Section I:

Summary: The states in our region suffer from higher burdens of occupational injury and illness, as well as high rates of unhealthy behaviors. Furthermore, many employers in our area are small with limited resources and include industries that have been underserved by the occupational safety and health profession (e.g., construction, agriculture). Additionally, changing workplace characteristics put workers at risk (e.g., increase in part-time work, sedentary work). The Midwest Center for a Healthier Workforce expands the currently funded Healthier Workforce Center for Excellence, to create a regional Total Worker Health® Center of Excellence serving Federal Region VII (Iowa, Nebraska, Kansas, Missouri). It is a collaboration between the University of Iowa, Washington University in St. Louis, and two Total Worker Health® Affiliates, the Nebraska Safety Council and the International Brotherhood of Boilermakers. The Midwest Center brings together an interdisciplinary team of researchers and advisors. This expertise will allow us to design, implement, and evaluate programs, practices, and policies that can be tailored to occupational groups with changing needs and high burdens of adverse health effects, with a continued emphasis on meeting the needs of small employers and urban and rural populations in our states.

Relevance: There is a critical need for Total Worker Health® in the Midwest. The states in our region suffer from higher burdens of occupational injury and illness, as well as high rates of unhealthy behaviors. The Midwest Center for a Healthier Workforce expands the currently funded Healthier Workforce Center for Excellence, to create a regional Total Worker Health®, with a continued emphasis on meeting the needs of small employers and urban and rural populations in our states.

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Center web link: [http://HealthierWorkforceCenter.org](http://HealthierWorkforceCenter.org)
Section II:

Total Worker Health® Methods Workshop
How can we ensure that Total Worker Health research is appropriate and effective? In March 2017, the Healthier Workforce Center of the Midwest hosted a Total Worker Health (THW) Research Methodology Workshop which included national experts from NIOSH, TWH centers and affiliates. The meeting was held in response to recommendations from the Independent Panel of the Pathways to Prevention (P2P) workshop, “Total Worker Health: What's Work Got to Do with It?” and goals provided in the National Total Worker Health Agenda. Experts reviewed current methodological approaches and limitations to TWH-related research and explored methods that have the most promise to advance the scientific evidence-base to develop a set of recommendations to guide the design of future TWH studies. Proceedings from the meeting will be submitted to the *Journal of Occupational and Environmental Health*.

Health and Safety Survey of Midwest Small Businesses
While the majority of employers in the US consist of small businesses, they have received less attention from occupational safety and health and Total Worker Health® practitioners. Based on the Institute of Medicine’s Employee Total Health Management model, a foundational model for TWH, statewide surveys and focus groups of Iowa employers (Merchant et al., 2013; Merchant et al., 2014) identified the health and safety practices and needs of workplaces and examined their burden on employers and employees and the corresponding impact on rising healthcare costs, productivity, and, most importantly, worker health and well-being. In 2016-2017, we conducted a modified version of the survey with small employers (employees <250) not only in Iowa but throughout Federal Region VII (Iowa, Kansas, Nebraska and Missouri). Federal Region VII disproportionately suffer from higher burdens of occupational injury and illness, as well as high rates of unhealthy behaviors compared to other regions of the country. Results suggested the vast majority of small employers have adopted at least one safety and health program or policy, reported good employee participation in program development, and are evaluating participation and some outcomes. However, there was a reported lack of support for both safety and health programs from management, and organizations were either in pre-contemplation or maintenance stages of change regarding the adoption of programs. In other words, few employers are contemplating or actively preparing to make additional changes to their safety and health programs. In comparing the 2012 data with the current data collection, Iowa did see a significant rise in the adoption of programs addressing safety, wellness, and behavioral health. Despite the adoption of programs that have some characteristics of TWH, survey results showed lack of awareness in the term “Total Worker Health.” Results from this study are forthcoming in a new book, *Total Worker Health*, edited by John Howard, Casey Chosewood, Anita Schill, Heidi Hudson, and Sarah Tamers of NIOSH.

Partnership with Nebraska Safety Council
The Nebraska Safety Council / WorkWell, a NIOSH Total Worker Health affiliate and Healthier Workforce Center partner, is actively integrating Total Worker Health concepts into their safety & wellness courses and materials, presentation, and symposiums (“The Worker Safety and Health 360°”). A new integrated health and safety risk and culture assessment tool will soon be available for all members. This instrument will also encourage employers to integrate safety & wellness initiatives. The Nebraska Safety Council/Workwell is also spearheading efforts to integrate Total Worker Health criterion into the Nebraska Governor's Wellness Award program.
Health and Safety Survey of Construction Apprentices

Construction is among the most hazardous industries in the US, with high rates of fatal and non-fatal injuries. Safety in construction is complicated due to rapidly changing work environments, unique hazards of the industry, and the organizational issues of coordinating interactions between multiple contractors. In addition to high rates of work injury, construction workers are more likely to die and to suffer from chronic diseases than other occupations. Construction workers also have higher rates of alcohol use, smoking, and other unhealthy behaviors. Since the goal is to prevent injuries and illnesses, it’s important to intervene early in construction workers’ careers. Therefore, the Healthier Workforce Center surveyed construction apprentices in order to better understand the relationships between work organization, environmental factors, health behaviors, and health outcomes. Results from more than 900 apprentices indicate high levels of job satisfaction, job security, and social support, but report high rates of musculoskeletal symptoms. Work related factors such as long commuting distance and no limits on daily working hours likely impact safety and health. Despite high smoking rates (28% are current smokers), only 55% report any restrictions on smoking at their worksites. These preliminary results highlight non-traditional worksite health risks.

Total Worker Health® Practices: Lessons From Innovative Small Enterprises

Studies of safety and health programs in workplaces are dominated by a focus on large employers. However, more than 90% of US workplaces are small. Studies by the Healthier Workforce Center in 2012, indicate that safety and health programs and policies of smaller employers lag behind larger businesses. In order to investigate this further, the Healthier Workforce Center conducted more than 30 site visits to small employers in Federal Region VII between 2014-2016 to investigate the barriers and facilitators to adopting safety and health programs. The initial round of site visits was focused on health and safety award winning small employers and then expanded to other for-profit and non-profit enterprises. Themes that emerged from the interviews, observational notes, and provided documentation indicated eight themes that smaller businesses face that impact their programs, policies and practices. These included the importance of value and return on investment, organizational factors such as management support, program design features which often focused on cheaper individually focused solutions (rather than costly changes to the workplace), the importance of engaging employees, the need for low cost-strategies, the need to evaluate, and the integration of safety and health programs by default (due to low budget and lower number of employees who could not be specialized).

Missing Pieces in the Employee Well-being Puzzle: A New Employer Guide

Through a community-based pilot project grant funded by the Healthier Workforce Center of the Midwest, the St. Louis Area Business Health Coalition (BHC) recently created and released the Total Worker Health® Employer Guide. It includes Total Worker Health (TWH) education and resources for employers to address topics including workplace hazards, interpersonal relationships, the organization of work, professional development, and more. The guide was debuted during the BHC Spring Forum where TWH topics were presented to over 150 business and wellness leaders. Initial feedback on the employer guide has been positive, with two-thirds of surveyed attendees indicating that they are likely or very likely to implement TWH approaches in their workplace or client’s workplace. Lauren Schulte, Senior Manager of Wellness Services for the St. Louis Area Business Health Coalition and Healthier Workforce
Center of the Midwest advisory board member said, “Over the last several decades, employers have seen an unprecedented shift in the way in which work tasks and teams are organized due to changes in technology, the economy, and generational expectations. As organizations look for strategies to help employees thrive in the modern work environment, Total Worker Health® research will continue to provide the scientific support and actionable resources necessary to advance well-being on-the-job.” The guide is freely available through the Healthier Workforce Center of the Midwest’s website.

**Exploring How to Impact the Health and Safety of New Correction Officers: A Study of Rural and Urban Jails**

Corrections officers face a number of safety and health challenges in both jail and prison settings. With pilot funding from the Healthier Workforce Center of the Midwest, Dr. Lisa Jaegers (Assistant Professor of Occupational Science & Occupational Therapy at St. Louis University) tracked newly hired corrections officers’ mental and physical health trends in order to determine appropriate ways to mitigate safety and health risks. Dr. Jaegers and her team recruited 280 newly hired corrections officers from urban jails and another 48 from rural jails. Results from baseline surveys suggested that corrections officers were less physically healthy than the general population, with nearly half of participants reporting missed work days in the past month because of a medical issue and nearly one-third reporting use of medication to control high blood pressure. Musculoskeletal pain was also common, particularly of the back, shoulder, and lower limbs. Participants also frequently reported feelings of depression at least 1-2 days during the previous week and being bothered by repeated, disturbing memories in the past month. Job dissatisfaction was common (>40%). Dr. Jaegers and her team then engaged with employee teams at each jail to identify potential workplace interventions. Potential areas of interventions suggested by the teams included (i) workplace culture and communication, (ii) training and safety, (iii) health, and (iv) community. Teams from urban jails believed that job stress and satisfaction could be reduced through increased respect and appreciation among co-workers and with management, while teams from rural jails believed that job stress could be positively impacted through improved staffing to better manage overcrowding. Both urban and rural teams expressed concerns with the limited availability of breaks during the workday, inconsistent practices between work shifts, and a need for more safety and health training. Results from the project have been presented at the American Occupational Therapy Annual Conference and the American Public Health Association Annual Meeting.