

Presentation Title	Place in Schedule
Global Partnerships in Total Worker Health: Lessons Emerging from Guatemala, Chile, and India	Chat 'n Chew <i>Day 2 – Wednesday May 9<sup>th</sup>, 2018 11:45 – 12:45pm</i>
Description of Presentation	Presenter Name(s) And Credentials
<p>Workers in low- and middle-income countries face risks for both non-communicable diseases and occupational injuries and illnesses. Two NIOSH TWH Centers of Excellence -- Center for Health, Work &amp; Environment (Colorado) and Center for Work, Health and Wellbeing (Massachusetts) --have developed international collaborations in Guatemala, Chile, and India to promote and explore how TWH principles can be applied in international contexts to address these risks. Three approaches will be discussed, including results from the evaluation of these interventions. In Guatemala, through partnership with a multinational agribusiness, we have systematically applied TWH principles to assess health risks and test interventions addressing the international epidemic of Chronic Kidney Disease of Unknown Origin (CKDu) as well as other, endemic worker health and safety hazards. This work has resulted in changes to the organization of work, approaches to worker protections, and to medical monitoring, with implications for high exertion labor in hot climates. We will present the implications of this work in a combined health, productivity, corporate social responsibility and business sustainability context. In Chile, through partnership with a private mutual insurance company, we have applied integrated approaches, including the SafeWell guidelines and WHO global model for action, to develop worker health and safety approaches in small and medium sized enterprises. This work has resulted in the</p>	Lee S. Newman, MD, MA <i>Center for Health, Work &amp; Environment, Colorado School of Public Health</i>
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	Jack Dennerlein, PhD <i>Northeastern University</i>
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adoption of a scalable certification for companies to attain, an audiovisual proposal, and web support platform to monitor and support implementation. In India, through partnership with institutes for public health in Mumbai, we have conducted a cluster-randomized trial in 20 manufacturing worksites, integrating occupational safety and health and tobacco control. This work has provided insights into the drivers for occupational safety and health, low level of leadership support and commitment, a resultant low level of receptivity to recommendations from industrial hygienists and significant, but marginal, impact on tobacco quit rates.

This session will conclude with a panel discussion exploring the benefits as well as limitations of an integrated approach and the connection between TWH and corporate social responsibility, the importance of understanding the social context and global trends that impact worker health and safety, as well as the opportunities and lessons learned through international partnerships.

Abstract 1: Total Worker Health® Approach to Address Chronic Kidney Disease of Unknown Origin in Guatemalan Agricultural Workers

Lee S. Newman, Claudia Asensio, Liliana Tenney  
Recent research has confirmed that workers employed by sugar cane plantations and other agribusinesses are in an international epidemic of chronic kidney disease of unknown origin (CKDu), also referred to as Mesoamerican Nephropathy. CKDu largely affects working age men who do not have traditional causes of chronic kidney failure and who work under conditions of high heat and physical exertion in Latin America and parts of Asia. Many theories have been proffered to explain the epidemic including heat exposure, high exertion, plus other factors such as agrochemical exposures, medications, smoking, altitude, and

nutrition/beverage consumption. Beginning in 2016, the Center for Health, Work & Environment, a NIOSH Total Worker Health®

Center of Excellence, has been collaborating with a major agribusiness based in Guatemala to apply TWH principles to address

the epidemic's causes and to test interventions.

Methods: The first objective was to characterize kidney function of sugar cane workers over the course of the six-month harvest

and to identify risk factors associated with changes in kidney function in the workforce. Demographic and biological data were

collected for 332 sugar cane cutters at the beginning and end of the 2015-2016 harvest. Multivariate regression analyses were

used to assess work- and non-work-related risk factors related to declines in kidney function. The second objective was to repeat

this study in a larger cohort (n =517) that was introduced to a health promotion intervention to optimize education and incentivize

adherence to hydration, rest, and shade recommendations, including more extensive biomonitoring for muscle injury, assessment

of meteorologic risk factors, more detailed assessment of both work- and non-work-related risk factors, and measures of

productivity.

Results: A decline in kidney function was observed in 36% of participants in the first season of our study.

Interestingly, we

observed that nearly two thirds of workers showed stability or improvement in kidney function during the season. Risk factors

associated with kidney injury included assignment to particular plantation worksites, being a local (versus Highlands, seasonal

migrant) worker, and current smoking habit. In a subsequent study during the 2016-2017 harvest season, with introduction of a set

of TWH interventions, we observed a drop in the prevalence and six-month incidence of abnormal kidney function. Incentives to

maximize hydration helped, but did not fully eliminate, the risk of acute and chronic kidney injury. Additional risk factors in the second season included use of non-steroidal anti-inflammatory medications (NSAIDs), tobacco use, and the amount of sugar cane cut per day. Those who cut the most cane early in the season were at significantly increased risk of a >20% decline in kidney function across season and of leaving the workforce early. Conclusions: Both work- and non-work related factors appear to be contributing to the risk of both acute and chronic kidney disease (CKDu). This session will discuss how these results led the agribusiness to make modifications in work practices, worker and supervisor education, monitoring, nutrition, hydration, and incentive programs to mitigate risks to worker health, safety and well-being. We will discuss the role of corporate social responsibility and sustainability goals in a Total Worker Health context.

Abstract 2:

Integrated approaches for safe and healthy companies in Chile – knowledge transfer and exchange with Mutual de Seguridad, CChC

Jack Dennerlein, PhD and Ivan Silva, MD

Government policies can have a direct impact on how integrated approaches can be disseminated and adopted by companies.

This impact on adoption of these social and political factors are a key component of the Center for Work, Health, and Wellbeing's conceptual framework.

Chilean Law number 16.744 providing social insurance against risk of work accidents and occupational diseases is an exemplar

of how social policy impacts organizational programs and practices concerning worker wellbeing. The social insurance is

administered by public (1) and private (3) Mutual. The insurance provides two basic services for their clients.

They provide risk

prevention benefits including technical assistance, courses and training, guidelines, and supervision programs for both companies and workers' health. These insurance companies also provide medical benefits such as medical assistance, surgery, hospital, physical rehabilitation, and professional re-education. Mutual de Seguridad, CChC is one of the private mutual insurance companies in Chile. Mutual de Seguridad's mission is to protect the workers of its member companies against work risks by promoting safe work environments and encouraging a safety culture, as well as providing medical and economic benefits for workrelated accidents.

Within the preventive framework, Mutual has initiated efforts of disseminating integrated worker health and safety approaches for their clients. Specifically, they have developed a program called the Safe and Healthy Company that integrates occupational and personal health, whilst also preventing occupational accidents and diseases and promoting the health of a company's workers.

Their companies often want to implement integrated programs, but such programs are often contextualized in foreign realities and there is a need to translate them to the Chilean context. The Safe and Healthy Company program attempts to address these challenges. The program builds from various international resources for integrated approaches including, Healthy workplaces: a WHO global model for action, and the Harvard T.H. Chan School of Public Health's Center for Work, Health and Wellbeing's SafeWell guidelines. It frames the program to address four dimensions, Physical and Environmental Risks, Psychosocial Risk Factors, Personal Health Factors, Family and Community.

Based on a pilot study in four SMEs, Mutual has adapted their program such that it now includes a scalable certification which

companies attain, an audiovisual proposal and a web support platform to monitor and support program implementation.

Mutual recognizes the impact of building evidence base approaches for Chile. Through knowledge transfer and exchange collaborations with international research centers, they are implementing new programs such as the Safe and Healthy Company program and implementing research projects determining the effectiveness of such programs and how to fit the integrated approach into diverse types of companies within the context of local policies and cultural aspects.