from Research to Reality

Return-to-Work Coordinators

Understanding Their Role

LIBERTY MUTUAL RESEARCH INSTITUTE FOR SAFETY

SCIENTIFIC UPDATE

Liberty Mutual
RESEARCH INSTITUTE FOR SAFETY

Letter from the Director

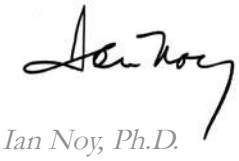
Dear Readers

Disability is a major contributor to the burden of workplace injury and it can have a devastating impact on injured workers and their families. The focus of our disability research program, therefore, is to identify strategies to achieve early, safe, and sustained return to work (RTW). We examine the RTW process holistically—as an integrated system—but we also look at each element. This issue is devoted to RTW coordinators, who play a pivotal role in the process by communicating with and supporting injured workers and other stakeholders in order to facilitate a smooth, safe return to work.

Through a series of studies, our scientists in the Center for Disability Research examined the background, personal qualities, and functions that make RTW coordinators successful. In particular, we examined which attributes and skills were most important for success in this role. Using knowledge gained through this research, Liberty Mutual's Claims organization is developing guidelines and training programs to help businesses achieve better RTW outcomes (see p. 7).

Also in this issue, we introduce our newest post-doctoral fellow and profile the research activities of our recent participants in the American Society of Safety Engineers Fellowship program.

We hope you enjoy this issue of Scientific Update. As always, we welcome your feedback.



Ian Noy, Ph.D.
Vice President and Director

INSIDE *this Edition:*

Volume 15 | Number 2

Improving Disability Outcomes

The Critical Role of RTW Coordinators

During the past 40 years, as health and safety research has greatly increased our understanding of workplace risk management, the US has seen a decrease of more than 50 percent in the rate of work-related injuries. However, the proportion of such injuries that result in worker absences has remained steady at about 22 percent. As a result, the amount of lost work time and associated costs remains high. This trend is expected to gain momentum in the years to come, as an aging workforce presents new challenges for injury recovery and return to work.

The above facts, taken together, suggest a critical need for effective intervention strategies to facilitate safe and sustained return to work. Having a dedicated return-to-work (RTW) coordinator following lost-time injuries or illnesses is one strategy that has demonstrated great promise.

The idea of assigning an individual to help prevent extended disability first arose after World War I with the development of programs to help injured veterans regain employment. Today, RTW coordinators help develop, coordinate, and implement workplace strategies that will expedite and smooth an employee's post-injury transition back to work. They do this through planning, personal interaction, and coordination with key stakeholders.

Some large employers, healthcare providers, or insurance companies hire full-time RTW coordinators, but in many organizations, this role is part of the existing human resources or safety functions. Those involved in RTW coordination typically have backgrounds in physical therapy or nursing, but many have simply learned on the job.

"Our research has consistently shown that RTW interventions that include a workplace component produce better outcomes than those that focus solely on medical care," says Glenn Pransky, M.D., M.Occ.H., director of the Institute's Center for Disability Research (CDR). "The active involvement of someone coordinating the RTW process is often critical to the success of these interventions."

Despite the potential value of RTW coordinators, there has been very little research to identify the types of backgrounds, actions, or skills that best predict success in this role. To address this knowledge gap, CDR researchers assessed the common activities and necessary competencies of RTW coordinators based on data from 40 published RTW intervention studies. They then conducted focus groups of experienced RTW coordinators to develop a consensus around key competencies. Finally, they conducted an international survey of a similar population to determine which of the identified competencies were most important.

"The idea behind this research is that, if organizations can identify the competencies possessed by successful RTW coordinators, they may be able to adjust their hiring, training, and job assignment practices to improve RTW outcomes," says Dr. Pransky. "Our findings have important implications for business operations, as they may lead to lower costs, decreased absenteeism, and improved productivity. The findings also have implications for injured workers, who benefit from well-informed guidance and care as they navigate the path toward a safe and sustained return to work."

Research Focus:

CDR Study Investigates Core Competencies

The role of the return-to-work (RTW) coordinator has become increasingly vital, as the direct costs of work-related injuries have soared, along with the indirect costs of employee absences. Yet there has been little research about the knowledge, skills, attitudes, and behaviors RTW coordinators need to succeed in the role. The Liberty Mutual Research Institute for Safety's Center for Disability Research (CDR) conducted a series of studies to better understand what RTW coordinators do and to help identify a set of core competencies for this important role.

Study I: Identifying Roles and Responsibilities

In 2008, CDR researchers teamed up with collaborators at the University of Sherbrooke (Quebec, Canada) to examine the role and responsibilities of RTW coordinators as a basis for establishing key competencies. "Prior research showed that those companies with someone coordinating the RTW process in a way that addressed the workplace perspective had significantly better RTW outcomes," explains study collaborator Patrick Loisel, Ph.D., now affiliated with the University of Toronto, Ontario. "So it was important for us to better understand the actions they took that were contributing to RTW success, as well as the key attributes of the coordinators themselves."

To begin to investigate these issues, researchers conducted a keyword search of two major medical publication databases—MEDLINE and CINAHL—for all published intervention studies involving workers with physical health ailments and a dedicated RTW coordinator. Of more than 2,000 titles meeting those criteria, researchers selected 90 articles that appeared to include direct, on-site workplace interventions. From within that group, they identified 40 articles (reflecting 22 studies) that met the study inclusion criteria. They then compiled and synthesized key information from each study to describe the activities included in RTW coordination efforts and to summarize the background, training, and scope of the RTW coordinator's role.

Findings from this first study, published in the *Journal of Occupational Rehabilitation*[1], identified the primary RTW coordinator responsibilities as follows: identifying barriers to an employee's return, facilitating work accommodations so the employee may be able to return sooner and safely, designing and implementing the RTW plan, coordinating with all stakeholders, and making sure the plan stays on track.

The study also identified six preliminary competency domains: assessing workplace ergonomics, interviewing clinical stakeholders, solving social problems, mediating in the workplace, understanding business and legal aspects, and understanding medical conditions.

Study II: Defining Core Competencies

To better define the competencies required to achieve optimal RTW outcomes, CDR researchers interviewed the principal investigators from 12 of the studies that had been reviewed. A primary goal was to obtain more detailed information not included in the published articles. Interviews began with open-ended questions related to the definition of RTW coordination,

> The study's most important finding was that 'nontechnical' competencies were rated much higher than 'technical' or 'content knowledge' ones. The highest rated competencies reflected either personal characteristics or specific interpersonal skills applicable the unique challenges that arise when coordinating among the many RTW stakeholders.

the setting and context of the program studied, and the backgrounds and impact of the RTW coordinators. Principal investigators were asked to describe the competencies needed to achieve RTW success. A total of 340 competency statements were elicited from the 12 interviews, and these were collapsed into 159 distinct competencies. Through an expert-informed affinity matching exercise, these were aggregated into groups of similar competencies. These groups were then organized into conceptual categories that were similar to those identified in the prior literature review.

The resulting paper, published in the journal *Disability and Rehabilitation*[2], identified 10 groups of essential competencies: individual traits and qualities, relevant knowledge base, RTW focus and attitude, organizational and administrative skills, interpersonal relationship skills, as well as skills in assessment, communication, conflict resolution, problem-solving, and RTW facilitation.

These competencies significantly expanded the literature review perspective and provided the framework for direct conversations with persons in this role to obtain more generalizable, detailed information.

Study III: RTW Coordinator Focus Group and Survey

Drawing from knowledge gained in the literature review and the principal investigator interviews, researchers began a final study to develop and validate RTW core competencies. The study was conducted in two parts. In the first part, 75 RTW coordinators participated in focus groups in which they identified and ranked competencies for RTW coordination. Once each group had identified key competencies from their perspective, researchers used the results of the principal investigator interviews to stimulate further discussion.

In the second part of the study, researchers and content experts conducted another affinity group mapping process in which they sorted the identified competencies into eight conceptual groups and labeled them as follows: administration, individual personal attributes, information gathering, communication, professional credibility, evaluation, problem-solving, and conflict management.

Of the entire set of 234 unique items identified, a subset of 100 items, including the 88 competencies most often cited across all focus groups, was integrated into an Internet-based survey. The 12 less important items were also incorporated to see if these differentiated certain subsets of RTW coordinators. The survey was then administered to 145 experienced RTW coordinators representing a range of professional backgrounds and employment settings. Respondents were asked to rank each competency on a five-point scale, ranging from "unimportant" to "essential."

Researchers analyzed the data, calculating means and standard deviations for each question and the mean response to all items (within each affinity group) for each respondent. They then calculated the frequencies of "essential" ratings for each item and used two-tailed *t* tests to explore differences across respondent subgroups.

The findings, published in the *Journal of Occupational Rehabilitation*[3], indicated that there was substantial agreement among participants on most competency items. Of the 100 competencies, 83 were rated "very important" or "essential" by more than half of the respondents, with very little difference based on the respondent's country of origin, educational background, primary employer, or length of job experience.

The study's most important finding was that "nontechnical" competencies were rated much higher than "technical" or "content knowledge" ones. The highest-rated competencies reflected either personal characteristics or specific interpersonal skills applicable to the unique challenges that arise when coordinating among the many RTW stakeholders. Even in cases in which the RTW coordinator also managed the injured worker's medical care, competencies such as medical evaluation skills were viewed as less important than these nontechnical competencies.

The following were among the highest-rated skills and attributes:

- Active listening—especially the ability to elicit concerns about RTW from workers, employers, health care providers, and others;
- Ability to communicate well in person and in writing with the full range of individuals involved in the RTW process;
- Ability to relate well to a wide range of personalities;
- Effective problem-solving skills around common issues that arise in returning to work; and

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- Respecting and maintaining confidentiality and effectively informing each involved party about the types of information that will be exchanged in the RTW process.

Unless the RTW coordinator is also managing the injured worker's medical care, the following competencies were among the lowest rated:

- Medical evaluation;
- Knowledge of treatment efficacy and best practices; and
- Evaluating comorbidity impacts.

The focus groups also provided valuable information for companies to consider when selecting, training, and developing employees in this vital role. For example, the focus groups recommended that organizations hire or select individuals who possess certain qualities—such as ability to relate and communicate well, active listening skills, and good problem-solving abilities—rated as important to a coordinator's success. They suggested that these traits also make it easier for RTW coordinators to acquire the other competencies necessary to succeed in the position.

In addition, focus group participants agreed that many of the technical or knowledge-related aspects of the RTW coordinator's role, such as knowledge of workplace policies, laws, practices, and insurance procedures, can be easily learned. "This reinforces the idea that, in order to succeed, it's more important at the outset for RTW coordinators to possess the right set of inherent skills than to know all the ins and outs of healthcare and insurance procedures," explains Dr. Pransky. Study participants were also in general agreement that *superior* RTW coordination skills could only be developed by on-the-job training as well as mentorship, supervision, and feedback. These skills include the ability to evaluate complex RTW barriers and devise solutions, as well as the ability to direct a group effort to achieve RTW.

"Though formal training in ergonomics and labor relations might provide a coordinator with additional skills," says Dr. Pransky, "the study found that negotiation, workplace problem solving, and specific communication skills were more critical to success—and these were best developed through mentorship by experts. We found a remarkable range of backgrounds in those who had become respected, experienced RTW coordinators—yet there was a common set of shared ideas about essential competencies and attributes required to succeed at the job."

The overall research conclusion is clear: When the right people facilitate the RTW process through activities such as early and supportive contact with employees and active problem solving, employers can be more effective in helping workers get back on the job sooner—and safely—a result that is nearly always healthier for workers and for the bottom line.

Portions of the above article were reprinted from Liberty Directions magazine, Vol. 20, No. 1, 2012.

Related Papers

[1]Shaw, W., Hong, Q.N., Pransky, G., and Loisel, P. (2008) A Literature Review Describing the Role of Return-to-Work Coordinators in Trial Programs and Interventions Designed to Prevent Workplace Disability, *Journal of Occupational Rehabilitation*, 18(1), 2-5.

[2]Gardner, B., Pransky, G., Shaw, W., Hong, Q.N., and Loisel, P. (2010) Researcher Perspectives on Competencies of Return-to-Work Coordinators, *Disability and Rehabilitation*, 32(1), 72-8.

[3]Pransky, G., Shaw, W., Loisel, P, Hong, Q.N., and Desorcy, B. (2010) Development and Validation of Competencies for Return to Work Coordinators, *Journal of Occupational Rehabilitation*, 20(1), 41-48.

Putting the Research to Work

Improving RTW Outcomes Through Evidence-Based Training

Research tells us that long-term unemployment or prolonged absence is not good for workers' physical and mental health. For this and many other reasons, it is important to get workers back to employment as safely and timely as possible after an injury or illness. A skilled return-to-work (RTW) coordinator—who may be a company employee, a claims professional, or a nurse case manager—can be instrumental in identifying and addressing RTW obstacles and fostering a positive RTW outcome. In studies of RTW coordinators, CDR researchers identified several core competencies, skills, and specific activities that predict success for those who carry out this critical role.

"The research is pretty clear—communication skills are paramount for those involved in RTW coordination," says David Buonviri, president of Cascade Disability Management, a Liberty Mutual-owned company that provides professional return-to-work and vocational rehabilitation services to customers. "Effective coordinators must engage in mutually beneficial conversations with the injured worker and other parties to recognize potential problems before they surface. In this way, they can address and overcome RTW obstacles that could unnecessarily extend disability."

Mr. Buonviri recently spearheaded a multidisciplinary effort to integrate the RTW coordinator research findings and findings from several other CDR studies into a three-part training program for Liberty Mutual workers compensation claims case managers and nurse case managers. The goal of the training is to help case managers understand and identify potential RTW obstacles and to develop skills for engaging injured workers, employers, and health care providers in effective problem solving.

"The specific challenges, barriers, and complexities involved in the RTW disability management process require unique skill sets," explains Lori Lorge, MSN, RN, CCM, a manager in Liberty Mutual's Shared Services Training Department. Ms. Lorge, who has spent the past 16 years helping injured workers return to work safely, was instrumental in developing the RTW training modules. "It's been very exciting to integrate the CDR's research findings into a state-of-the-art training program." Built around three core principles—effective communication, active listening, and problem solving—the training helps case managers develop the skills that they need to facilitate the RTW process.

In July 2012, Liberty Mutual released the first of four online training modules to more than 1,800 workers compensation claims case managers and nurse case managers. This first module focuses on developing skills and strategies for effective conversations with injured workers. "We have learned that worker-focused, open-ended questions are much more effective than scripted questions for helping injured workers overcome RTW obstacles," says Mr. Buonviri. In addition to providing several examples of effective, unscripted conversations, the module emphasizes the benefits of active listening—a communications strategy that helps case managers identify and address early risk factors that are associated with delayed return to work.

A second module, released in October, illustrates how case managers can work more effectively with employers to identify and resolve RTW barriers. "This module stresses the importance of being able to explain to employers the ramifications of *not* returning people to work, as well as the benefits of helping someone get back to work," explains Mr. Buonviri. He notes

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> “Ultimately, improved communication based on our knowledge of core RTW coordinator competencies will help us do a better job guiding the injured worker back to a safe and timely return to work.”

that the training draws from prior CDR research which showed the benefits of early, supportive contact with injured workers and highlighted the importance of modified duty. The module also provides strategies and materials for engaging employers in conversations about temporary tasks for workers who are not yet ready for full duty.

A third module, currently in development, focuses on effective RTW coordination with medical providers. According to Ms. Lorge, this module presents strategies to help case managers engage the medical provider in the RTW process and stresses their shared goals of helping patients return to work as safely and timely as possible. “The module also explains why it is so important for injured workers to see the right type of medical provider early in the course of their treatment—an approach that is supported by research,” says Ms. Lorge. Lastly, the module presents strategies to engage the medical provider in determining an injured worker’s physical capabilities in order to facilitate transitional work while he or she recovers.

A fourth and final module will focus on the critical role the claims team manager plays in helping front-line case managers continually develop their RTW communication skills. “It is important to recognize that, with the right support from a coach, mentor, or supervisor, communication skills can significantly improve over time,” notes Mr. Buonviri. “CDR research findings underscore the importance of this type of mentorship in the ongoing development of RTW coordination skills. This final module will give team managers important pointers on how to provide such mentorship.”

“By integrating CDR research findings into the training, we hope to foster more effective communication between case managers and injured workers and among all of the stakeholders involved in the RTW process,” concludes Ms. Lorge. “Ultimately, improved communication based on our knowledge of core RTW coordinator competencies and activities will help us do a better job guiding the injured worker back to a safe and timely return to work.”

Evidence-Based Principles for More Effective Return-to-Work Coordination

In the NEWS

Research Institute Welcomes New Post-Doctoral Fellow

Dr. Karol

Sohit Karol, Ph.D., a graduate of the University of Maryland School of Public Health, is the Research Institute's newest post-doctoral fellow. Dr. Karol is participating in the joint fellowship program with the Harvard School of Public Health.

In collaboration with the Institute's Center for Behavioral Sciences, Dr. Karol is working to develop new methods to investigate musculoskeletal disorders that may be associated with knowledge work. His research integrates techniques from motor control, psychology, and upper-extremity biomechanics to quantify the onset and progress of musculoskeletal disorders. In addition, Dr. Karol is collaborating with colleagues at the Harvard School of Public Health to evaluate the ergonomics and motor control of smart phones, tablets, and certain biomedical devices.

"This unique opportunity enables me to work with some of the best scientific minds in my research area," says Dr. Karol. "I am looking forward to collaborating with Institute scientists from different disciplines and conducting high-impact research during my time here."

Dr. Karol's research interests include upper-extremity biomechanics, motor control, cognitive psychology, perceptual psychophysics, and human–computer interaction. Most recently, he worked as a graduate teaching assistant at the University of Maryland (College Park), where he designed coursework in biomechanics of human movement and led interactive lectures for a class of more than 120 students. There, he also managed the Neuromechanics Laboratory in the Department of Kinesiology.

Dr. Karol received a doctoral and master's degree in kinesiology from the University of Maryland School of Public Health and earned a bachelor of technology in mechanical engineering from the National Institute of Technology, India. He has published 13 scientific investigations and has presented his work internationally. He is a member of the International Society of Biomechanics, the American Society of Biomechanics, the Society for Neuroscience, and the Human Factors and Ergonomics Society.

2012 IEA/Liberty Mutual Medal Winners Announced

Researchers Paul Schepers, M.Sc., M.A., and Berry P.L.M. den Brinker, Ph.D., of the Netherlands, won the 2012 International Ergonomics Association (IEA)/Liberty Mutual Medal. The researchers received the honor for their scientific paper, "What Do Cyclists Need to See to Avoid Single-Bicycle Crashes?" (*Ergonomics*, Vol. 54, No. 4, pp. 315–327, 2011). Schepers is a road safety consultant with the Ministry of Infrastructure and the Environment, Centre for Transport and Navigation (Delft), and den Brinker is a researcher and director of the Scientific Institute for Low Vision Use Research at Vrije Universiteit (Amsterdam). The medal was presented at the meeting of the Dutch Ergonomics Society held in Amersfoort, The Netherlands, on October 25–26, 2012.

The winning paper discusses a study that aims to improve cycling safety by examining the role of visual characteristics of cycling facilities, such as pavement markings and the visibility of bollards on bicycle paths. "This study demonstrates how ergonomics can simultaneously improve system effectiveness and human well-being," says Andrew S. Imada, Ph.D., IEA past president and awards committee chair. "It considers task demands, environmental dimensions, human characteristics, and capabilities to improve bicycle systems."

"We are proud to receive this award," says Schepers. "We hope that our study will stimulate more

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research on single-bicycle crashes and that road authorities will realize the importance of a good visual design to help prevent single-bicycle crashes."

For more information on the IEA/Liberty Mutual Medal, visit our website at www.libertymutualgroup.com/researchinstitute.

ASSEF Fellows Investigate Fall Risk and Prevention

Tzurei Betty Chen, P.T., M.S., a doctoral candidate at the University of Oregon (Eugene), and Andrew S. Merryweather, Ph.D., an assistant professor at the University of Utah (Salt Lake City), recently completed fellowships through the Research Institute's joint program with the American Society of Safety Engineers Foundation (ASSEF).

The Safety Research Fellowship Program encourages safety research activity; familiarizes graduate students, faculty members, and researchers with current scientific projects and applications; and stimulates safety research understanding. The program also provides a forum for linking safety professionals, industry needs, and quality research programs. Fellows spend four to six weeks at the Research Institute.

Tzurei Betty Chen, P.T., M.S.

Ms. Chen's fellowship focused on fall prevention in the elderly population, the subject of her dissertation. Her study aims to provide an improved, reliable measure to predict falls among the elderly. Prior to arriving at the Institute, Ms. Chen had collected data from 60 participants in a one-year longitudinal study at the University of Oregon. While at the Institute, she collaborated with research scientists to analyze the data. The researchers provided feedback to improve the study's quality, and the study provided insight to researchers for designing longitudinal study protocols that enhance fall risk evaluation.

"It has been a great honor and pleasure," says Ms. Chen. "I am thankful for the opportunity to meet many exceptional researchers with different expertise. Their valuable input will greatly enhance the quality of the project."

Ms. Chen's research interests include biomechanics, motion analysis, fall prevention, and geriatric populations. In addition to her doctoral studies in biomechanics and human physiology, Ms. Chen received an M.S. degree from the University of Oregon and a B.S. from the National Yang Ming University (Taipei, Taiwan). She served as a graduate teaching fellow and research assistant in the Department of Human Physiology, University of Oregon, and worked as a physical therapist at the Taipei Veterans General Hospital, Taiwan. Ms. Chen is a member of the American Society of Safety Engineers, the American Society of Biomechanics, and the American Federation of Teachers.

Andrew S. Merryweather, Ph.D.

Dr. Merryweather studied the effects of hospital bed adjustments on stability and slip parameters in a population of fall-prone older adults. The fellowship enabled Dr. Merryweather to improve his study design and analytical methods. During his tenure, he consulted Institute scientists to review all project aspects and to work on a large number of technical details related to his research protocol. Dr. Merryweather refined and improved key project aspects, and Institute scientists gained knowledge from his expertise.

"This was truly a choice experience of a lifetime that I will always remember," says Dr. Merryweather. "I gained a lot of insight from the researchers and appreciated all the hallway conversations and group discussions. The study is still ongoing, and I am actively collaborating with a few of the researchers on multiple projects and manuscripts."

Dr. Merryweather maintains research interests in occupational biomechanics, three-dimensional musculoskeletal modeling, rehabilitation ergonomics, motion capture, rehabilitation robotics, and human factors and design. He is an assistant professor with the Department of Mechanical Engineering at the University of Utah, where he also earned his Ph.D. and M.S. degrees in mechanical engineering. He earned a B.S. degree in mechanical engineering from Utah State University. Dr. Merryweather has presented his work widely and has published more than 25 journal papers and conference proceedings. He is an editorial board member for *WORK: A Journal of Prevention, Assessment, and Rehabilitation* and a member of the American Society of Safety Engineers, American Society of Biomechanics, and the American Society of Agricultural and Biological Engineers.

News and Notes

David A. Lombardi, Ph.D., principal research scientist, led a session at the Harvard School of Public Health colloquium on Sleep and Shift Work. Dr. Lombardi presented "Translating Fatigue Research into Technologic Countermeasures" at the September meeting. … **Theodore K. Courtney, M.S., C.S.P.**, director of the Center for Injury Epidemiology, was appointed as associate editor of the journal *Accident Analysis and Prevention* (AAP). … **David A. Lombardi, Ph.D.,** also joined the AAP editorial board, and Research Scientist **Helen Marucci-Wellman, Sc.D.**, joined the *Journal of Safety Research* editorial board.

Conferences

11th World Conference on Injury Prevention and Safety Promotion: Oct. 1–4, Wellington, New Zealand

- Use of a Nested Case-Crossover Study Within a Prospective Cohort Study to Examine Both Fixed and Transient Risk Factors for Slipping • Internet vs. IVR Survey: Choice, Engagement, Data Equivalency—S.K. Verma, Sc.D., M.D., M.P.H.

Odense International Forum XII: Primary Care Research on Back Pain: Oct. 16–19, Odense, Denmark

- Hot Topics at the 2012 Forum—And Where Do We Go From Here? Shaping the Agenda for Back Pain Research—G.S. Pransky, M.D., M.Occ.H.

4th International Conference on Automotive User Interfaces and Interactive Vehicular Applications: Oct. 17–19, Portsmouth, NH

- Effect of Performance Feedback (or Lack Thereof) on Driver Calibration—W.J. Horrey, Ph.D.

2nd Scientific Conference on Work Disability Prevention and Integration: Oct. 22–24, Groningen, The Netherlands

- Work Disability Research: New Insights, Current Challenges, Future Prospects (Keynote)—G.S. Pransky, M.D., M.Occ.H.
- The Pain Recovery Issues, Concerns, and Expectations (PRICE) Questionnaire: A 46–Item Patient-Centered Screening Measure to Guide Early Intervention Strategies for Preventing Back Disability—W.S. Shaw, Ph.D., P.E.
- Assessing Return-to-Work Success Following Occupational Injury—A.E. Young, Ph.D.

56th Annual Meeting of the Human Factors and Ergonomics Society: Oct. 22–26, Boston, MA

- Development and Validation of a Safety Climate Scale for the Utility/Electric Power Industry—Y.H. Huang, Ph.D.
- Measurement Equivalence of Trucking Industry-Specific Safety Climate Scales—J. Lee, M.A.
- Reading While Driving: A Study on Drivers' Strategies of In-Vehicle Task Initiation—Y. Liang, Ph.D.
- Application of Near-Infrared Spectroscopy in Ergonomics and Human Factors—R.V. Maikala, Ph.D.
- The Influence of Organizational Structure on Safety Climate in the Trucking Industry—L.A. Murphy, Ph.D.

140th Annual Meeting and Exposition of the American Public Health Association: Oct. 27–31, San Francisco, CA

- Slips, Trips, and Falls in the Hospital Environment • Slipping as an Upstream Measure of Outcome for Fall-Related Injury Research—T.K. Courtney, M.S., C.S.P.
- Independent Effects of Sleep Duration and Body Mass Index on the Risk of a Work-Related Injury: Evidence from the US National Health Interview Survey (2004–2010)—D.A. Lombardi, Ph.D.
- Work in Multiple Jobs and the Risk of Occupational Injury in the US Working Population • Identification, Analysis and Aggregation of Occupational Injury Scenarios for Prioritizing Intervention Strategies in Rural Communes of Vietnam—H. Marucci-Wellman, Sc.D.
- Factors Associated With Use of Slip-Resistant Shoes in US Limited-Service Restaurant Workers—S.K. Verma, Sc.D., M.D., M.P.H.

Publications

Andersen, J. H., Fallentin, N., Thomsen, J. F. and Mikkelsen, S. (2012) Risk factors for neck and upper-extremity disorders among computers users and the effect of interventions: an overview of systematic reviews. *PLoS One*, 6(5), e19691.

Arlinghaus, A., Lombardi, D. A., Willetts, J. L., Folkard, S. and Christiani, D. C. (2012) A structural equation modeling approach to fatigue-related risk factors for occupational injury. *American Journal of Epidemiology*, 176(7), 597–607.

Ciriello, V. M., Shaw, W. S., Rivard, A. J. and Woiszwillo, M. J. (2012) Dynamic training of the lumbar musculature to prevent recurrence of acute low back pain: a randomized controlled trial using a daily pain recall for one year. *Disability and Rehabilitation*, 34(19), 1648–1656.

Fallentin, N., Maikala, R. V., Banks, J. J., O'Brien, N. V. and Rivard, A. J. (2012) Specificity of back muscle response to submaximal fatiguing contractions. *Work*, 41, 2539–2544.

Horrey, W. J. (2012) Assessing the effects of in-vehicle tasks on driving performance. *Ergonomics in Design*, 19(4), 4–7.

Meyer, J. D., Cifuentes, M. and Warren, N. (2012) Association of self-rated physical health and incident hypertension with O*NET factors: validation using a representative national survey. *Journal of Occupational and Environmental Medicine*, 53(2), 139–145.

Verma, S. K., Courtney, T. K., Corns, H. L., Huang, Y. H., Lombardi, D. A., Chang, W. R., Brennan, M. J. and Perry, M. J. (2012) Factors associated with use of slip-resistant shoes in US limited-service restaurant workers. *Injury Prevention*, 18(3), 176–181.

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