THE NIOSH *TOTAL WORKER HEALTH*® PROGRAM AND OPPORTUNITIES FOR PROMOTING HEALTHY SLEEP AND REDUCING RISKS FOR FATIGUE

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Background: To date, traditional occupational safety and health protection programs have primarily concentrated on ensuring that work is safe and that workers are protected from the harms that arise from work itself. Total Worker Health® (TWH) aims for a holistic understanding of the relationship between work, safety, and health. As such, it is defined as policies, programs, and practices that integrate protection from work-related safety and health hazards with promotion of injury and illness prevention efforts to advance worker well-being. A TWH approach advocates for the integration of all organizational policies, programs and practices that contribute to worker safety, health and well-being, including those relevant to the control of hazards and exposures, the organization of work, compensation and benefits, built environment supports, leadership, changing workforce demographics, policy issues, and community supports.

TWH explores opportunities to not only protect workers, but also advance their health and well-being by targeting the conditions of work. Scientific evidence now supports that risk factors in the workplace can contribute to health problems previously considered unrelated to work. For instance, organization of work, including scheduling, flexibility, and autonomy has been shown to be associated with job stress, which is linked with sleep, fatigue, and cardiovascular disease issues. Of particular concern are trends toward shift work, long work hours, work intensification, and nonstandard employment relationships, which have been found to be associated with negative safety and health outcomes, affecting both the work and non-work lives of workers and their families.

Problem: Worker fatigue is increasingly seen as an important occupational health concern. Although sleeping 7 to 8 hours a night is linked with a wide range of better health and safety outcomes, the percentage of American civilian workers reporting 6 or fewer hours of sleep per day has increased from 24% in the 1980s to 30% in the 2000s (Luckhaupt, Tak, & Calvert 2009). Inadequate sleep has implications for individual workers (i.e., personal safety, susceptibility to illnesses, depression, obesity, etc.), as well as the health of businesses and communities, which are affected by worker errors, low productivity, and safety incidents such as industrial disasters and motor vehicle crashes that can result when employees are fatigued.

Approach: Sleep has long been viewed as an individual behavior or choice. However, sleep quality is affected by a variety of complex and intersecting influences and pressures (societal, work, family, individual health conditions, etc.). Employers, for instance, influence employee health behaviors through the organization of work, which can significantly impact not only employees' on-the-job experiences, but also their off-the-job risks such as their ability to get quality sleep. Because employers design work practices that affect health, and workers spend over 1/3 of their day on average at work, the work site is an effective place to conduct health interventions that aim to reduce risks for fatigue and poor sleep quality.

The National Institute for Occupational Safety and Health (NIOSH) has long promoted the importance of designing work in such a manner that it protects workers from physical and psychological risks and believes that integrating the *protection* of worker safety and health with programs, policies and practices that *advance* worker well-being is an important strategy for building a strong economy on the foundation of safe jobs and healthy workers. In June 2011, NIOSH launched the TWH Program as an evolution of the NIOSH Steps to a Healthier US. Workforce and the NIOSH WorkLife Initiatives. Later becoming The Office for TWH in 2014, The TWH

Program supports the development and adoption of ground-breaking research and best practices of approaches that emphasize the opportunities to sustain and improve worker safety and health through a primary focus on the workplace.

Future Considerations: This presentation/poster will highlight the foci of the NIOSH TWH Program by delineating the following elements: issues relevant to advancing worker well-being through TWH; hierarchy of controls applied to NIOSH TWH; evidence-base and emerging research; partnership activities and opportunities for collaboration; practice and capacity-building outputs and activities; and future directions of the NIOSH TWH Program. Due to its vast effects on employee safety and health, we will focus on fatigue and sleep quality as a critical health risk in need of additional research attention and one that would especially benefit from a TWH approach, given the intersection between work design and worker behaviors that influence risk for fatigue. We will briefly review the scientific evidence describing the societal, organizational and individual factors that represent risks for employee fatigue. Opportunities for promoting healthy sleep and reducing risks for fatigue will be discussed in the context of a TWH framework, with special attention to work organization issues.

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