| Presentation Title | Place in Schedule |
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| Partnering into Practice: Research-Practice Partnerships for Total Worker Health® | Plenary Session 4<br>*Day 3 – Thursday*<br>*May 10th, 2018*<br>*10:30-11:00am* |

| Description of Presentation | Presenter Name(s) And Credentials |
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| 1. Title: Partnering on tools to improve worker safety, health, and well-being<br>Background<br>The adoption of Total Worker Health® approaches to improve worker safety, health, and well-being is a goal of the National Institute for Occupational Safety and Health Total Worker Health Initiative (TWH).<br>The Harvard T.H. Chan School of Public Health Center for Work, Health, and Well-being (the Center) collaborates with partners in different types of organizations to research the effectiveness of using integrated approaches to worker safety, health, and well-being (integrated approaches). We realized that organizations are often unclear as to how to integrate systems-level operations to improve employer, as well as employee safety, health, and well-being outcomes. Practical worksite tools are necessary both to encourage adoption and sustain implementation of integrated approaches.<br>Purpose<br>This presentation will describe tools recently developed in collaboration with organizational partners and plans for additional tools under development.<br>Methods<br>Tools were developed collaboratively with partners to address specific questions that arose during research projects using integrated approaches. The questions included: What are integrated approaches to worker safety, health, and well-being; how do we evaluate the extent to which an organization implements them, and how do we implement them?<br>Description of tools built with partners<br>What is it? We collaborated with commercial vendors, a health care institution, and a manufacturing | Glorian Sorensen, PhD, MPH<br>*Harvard Chan School of Public Health Center for Work, Health and Wellbeing Dana-Farber Cancer Institute* |
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| | Nico Pronk, PhD<br>*HealthPartners Institute, HealthPartners, and Harvard University* |
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worksite to recently publish Implementation Guidelines (the Guidelines), available at: http://centerforworkhealth.sph.harvard.edu/. In the Guidelines, we describe an integrated approach as a management system approach to worker safety, health, and well-being that is shaped by employee input and participation. It has six characteristics: leadership commitment; policies, programs and practices focused on positive working conditions; participation from organizational stakeholders; comprehensive and collaborative strategies; adherence to regulations and ethical norms; and data-driven change. Our partners have helped us hone our approaches and tools to make them relevant for practitioners

How do we evaluate the extent to which an organization implements it? While the Guidelines describe the approach, colleagues and research collaborators encouraged us to develop a tool representing indicators of organizations that use integrated approaches. We partnered with a commercial health vendor, as well as a large government agency to validate these indicators of integration. These indicators have recently evolved into a new measure using the six characteristics of an integrated approach outlined above. It measures effective workplace organizational policies and practices that focus on working conditions and organizational supports of worker safety, health, and well-being.

How do we do it? The 2017 Implementation Guidelines outline a process to assist organizations to implement organizational policies and practices that create and sustain positive working conditions as an effective way to improve employer and employee outcomes. Our partners' experiences are used throughout the Guidelines to exemplify how they implemented integrated approaches.

Additional tools under development include trainings and technical assistance to accompany the Implementation Guidelines. These tools will also be developed in collaboration and tested with vendors and other organizations.

Conclusion

Partnering with organizations can produce evidence-based tools that they can use to improve their

practice of TWH.

2. Title: Partnering in Practice: Multi-Level Assessments in Total Worker Health

An integrated Total Worker Health (TWH) assessment needs to evaluate aspects of health, safety, and well-being: among employees; of organizational policies, programs, and practices; and of the physical work environment. However, few practical tools exist to assess worksite and worker health, safety, and well-being. The Center for Work, Health, and Well-Being (CWHW) partnered with a health promotion vendor (HealthPartners Inc.) to assess the feasibility, acceptability, and preliminary outcomes of an intervention using TWH approaches. For the study's evaluation component, investigators developed and piloted several TWH assessment tools, including scorecards, to use in small- to medium-sized manufacturing facilities. The assessment tools address worker and worksite health, safety, and wellbeing and include: 1) the Occupational health and safety assessment tool (assesses worksite physical environment and policies; 2) Dimensions of integrated worksite health (assesses organizational policies, programs, and practices related to workplace health, safety, and wellbeing); and 3) HealthPartners health assessment (evaluates worker health, safety, and well-being). The Health, Safety, and Well-being Feedback Report will also be discussed.The assessment tools studied were found to be feasible, meaningful, and acceptable to companies in the study. As a follow-up analysis based on this work, we conducted an investigation designed to show the association between workplace climates (perceived worker safety and well-being) and worker and employer outcomes. Cross-sectional data used for the analysis were collected as part of an employee health risk assessment (HA) offered at 3 small-to-medium sized Midwestern manufacturing companies in 2014 (n=959; 53% response rate). Of the five worker health behaviors considered, physical activity (OR=1.56; 95% CI=1.09-2.22) and healthy sleep (OR=1.82; 95% CI=1.35-2.45) were the only variables for which significant relationships ($p < .05$) were found with workplace safety climate. Healthy sleep was

found to relate marginally (p=.058) to workplace HWB climate (OR= 1.32; 95%CI=0.99-1.76). Of the eight worker outcome variables considered, nearly all were associated with the two climate variables (safety climate and health and well-being climate). Though no effects were identified for physical and emotional abuse outcomes, climate variables were related to less depression (OR=0.70; 95% CI=0.52-0.92), higher job satisfaction (OR=3.28; 95% CI=2.27-4.73), higher life satisfaction (OR=3.57; 95% CI=2.53-5.03), less frequency of back pain (OR=0.63; 95% CI=0.47-0.84), less daily impact of back pain (OR=0.67 ; 95% CI=0.50-0.89) and higher self-perceived general health (OR=1.92 (95% CI=1.43-2.59). Two different indicators of productivity were considered, the WLQ and the WPAI. Using the WPAI we found that the odds that an employee will experience productivity loss are lower for those who report a strong culture of worksite safety (OR= .54; 95%CI=0.39-0.75) and culture of HWB (OR=.49; 95%CI=0.36-0.68). The short form WLQ was not associated with either climate variable.

Multi-level assessments allow for the generation of new insights into TWH relationships that appear to be actionable for companies.

3. Title: Research in the Corporate Setting – Partnering and Navigating the Different Worlds

Statement of the Challenge: Partnerships between businesses and universities are not new, but have become especially relevant due to the need for interdisciplinary approaches to solve problems. In addition, global economic forces make "speed to market" a critical imperative for both academic findings and business products.

We present a case study of the challenges, successes, and learnings from the research partnership between Sodexo, an international Fortune 500 company with over 430,000 employees and the Harvard T.H. Chan School of Public Health Center for Work, Health and Well-Being (Harvard Center). The two stakeholders in this partnership experienced some of the traditional challenges that are common in the corporate-academic partnership sphere, such as financial implications of research time on the business,

contractual matters, politics of the academic and business institutions, stakeholder buy-in, and
understanding each institution's organizational priorities. This case study presents how the teams from
both institutions worked together in the first year of the study to conceptualize and develop an
intervention focusing on working conditions to improve the safety, health and wellbeing of low-income
food service workers.

Methods and approaches: Case study of challenges, solutions and successes achieved in the first year
of this research collaborative. Based on the Harvard Center's key characteristics of an integrated
approach, our collaborative efforts focused mainly on:
· Aligning the intervention with Sodexo's organizational and business objectives
· Focusing on working conditions – by conducting focus groups and interviews to understand how
working conditions, such as job demands and supervisor support, can influence worker health, safety and
wellbeing and can be addressed in an organizational intervention

Intervention: The research partnership is designing an integrated intervention for low-income food service
workers that will promote positive working conditions to reduce muscular skeletal disorders (MSDs),
improve employee wellbeing and job satisfaction

Participants: Global Vice President for Research for Corporate Services plus District- and site-level
managers at Sodexo; Principal and co-investigators at the Harvard Center

Outcomes: To address challenges, partners engaged in open dialogue to explain the origin of
perspectives and rationales; having both academics, practitioners, and worksite supervisors and workers
provide their frame of reference and revisiting areas of potential discomfort sometimes in smaller groups.
Solutions developed by the partnership included adjusting how we conducted focus groups and
interviews in worksites to accommodate very short time frames; and conducting partnership calls and
updates with the larger team and planning for smaller break-out groups based on topic.

Practical implications: By drawing on the strengths and assets of each partner, the expertise and
bandwidth to engage in worksite intervention research is enhanced. For corporations, academic partners
can bring credibility and tools to the intervention development process. Corporations can in turn provide
access to low-wage workers and the opportunity to work with stakeholders at multiple levels of the
organization to improve the working conditions.

4. Title: Partnering with the Boston Fire Department and Firefighter Union to Improve Fire Station
Working Conditions

Background: Over the last two years, the Harvard T.H. Chan School of Public Health Center for Work,
Health, and Well-being (the Center) has been collaborating with the Boston Fire Department (BFD) and
the Boston Firefighters Local 718 Union to address cancer prevention among their fire fighters. The goals
of this presentation are to describe the development of our partnership, and to provide an overview of our
current research agenda, including presentation of preliminary findings.

Approach: The BFD originally contacted the Center due to concerns over high rates of cancer among
their firefighters. We explored common goals during a series of meetings with the BFD and Union where
we listened to their concerns and priorities, described our research expertise and interests, discussed
relevant scientific literature, and developed a shared research agenda. The overall goal of the agenda is
to examine how organizational policies and practices at the fire station can promote supportive working
conditions, which closely aligns with the Center's conceptual model. We also used the Center's model to
help guide specific research questions. For example, our first research endeavor involved a small mixed
methods pilot in Boston fire stations, where we conducted air quality assessments and key informant
interviews with fire captains and lieutenants to learn about the health and safety policies and programs at
the fire station.

Research findings: In the pilot, we found that contaminant levels were higher in the truck bays
compared

to the station kitchens or outside measurements, and that levels in the truck bays varied considerably throughout the day. Building age, station layout, and ventilation appeared to impact contaminant levels in the fire station. Additionally, qualitative data revealed several key themes of the nature of this occupation, including: 24-hour shift schedules; strong sense of social cohesion, and brotherhood; and high-stress levels. The pilot also helped to establish a strong working relationship with the BFD and Union and identified areas for further research.

Conclusions: The Center's conceptual model provided an evidence-based tool that was used in the early stages of our partnership development. It provided a framework to discuss concrete research questions and strategies that focused on the conditions of work in relation to policies and programs, and allowed us to find common goals with labor and management. Finally, the results of our pilot provide a first step in understanding how the fire station working conditions may influence cancer risk.