (1), Mexico (1), Japan (1) and Israel (1). Consensus expert opinion supplemented the available literature and was used exclusively when published data were lacking. For example, 1 year following cast or brace treatment of a thoracolumbar burst fracture, the expected outcomes include a 40% chance of being pain free, a 70% chance of regaining pre-injury range of motion, and an expected ability to participate in high-impact exercise and contact sport with no or minimal limitation

Conclusions

This synthesis of the best available literature and consensus opinion of surgeons with extensive clinical experience in spine trauma reflects the optimal methodology for determining functional prognosis after thoracolumbar trauma. By providing consistent, accurate information surgeons will help patients develop realistic expectations and potentially optimize outcomes.

Spine (Phila Pa 1976) 2012 Aug 15; 37(18): E1140-7

An evidence-based medicine process to determine outcomes after cervical spine trauma: what surgeons should be telling their patients

Peter Lewkonia [1], Christian Dipaola, Rowan Schouten, Vanessa Noonan, Marcel Dvorak, Charles Fisher

PMID: 22565383 DOI: 10.1097/BRS.0b013e31825b2c10

Study design

A systematic review of the available medical literature from 1980 to 2010 was conducted and combined with expert opinion from a recent survey of experts regarding cervical spine fractures. Using an objective, hierarchical approach, the best available evidence is presented for health-related quality-of-life outcomes for these injuries.

Objective

To provide an evidence-based set of guidelines for cervical spine injuries in order to reduce variability in the information given to patients and their families.

Summary of background data

Patients' expectations regarding quality-of-life outcomes are highly dependent on the information provided by surgeons early in the treatment course. Our previous work has demonstrated that there is substantial variability in what surgeons tell patients regarding outcomes of cervical spine injuries, thus patients' expectations will differ and outcomes vary.

Methods

Four common cervical spine injuries (C1 burst, Hangman fracture, odontoid fracture, and unilateral facet fracture) treated both surgically and nonsurgically were considered. We assessed the evidence regarding 5 health-related quality-of-life outcomes: time to return to work, activity level, hospital stay, the proportion of patients who are pain free and patients who have regained full range of motion at 1 year after the injury.

Results

Published outcome data were available for most injuries. Using consensus expert opinion and the literature, answers to each question were achieved. Overall, expert opinion was relatively homogeneous across injury types, suggesting that experts do not distinguish between specific injuries when advising patients of expected outcomes such as pain.

Conclusion

By overcoming gaps in the literature with consensus expert opinion, our study provides surgeons and others with evidence-based medicine guidelines for patient-centered outcomes after cervical spine injury. This information can be presented to patients to frame expectations of typical outcomes during and after treatment to optimize patient care and quality of life.

J. Occup Rehabil. 2006 Mar; 16(1):27-39.

Early healthcare provider communication with patients and their workplace following a lost-time claim for an occupational musculoskeletal injury

Agnieszka Kosny, Renée-Louise Franche, Jason Pole, Niklas Krause, Pierre Côté, Cameron Mustard

Problem

One of the key players in the return-to-work (RTW) and work accommodation process is the healthcare provider (HCP). This study examines the association between RTW approximately one month post injury and early, proactive HCP communication with the patient and workplace.

Methods

In this cross-sectional study 187 Ontario workers completed a telephone survey 17-43 days post injury. All had accepted or pending lost-time claims for back, neck or upper extremity occupational musculoskeletal injuries. Logistic regression was used to analyze the effects of three self-reported items "your HCP told you the date you could RTW," "your HCP advised you on how to prevent re-injury or recurrence," "your HCP made contact with your workplace" on self-reported RTW. Fourteen potential confounders were also tested in the model including sex, age, income, education, occupational classification, worksite size, co-morbidity, psycho-physical work demands, pain, job satisfaction, depression, and time from injury to interview.

Results

The HCP giving a patient a RTW date (adjusted OR=3.33, 95% CI=1.62-6.87) and giving a patient guidance on how to prevent recurrence and re-injury (adjusted OR=2.71, 95% CI=1.24-5.95) were positively associated with an early RTW. Contact by the HCP with the workplace was associated with RTW, however, this association became weaker upon adjusting for confounding variables (crude OR=2.11, 95% C1=1.09-4.09; adjusted OR=1.72, 95% CI=0.83-3.58).

Interpretation

Our study lends support to the HCP playing an active role early in the RTW process, one that includes direct contact with the workplace and proactive communication with the patient.

Appeals Board Releases Opinions on MIR Registry Eligibility, Medical Case Managers

Jane Salem, Esquire

The Appeals Board recently issued two opinions of interest to medical and legal professionals in Tennessee's workers' compensation community.

In one opinion, the Appeals Board gave a green light to an employee's request for a Medical Impairment Rating Registry evaluation, relying on regulations defining "dispute" to include cases where a physician finds that no permanent impairment exists but also places permanent restrictions.

In the other opinion, an employee was allowed to discover notes from a nurse case manager, rejecting the employer's contention that the communications were protected by the common interest doctrine, attorney-client privilege, or the work product doctrine.

MIR Evaluation May Proceed

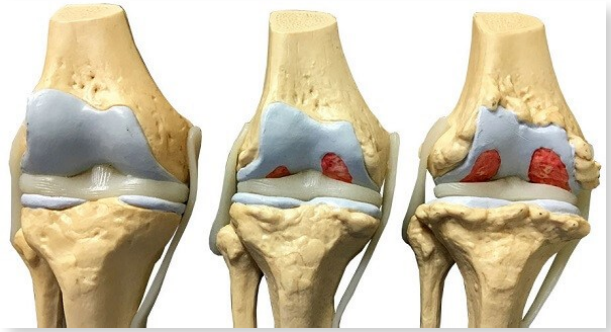
In *Donna Davis v. Amazon.com, Inc.,* the employee struck her knee against a conveyor. Amazon accepted the claim, and Davis later came under the care of orthopedic physician Dr. James Rungee.

After conservative treatment, Davis underwent a functional capacity evaluation. According to Dr. Rungee, the evaluation showed she "could only work at a sedentary seated-type job with occasional walking, stooping and stair climbing and no lifting or pushing over 15 pounds." He assigned these as permanent restrictions but also concluded she had no permanent impairment from the injury. Rather, he wrote, "she does have posttraumatic arthritis that is all related to her remote injury in 1999 and would appear to be compensable under that injury[.]"

Davis filed a petition for benefit determination and requested an MIRR examination. The MIRR Program Coordinator concluded that the request met the definition of a "dispute" in the program's rules but added that if a party disagreed, they could file a petition for benefit determination, which Amazon promptly did. It alleged a dispute of "MIR applicability."

Amazon then filed a motion requesting a denial of the MIRR request. The trial court denied that motion, and Amazon appealed.

The Board's analysis began with the Workers' Compensation Law itself, which states that "[w]hen a dispute exists as to the degree of medical impairment, either party may request an independent medical examiner." Further, regulations define "[d]ispute of degree of medical impairment" to include when a physician has issued an opinion "that no permanent impairment exists, yet that physician has issued permanent physical or mental (psychiatric) restrictions[.]"



Amazon asserted that no dispute as to medical impairment existed "when permanent physical restrictions are assigned to a non-work-related injury." It pointed to Dr. Rungee's note about the knee detailing a 1999 work injury. After concluding that Davis would not have any permanent impairment "assignable to her most current contusion of the knee," Dr. Rungee wrote she "does have posttraumatic arthritis that is all related to her remote injury in 1999."

Amazon argued that Davis's recent work-related contusion didn't cause permanent impairment, but rather the post-traumatic arthritis led to her permanent restrictions.

The Board disagreed. The judges didn't address causation. Rather, they reminded that the purpose of the MIRR program is to resolve disputes regarding the degree of permanent medical impairment. The Board wrote that the regulations "clearly" define a "dispute of degree of medical impairment" to include when a physician concludes that no permanent impairment exists, yet that physician has issued permanent physical restrictions, as Dr. Rungee did here.

"Unlike Employer's interpretation of Dr. Rungee's statements, we conclude the medical records before us do not address the underlying source or cause of Employee's permanent restrictions," the Board wrote. "[R]ather, the records are silent in that regard and only attribute the existence of Employee's post traumatic arthritis 'to her remote injury in 1999.'"

The Board affirmed and remanded. The case has since settled.

Medical Case Managers Are Neutral

In *Philalom v. State Farm Mutual Automobile Ins. Co.,* the trial court ordered State Farm to respond to Lynnese Philalom's discovery request that it provide copies of the nurse case manager's records.

The Board rejected each of the three arguments State Farm raised on appeal.

First, the Board held that the "common interest doctrine" was inapplicable for several reasons. Neither the third-party administrator nor the nurse case manager were parties to the case or potentially liable. Further, State Farm wasn't seeking to create a "joint legal strategy" between it and the third-party administrator or the nurse case manager because neither were defendants who needed a "joint legal strategy." Also, the regulations for nurse case managers made clear that their role is to provide case management services for the benefit of the employee while also controlling costs.

State Farm's contention that any communication between it and its counsel that included the nurse case manager is protected by the attorney-client privilege was also unpersuasive. State Farm said this was the intent of "legislative and administrative bodies."

The Board disagreed. "[W]e find nothing in the stated legislative intent of statutory and regulatory provisions relating to nurse case management to suggest the legislature intended nurse case managers to act as agents of employers."

In fact, the judges continued, the regulations explicitly prohibit nurse case managers from participating in compensability determinations, medical causation findings, negotiations, investigations, or any other non-rehabilitative activity.

The Board likewise rejected the characterization of a nurse case manager as an employee of an employer, so that the privilege applies.

"First, as noted above, nurse case managers have statutory and regulatory duties intended to benefit both employees and employers. Second, unlike employees and agents of the employer, nurse case managers are expressly prohibited from engaging in any 'non-rehabilitative' conduct pertinent to the compensability of an

employee's claim for benefits. Third, a nurse case manager is obligated to provide his or her reports to all parties to the claim. Fourth, there is nothing in the statute or regulations that obligates a nurse case manager to keep confidential any communications it has with the attorneys for either party."

Finally, State Farm asserted that communications between an employer, its counsel, and the nurse case manager are protected from discovery by the work-product doctrine.

The Board didn't accept this argument either, reasoning that:

"[A] nurse case manager is not a party to workers' compensation litigation and does not act solely for the benefit of the employer. A nurse case manager's role is essentially neutral. The nurse case manager is directed by regulations to assist the injured worker in rehabilitative activities and address return-to-work issues, and the nurse case manager is prohibited from engaging in any activity that places him or her in an adversarial role to either the employee or the employer."

The opinion clarified the role of nurse case managers: to remain neutral and provide rehabilitative services to injured workers.

Neither *Davis* nor *Philalom* may be further appealed because the appeals were made at the interlocutory stages of the cases.

In *Philalom,* the employer filed a motion to reconsider with the Appeals Board. The Board denied the motion but noted that, if the case proceeds to a compensation hearing, the employer may preserve the issues from the interlocutory appeal for purposes of appellate review.

Bureau Seeks Board-Certified Physicians

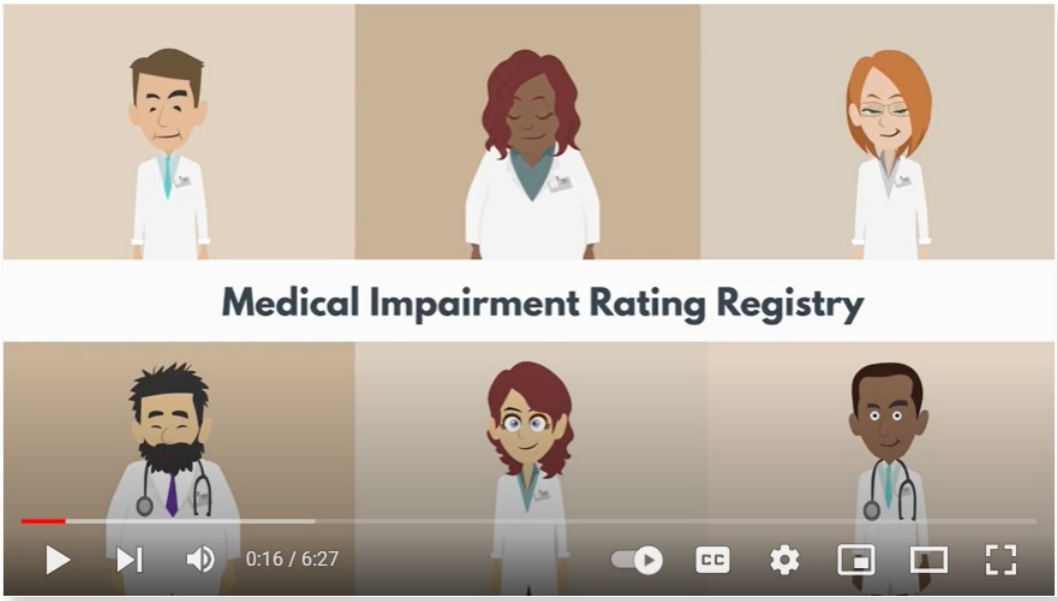
Consider the MIR Registry

Jay Blaisdell, MA

The Medical Impairment Rating (MIR) Registry is a Bureau-maintained listing of qualified and approved physicians who are specially trained to conduct impairment rating medical evaluations and who have applied to serve on the Registry. The program is designed to assist parties in settling a workers' compensation claim when the only item being disputed is the impairment rating.

How it Works

The program provides the names of physicians, listed on the Registry, who are specifically trained in the techniques of performing impairment rating evaluations on the body part(s) involved in the workers' compensation claim. The parties choose a physician from the list provided to perform an evaluation to determine an appropriate impairment rating. The rating produced is utilized to help determine any permanent disability benefits due in the matter. An MIR evaluation may be requested by either party. Regardless of which party requests it, the cost of the evaluation is borne by the employer. The report provided by the MIR physician will provide only the impairment rating. It will not address causation, apportionment, job restrictions or modifications, or the appropriateness of treatment.



Accurate, Objective, Impartial

Unlike some physicians who practice within the Tennessee workers' compensation system, MIR Physicians are formally trained to conduct impairment evaluations according to the AMA *Guides.* They are also required to cite the *AMA Guides* in their reports to show exactly how their impairment rating was obtained. Since the MIR Physician has no affiliation with either the employer or employee, and neither party may communicate with the MIR Physician prior to the evaluation, the whole process is designed to be objective and impartial. Once the MIR Report is completed, it is submitted to another independent physician for "peer review" to ensure AMA *Guides* methodology has been properly applied. Finally, and most importantly, MIR Reports are legally presumed to be accurate. Since a much higher standard of evidence must be used to refute an MIR Report, they usually supersede all other impairment rating opinions.

Approved AMA Guides Training

For appointments to the Medical Impairment Rating (MIR) Registry or the Certified Physician Program (CPP) Registry, the Bureau requires training in the AMA *Guides*™ *to the Evaluation of Permanent Impairment*, Sixth Edition. Physicians seeking appointments to either the MIR or CPP Registries must provide proof of certification issued by an approved vendor. Approved impairment rating training vendors are:

6th Edition.com

6thEdition.com is a web-based annual subscription service. It is the only Bureau-approved training that is 100% online. The presentations are given by Christopher R. Brigham, MD, Senior Contributing Editor to the Sixth Edition. The subscription offers access to training, articles, calculators, forms and other resources to address the most commonly rated conditions.

IAIME

Founded in 1986, the International Academy of Independent Medical Evaluators (IAIME) offers period training conferences throughout the country in the AMA *Guides*™ *to the Evaluation of Permanent Impairment*, Sixth Edition. IAIME is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

ABIME

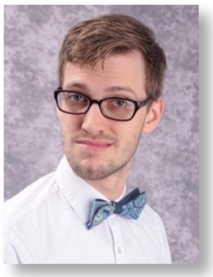
Founded in 1993, the American Board of Independent Evaluators (ABIME) was created to establish and maintain standards of conduct and performance among independent medical examiners. ABIME periodically offers weekend training conferences throughout the country in the *AMA Guides™ to the Evaluation of Permanent Impairment,* Sixth Edition. Continuing medical education credits are available.

Apply for Appointment to the MIR Registry Today

Interested physicians must request appointment by filling out the Physician Application for Appointment to the Medical Impairment Rating Registry and submitting it to the Program Coordinator, along with the proof of medical licensure, board certification, approved *AMA Guides* training, and malpractice insurance. Meeting the minimum qualifications does not necessarily guarantee an appointment. The MIR Registry offers physicians an opportunity for public service, industry recognition as premier rating experts in Tennessee, publication of their names online, $1500 per MIR referral and up to $2000 for extraordinary cases. Apply for appointment today.

AdMIRable Review Editorial Staff

Kyle Jones



Kyle Jones is the Communications Coordinator for the Tennessee Bureau of Workers' Compensation. After receiving his bachelor's degree from MTSU, he began putting his skillset to work with Tennessee State Government. You will find Kyle's fingerprints on many digital and print publications from videos to brochures published by the Bureau. Kyle believes that visuals like motion graphics can help explain and break down complex concepts into something more digestible and bring awareness to the Bureau's multiple programs that are designed to help Tennesseans.

Sarah Byrne, Esquire

Sarah Byrne is a staff attorney for the Court of Workers' Compensation Claims. She has a bachelors' degree in journalism from Belmont University and a masters' degree in English from Simmons College in Boston. After working in religious publishing and then state government, she earned a law degree from Nashville School of Law in 2010. She first joined the Bureau of Workers' Compensation in 2010 as a mediator.

Jane Salem, Esquire

Jane Salem is a staff attorney with the Court of Workers' Compensation Claims in Nashville. She administers the Court's blog and is a former legal reporter and editor. She has run more than forty marathons.

Brian Holmes, MA

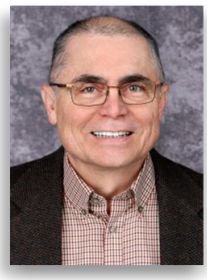
Brian Homes is the Director of Mediation Services and Ombudsman Services for the Tennessee Bureau of Workers' Compensation. In this role, he directs policy and leads twenty-three mediators and six ombudsmen as they educate the public about workers' compensation and help resolve benefit

disputes. He has had the privilege of helping thousands of injured workers', their employers, and insurance companies make informed decisions. A 16 year veteran of the Bureau, he has, of recent, created and implemented the Next Step Program, which assists unemployed workers' compensation claimants return to the workforce.

Robert B. Snyder, MD

Dr. Snyder was appointed Medical Director for the Bureau of Workers' Compensation in January, 2014 after 37 years of private practice in Orthopaedics. He graduated from Wayne State University School of Medicine in Detroit and completed two years of general surgery training at the University of Pittsburgh before he came to Nashville, completing his residency in Orthopaedics and Rehabilitation at Vanderbilt University. Dr. Snyder has presented lectures for the American Academy of Orthopaedic Surgeons, Arthroscopy Society of Peru, the American Orthopaedic Society for Sports Medicine, the National Workers Compensation and Disability Conference, the National Association of Workers Compensation Judges, and in Tennessee: the Chiropractic Association, the Orthopaedic Society, the College of Occupational and Environmental Medicine, the Pain Society, the Neurosurgical Society, the Tennessee Medical Society, and Tennessee Attorney Memo. He has made numerous other presentations to attorneys, case managers, employers, adjusters and insurers. His activities with the Bureau have focused on Medical Treatment Guidelines, the Drug Formulary, Utilization Review, Case Management, Fee Schedules and physician/provider communications.

James B. Talmage, MD



Dr. Talmage is a graduate of the Ohio State University for both undergraduate school (1968) and medical school (1972). His orthopedic surgery training was in the United States Army. He has been Board Certified in Orthopaedic Surgery since 1979 and also was Board Certified in Emergency Medicine from 1987 - 2017. Since 2005 he been an Adjunct Associate Professor in the Division of Occupational Medicine, Department of Family and Community Medicine at Meharry Medical College in Nashville. In 2013 he was Acting Medical Director for the State of Tennessee Division of Worker's Compensation. In 2014 he became Assistant Medical Director for the renamed Bureau of WC. He has been an author and co-editor of the AMA

published books on Work Ability Assessment, and the second edition of the Causation book. He was a contributor to the AMA Impairment Guides, 6th Edition, and he has served as CoEditor of the AMA Guides Newsletter since 1996.

Jay Blaisdell, MA

Jay Blaisdell is the coordinator for the Tennessee Bureau of Workers' Compensation's Medical Impairment Rating (MIR) Registry. He has been the managing editor of *AdMIRable Review* since 2012, and is certified through the International Academy of Independent Medical Evaluators (IAIME) as a Medicolegal Evaluator. His articles are published regularly in the AMA *Guides Newsletter*.

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Submission Guidelines

AdMIRable Review accepts electronic submission for articles related to Tennessee Workers' Compensation. Manuscripts prepared in accordance with the American Psychological Association (APA) guidelines are preferred. Submission of a manuscript implies permission and commitment to publish in *AdMIRable Review*. Authors submitting manuscript to *AdMIRable Review* should not simultaneously submit them to another public-administration journal. Submission and inquires should be directed to *AdMIRable Review*, Editorial Staff, at Jay.Blaisdell@tn.gov.

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