Boakye-Dankwa E, Punnett L, Gore R, Kernan L, & ProCare Research Team (Oct 2014) Organizational features related to quality of worker and resident experience in nursing homes

**Background:** Workers and residents in nursing homes share a common environment. Workers’ wellbeing is reflected in a variety of indicators, ranging from the rate of work-related injury, to engagement in decision-making, to employee retention rates. The quality of residents’ experience may be measured through the frequency of adverse outcomes (e.g., falls, pressure ulcers) as well as expressed satisfaction. However, there has been little empirical examination of whether workers’ and residents’ outcomes are correlated, nor whether there are leading indicators that could motivate early intervention by corporate managers. In this study, our goal was to identify those characteristics that distinguish nursing homes from each other in terms workers’ and residents’ experiences.

**Method:** The study population is 200 skilled nursing facilities (SNF’s) in 13 states, owned or jointly managed by one corporation. We extracted 10 organizational characteristics for each SNF from corporate and Center for Medicare and Medicaid Services (CMS) data files. For these preliminary analyses, we used data only for 2012. We examined all pair-wise correlation coefficients and then employed cluster analysis (k-means) to group clusters without any a priori hypothesis. Centers are clustered so that they are relatively homogeneous within their respective clusters and heterogeneous between clusters. Analyses were conducted with SAS 9.4.

**Results:** K-means partitioned the data into 3 clusters. Cluster 1, cluster 2, and cluster 3 with respective cluster size 60, 52, and 88. Overall, cluster 3, the largest group comprised centers with most favorable employee characteristics and lowest residents’ adverse outcomes. Cluster 2, had the least favorable characteristics. Finally, cluster 1 had highest participation in a corporate foundation program designed to assist workers in financial need.

**Conclusions:** In general, across all 3 groups, when nursing aides retention and staffing were higher, rate of residents adverse clinical outcomes were lower. Future studies will add more variables and data for more years, and will examine the cluster solution for stability over time (back to 2003). This exploratory analysis has generated some hypotheses for further analysis, such as whether nursing aides retention predicts rate of resident adverse outcome over time.

El Ghaziri M & Cherniack M (Oct 2014) A tale of two intervention approaches: Towards Total Worker Health™ within a correctional workforce

**Background:** Correctional officers (COs) begin their careers physically fit; within three years of employment, key health indicators (obesity, hypertension, and depression) mirrored COs tenured >15 years. Costs have increased because of COs who are on leave without pay or have workers’ compensation claims. Health Improvement Though Employee Control II (HITEC II) is a participatory action research (PAR) intervention study of CO health and quality of worklife. In the first three years of the program, there was a clear preference for participatory approaches to interventions in comparison with top-down approaches. HITEC II incorporates this experience by comparing two
participatory approaches to improving the health of COs and staff: 1) multi-representative *kaizen event teams (KET)* and 2) a CO-directed Design Team (DT) that borrows from participatory ergonomics.

**Method:** Current results are based on 6 years of accumulated data. COs are assessed at multiple points by questionnaire and physical performance testing. Physical and psychosocial exposures, as well as health indicators, performance and lifestyle factors have been compared cross-sectionally at baseline (2008, $N=198$) and in the most recent test period (2013, $N=326$). Data on individuals captured in 2008 and 2013 are presented to illustrate health pattern changes. Repeated measures, ANOVAs and Chi square tests are used to look at differences between sites, between intervention type and participation rates, and between the two time points.

In order to evaluate the effectiveness of the two approaches, workers’ compensation claims from two prisons, one with the KET and one with the DT interventions, will be compared internally, with comparable facilities (control sites), and with overall Connecticut DOC workers compensation claims. The number and scope of interventions, as well as their resource utilization and participation rates, will also be compared across sites.

In addition to the survey results, the presentation will describe the structure and implementation of the two participatory approaches. The interventions focus on four general areas.


**Results:** More than half of the participants are >40 year of age. At baseline, the majority was obese and had elevated cardiovascular risk based on BMI (30.23± 5.48), percent body fat index (26.4±7.5), and blood pressure (systolic: 139.6±16.8 mmHg; diastolic: 82.7±11.5 mmHg). Alcohol use, tobacco chewing (smoking replacement), and sleeping <6 hours were common. As designed, the DT has met 3x more frequently than the KET, with greater team attendance. The KET incorporates managers and has had superior access to resources. The focus of the two teams initially was on indoor air-quality, noise, and weight loss. An overview of the results from the two teams’ interventions will be presented along with the challenges to and successes of each approach.

**Conclusion:** Two participatory interventions are under analysis. They will guide practitioners and researchers towards interventions for enhancing health status and decreasing work-related health risks of COs.


**Background:** Health innovations are adopted very rarely, even with well-coordinated dissemination campaigns. Evaluating the reasons why an innovation is or is not adopted, and understanding the barriers to implementation can make it possible to adapt the innovation and thereby advance translation of research to practice. Researchers at the Center for Promotion of Health in the New England Workplace (CPH-NEW) recently launched a coordinated dissemination effort for a new Healthy Workplace Participatory Program (HWPP) online toolkit. The HWPP toolkit is designed for workplace health or safety professionals to implement integrated health protection, health promotion programs for achieving Total Worker Health™.
The toolkit materials were field tested in four varied employer organizations with good results. Trained worksite health promotion practitioners from the research team served as program facilitators, using prototypes of the HWPP Toolkit to guide program implementation (i.e., committee formation, needs assessment, intervention planning, and evaluation). The toolkit materials were refined throughout the study period, re-formatted for web-based delivery, beta-tested, and are now freely available on the CPH-NEW website. Webinar training seminars on the program toolkit materials have been well-attended by professionals who were previously unfamiliar with the program (XX participants to date).

The current study evaluates the use of the toolkit materials by practitioners from different sectors and disciplines who are new to the program. The study is designed to learn how practitioners use the program materials in practice, and to measure satisfaction, ease of use, perceptions of program attributes, barriers/facilitators to implementation of a participatory program, and feasibility for generating integrated programs or interventions. This knowledge is vital to evaluating the current dissemination strategy, and for evaluating the need for further toolkit revisions that would improve feasibility, adoption and effectiveness of the program.

**Method:** Participants of HWPP training webinars were surveyed using a brief, web-based questionnaire within 48 hours of webinar attendance. The survey measured perceptions of the HWPP materials on a range of program implementation predictors and outcomes, including perceptions of the HWPP program itself. Participants who indicated they intended to use the HWPP materials will receive a follow up survey to identify whether they have used one or more of the HWPP tool. This survey will be re-administered at nine months follow up (or sooner if the participant expresses they plan to discontinue implementation). A baseline interview will be administered with materials users to collect information about current workplace safety, health, and wellness programs, and characteristics of the participants and host organizations that are relevant to participatory program implementation. Follow up interviews will be conducted two months, four months, six months, and nine months following the baseline interview to allow real time feedback at various stages of the program implementation process, from program committee formation through the first attempts at using the program tool designed for participatory, integrated intervention planning (i.e., the IDEAS tool). Data were collected on which toolkit materials were used, difficulties during implementation (if any), gaps in knowledge or skills when using the materials (if any), and recommendations for toolkit revisions.

**Results:** We will report participant perceptions of the materials before and after implementation regarding feasibility, acceptability, relative advantage, adaptability, and effectiveness. Barriers/obstacles to successful implementation of specific toolkit materials will be described, as well as participant recommendations for future training needs and toolkit materials revisions.

**Conclusion:** The HWPP Toolkit materials were originally field tested using trained workplace health promotion practitioners and researchers who delivered the program while also guiding the development of the program materials. This study sought to understand the experiences of a representative sample of “real world” safety and health promotion practitioners as they used the HWPP materials to implement the program without on-site support from the research team. The results will guide further refinements in the program toolkit materials and associated training, and will inform future dissemination activities to enhance the utility, adaptability, and effectiveness of the HWPP materials in practical settings.
Kurowski, A, Pransky G, & Punnett L (Oct 2014) Impact of safe resident handling programs in nursing homes on outcomes after work injury

**Background:** Manual handling of residents has resulted in excess musculoskeletal injuries among nursing home workers. Safe Resident Handling Programs (SRHPs) have been shown to be an effective strategy to reduce risk, but their impact on Return-to-Work (RTW) and on re-injury has not been evaluated. Improved RTW outcomes could potentially lead to greater adoption of SRHP practices.

**Methods:** A large nursing home corporation introduced a three-year SRHP program in 2004, including purchase of resident handling (RH) equipment for all centers, staff training, policies, and maintenance. Following three years of periodic training (first “post” period), SRHP management was transferred to the centers (second “post” period). Lost-time workers' compensation claims (WCCs) for 136 centers covered 3 years pre-SRHP and 6 years post-SRHP. Claims were assigned a time period based on center-specific program implementation date, and RH-related and back-related claims were identified. First episode of disability before RTW was calculated for each claimant, and injury recurrence was determined. These outcomes were compared over time to quantify the effect of the SRHP on RTW and re-injury.

**Results:** In 2000-2010, there were 3,263 lost-time WCCs, of which 1,308 were related to RH. A total of 998 were back claims (656 RH-related back claims). Across the 3 time periods, downward trends in length of first episode of disability were observed for all claims. However, because of an insurance company effort to close longer claims more quickly, shorter duration claims (disability < 6 months) were examined preferentially, and they showed no changes in the length of disability. An examination of recurrent claims showed reductions in recurrent RH-related claims across the three time periods which was not observed among other types of claims. Mean paid indemnity and medical costs were about 3 times higher for claimants with recurrent injuries compared to those with a single injury.

**Conclusions:** No reduction in claim length of disability could be attributed to the SRHP. However, significant reductions were observed in recurrent claims, resulting in lower costs. Since back pain is inherently recurrent, these results suggest that the SRHP helps workers to remain at work. The impact on recurrent claims was sustained even after the end of the external training program.

Lee J, Henning R, & Cherniak M. (Oct 2014) A Bayesian network approach for identifying key contributing factors to correction officer health and wellbeing

Correction officers suffer numerous health issues due to the demands of shiftwork plus some unique working conditions such as unexpected hold-over shifts and the constant threat of being attacked by inmates. These working conditions may be negatively associated with emotional and physical health outcomes as well as job performance level or workability. To promote safety and health in this population, it may be imperative to consider the complicated interactions among various psychosocial and behavioral factors of this physically and psychologically challenging job. Given the limited ability of conventional linear modeling approaches to handle uncertainty and complexity, Bayesian Network (BN) modeling was adopted. A data-driven model was built and validated in this study with a sample of 353 correction officers who participated in a field study by the Center for Promotion of Health in New England Workplace (CPH-NEW). Inputs to the model included a wide range of physical assessment data and psychosocial and behavioral variables. Results showed that...
the accuracy of the study variables’ case classification was well above the random classification level, suggesting acceptable model validity. The identified Bayesian model reveals the most probable scenario of how exhaustion from work leads to occupational stress as well as a loss of workability, and a limited ability to get regular physical exercise. These three outcomes were also inter-related with psychological factors, such as depressed mood and the lack of job engagement and work-family balance. Depressed mood served as an important “hub factor” which was directly related with most of the study variables. These results support use of the Total Worker Health™ framework for considering a wide range of factors impacting worker health and wellbeing, such as exhaustion from work and depressed mood, and suggest the need to design more integrated interventions. The results also show that a data-driven machine learning approach was able to reveal the complex interdependence of psycho-social and behavioral factors related to the occupational health and well-being of correction officers.

Mignano C & Faghri P. (Oct 2014) Underreporting of stress and negative feelings among correctional employees

**Background:** Corrections is recognized as a high stress work environment, but correctional officers have also been observed to underreport stress. The contradiction complicates the usual problems of selected responses in studies relying on self-reports. Therefore, it is important to assess the accuracy of tools currently in use to measure correctional employees’ stress and emotional health.

**Method:** To assess perceived stress, overall feelings, and health behaviors (diet, exercise, and sleep quality), the Wellsouce Health Risk Assessment (HRA) was used in a population of corrections officers. The HRA is a self-report survey has been utilized and reportedly validated for workplace health promotion. All employees at two correctional institutes were invited for voluntary participation in assessments with a total of 317 completing HRAs.

**Description of Program/Intervention:** This study sought to examine prevalence of reported stress, negative feelings (e.g. feeling blue or worthless), and positive feelings (e.g. feeling happy or calm) among correctional employees and to examine the effects of reported stress and overall feelings on health behaviors (diet, exercise, and sleep quality). The study is part of a larger prospective study addressing correctional employee health and safety.

**Results:** Descriptive statistics (frequencies and histograms) were compiled to assess prevalence of stress and both negative and positive feelings. Structural equation modeling (SEM) utilizing Mplus software was used to assess if reported stress and overall feelings affected health behaviors. Six (6) stress signals were examined. Descriptive analysis revealed that a majority of corrections employees reported no/few stress signals, with the percent reporting no stress signals ranging from 81.4- 91.2% (depending on the signal). All 6 stress signals had a large skewness (1.621 to 2.915). Similarly, a majority of participants reported infrequent negative feelings, with a large skew (skewness of -0.924 to -2.060). In contrast, reporting of positive feelings was more evenly distributed (skewness of 0.169 to -0.556). SEM analysis showed higher self-reported stress had no effect on diet or exercise quality, but negatively affected sleep quality (B=-0.23, p=0.001). Overall feelings directly affected all three health behaviors of diet (B=0.163, p=0.006), exercise (B=0.163, p=0.006), and sleep quality (B=0.318, p<0.001), with better overall feelings resulting in better health behaviors.

**Conclusions:** For a population known to have high stress levels, the low reported stress was surprising. The non-normal distribution of reported stress and negative feelings (feeling worthless
and blue) and the lack of association between reported stress and health behaviors may suggest that correctional employees underreport stress and negative emotions on a self-reported HRA survey. Correctional employees may either resist reporting true feelings or may self-censor awareness of stress and negative emotions (eg. experience “emotional numbness”). Positive feelings were more normally distributed and the analysis suggests that overall feelings is a more meaningful assessment for this population. There appears to be less inhibition toward portrayal of positive feelings than towards reporting negative “weak” feelings. Future studies should consider that the HRA and more specific stress survey instruments may be imperfect in capturing the emotional health of correctional employees. Moreover, when common available survey instruments are used, it is important to look at multiple emotional characteristics, both positive and negative.


**Background:** Employees at high stress jobs are at potential risk for overweight and obesity. Stress and emotional characteristics may effect individual’s health behaviors and ultimately affect weight status.

**Method:** Height, weight, and body mass index (BMI) were directly measured. Emotional characteristics and health habits were self-reported on a standardized and validated questionnaire designed for use in corrections. This was an observational study in which all employees at two correctional facilities were invited for voluntary participation (n=317) in a larger prospective study on corrections officer health.

**Description of program/intervention:** This study is an assessment of the relationship between six emotions and stress characteristics, health behaviors (diet, exercise, and sleep quality), and weight status among employees at two correctional facilities. The study is part of a larger prospective study addressing correctional employee health and safety.

**Results:** Measurement models were conducted creating latent variables to build structural models including mediation effects. The models were analyzed using a structural equation model approach (SEM) with MPlus software. Eighty eight percent of employees were overweight or obese (BMI ≥ 25). Those reporting more adverse emotional characteristics (higher stress) also exhibited poorer health habits (less physical activity, and poor diet). Furthermore, higher reported stress had a negative association with sleep quality (B=-0.23, p=0.001). More positive emotional characteristics were associated with better diet quality (B=0.163, p=0.006), exercise quality (B=0.322, p<0.001), and sleep quality (B=0.318, p<0.001). BMI was negatively related to diet (B=-2.167, p<0.001) and exercise quality (B=-0.129, p=0.001). BMI was also negatively associated with self-assessment of personal energy (B=-0.162, p=0.006), an effect that was mediated by exercise (B=-0.098, p=0.007) and diet (B=-0.078, p=0.002).

**Conclusions:** Sleep and stress are increasingly recognized as vital to good health. Better sleep quality and lower levels of stress help individuals feel good and function effectively, and are in accord with good physical health. Among corrections offices, poor sleep quality and high stress were independent sources of concern. There was even greater concern about excess weight being their consequence. Our results indicate that the perception of corrections as a high stress work environment seems to be confirmed by reported high stress and poor sleep quality. Our evidence
suggests that these effects contribute to unhealthy behavioral practices (poor eating patterns and lack of physical activity). Factors that contribute to being overweight or obese in corrections pose potential chronic disease and in particular to cardiovascular disease risks.


**Background**: Substantial research links job-stress in corrections with decreased personal and organizational health outcomes. Poor indoor air quality (IAQ) can also affect personal and organizational health.\(^2\) Research has suggested a potential relationship between poor IAQ and stress and that both may affect performance. Health Improvement Through Employee Control II (HITEC-II) is a NIOSH funded research project that applies a participatory action framework to the study of correctional health and wellness and explores workplace factors affecting these outcomes. Among the participatory approaches is an officer-driven Design Team (DT), centered on four major areas of concern: working environment, nutrition, fitness, and safety. The DT at a medium security-level correctional facility in Connecticut has identified indoor air quality (IAQ) and stress as major sources of concern.

**Method**: Stress and IAQ issues were recorded using the Intervention Design and Analysis Scorecard (IDEAS), a Research-to-Practice (R2P) toolkit available at [www.uml.edu/cphnewtoolkit](http://www.uml.edu/cphnewtoolkit), developed by the Center for the Promotion of Health in the New England Workplace (CPH-NEW). The IDEAS tool helps generate, evaluate, and rank planned interventions and solutions in seven major steps, which are then presented to a site steering committee and upper management for approval. An IAQ assessment, and a survey will be conducted to gain a broader perspective of correctional officers (COs) concerns relating to IAQ and stress. To increase the program's effectiveness and likelihood of adoption, we will assess relevant effectiveness outcomes (i.e., changes in perceived stress and IAQ) and implementation outcomes (i.e., adoption, cost, fidelity, penetration, sustainability; Chaudoir et al. 2013, Proctor et al. 2011).

The poster presentation will describe the DT process, the IDEAS Tool, and the five implementation outcomes from Proctor et al. 2011. The Design Team consists of nine COs who attend around specific issues that interest them; five attend regularly. HITEC-II staff are present at all DT meetings.

**Results**: There are seven planning steps in the IDEAS tool, of which two have been completed at present. Step 1 asked the DT to break down the issues of stress and IAQ to relevant sub-issues and contributing factors. Step 2 allowed DT members to identify intervention alternatives that relate to the sub-issues developed in Step 1. The sub-issues and contributing factors for IAQ and stress can be divided into exposure and performance/health outcomes. Major sub-issues of stress were: poor schedule planning, no opportunity to de-stress at work, and disciplinary action. Major sub-issues of IAQ were: heat, humidity, and dust, to which the DT attributed health issues (e.g. sinus, wheezing, asthma) absenteeism, and presenteeism. Proposed solutions included gym use during shift, stress-lounge, open doors for airflow, temperature control, and preventative maintenance. Evaluation of implementation outcomes using guidelines from Proctor et al. 2011.\(^5\) These will be presented if achieved prior to the poster presentation.

**Conclusions**: The IDEAS tool allows for ownership of, engagement with, and sustainability of proposed and implemented interventions, and could serve as a guide for other studies looking at health-based interventions in the workplace setting.
Background: Workplace health promotion (WHP) programs are relatively widespread in the employee health marketplace but effectiveness is often threatened by low participation and unsustainability. Conventional WHP programs often lack attention to working conditions contributing to poor health, with front-line employees having little say in how they are implemented. Prior workplace studies have demonstrated effectiveness of more participatory interventions to improve health, safety, and wellness in the workplace. CPH-NEW has developed and field tested an approach to intervention planning modeled after best practices in participatory ergonomics (PE) programs. Small “design teams” of front line employees collaborate with a facilitator to use ergonomic risk reduction approaches to develop integrated health protection/health promotion (“PE x HP”) interventions with. A “steering committee” of management personnel acts as a sounding board and assists with refining selected interventions developed through the design process. However, the assessment instruments and implementation protocols for this new approach were labor and time intensive, rendering them impractical in many real world settings.

Objectives: Develop a practical toolkit to support implementation of a participatory ergonomics and health promotion (“PE x HP”) program approach for Total Worker Health™. Field test the toolkit materials in four varied employer organizations to assess feasibility, ease of use, and effectiveness for designing integrated health protection/promotion interventions.

Method: Prototypes of program materials and short survey instruments were used at study sites by program facilitators with prior experience in worksite health promotion. Program start-up included evaluation of employee health/safety issues, program committee formation, and training activities. Facilitators used program tools with management and front-line employees to design interventions incorporating root causes analysis a business case approach. Process data were gathered continuously to assess materials effectiveness, ease of use, and needs for additional revisions or training. Surveys, interviews, and focus groups were collected one year after program start up.

Description of Program/Intervention: The Healthy Workplace Participatory Program toolkit provides step by step implementation guides, training materials, survey instruments, and planning tools. Two unique features of this program are the “dual committee plus facilitator” program structure, and a structured, 7-step process for participatory design of integrated interventions (the IDEAS tool). These features help to engage employees at all levels of the organization in the intervention design process, and that interventions take an integrated approach.

Results: Start-up guides were rated as helpful to facilitators; facilitation tips, group activities, and communication templates were added. The IDEAS tool underwent several iterative design changes to streamline the process and clarify instructions and worksheets. Most design team members reported high involvement and peer support. Managers reported greater awareness, improved communication, and that interventions were beneficial and innovative. Interventions and barriers/promoters of program success will be presented.
Conclusions: Field tests of the Healthy Workplace Participatory Program toolkit demonstrated the program tools and protocols were effective, acceptable, require modest time commitment, and can be adapted to a variety of site characteristics. Program materials were judged as useful for facilitating intervention planning and employee participation.

Nobrega S & Robertson M (Oct 2014) Using the Healthy Workplace Participatory Program to implement a participatory, health protection, health promotion program in your organization (pre-symposium workshop)

This workshop will introduce participants to the new CPH-NEW Healthy Workplace Participatory Program (HWPP) web-based toolkit (www.uml.edu/cphnewtoolkit). The tools provide organizations with a systematic, participatory program approach to develop integrated health, safety and wellness interventions. Participants will learn the scientific evidence underlying the program design, navigate to find key program tools, take an organizational readiness assessment survey, and practice using the IDEAS intervention planning tool for developing integrated health protection/health promotion interventions. Workshop leaders will use case studies to show how the materials can be adapted for various organizational characteristics and safety and health concerns.

By the end of the session participants will be able to:
1. Describe several unique and successful elements of the CPH-NEW Healthy Workplace Participatory Program design
2. Identify key organizational and program readiness criteria for successful implementation of a participatory program
3. Navigate the HWPP website to find resources and tools for starting or enhancing a program
4. Describe the IDEAS design process for integrated safety, health, and wellness interventions
5. Discuss how the IDEAS design process was used in knowledge based organizations with intensive computer users and new current uses


Background: Occupational health and safety (OHS) represents an important piece of the Total Worker Health puzzle. In light of this, an OHS module was developed for the CDC Worksite Health ScoreCard as part of its ongoing effort to provide evidence-based tools to assess organizational support systems for worker health and well-being. The OHS module, which is now publicly available on the CDC website, is designed to be used by organizations to identify occupational health and safety practices that impact employee health and well-being. The National Healthy Worksie Program (NHWP) provides an opportunity to examine this tool in practice across a diverse array of organizations that vary with respect to size and industrial sector.

The primary objective of this study was to take a fine-grained look at this new module in the Scorecard. Our analyses were designed to examine the prevalence of practices assessed by the OHS module of the CDC Worksite Health Scorecard among organizations participating in the NHWP, and to examine the extent to which OHS module scores are aligned with employee wellness and perceptions of safety.
**Method:** Data were derived from 88 organizations participating in the baseline phase of the NHWP, a large-scale project aimed at promoting health, reducing chronic illness, and improving productivity. NHWP participating organizations were dispersed across eight regions of the United States. The majority of organizations were from the service sector (56%) and employed less than 100 employees (55%). In addition to information about organizational practices gathered directly from employers, a total of approximately 5000 employees participated in the study by completing health and workplace assessments and taking part in biometric screenings.

The OHS module contains 11 items; each item is assigned a value of 1, 2, or 3 points, for a maximum possible total score of 22 points. Larger weights are assigned to organizational support systems that have a greater potential impact on occupational health and safety. Organizational representatives completed the module when baseline data were gathered for the NHWP. In addition, employees at each organization completed the NHWP Health and Safety Climate Survey (INPUTS) and the NHWP Employee Health Assessment (CAPTURE), and took part in biometric screenings.

**Results:** There was considerable dispersion in total scores on the OHS module among the participating organizations (M =13.6, SD = 5.2) and scores varied by organization size and industrial sector. More fine-grained analyses also revealed sector-specific patterns of low, moderate, and high-impact OHS practices currently in place. When employer OHS module scores were compared with aggregated employee-level data, significant relationships were observed between OHS module total scores and factors relating to employee wellness as well as perceptions of health and safety within the organization.

**Conclusions:** The OHS module is designed to provide organizations with guidance on types of systems to implement for the promotion of occupational health and safety. Findings from these analyses will help researchers and practitioners understand the current landscape of OHS systems employed by organizations throughout the country and provides insight into how these are linked to employee wellness and perceptions of safety in the workplace.

**Zweber Z, Henning R, Magley V, & Faghri P. (Oct 2014) Evidence for the importance of organizational health climate in employee physical and mental health**

**Background:** A healthy organization is defined as one that “maximizes the integration of worker goals for well-being and company objectives for profitability and productivity” (Sauter, Murphy, & Hurrell, 1990). Although the concept of healthy organizations has been explored theoretically, until recently the lack of sound and practical psychometric work in the area has prevented fundamental research as to what are the benefits of making an organization healthier. Using organizational health climate as one component of a healthy organization, the goal of this study is to argue for, and find evidence of, the importance of having a healthy workplace climate. Health climate is conceptualized as employee perceptions of the active support for their health and well-being from the organization, supervisors and coworkers. Consistent with the Total Worker Health perspective, health climate, encompasses support for many aspects of employee mental health, physical health and well-being both at and outside of work.

Physical health and mental health outcomes were examined as they relate to the three facets of health climate as measured by the Multi-faceted Organizational Health Climate Assessment (Zweber, Henning, & Magley, under review). Two underlying mechanisms through which these facets of health climate might affect employee health, health behavior intentions and work sense of coherence, are also explored.
Method: Data from the Center for the Promotion of Health in the New England Workplace (CPH-NEW), one of four NIOSH centers for research excellence in Total Worker Health™, were used for this study. The sample consists of survey and physical assessment data of 284 correctional officers. Variables used from the survey were health climate, health behavior intentions, work sense of coherence (work-SOC), job stress, depression, SF-12 mental, and burnout. Physical assessments included handgrip strength, blood pressure, and body fat percentage.

Results: Structural equation modeling was used to test the relationships in Figure 1. Results indicate the model has good fit and some significant indirect effects. The workgroup facet of health climate had significant indirect effects on handgrip strength and blood pressure via health behavior intentions; the workgroup and organizational facets of health climate both had a significant indirect effect on mental health via work-SOC comprehensibility.

Conclusions: The results of this study provide evidence for the importance of workplace norms for health and well-being (health climate). Although results did not show any significant direct effects on physical health, as measured with objective physical measures, significant indirect effects suggest that health climate is affecting both physical and mental health through other behavioral and psychological mechanisms. From a Total Worker Health perspective, this study provides evidence for the significant role that organizations might play in cultivating a positive climate for health that addresses multiple aspects of employee health and well-being, including interventions to improve the interactions and norms among coworkers surrounding health. Results from this study indicate that aspects of health climate may increase individual’s intentions to engage in health behaviors and decrease physical health issues. Positive aspects of health climate may also increase one’s comprehensibility of their job and, in turn increase their mental health status.

Zweber Z, Henning R, Magley V, & Faghri, P. Organizational health climate: relative contributions of work groups, supervisors and the organization to worker wellbeing

Background: One potential way that healthy organizations can impact employee health is by promoting a climate for health within the organization. Health climate has been defined as “employee perceptions of active support from upper management, as well as supervisors and coworkers, for the physical and psychological well-being of employees” (Zweber, Henning, & Magley, under review). This definition assumes three important influences on an individual’s health: the workgroup, supervisors, and the organization itself.

This definition of health climate is in line with a social ecological systems perspective that offers a framework for examining the interrelations among the environment, human behavior, and individual well-being (Stokols, 1996). For example, the ecological systems perspective suggests that employee health is simultaneously determined by an individual’s dispositions, resources, and characteristics, as well as his/her interactions with the work environment (Bronfenbrenner & Morris, 1998; Ettner & Grzywacz, 2001).

This study examines whether all three facets, the workgroup, supervisor and organization, are necessary to experience the benefits of a healthy organization, and if any facets are more strongly related to employee work-related well-being.
Method: Survey data from the Center for the Promotion of Health in the New England Workplace (CPH-NEW), one of four NIOSH centers for research excellence in Total Worker Health™, were used. The sample consisted of 284 correctional workers. Organizational health climate was assessed via 9 survey items. K-means cluster analysis was used to empirically identify groups of individuals based on the strength of the three facets of health climate.

Results: The 6-cluster solution that was chosen can be seen in Figure 1. Cluster membership was then used as a grouping variable in a discriminant function analysis of key well-being outcome variables. In the significant function, more positive scores are associated with the more positive outcomes of civility norms, work ability and general mental health, whereas more negative scores are associated with stress, burnout, and depression. Figure 2 shows the group centroids for each of the six clusters on this function. The cluster with high scores on all of the three facets is the highest on the function whereas the cluster with low scores in all three facets performs the worst. Other cluster comparisons point to the importance of the organization and workgroup facets of the organizational health climate scale. For example, clusters 1, 4, and 6 all have similar organization scores but perform differently on the function based on their levels of the other two facets.

Conclusions: Findings from this study suggest the importance of each of the proposed three facets of health climate, highlighting the importance of considering multiple levels of influence on employee health. Results indicate that the supervisor facet may be less influential than the workgroup or supervisor facets; however, strength in all three facets had the greatest positive impact on well-being. One practical implication is that organizations can benefit from evaluating all three facets of health climate separately, rather than only deriving a combined health climate score, to better target interventions to improve employee well-being and the overall health of the organization.