

populations. Occupational health nurses are no longer operating in clinics that are separate and independent from one another. To understand the global economy where the corporate environment often consists of a dispersed workforce, it is clear that a high premium is placed on building trust, teamwork in workplace environments, and skills and talents that create outstanding results. Present and future research should focus on the remarkable plasticity of brain functioning and illustrate the nurturance of human beings' social needs that are linked to survival. "Creating Safety for Our Social Brains" illustrates that the success of future occupational health nursing practice will depend on nurses creating environments to meet worker needs for "Love and Belonging" as they currently meet workers' "physiological" and "safety" needs. The idea is to incorporate an understanding of how responsive human brains are to social interactions that are either inhibiting or enhancing productivity and creativity.

### **CPAP on the Road—The Experience of Long-Haul Truck Drivers: A Pilot Study**

Kenya Kirkendoll, MSN, MPH, RN;  
Karen Heaton, PhD, FNP-BC

Obstructive sleep apnea (OSA) is a chronic health condition characterized by recurrent episodes of upper airway collapse and obstruction that result in episodes of apnea and hyperpnea during sleep. The prevalence of OSA in the general population is estimated at 4% among males and 2% among females, in stark contrast to estimated OSA prevalence of 13% to 28% among commercial motor vehicle (CMV) drivers. Untreated or ineffective treatment of OSA is associated with changes in cognition, increased risk of motor vehicle crashes, and daytime sleepiness. Treatment of OSA with continuous positive airway pressure (CPAP) for as few as 2 to 7 days has been associated with improved performance on a driving simulator. Much of the sleep disordered breathing research among CMV drivers focuses on OSA prevalence. With high estimations of OSA among CMV drivers, it is imperative that empirical research explores CPAP use in this population. The purpose of this qualitative descriptive study was to describe long-haul truck drivers' experiences with CPAP when they were on the road. Individual interviews were conducted with long-haul drivers who were diagnosed with OSA and used CPAP. Content analysis was used to identify themes and subthemes. Interviews were conducted until data saturation was achieved. Findings from the study can be used to raise awareness about the challenges faced by long-haul truck drivers in their efforts to adhere to CPAP therapy and to inform CPAP adherence initiatives and policies in the trucking industry.

### **Infectious Disease Transmission via Conjunctiva: Occupational Contamination Risk and the Role of Eyewear**

Ellen Hassett Cahill; Victor R. Lange, JD, MSPH, BS, BA, ICP, CRC, CRA

A recent clinical study investigated eyewear contamination to assess infection risk and inform protocol development. The study found 37.7% of disposable and 94.9% of reusable eyewear pieces cultured positive for microbial contamination post use. More than 74% of reusable eyewear still cultured positive following disinfection. Reusable eyewear may carry ongoing bio burden and, thus, contribute to environment health and safety risks. This presentation informed health care staff in advocating for safer working environments as well as assisting health care management in future decision making regarding personal protective equipment decisions.

### **Factors Associated With Safe Patient Handling Behaviors and Lift Use Among Hospital Nurses: A Statewide Survey of California Nurses**

Soo-Jeong Lee, PhD, RN; Joung Hee Lee, MSN, RN

Unsafe patient handling is the primary cause of musculoskeletal injury among nurses. Safe work practices can prevent musculoskeletal injury. This study investigated factors associated with safe patient handling behaviors and lift use among hospital nurses. This cross-sectional study analyzed data from a statewide random sample of 212 California hospital nurses who performed patient handling. Data were collected using postal and online surveys on sociodemographics, organizational safety practices, physical and psychosocial job factors, musculoskeletal symptoms, risk perception, perception about lift use, frequency of lift use, and safe patient handling behaviors. Lift equipment was available for 65.6% of the participants ( $n = 139$ ); these nurses reported using lifts  $\leq 25\%$  of the time (51.5%), 26% to 50% of the time (18.1%), 51% to 75% of the time (10.9%), and 76% to 100% of the time (19.6%) when lifting/transferring physically dependent patients. Positive perceptions about lift use (ease, patient comfort, time, access, storage) were associated with frequent use of lifts ( $p < .05$ ). In multiple linear regression analysis, safe patient handling behavior was associated with safety climate ( $\beta = .29, p = .0004$ ), availability of lifts ( $\beta = .25, p = .0002$ ), older age ( $\beta = .14, p = .041$ ), and day shifts ( $\beta = .13, p = .048$ ). For physical workload, job strain, and musculoskeletal symptoms, only bivariate associations were observed with safe patient handling behaviors. Risk perception was not correlated with safe patient handling behaviors. The findings suggest that safety climate, lift availability, and perceptions about lifts are significant factors for safe work practices of

nurses. Special attention should be given to younger nurses working non-day shifts to promote safe work practices.

### Noise Exposure Monitoring and Hearing Protection Devices: Assessment, Education, and Compliance Among Machine Operators in Manufacturing

Jennifer Leslie, BSN, BSME, RN

Noise is more than a nuisance; it is a hazard to health, safety, and overall well-being. Repeated, unprotected exposure to hazardous noise is the cause of this occupational illness that commonly affects employees in the U.S. manufacturing sector. According to the Bureau of Labor Statistics, one in nine recordable illnesses is due to occupational hearing loss. Noise-induced hearing loss is an irreversible sensorineural hearing impairment characterized by the loss of auditory sensory cells in the cochlea. Sensorineural cells cannot be regenerated or repaired. Because the condition is permanent, noise studies and prevention efforts to preserve hearing are an important focus of occupational health specialists. The purpose of this project was to conduct a noise dosimetry exposure assessment and area noise survey in compliance with 29 CFR 1910.95, summarize findings and include or exclude employees in a Hearing Conservation Program (HCP), synthesize findings applying critical thinking skills to counsel employees on the selection of hearing protection devices meeting regulatory requirements, and provide optimized worker health and productivity. The project had three aims: (a) accurately report the noise levels meeting the company's regulatory compliance requirement, (b) validate inclusion or exclusion of the employees in the HCP, and (c) enable workers to make the "right" choice of hearing protection devices, and provide education and counsel specific to health and productivity needs. The results of the study were shared with facility management and identified personnel; the HCP was also updated.

### Nursing Beyond Nursing: A Workplace Health and Safety Stewardship Model

Cathy Loisel, MS, RN, CEES, COHN-S

Occupational health is nursing beyond nursing. The workplace presents an opportunity for nurses to use strategic thinking and apply critical reasoning in support of clinical excellence and business objectives. The author dubbed this opportunity "nursing beyond nursing." Optimally, employers view occupational health nurses as experts, not only in employee health management but as progressive leaders capable of assisting with the development of business initiatives through on-site services and clinics. Strategic thinking has been defined as the generation and application of business insights on a

continual basis to achieve a competitive advantage (R. Horwath). Strategic thinking enables occupational health nurses to combine their roles as health services managers and business partners to address the needs of frontline workers as well as those in the corner office. Meanwhile, critical reasoning in occupational health allows nurses to use their experience to formulate individual treatment plans and design health promotion programs for entire working populations. Nurses who practice in work settings typically function as gatekeepers for all health care-related services. Strategic thinking and critical reasoning are necessary for occupational health nurses to successfully balance these demands. In acute care, patient delivery is predictable, and the nurse's role is relatively well defined. Not so in the workplace, where worker populations are as varied as their needs. Occupational health nurses must develop the skill set to define and legitimize their role in the business environment. Taking the time to leverage experience and prioritize business objectives facilitates nurses' leadership role.

### Mining Career Firefighter Injury Data to Build a Proactive Occupational Health Program

Cynthia M. Lyons, BSN, RN, OHN-S; Karyl A. Kinsey, PhD; Stephanie Phelps, PhD Candidate; OiSaeng Hong, PhD, RN, FAAN, NP

This poster described occupational injuries among career firefighters in Austin, Texas, and the settings where these injuries are most likely to occur; the impact of treatment delays on costs and days lost by comparing compensable claims that started as "incident only" (IO) reports with those that started as medical. Firefighting results in a high incidence of occupational injury. The National Fire Protection Association estimated that 65,880 firefighter on-the-job injuries occurred in 2013. This report examined the prevalence and characteristics of occupational injuries among Austin firefighters to identify areas where occupational health nurses could take a more proactive approach to care. Data were coded from 472 First Report of Injury forms filed by Austin firefighters in 2013. Seventy-two percent of injury reports started as IO, meaning no intent to seek medical treatment; however, 14% ( $n = 68$ ) were later converted to medical care. On average, compensable claims that started as IO cost US\$1,437 more and had 39.6 more hours lost than claims started as medical and were more likely to occur for training and exercise injuries involving the abdomen, foot, hip, and groin. Overall, the major injury-producing activities were fitness exercises (27%), dispatched incidents (23%), and training (17%). Weight-lifting exercises had 4 times the cost and days lost than all other exercise injuries combined. Higher costs/days lost for nonexercise injuries involving lifting/lowering or pushing/pulling suggest moving heavy objects as a possible common factor across