PROMISING AND BEST PRACTICES IN

TOTAL WORKER HEALTH™

WORKSHOP SUMMARY

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

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TOTAL WORKER HEALTH™

WORKSHOP SUMMARY

Victoria Weisfeld and Tracy A. Lustig, *Rapporteurs*

Board on Health Sciences Policy

INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

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"Knowing is not enough; we must apply.
Willing is not enough; we must do."
—Goethe

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PLANNING COMMITTEE FOR A WORKSHOP ON TOTAL WORKER HEALTH: BEST PRACTICES IN THE INTEGRATION OF OCCUPATIONAL HEALTH AND SAFETY AND HEALTH PROMOTION IN THE WORKPLACE[1]

GLORIAN SORENSEN (*Chair*), Professor, Harvard School of Public Health; and Director, Center for Community-Based Research, Dana-Farber Cancer Institute

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[1]Institute of Medicine planning committees are solely responsible for organizing the workshop, identifying topics, and choosing speakers. The responsibility for the published workshop summary rests with the workshop rapporteurs and the institution.

Reviewers

This workshop summary has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the National Research Council's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published workshop summary as sound as possible and to ensure that the workshop summary meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the process. We wish to thank the following individuals for their review of this workshop summary:

Marianne Fazen, Dallas-Fort Worth Business Group on Health
William H. Kojola, AFL-CIO (retired)
Garry Lindsay, Federal Occupational Health
James A. Merchant, The University of Iowa
Jennifer Sponsler, National Business Group on Health
Victoria Weldon, ExxonMobil

Although the reviewers listed above have provided many constructive comments and suggestions, they did not see the final draft of the workshop summary before its release. The review of this workshop summary was overseen by **Linda Hawes Clever,** California Pacific Medical Center and RENEW. Appointed by the Institute of Medicine, she was responsible for making certain that an independent examination of this workshop summary was carried out in accordance with institutional procedures and that all review comments were carefully considered.

Responsibility for the final content of this workshop summary rests entirely with the rapporteurs and the institution.

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Introduction[1]

Combined with the more traditional employer occupational safety and health protection activities are newer employment-based programs to promote better health through helping workers quit smoking, lose weight, reduce stress, or exercise more regularly. In support of these efforts, some employers have made changes in their policies and facilities to support physical activity and healthier eating, and some employers connect with community resources for health education, health fairs, and other services. From company to company, the interest in, resources for, and ability to do more for employee health and well-being vary. Employees' interest in, needs for, and priorities for these types of programs also vary.

This diverse array of activities most typically has been planned, managed, and assessed—to the extent they exist in the workplace at all—by different, often uncoordinated departments within the business entity. Some employers have reconceptualized their safety, prevention, and promotion initiatives and attempted to bring them together into a coherent whole. The National Institute for Occupational Safety and Health (NIOSH) has supported this integration, defining Total Worker Health™[2]

[1]The planning committee's role was limited to planning the workshop, and the workshop summary has been prepared by the workshop rapporteurs as a factual summary of what occurred at the workshop. Statements, recommendations, and opinions expressed are those of individual presenters and participants, and are not necessarily endorsed or verified by the Institute of Medicine, and they should not be construed as reflecting any group consensus.

[2]The National Institute for Occupational Safety and Health asserts common law trademark rights for the term *Total Worker Health*.

as "a strategy integrating occupational safety and health protection with health promotion to prevent worker injury and illness and to advance health and well-being."[3]

In May 2014, with support from NIOSH, the Institute of Medicine (IOM) organized a 1-day workshop on Total Worker Health. Rather than a review of published literature, this workshop sought input from a wide variety of on-the-ground stakeholders regarding their experiences with integrating occupational safety and health protection with health promotion in the workplace. Box 1-1 lists the workshop's formal statement of task.

BOX 1-1
Statement of Task

An ad hoc planning committee of the Institute of Medicine will develop and conduct a public workshop focused on identifying prevalent and best practices in programs that integrate occupational safety and health protection with health promotion in small, medium, and large workplaces; employer and employee associations; academia; government agencies; and other stakeholder groups.

The workshop will feature invited presentations and discussions on:

- Best or promising practices associated with the design, implementation, and evaluation of an integrated approach to worker health, including factors associated with successful implementation;
- Barriers to implementing integrated occupational safety and health protection and health promotion programs and ideas for overcoming those barriers; and
- Measures being used or considered for evaluating the effectiveness of programs that integrate occupational safety and health protection with health promotion.

[3]For more information about the NIOSH Total Worker Health program, see http://www.cdc.gov/niosh/twh (accessed July 21, 2014).

An ad hoc committee, chaired by Glorian Sorensen, Professor of Social and Behavioral Sciences, Harvard School of Public Health, and Vice President for Faculty Development, Dana-Farber Cancer Institute,[4] developed the workshop agenda. Effective implementation of good practices was a prime concern of the committee, not only through the identification of implementation barriers, but ways to address and even overcome them. Committee members placed an additional emphasis on the importance of program evaluation. The committee was careful to ensure the agenda offered a range of perspectives, and to include programs operating among employers of different sizes and types of industries. As a result, speakers and panelists represented both blue- and white-collar settings, including government, health care, manufacturing, energy, and chemicals.

BACKGROUND

A wide range of common approaches is used within worksites to promote and protect worker health. Sorensen noted that, by and large, these can be divided into the following four principal categories:

1. Supporting healthy behavior (e.g., health screening, creating a health-promoting environment),
2. Preventing work-related illnesses and injuries (e.g., controlling workplace hazards, improved ergonomics),
3. Reducing work-related stress (e.g., fostering social support among workers, supporting work-family balance through flexible schedules), and
4. Expanding work-related resources and opportunities (e.g., medical benefits, paid sick and personal leave, child and elder care services, job training, adequate wages).

[4]Dr. Sorensen is also the principal investigator for one of four NIOSH Centers of Excellence for Total Worker Health, which are: the Center for the Promotion of Health in the New England Workplace (at the Universities of Connecticut and Massachusetts); the Oregon Healthy Workforce Center; the University of Iowa Healthier Workforce Center for Excellence; and the Harvard School of Public Health Center for Work, Health, and Well-Being. See more information at http://www.cdc.gov/niosh/twh/centers.html (accessed July 21, 2014).

Typically, these strategies are managed in a very siloed fashion by people with different professional training, she said. For example, illness and injury prevention may be the domain of workplace safety officers trained in industrial hygiene, engineering, or occupational safety. Reducing work-related stress—if it is anyone's explicit responsibility—may be delegated to frontline managers, while benefits expansion falls within the purview of human resources professionals and departments. Total Worker Health programs, by contrast, attempt to integrate these activities and skills.

The NIOSH Total Worker Health Centers of Excellence focus on melding occupational safety and health protection with health promotion activities, Sorensen said. As a result, instead of assuming that individual workers are responsible for their own health-related behavior—as in traditional health promotion programs—and that management is responsible for safety and health protection, under an integrated approach, the responsibility is shared. This type of rethinking changes many underlying assumptions about planning and implementing potential programmatic innovations for employers.

A range of research has looked at the benefits of integrated approaches, Sorensen said, in terms of behavior change, employee engagement broadly, reductions in occupational injury and disability rates, stronger health and safety programs, and the potential for better health. These improvements, in turn, have the potential to improve the company's bottom line, by reducing various kinds of costs and increasing worker performance and productivity.

John Howard, Director of NIOSH, described the agency's history and vision for Total Worker Health. Traditionally, he told workshop participants, public health programs for workers were separated from a community's other health-related initiatives, effectively partitioning people into parts. Although in occupational safety and health programs, the bedrock purpose is to protect workers from all sorts of workplace hazards—physical, chemical, biological, and radiological—the idea of integrating health promotion with these traditional activities was fundamental to NIOSH's 2004 program, Steps to a Healthier U.S. Workforce, which has evolved into the Total Worker Health initiative.[5]

[5]For more on the history of the Total Worker Health program, see http://www.cdc.gov/niosh/twh/history.html (accessed July 18, 2014).

A decade into the program now, NIOSH is considering whether it is on the right track with this initiative, and the extent to which employers—and which kinds of employers—are picking up on the idea. Howard recognized the need to learn from what is happening in workplaces in "the real world," and said NIOSH has the opportunity to realign efforts. He welcomed "a robust critical dialogue about all of these issues." Therefore, while the workshop focused on examining best and promising practices in pursuing Total Worker Health, several participants provided critiques of the Total Worker Health initiative overall, citing the need to focus on safety issues first before adding health promotion programs.

ORGANIZATION OF THE SUMMARY REPORT

This workshop summary is limited to describing the presentations given and general topics discussed during the workshop itself. Overall, each speaker's presentation and the ensuing discussions are captured in a variety of ways. For panels, remarks made by individual speakers, as well as topics raised and responses given during the discussion periods, are presented by topic area. Remarks are also not necessarily organized in the same order as the actual workshop, but have been rearranged to provide a better flow for the readers of this workshop summary.

Following this introductory chapter, Chapter 2 presents one personal experience of pursuing Total Worker Health in the "real world." Chapter 3 explores the value in pursuing Total Worker Health, including discussion of how to define success and which metrics to use. Chapter 4 looks at the experiences of larger businesses, while Chapter 5 considers the experiences of small- and medium-sized businesses. Finally, Chapter 6 describes the reflections and reactions of individual speakers and participants to the workshop overall.

2

Total Worker Health in the Real World

A healthier workforce will be a safer workforce. And a safer workforce will be a healthier workforce.
—Robert McLellan

Robert McLellan, Medical Director of the Live Well/Work Well program[1] at Dartmouth-Hitchcock Medical Center, began the workshop by talking about how to build a sustainable foundation for integrating safety and health protection activities with health promotion activities from lessons learned at Dartmouth-Hitchcock. In particular, he noted the development of SafeWell Practice Guidelines[2] that "provide organizations with a framework for implementing a comprehensive worker health program, along with specific strategies pertaining to the details of implementation" (McLellan et al., 2012a).

For context to the Dartmouth-Hitchcock experience, McLellan noted that the center employs about 8,600 people, with an additional 8,000 family members as part of its health insurance plan. These workers are spread across a number of sites in the local region, many of which were formerly small medical practices. Dartmouth-Hitchcock is self-insured for group health, short-term disability, and, essentially for workers' compensation, as well. The Live Well/Work Well program involved 12 key steps in its development (see Box 2-1).

[1]See more about Live Well/Work Well at http://employees.dartmouth-hitchcock.org/livewellworkwell.html (accessed July 17, 2014).

[2]The SafeWell Practice Guidelines were created through a collaboration between the Dana-Farber Cancer Institute; Harvard School of Public Health Center for Work, Health, and Well-Being; and Dartmouth-Hitchcock Medical Center.

BOX 2-1
Dartmouth-Hitchcock's 12-Step Approach

1. Build sustainability for generations to come.
2. Communicate the foundational premise.
3. Imagine a healthy and safe place to work and live.
4. Create a team.
5. Align effort.
6. Partner in health, environment, wellness, and safety.
7. Engage employees—the number one challenge.
8. Develop leadership competence and accountability.
9. Integrate with primary care.
10. Measure the impact: An integrated value chain approach.
11. Integrate data.
12. Integrate reporting.

SOURCE: As presented by Robert McLellan on May 22, 2014.

PROGRAM FUNDAMENTALS

A first consideration, McLellan said, in a theme that recurred in subsequent discussions, is to build a set of integrated activities that are not attached to a particular leader, leadership team, or budget cycle. Instead, he said, the initiative should grow from a sustainable culture of health that will support worker health and safety in the long term. To put this another way, the initiative needs to be aligned with the corporate culture of the particular business and embedded it its strategic plan, and McLellan believes building a healthier culture is Dartmouth-Hitchcock's most important prevention activity.

Dartmouth-Hitchcock's institutional vision, McLellan said, is to achieve the healthiest population possible, which is highly congruent with the Live Well/Work Well concept. Because of that tight fit, the initiative is routinely embedded as a key tactic in Dartmouth-Hitchcock's annual operational plans, including the way in which the institution delivers services to other employed populations and their dependents. Live Well/Work Well also aligns with Dartmouth-Hitchcock's academic mission of investigating the best ways of delivering health care and creating a healthy community. As a result, and because of the significance of the medical center's local presence, "The community is us," McLellan said.

According to McLellan, not only do institutional leaders need to communicate effectively and consistently what their worksite wellness initiative is about in general terms, perhaps with message maps to guide them, they have to communicate how specifically they plan to achieve the integration of occupational safety and health protection with health promotion for workers, families, and retirees. This requires reaching out into the community where health promotion and environmental intervention opportunities may exist, and using information technology to inform, motivate, and provide feedback, he said.

Specific and easily understood examples of using the work environment to promote health that can communicate the integration concept effectively include encouraging staff to use the stairs or take a walk on campus; providing healthy foods in the cafeteria and vending machines; and improving work organization (such as clinical flow), which not only supports good patient care, but also reduces employee stress. Another example, said McLellan, is Dartmouth-Hitchcock's focus on safe patient lifting, which involves an active group that helps staff with everything from ergonomic assists, to training in safer lifting techniques, to access to floating help when a staff member needs another person to help lift a patient safely.

Despite the anticipated benefits of integrating health protection and safety with wellness activities, employee engagement is "the number one challenge," McLellan said, no matter which health-related issue is under consideration. He pointed to 2010 data from an annual national employer survey on purchasing value in health care that showed "lack of employee engagement" to be an issue for 58 percent of employers (National Business Group on Health and Towers Watson, 2010). However, he noted that the use of social media, health ambassadors, and various colloquia have helped to build a "buzz" in the community. McLellan said that in the most recent Dartmouth-Hitchcock engagement survey, employees gave their highest scores—86 percent support—for the center's health promotion and safety efforts.

PROGRAM ELEMENTS AND TEAMS

At Dartmouth-Hitchcock, occupational medicine, safety and industrial hygiene, disability prevention and treatment, health promotion, and employee assistance services are augmented by primary care services. Primary care is offered through a patient-centered medical

home and supported by behavioral health, health coaching, and care coordination services. Primary care clinicians are trained to address work-related health issues, which means they know what employees' jobs are, how to take a basic occupational history, and basic stay-at-work and return-to-work strategies. Nevertheless, some tasks—such as "fitness for duty assessments" or U.S. Department of Transportation examinations for professional drivers—may require specialized occupational medicine expertise outside of the primary care practice, McLellan said.

In addition, Dartmouth-Hitchcock followed the lead of the National Center for Quality Assurance (NCQA) in establishing the concept of a patient-centered specialty practice[3] to coordinate care between primary care and occupational medicine, in order to improve quality and the patient experience, reduce waste, and create synergies (McLellan et al., 2012b). The approach builds on the long-term experience of occupational health nurses who have followed employees' blood pressures or glucose levels, providing flu shots, and the like, then providing that information to primary care providers. This original approach was "not a very robust integration," McLellan said. However, now, employer-based services are more integrated and no longer merely parallel community-based public health and the health care delivery system.

Even for employees who seek primary care outside Dartmouth-Hitchcock, the institution provides care coordination and behavioral health services. The initiative compiles care registries, built through health and wellness assessments and claims data, and staff members ask injured or ill employees whether they have a primary care physician and, if not, help them obtain one, if they desire.

True integration requires a thorough and thoughtful approach to team creation, McLellan said. Early in Dartmouth-Hitchcock's program, staff made discipline-specific presentations to the team, so all professional groups clearly understood what an occupational health professional or a disability specialist or a health coach does—including the various professional groups' different terminologies and ways of working. Over time, these presentations evolved into case examples of an individual with a lifestyle or occupational health issue, with all those involved in caring for that person participating in the presentation. Finally, the team employs a discussion method called "appreciative inquiry," in which

[3]See more about NCQA's Patient-Centered Specialty Practice Recognition program at http://www.ncqa.org/Programs/Recognition/Practices/PatientCenteredSpecialtyPracticePCSP.aspx (accessed July 17, 2014).

team members tell stories about what is going well, as opposed to the usual focus on what is going badly.

However, assembling a team is not enough. "You cannot just put everyone in the same boat and give them an oar," McLellan said. The next stage of team development involved setting high-level team goals, aligned with the organization's goals. As an example, the team might want to reduce the number of employees who have a specific lifestyle risk. All team members have tactics they can use to contribute to achieving this integrated team goal.

Large organizations typically have a number of committees involved in health, safety, wellness, and benefits. Dartmouth-Hitchcock disbanded those groups and instead assembled an integrated committee called Partners in Health, Environment, Wellness, and Safety. Core content experts attend every meeting of this committee, but frontline staff rotate through, depending on the specific issues the committee will address. An important part of the committee's role is to ensure that the integration is proceeding smoothly.

THE OCCUPATIONAL HEALTH–LIFESTYLE LINK

Research findings suggest a clustering of occupational health and personal lifestyle health risks, McLellan said (Punnett, 2007; Schulte et al., 2012). Based on this insight, Dartmouth-Hitchcock is using injury reports to identify departments, workgroups, and employees likely to benefit most from integrated health protection and promotion efforts. Essentially, McLellan said, it is treating injury reports as sentinel events. The reporting system has revealed units with rates of injury three or more standard deviations above those of other departments. These present opportunities for intervention that would reduce overall institutional injury rates significantly.

Injury reports, which Dartmouth-Hitchcock personnel can generate electronically, trigger an e-mail message about the incident to all the key personnel who need to be involved, McLellan said. While the injury reports prompt treatment referrals, they also can stimulate an integrated, comprehensive investigation of the work environment and the personal and organizational factors that may be influencing workgroup health. Similarly, in the occupational medicine clinic, clinicians not only manage illnesses or injuries that result from work-related exposures, they

also identify any behavioral risk factors or co-morbidities that might benefit from referral to in-house or community-based resources.

Although these occupational-lifestyle risk clusters have been observed in the workers' compensation arena for some time, McLellan said, "It is frustrating as a physician who wants to take care of a whole person" when workers' compensation does not pay for services related to co-morbidities or lifestyle. Similarly, in some settings, if a company physician denies a compensation claim, private insurance may not cover the costs of care sought privately, giving employees an incentive to conceal the possible occupational origin of an illness or injury. This skews data and may stall remediation efforts, McLellan said. Moreover, there are privacy issues to consider when including information on behavior and co-morbidities in employees' workers' compensation records, he said, even though these conditions may substantially affect the outcome of the claim.

Dartmouth-Hitchcock has pulled together a Safety Wellness Action Team (SWAT), triggered not just by units that are work safety outliers, he said, but also by other evidence of problems: critical or clustered events, plus some combination of poor participation in some of the employer-sponsored health promotion activities or indicators of lower-quality care provided by the unit, for example. SWAT interventions begin with an open-ended, integrated work environment assessment intended to prompt discussion, as well as a "culture of health" survey. Workers complete a self-scored psychosocial and personal health assessment that helps individuals recognize whether they have burnout, compassion fatigue, depression, or other factors inhibiting performance.

The next step is to work with a local unit committee to discuss potential interventions. In practice, this approach has encountered some difficulties, McLellan said, such as the presence of labor-management issues outside SWAT's scope of authority, lack of clarity regarding the team's role, and, in one instance, a profusion of priorities on a unit that overwhelmed the manager. One unsuccessful application of the SWAT method revealed that management would not release staff to attend psychosocial interventions. McLellan said this underscored the importance of micro-level work cultures on staff participation in health promotion. Broad institutional participation rates hid some of these pockets of poorer performance, he said.

The institution's Job Satisfaction Survey revealed a strong correlation between job satisfaction, employees' perceptions of job safety, belief that local leadership cares about individuals and their well-

being, employees' sense they can express grievances, and the likelihood that they would participate in employer-sponsored health risk assessment and biometric screening campaign (McLellan et al., 2009). These psychosocial attributes of a workgroup culture are closely tied to leadership competence, McLellan said, noting that Dartmouth-Hitchcock's next step is to create performance expectations for health protection and health promotion not just for employees, but for leaders at every level, as well. To help leaders meet these expectations, the organization will develop a curriculum about how to create work environments that are safe and health promoting. At the higher levels of the organization, leaders are expected to create supportive policies and practices and incorporate relevant messages in public communications.

MEASURING RESULTS

Dartmouth-Hitchcock's integrated approach to measurement employs the concept of a value chain. This value chain begins with creating a work environment that is safe and health promoting (and documented with audit tools), then proceeds to assess the comprehensiveness and performance of individual program components, based on external judgment, internal assessment, and employee participation.

Another link in the value chain is reflected in a variety of measures of employee health and well-being, satisfaction, and retention. The final step in the chain relates to the traditional occupational health measures, personal clinical outcomes, and business outcomes (e.g., claims, direct costs, productivity measures, and, ideally, return on investment).

In other parts of the medical field, return on investment is not the measure of interest, McLellan said; instead, the analytic approach usually used is cost-effectiveness or cost–benefit analysis, with the measure of effectiveness often expressed as quality-adjusted life years (QALYs). This more usual approach may suggest another approach to measuring the impact of integrated programs, McLellan said, perhaps in parallel with assessments of return on investment. An alternative measure would reflect the impact of an intervention on *quality of work life*. Some potential contributors to that analysis (e.g., retention) and some approaches used in more traditional health care quality effectiveness assessments, so far have not been applied to integrated health protection and health promotion services.

Larger employers, especially, collect information relevant to workforce health from a great many data streams, either in-house or from external vendors. The challenge is to aggregate and integrate these, McLellan said. Workers' compensation and disability data, for example, may be hard to integrate with the organization's own information; employee surveys may not be online or may be externally managed.

As primary care providers move toward an accountable care organization model, under which they assume responsibility for managing the health of a population, they will be increasingly interested in how employer-based health promotion and protection can synergize with community-based health services to improve population health, McLellan said. As well, Dartmouth-Hitchcock is creating an integrated scorecard to report in easy-to-understand, actionable format data along its value chain, compiled from many sources. In the scorecard's current state of development, it includes these domains of wellness: health promotion, health protection, engagement, and care management. Total costs are also reported. For each domain, specific metrics are used to monitor progress toward established targets. Once the scorecard is further refined, it will be made widely available within the organization.

3

The Value in Pursuing Total Worker Health

In terms of the concept of Total Worker Health, the employees are beginning to see this as their program.
—Jules Duval

[Unions] have to be at the table as equal partners [in discussions about worker health], but I would say let's first talk about having a safe workplace and a healthy workplace.
—Nancy Lessin

Health in the workplace can be viewed as a continuum, beginning with how people work safely in an environment, through how employers begin to promote personal health issues, to how they create an environment that augments worker health and safety and promotes health and well-being. Traditional employee health-related services (e.g., wellness programs, workers' compensation, occupational medicine) have many models, said Pamela Hymel, Chief Medical Officer, Walt Disney Parks and Resorts. But, she added, as employers move toward the prevention and health promotion end of the continuum, followed by more proactive health assessments and lifestyle initiatives, models may be fewer and more challenging to implement. In some environments (e.g., government), going all the way to integrating primary care with workplace initiatives may be impossible.

A panel of speakers explored several employer programs and the ways in which their value is being measured. An expanded notion of return on investment may take into account not just monetary return, but a return in terms of improved health and safety, improved employee engagement, and improved worker vitality. Although employers are striving to measure many of these effects, their efforts are relatively unnoticed,

Hymel said, because they rarely appear in peer-reviewed journals, and alternative means to disseminate those best measurement practices may be necessary.

This session, moderated by Hymel, asked several representatives of large businesses to reflect on the following questions:

- What is success? What is the value of these programs?
- What specific measures or outcomes are being used to demonstrate success?
- What metrics could be more useful? What are the differences of opinion over the validity of various metrics and their use?

Speakers in this session included Jules Duval, Medical Director of Occupational Health Services, Smithsonian Institution; Kathleen McPhaul, Chief Consultant, Occupational Health, Veterans Health Administration (VHA); Peter Wald, Vice President and Enterprise Medical Director, USAA; and Nancy Lessin, Senior Staff for Strategic Initiatives, United Steelworkers–Tony Mazzocchi Center.

BUILDING ONGOING SUPPORT

A challenge with a new workplace wellness program is to build a case to convince senior leadership of its importance and the need for resources and other forms of support. This was a challenge facing newly hired Duval. He began by giving employees a health risk assessment and comparing the results to U.S. norms. The results helped counter leaders' preconceptions that the Smithsonian's employees were not experiencing the same kinds of health problems as Americans overall. Duval was especially attentive to the prevalence of predisease states (e.g., prehypertension and overweight, elevated fasting blood sugar, and low rates of exercise). These data effectively made the argument that prevention efforts could benefit this specific workforce.

Duval said evidence of management's acceptance of the program is reflected in the most tangible of assets—space. When one of the Smithsonian's museums was due to be renovated, the health unit was slated for elimination, as it was then serving as a one-person shop doing walk-in care. Before that could happen, Duval and several nurses had the facilities staff take out a couple of walls, build a bay area, create several rooms for conducting individual health risk assessments and counseling, and create a

fitness area with equipment available around-the-clock (key card access). The new space became so popular that when the museum was finally renovated the wellness space was rebuilt as a new 1,500-square-foot health center that retained the treatment rooms and fitness area.

Within VHA, the overall safety and wellness effort has been integrated in the Central Office, said McPhaul. Three Total Worker Health pilot projects are beginning within medical facilities. Next steps, she said, will be to tackle stress and the psychosocial environment, including psychological safety—higher rates of which increase job satisfaction, retention intention, engagement, civility, and innovation. Efforts to foster acceptance of the overall program by both labor and management are ongoing.

USAA is a financial services company with more than 10 million members and is the leading provider of advice about financial planning, insurance, banking, investments, and financial security to members of the U.S. military and their families, said Wald. The company focuses on providing a high level of service to all of its members, which includes all of its employees, and thinks of employees as a fixed resource, he said. The purpose of the USAA wellness program,[1] which began in 2002, is to keep that resource working well and productively, making it integral to the company's mission. By keeping their employees and their families physically, emotionally, and financially healthy, those employees can focus at work on member services, said Wald. "That is the goal. Anything that gets in the way of member services is something we want to flatten out."

Program Focus

When McPhaul first joined the U.S. Department of Veterans Affairs (VA), she saw her position as traditional occupational health: focused on the many hazards in the health care environment and on injury prevention and recognizing that hospitals and nursing homes have a higher rate of occupational injuries and illnesses than U.S. private industry as a whole. She said that with more than 304,000 employees, more than 117,000 of whom are veterans, and, on any given day, perhaps another 100,000 volunteers, students, and contractors on site, the demand for traditional occupational health and safety services was high.

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[1]The USAA wellness initiative won the C. Everett Koop National Health Award in 2006.

In addition, like many employers, VHA has many older workers, whose risk of injury may be greater than for younger workers. McPhaul believes effective injury reduction for the older worker cohort requires consideration of the other health issues in their lives. These contribute to the longer time older workers need in order to return to work and their higher rates of disability.

With limited resources, Duval and his Smithsonian staff focused on the problem of overweight and obesity. Data from the employee health risk assessments showed that only about a third of the Smithsonian's employee population was normal weight. The staff created a program that would enable them to work with employees who were overweight and obese on an ongoing basis, providing exercise prescriptions and nutrition counseling, along with opportunities to exercise more. The aim was to reduce the prevalence of higher blood pressure, fasting blood sugar, and cholesterol levels.

USAA demonstrates its commitment to its employees through attention to the built environment and the development of programs that focus on primary prevention and keeping people well, said Wald. To operationalize and support employee-directed health information, management makes sure the messages it is sending—through, for example, foods available in the cafeteria, offering an on-site pharmacy, and exercise and relaxation options—point in the same direction.

Integration

USAA management formed a wellness council that reports to the head of human resources, who reports to the chief executive officer and has responsibility for integrating the overall effort. All the initiative's individual components—which are as diverse as workers' compensation, disability, safety, corporate communications, corporate real estate, and corporate services—formerly had difficulty making their voices heard, Wald said, but presenting as a unified group under the wellness council umbrella, has proved more successful.

Duval embedded his wellness staff into the Smithsonian's traditional occupational health organization in order to establish a team approach, while nonetheless providing services in an engaged, individualized way.

A concern is that a good occupational health program is systems oriented, whereas health promotion has usually been about individual behavior, which can make integration difficult and risks blaming individuals for being overweight or smoking, said Laura Welch, Medical

Director, Center for Construction Research and Training (CPWR). Even when health promotion activities might not overtly target individuals as being responsible for high health costs, lower productivity, and so on, workers may hear that as the message, Lessin added. Initiatives should work to provide employees with education and the tools they need to make better choices for themselves and their families, Wald said, citing as an example of a positive systems approach USAA's 5 percent health insurance premium reduction for employees who participate in wellness programs.

Welch noted one situation in which an employer might not want to engage in a Total Worker Health initiative would be if the workplace's safety situation is inadequately addressed. Lessin added that resources should instead be devoted to providing safe and healthful workplace conditions as required by law. In addition, she said, employers' support of the health of their workforce should include the provision of such things as paid sick time, paid parenting leave, paid vacation time, pensions, and a living wage.

Employee Engagement

The Smithsonian's wellness program has added about 600 employees every year, and currently engages nearly 2,800 employees, Duval said. Program staff do not wait for employees to come to the wellness center; instead, they reach out to the organization's 19 museums and 9 research centers in the United States and abroad. Meanwhile, traditional occupational health program enrollment has grown from 1,400 in 2006 to 2,400 most recently. Workers are becoming persuaded that the occupational health tests are not being done "on them," but "for them," Duval said. Employee satisfaction questionnaire responses bear out this positive response.

Even though wellness messages need to be aligned across an organization, Wald said, they can take different forms, because different messages appeal to and motivate different individuals. For example, he said variations on the "getting in shape" message might discuss looking good, being around so you can see your kids graduate from college, wearing a bathing suit at the beach, feeling better, and executing the company's mission. USAA's Healthy Points program rewards workers for healthy behaviors and combines both participation and outcomes.

DEFINING AND MEASURING SUCCESS

Executive support for USAA's program is maintained by monitoring four important kinds of information, Wald said. They are:

- *Satisfaction*, including personal anecdotes, which not only resonate but also show the program is having powerful effects on individual employees;
- *High participation rates*, which indicate the extent to which employees believe the program is valuable;
- *Risk factor reduction*, including such activities as ergonomic evaluations of work stations, which may be associated with a decrease in repetitive motion injuries; and
- *Economic impact analyses*, which have shown decreases in both short- and long-term disability.

McPhaul said that in the VHA environment, success can be viewed from various perspectives: public health, occupational health, health care delivery (primary care), employer, and employee. VHA has its own views about success in each of these areas, McPhaul said. For example, public health success might be reflected in having different structures work together more effectively; primary care success might be achieved through clinicians' greater attention to occupational histories and workplace risks; employer success might be measured by employee engagement and productivity; and employees might measure success in terms of work's impact on their physical and mental health and job satisfaction. In the end, if the VHA's Total Worker Health initiative is successful, McPhaul said, that success can be measured by improvements in health-related behavior, the psychosocial work environment, and job satisfaction, along with a reduction in occupational injuries and illnesses. Ultimately, she added, these improvements should have a positive impact on the quality of health care veterans receive and the support of facility leadership.

A new unit set up at VHA headquarters is responsible for occupational metrics and surveillance and holds great potential for providing insights regarding Total Worker Health, McPhaul said. While VA Central Office staff habitually think in system terms, that kind of integrative thinking may be less common in the system's 150-plus hospitals and several thousand clinics, with tremendous diversity in culture and practices across the system. In general, VHA has quite a few resources aimed at improving employee health, but not good measures of integration

among them. Existing VHA data that can be used for this purpose include those describing employee demographics, health behavior (from self-reported surveys and health risk appraisals), information about occupational safety (incident reports, workers' compensation claims), job satisfaction and turnover, and indirect measures of job stress.

Data from each of the VHA's hospital regions indicate performance variations, analysis of which may yield clues about how to improve performance throughout the system. Similarly, analysis of data by occupation may identify employee groups where prevention efforts could be usefully concentrated. An example McPhaul used was injuries that occur when lifting or repositioning patients, which are more than twice as high among nursing assistants as among other nursing occupations.

Measuring Health Risk

Since 2006, the Smithsonian's focused wellness program has seen fairly steady declines in the proportions of employees with positive health risks (for the measures being tracked),[2] Duval said, most dramatically in the proportions of employees identified with prediabetes and a sedentary lifestyle.

USAA uses the health risk appraisal as "a personal dashboard for employees," Wald said. It comprises an online questionnaire and biometrics (body mass index [BMI], blood pressure, fasting glucose, and lipids measures). The number of employees completing these appraisals and participating in other wellness programs has steadily increased. More important, health risk assessments show a 28 percent reduction in the number of employees' total risk factors between 2009 and 2013, as well as in BMI for those in the highest weight groups (BMI of 30 or more). And, since 2002, USAA has seen about an 80 percent decrease in long-term disability costs, as well as a decrease in short-term disability, Wald said.

Sick Leave

In terms of any effects on employee productivity or offsetting savings, as a federal agency, the Smithsonian is not allowed to access data

[2]Measures include prehypertension, overweight, prediabetes, inadequate exercise, high cholesterol, depression risk, and smoking.

on insurance claims, Duval said, but it can look at employees' use of sick leave. Many employment metrics can be difficult to interpret, and sick leave is one of them. Is a low number of sick days a good thing, or a bad thing? Duval asked. If it indicates that employees are becoming healthier, it would be a positive result. But if it means employees are coming to work when they are sick, and thereby reducing productivity or infecting other workers, that is not good. At the Smithsonian, leadership actively encourages people to stay home when they are sick. Some union representatives participating in the workshop commented on the growing trend across the country for employers to establish "no-fault attendance policies." Lessin said that any time missed from work equals an "occurrence," and under such policies, workers can be fired if they have too many occurrences. A consequence of these policies, she said, is that workers go to work sick. Lessin added employers in Sweden, for example, use a different approach to attendance: if there is high absenteeism in a workplace or work area, the occupational safety and health committee is dispatched to investigate whether there is something wrong with the *job* and, if so, what is needed to address the problem.

Data supplied by the Smithsonian's human resources office show a decline (from 4.46 hours of sick leave for every 100 hours worked to 3.99). Although this is a modest trend in the right direction, it is still a higher rate of sick leave hours than among other federal workers or U.S. private-sector employees, Duval said. Nevertheless, over the population of employees, sick leave costs have declined $12.7 million in the program's first 5 years.

Costs

Data analysis has revealed that only 2.5 percent of employees account for 40 percent of USAA's health care costs, Wald said. When the workforce is divided into quintiles by how much is spent on health care, only 649 employees are in the highest two groups. By contrast, the vast majority of employees are healthy, with almost 22,000 in the lowest quintile.

Wald does the cost analyses for USAA, which may approximate the situations in which private companies find themselves, based on *total costs,* because he believes that if companies squeeze down on, for example, workers' compensation benefits, those costs pop up elsewhere instead, likely in the health plan. According to Wald, a significant advantage of having a centralized, integrated program is that you cannot have this

"squeezing the balloon" effect in which costs are not actually lowered, but instead shifted to another area. Over the past 5 years, USAA's health plan costs have grown about 2 percent, about half that for employers generally.

A LABOR PERSPECTIVE ON THE VALUE OF TOTAL WORKER HEALTH

Lessin reflected on the issue of value in Total Worker Health programs from her perspective within organized labor, making the following major points:

- Employers currently are not providing safe and healthful workplaces, as they are required to do by law.
- The way work is being restructured and organized is contributing to injuries and illnesses, including cardiovascular disease.
- A growing body of scientific literature questions the assumptions and underpinnings of wellness programs.
- Who gets to define *health* in *health promotion*?

Safe and Healthful Workplaces

The Occupational Safety and Health Act of 1970[3] was enacted to ensure the nation's workplaces and working conditions are safe, healthful, and free from recognized hazards that can cause death or serious physical harm. Established under the act were the Occupational Safety and Health Administration, which has regulatory authority, and the National Institute for Occupational Safety and Health (NIOSH), which provides research, training, information, and education aimed at helping ameliorate hazardous workplace conditions. Lessin noted that NIOSH's roots are centered around the need to reduce and eliminate hazards and hazardous conditions on the job, and that in her opinion, NIOSH has gone "off course" with Total Worker Health.

The U.S. Bureau of Labor Statistics (BLS) reported that 4,628 workers in the United States died from occupational injuries in 2012 (BLS,

[3]Occupational Safety and Health Act of 1970, Public Law 596, 91st Cong. (December 29, 1970).

2014). In addition, a report from the AFL-CIO notes that 49,000 workers die each year from workplace-acquired diseases (AFL-CIO, 2014). The report also notes that many more workers (approximately 3.8 million) reported non-fatal work-related injuries or illnesses in 2012, but asserts the true range is between 7.6 and 11.4 million per year. BLS data indicate a sharp decline in recordable injury rates between 1992 and 2012, but Lessin said research attributes these declines to employer practices that discourage the reporting of occupational injuries and illnesses rather than fewer actual injuries. A 2009 U.S. Government Accountability Office report documented such practices and cited many shortcomings in the reporting of work-related injuries and illnesses (GAO, 2009).

According to a 2008 congressional report (U.S. House of Representatives, 2008), employers have a number of methods to discourage accurate reporting of injuries and illnesses. Lessin said that in surveys conducted by the United Steel Workers (USW), more than 90 percent of employers at USW-represented workplaces engage in at least one of these practices. "These are the same employers who are telling us they care about our health and want us to be involved in wellness programs." The pattern of underreporting is of concern both from a regulatory standpoint, and from a public health standpoint. While known hazardous conditions can be difficult to correct, hazardous conditions that remain unidentified (because job injuries and illnesses are not reported) will remain unaddressed, she said.

The Restructuring and Organization of Work

Many of the most significant health and safety concerns of workers today suggest the need for system fixes, said Lessin, including the need for engineering controls to prevent hazardous exposures, improved training and equipment maintenance, remediation of ergonomic hazards, and greater concern for the pressures on workers that arise from downsizing and increased production demands (including extended hours and multiple shifts). Many of these concerns have to do with how work is being restructured and reorganized in ways that create a more stressful—and hazardous—workplace, she said. Although some of the health risk factors that wellness programs intend to address have a stress component, she added, the programs typically focus on individual behavior change and not on changing systemic factors in the work environment. Lessin noted a growing body of scientific literature documenting the adverse health and safety impacts associated with job stressors and with the way employers

are organizing and restructuring work (Anna, 2011; Belkic et al., 2004; Chandola et al., 2008; Eatough et al., 2012; Karasek and Theorell, 1990; Landsbergis et al., 2013a, b; NIOSH, 2002; Schleifer and Shell, 1992; Schnall et al., 2009; Schulte et al., 2012; Smith et al., 1992).

Lessin also noted a body of literature questioning the value of wellness programs (CHBRP, 2013; DiNardo and Horwitz, 2013; Horwitz et al., 2013; van Dongen et al., 2011). The extent to which reducing unhealthy behavior actually saves health care costs is unclear, she said, and programs that reward people for healthy behavior may tend to disadvantage lower-income, less educated workers whose environmental and other health risks are greater, risking discrimination. The health benefits of worker wellness programs versus increases in low-wage worker income is untested, she said.

Integrating Wellness

Lessin reiterated that resources should first be devoted to providing safe and hazard-free workplace conditions as required by law. According to Lessin, workers' priorities for health promotion include

- Paid sick and family leave,
- Paid maternity and paternity leave,
- Paid vacation time,
- A living wage,
- Comprehensive health care for workers and retirees,
- Pensions,
- Meal time more than 20 minutes, and
- A clean environment.

Defining Health

Finally, she asked, who defines health? From her perspective, the World Health Organization's definition—"Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 2014)—with its emphasis on well-being is where the country should aim. If health is more than the absence of disease or infirmity, it is surely more than a person's BMI, said Lessin.

Closing Remarks

For the above reasons—persistent high rates of employee injury, illness, and death (despite underreporting of job injuries and illnesses); fundamental and systemic changes in the organization of work itself that have increased job stress; and uncertainty about the benefits of wellness programs in the workplace—Lessin believes it is timely for NIOSH to go back to the basics before moving into worksite wellness efforts: first, make sure occupational health and safety programs are comprehensive and effective in identifying and eliminating or reducing hazards; second, look at all sides of the debate about wellness and health promotion programs, including controversies and down sides; and third, make sure worker organizations, including unions, have a seat at the table when future NIOSH directions and programs are planned and implemented.

4

Total Worker Health in Large Businesses

We have been at it for 23 years. We are still learning. We are still developing. We don't have all the answers, and there is still room to do some of the things we want to do.
—Andrew Scibelli

There are a whole lot of workers that the program will not reach as long as we have an employer-based approach…[for many workers, their] relationship with their community is probably stronger.
—Laura Welch

Changing the workplace requires helping employees obtain skills, knowledge, and tools, and making them ready, aware, and engaged in improving their own health and well-being, said Ron Goetzel, Visiting Professor and Director of the Institute for Health and Productivity Studies at the Johns Hopkins Bloomberg School of Public Health and Vice President of Consulting and Applied Research for Truven Health Analytics. It also requires that employees be persuaded of a larger purpose than simply "my employer wants me to do this," he said. He added that organizations sometimes do a lot that is really not very helpful to themselves, to their workers, or to the creation of a healthy company culture necessary to achieving health-promoting changes.

Establishing a healthy company culture depends on a supportive mission, Goetzel said. Companies that do not operate under a mission supporting employee health may not be ready for an integrated health and wellness program. Generic wellness programs are unlikely to properly fit the culture and mission of a particular employer or the characteristics and challenges of a particular set of employees. This field is dynamic, and

increasingly, leader organizations have gone far beyond a concern about employee weight management to recognizing the workplace culture must foster a sense of well-being for workers. These companies—most of them large—want employees to like and enjoy being at work, to like their co-workers, to feel the company is out to benefit them, and to understand they share the credit for their employer's accomplishments and success, Goetzel said.

This session, moderated by Goetzel, asked several representatives of large businesses to reflect on the following questions:

- How are you approaching integration? What could it look like ideally?
- What innovative approaches are being used to achieve integration?
- What are the barriers to full integration, and what strategies are being used to overcome those barriers?
- Are there different approaches for different workers?

Speakers in this session included the following:

- Michael Carson, Global Director of Operations and Consulting for Health Services for The Dow Chemical Company. With 54,000 employees at about 300 sites in 49 countries, manufacturing more than 5,000 different products, and having 90 health clinics around the world, Dow has been involved in Total Worker Health initiatives for about 20 years.
- Maribeth Rouseff, Assistant Vice President of Employee Health Services and Wellness Advantage for Baptist Health South Florida, Inc. Baptist Health is the largest private employer in South Florida, with some 15,000 employees, $2.3 billion in total operating revenue, and annual health insurance costs of more than $100 million. Its corporation-wide wellness program, Wellness Advantage, was formed in 2000.
- Andrew Scibelli, Manager of Employee Health and Well-Being for NextEra Energy. With nearly 14,000 employees and revenues of approximately $15.1 billion (in 2013), NextEra provides electricity-related services in 27 states, is the largest North American supplier of energy from renewable wind and solar sources, and operates the nation's third largest nuclear power generation "fleet."

- Laura Welch, Medical Director for CPWR, which strives to reduce occupational injuries, illnesses, and fatalities in the construction industry through research, training, and service programs.

THE COMMUNITY CONTEXT FOR HEALTH

Dow Chemical has a very broad view of health, which takes into account the communities where employees live, the benefits the company offers workers and their families, and the products it makes, said Carson. Foundational to Dow's approach is advocacy for the employees and connection with people on multiple levels—not just their fitness or cholesterol levels, but also the ways emotional or family factors affect their health. The understanding that Dow's employees are the primary source of its competitive advantage means that, ultimately, good employee health links to corporate business strategies and priorities, including reduced direct and indirect costs. Specifically, Dow developed a health workplace index to better describe the issue of corporate culture. Carson said that the index embodies a company-wide understanding of the "drive to zero injuries and zero adverse events" and links it to safety, quality, and reliability.

NextEra Energy, likewise, believes its wellness initiatives are about more than improving awareness and changing behavior, said Scibelli. They are concerned with creating a culture and environment that supports health through the company's facilities and policies.

Welch noted that for low-wage workers and those without employer relationships (independent contractors, those who work for franchises, and others), the worksite is only one possible locus for wellness intervention. Various community agencies, including local health departments and clinics, can play a major role in promoting worker health and well-being (Baron et al., 2014), a strategy Welch suggested NIOSH might support. What would be helpful, she said, would be a hotline, akin to a Poison Control Center, that community-based practitioners could call when a patient reports an occupational health problem. Such a resource would be an additional support to low-wage workers. Welch noted that the Migrant Clinicians Network set up a demonstration program like this that worked through a local community clinic.

Even large employers that do have employee relationships may have difficulty promoting behavior changes (e.g., improved nutrition) without addressing the availability of healthy food in the community. As another

example, under a comprehensive, community-grounded approach to smoking cessation, Welch suggested the worksite could disseminate information and cover the cost of antismoking drugs, the health clinic could reinforce the message in primary care visits, the health department could discuss the impact of smoking on families (e.g., asthma and low birth weight prevention), and other community organizations could perform additional roles, such as supporting increased excise taxes, mass media campaigns, and smoke-free laws.

In a discussion on a subsequent panel in the workshop, previous speaker Kathleen McPhaul, VHA, emphasized the importance of the wellness program's connection to an employee's primary care provider for follow-up. Ideally, the primary care provider should know what the person does on the job and what he or she is exposed to, she said. For example, Greg Howe, Wellness Manager at Lincoln Industries, gave local primary care providers tours of their facility, so they could see what employees are doing, day in and day out.

The Patient Protection and Affordable Care Act (ACA)[1] has heightened awareness of the importance of the community piece, as care providers that become accountable care organizations (ACOs) take on some of the responsibilities of a public health organization, said Robert McLellan, Dartmouth-Hitchcock. ACOs will have to identify causes of injury and illness and forge new partnerships, perhaps with employers, to remediate them before costly medical interventions, often of limited benefit, become necessary. So far, however, occupational health has essentially been missing from the national conversation around ACOs, McLellan said. In the future, or in some situations, occupational health services may not be necessarily employer based; they may be community based.

A FOCUS ON SAFETY

While a full-blown integrated worker safety, health protection, and health promotion initiative may take up to 20 years to develop, test, and refine—and indeed, it will likely never stop evolving—the fundamental task is ensuring worker safety. An employer that does not have a strong safety program may not be ready to launch wellness activities, Carson said.

[1]Patient Protection and Affordable Care Act, Public Law 148, 111th Cong., 2nd sess. (March 23, 2010).

Many large employers, like Dow, have a tremendous amount of experience with toxicologists, industrial hygienists, and other safety personnel, each with their own discipline, who have different insights on the factors associated with injuries in the workplace. Some of the insights he identified include

- Stress and fatigue (especially among shift workers),
- Substance abuse,
- Underlying health conditions, and
- Lifestyle factors (e.g., physical activity, tobacco use, weight).

A proactive injury management program at Dow revealed that the biggest single risk factor for injury was having a recent previous injury. The resultant multifactorial assessment of repeat injuries now assesses both individual health factors and systemic workplace factors that may have an influence and offer previously unrecognized opportunities for injury prevention.

At Baptist Health, a principal source of employee injuries has been patient transfers, with safe patient handling a prime example of the intersection of employee safety, health promotion, and quality of care, Rouseff said (see Box 4-1).

Nancy Lessin, United Steelworkers–Tony Mazzocchi Center, said employers should first look to change the job to improve safety and health, such as through the use of equipment to reduce or eliminate physical injuries, rather than focusing on worker behavior or habits. "Ergonomics is how you change the job to fit workers rather than how you change a worker to fit the job," she said. Scibelli noted that in addition to stretching programs (described later in this chapter), NextEra Energy looks at the working environment and considers how to modify both the environment and the actual process of work to improve safety and health.

When Baptist Health employees return to work from physical rehabilitation, either with or without work restrictions, their rehabilitation therapists work with the exercise physiologists in the employee fitness center to develop an exercise plan. This reinforces the message that the organization is concerned about healing and recovery and makes it easier for the employee to maintain the requisite exercises, Rouseff said.

Ergonomic injuries are a particular challenge for the 1,000 Wind Fleet workers who service NextEnergy's 10,000 wind turbines in 112 locations

BOX 4-1
A Multifactorial Approach to Safe Patient Handling

In 2003, when Baptist Health leadership recognized that patient lateral transfers (e.g., from bed to chair) were the leading cause of employee injuries, they embarked on a comprehensive strategy for reducing the rate of such injuries, knowing it would also increase patient safety, improve quality of care, improve employee and patient satisfaction, and reduce their costs. The program is aimed at establishing safe patient handling as part of the culture of care, and its components include the following:

- Improved staff training;
- Investment in various new technologies and types of equipment to facilitate transfers;
- Establishing the expectation that the equipment for safe transfers will be used;
- Hands-on practice with the equipment options during new staff orientation;
- Mobility assessments on new patients that specify which equipment staff must use when transferring them;
- Conveying to nurses that their safety and longevity in their careers is important to the organization; and
- Emphasizing that patient safety initiatives, including those of the American Nurses Association, support use of these types of equipment.

As a result of this comprehensive approach to prevention, the injury rate for employees in lateral transfers was reduced 70 percent.

SOURCE: As presented by Maribeth Rouseff on May 22, 2014.

scattered throughout the United States, Scibelli said.[2] These workers must climb internal ladders to the top of the 20-story turbines, carrying 80 to 90 pounds—and sometimes 110 pounds—of gear. Once they arrive in the confined work area, they must bend, lift, and twist, and remain in various awkward positions for extended periods. This particular work environment makes "ergonomic perfection" impossible, Scibelli said, but steps were needed in order to minimize the job's inherent risks and workers' frequent musculoskeletal strain and sprain injuries. In 2009, the

[2]The blades on a wind turbine are longer than a football field, and each turbine generates enough electricity to power 250 homes, Scibelli said.

company initiated a stretching program, but it was ineffective and lacked employee support.

Wind Fleet personnel sought help from the company's Health and Well-Being staff, and together, they developed a more dynamic stretching program, Scibelli said. Introduced in 2011, the new program includes a 10-minute video that demonstrates specific, more effective stretching techniques relevant to the demands of the job and teaches power lifting techniques. The program recommends that workers do warm-up stretches at the start of the work day, rest after the tower climb, take microbreaks[3] between work tasks, and do another round of stretches after work. The importance of these steps has been reinforced through increased awareness of ergonomics and body mechanics, on-site coaching, management support, and peer engagement.

All sites and the majority of employees now are performing the stretching routines, and many are asking for more information and sharing constructive feedback. More than 80 percent of Wind Fleet technicians have completed the three-part training, and almost 90 percent say they believe it was successful. Meanwhile, NextEra is looking for ways to modify both the wind turbines' work environment and the process of work. This experience reinforces the value of cross-disciplinary and cross-functional involvement, including workers on the ground, in program planning, and the importance of being willing to evolve programs that are not working.

INTEGRATING WELLNESS

When designing an employee wellness program, the traditional occupational health silos previously mentioned need to be crossed; "You have to have everyone working together," Carson said. At the individual level, the Dow program works one-on-one with people across important dimensions of health. Looking to the future, the corporation would like to work with employees on new health promotion issues, like sleep and fatigue, building resiliency, and more effective use of technology, Carson said. Other new initiatives include efforts to create "active offices" that help employees avoid sitting all day (e.g., standing desks, standing offic-

[3]Scibelli defined microbreaks as 3- to 5-second smooth, controlled movements in the opposite direction of the work, supported by breathing, that help workers focus on reducing task-related muscle tension and fatigue.

es, standing meetings); redesign clinics and wellness centers; and make stairways more inviting.

Baptist Health's Wellness Advantage program has incorporated various existing employee health initiatives, such as the nine free employee clinics that care for minor illnesses and injuries, and stimulated environmental changes, including transition to healthier cafeteria menus, in partnership with the organization's food service providers. Other components of the initiative are directed at individuals, such as employee fitness centers and several weight management, smoking cessation, and risk factor reduction programs, Rouseff said.

NextEra's health and well-being program is about "influencing health, creating balance, fully engaging and helping our employees to be as high-performing as they can," Scibelli said, and has the following five distinct, integrated components:

1. On-site primary care health centers that perform medical screenings and annual physicals, treat minor illnesses, and provide allergy injections, chest X-rays, and other services;
2. Nutrition counseling, including a high-touch weight management program and healthy foods in company cafés and vending machines;
3. Sixty-six fitness centers that do fitness testing, offer group classes, offer cardio- and strength-training equipment, and conduct fitness programs;
4. An employee assistance program that includes 24/7 help for stress management, depression and anxiety, alcohol and drug issues, sleep problems, and family issues; and
5. The largest component, health promotion, which includes heart health screenings, immunization clinics, educational programs, ergonomic support, stress management, tobacco cessation, and incentive programs.

NextEra Energy's goals are to keep the program simple and high-touch, person-to-person, and peer-to-peer, said Scibelli.

A new program at Dow called "team agility," allows workgroups to identify problems that may be contributing to stress. Sometimes these are work-related, and sometimes they are because of personal issues, but the company focus is on issues it can do something about, Carson said, recognizing that, while there is always stress, systems, supports, and culture can be built that help manage that stress.

However, workplace wellness approaches often focus on individual strategies to help workers manage stress and fatigue, but neglect to identify and eliminate or reduce occupational sources of stress and fatigue, Lessin said. Some major sources of worker stress are low pay, unreasonable workloads, and job insecurity—factors employers can (but often neglect to) remediate, she added.

LEADERSHIP AND IMPACT

Along with previous speakers, Rouseff credited leadership in her organization with creating the conditions and encouraging the breakdown of silos that have allowed Baptist Health's wellness program to succeed.

Dow Chemical's leadership development efforts include a module giving every corporate leader an understanding of employee health and the importance of life balance for themselves and for workers. There, too, leadership support is deemed essential to creating the alignment across corporate programs and priorities that will lead to more effective strategies to improve employee health and performance, Carson said.

The Dow health strategy has saved the company an estimated $150 million in the past decade, even as it has expanded preventive benefits. The rate of injuries and workplace-related illnesses has declined more than 80 percent, and overall employee health profiles have improved about 9 percent. Chronic health conditions are having less impact on workers, and fewer employees are at high risk of chronic illnesses, Carson said. At the same time, the acceptability of the program has improved, with more employees understanding their health risks and motivated to maintain a healthy lifestyle.

Scibelli said that the success of NextEra's injury prevention program for Wind Fleet workers has prompted it to expand the program into other areas of the company, beginning with power generation.

Experience has shown the importance of giving leaders and managers talking points and messages so they know what they need to be saying and doing in order to promote workplace health and safety, Goetzel reiterated.

CONTINGENT WORKERS

The discussion of integrated wellness and safety initiatives in large companies can leave out the increasing number of workers who do not have a regularized employment relationship. Typically, Welch said, the 39 million low-wage workers in the United States (making, on average, $435 per week) tend to have contingent and temporary relationships with employers. These workers are disproportionately female, African American or Hispanic, foreign born, lacking a high school diploma, and under age 24. Commonly, they work as cashiers, food service workers, personal and home care aides, housekeepers, farm workers, and child care workers.

In construction, as well as other industries, a common practice is to hire independent contractors or have some third party between the lead company and the worker, Welch said. This may be a staffing or temporary firm, a labor contractor, or a franchisee. In some cases, even a large lead company may not have "employees" for whom it must provide benefits, contribute to unemployment insurance, or participate in workers' compensation programs.

Outsourcing has several additional negative effects on workers, Welch said. Wages decline, in part because the intermediary company takes a portion of the wages to cover its costs. Researchers find that wage and overtime violations, including working without pay outside of the regularly scheduled work times, become more common (Bernhardt et al., 2009; Ruckelshaus et al., 2014). Even conscientious employers face difficulties in such an environment, as they must compete with lower-bidding firms. In the construction industry, for example, Welch said union contractors report keen competition from companies that treat every worker as an independent contractor, minimizing their benefit and insurance costs.

5

Total Worker Health for Small- and Medium-Sized Businesses

It's a mistake to pretend that small businesses are just little big businesses. The lessons and experiences of the large corporation cannot be shrunk down to apply to the small one.
—Lee Newman

If you really want to know what is going on in the place of business, you have to find out from the people that actually do the jobs day in and day out.
—Joe Nguyen

Smaller businesses have unique challenges and opportunities when establishing integrated safety and health programs, said Chia-Chia Chang, Public Health Analyst, NIOSH Total Worker Health program. On one hand, it may be easier to integrate programs because of fewer competing departments and worksites. On the other, she said, smaller employers have fewer resources to get things done and, therefore, may find it necessary to focus on specific occupational safety and health mandates; they may have higher turnover or more temporary or contingent workers, which may decrease the commitment to worker safety and health; or data may be harder to collect and analyze because of privacy concerns, a point reiterated by panelist Joe Nguyen, an employee of RACO and union president.

Although examples of truly integrated safety and wellness programs within smaller businesses were difficult to identify for the workshop, about half of all Americans work in settings with 500 or fewer employees. "We are a nation of small businesses," said Lee Newman, Professor, Colorado School of Public Health, and Chief Medical Information Officer, Axion Health, Inc. "If we, NIOSH, do not grapple with this, then

we are failing the majority of workers in this country." In fact, large employers may not need help, said Peter Wald, USAA. They have resources. If NIOSH was going to focus on a group of businesses, he said, it might focus on the smaller employers and encourage the larger employers to help. However, at the small, widely dispersed worksites of many large corporations, program implementation faces many of the same challenges a small business does. There may be few resources at these remote (or mobile) sites to plan, implement, and monitor a wellness program.

This session, moderated by Chang, asked several representatives of small- and medium-sized businesses to reflect on the following questions:

- How are you approaching integration? What could it look like ideally?
- What innovative approaches are being used to achieve integration?
- What are the barriers to full integration, and what strategies are being used to overcome those barriers?
- Are there different approaches for different workers?

Speakers in this session included the following:

- Greg Howe, Wellness Manager for Lincoln Industries (Lincoln, Nebraska), which has some 620 workers at 5 sites of varying sizes, ranging from 8 people to about 500. The company is primarily a metal finisher, although it also engages in engineering, fabrication, polishing, plating, coating, assembly, and supply chain work.
- Lee Newman, Professor, Colorado School of Public Health, and Chief Medical Information Officer, Axion Health, Inc. A Colorado School of Public Health initiative, Health Links™[1], is developing a healthy business certification and advising program in the state and which mostly serves businesses with fewer than 500 employees. In Colorado, 96 percent of small businesses have fewer than 50 employees, and no programs to improve worker health are specifically geared toward these employers.

[1]The Colorado School of Public Health asserts common law trademark rights for the term *Health Links*.

- Joe Nguyen, President of IUE-CWA Local 84913 and employee of RACO, a manufacturer of electrical boxes and fittings, and a small division of the much larger Hubbell Incorporated. Although RACO does not have a Total Worker Health program, over the years it has had components of such a program.

READINESS

Some businesses with fewer than 50 employees may consider themselves to be too small for a worksite wellness program or for integration of wellness and traditional safety programs, said Newman. His Colorado School of Public Health program works with small businesses on ways to translate research into practice around safety and health promotion, but the literature on small business applications "is sparse." A systematic review of published articles on the worksite wellness component for small businesses—in terms of both adoption and effectiveness—found fewer than 20 studies that met the reviewers' criteria for rigor (McCoy et al., 2014), and even less is known about the integration of health promotion and health protection/safety in small businesses, he said.

One of Lincoln Industries' core beliefs is that "wellness and healthy lifestyles are important to our success," and among the company's success drivers is the statement that "a safe working environment is our commitment to each other," said Howe. The commitment starts at the top and is shared by every single worker. According to Howe, such a foundational culture is necessary to support initiatives like Total Worker Health. With that culture in place, the company can support people to live healthy lifestyles and "to become the best version of themselves," as Howe put it, which he believes will lead to optimal business performance.

A company may use formal means, such as surveys and environmental evaluations, to determine whether it is ready for an integrated program, but for small employers, Howe said, it may simply be a matter of asking peoples' opinion about what they want when the company is looking at making an investment—a new product, new machines, or a new employee benefit. Such decisions require weighing where the company wants to grow and what its people most need in order to get there. According to Howe, typical drivers for small business decision making include the following:

- An interest in hiring and retaining quality people.
- A recognition that younger workers, especially, are more demanding about the kind of workplace they are being hired into, including evidence that the employer cares about workers and keeping them happy. (Several other workshop participants also noted the increasing preoccupation among employers regarding worker "happiness.")
- The desire to be sure an initiative has buy-in from people already working there.

While top leadership support is vital, there has to be at least some support throughout the organization, Howe said.

INTEGRATION OPPORTUNITIES AND IMPACT

The following are examples of programs in which Lincoln Industries has integrated health and wellness:

- Fuel for Performance (covering sleep, fitness, and nutrition),
- HealthyU (an on-site free medical clinic),
- HealthyU Fit (an on-site fitness center), and
- Platinum Wellness.

The Fuel for Performance program works with individual teams and departments from across the company, providing individual professional coaches to help people establish their own goals, which they then work on for 12 to 16 weeks. (The types of exercises that people specifically requested, in order to make them feel better at work, were aimed at improving range of motion and flexibility.) The company started looking at the exercise and fitness domain using a sports medicine model. While the program produced some health and fitness benefits, Howe said, it also reduced absenteeism and was associated with both self-reported and supervisor-reported performance improvements. In addition, team camaraderie increased, as employees supported each other in their efforts to meet their individual goals.

HealthyU, the company's free medical clinic available to both workers and families, provides primary care, health coaching, and acute care, and helps people access health care. Each clinic appointment is a minimum of 15 minutes, so even when a presenting problem is quickly ad-

dressed, Howe said, there is an opportunity for conversation about healthy lifestyle, if the person wants to discuss it.

In addition, massage therapists and physical therapists are available to help with any appropriate issues, regardless of whether an injury occurred at work. Because these therapists know the company so well, Howe said, they can provide greater ergonomic support and are brought in when the company is launching new processes, sitting in with the engineering and design team, in the hope of preventing ergonomic problems. Massage therapy fits the sports medicine model, and was offered to a group of workers whose rate of musculoskeletal injuries was trending up. At the same time, some robotics were brought in to lighten the load. Massage therapy is now offered weekly for members of that high-risk group, as a paid-time, on-the-clock benefit. Injuries among them have been almost eliminated, with no new injury for 4 years.

The Platinum Wellness Program is an employee incentive program that includes various health screening measures and addresses tobacco use. (In 2004, 42 percent of Lincoln Industries' employees smoked; today only 13 percent do, and risk factors for diabetes and heart disease have likewise declined, Howe said.) Workers who achieve certain results receive points and are eligible for different rewards. One of these is a Platinum Mountain Climb, a company-paid trip to Colorado where the group summits a 14,000-foot mountain. In 2014, 270 employees qualified (though not all do the climb). How this differs from some other employer incentive programs, Howe said, is that it is an experience, one that employees are proud to have achieved.

Newman gave as an example his project's experience with San Isabel Electric Association in Pueblo, Colorado, which is a "fairly hazardous" industry employing some 85 people. The integrated approach had leadership buy-in, and middle-managers and individual champions promoted a new wellness component to combine with the existing safety program. The result, Newman said, was both good public and community relations and "a healthier, happier, more productive workforce."

Recognizing that one size does not fit all, the Colorado project does not start with any specific template for how—or whether—employer health and safety programs should be integrated. Instead, the project educates company leaders using an evidence-based framework for establishing a sustainable culture of safety and health. The framework allows them to determine which specific wellness and safety activities fit in their business framework and company culture. Employers currently offering no health and safety programs, Newman said, "may integrate

health and safety from the beginning," while employers that already have both will want to carefully analyze whether there will be real benefits from integration before making changes.

A FOCUS ON SAFETY

Hazardous industries need to start their efforts with strong safety programs, Newman said, though small office-based companies may be able to start with wellness. Priorities may differ within the employee population, Nguyen said, with employees doing the "heavy lifting" preferring an emphasis on safety—including improved building maintenance to reduce hazards—with people in office jobs preferring wellness. Yet another group of workers might prefer that the monies spent on wellness be invested in higher wages or used to hire additional employees, in order to decrease the amount of mandatory overtime or ease productivity demands. In other words, employees may need building repairs, job repairs, and process repairs to make work healthier.

Nguyen emphasized the importance of having a joint labor and management safety committee, to assure input from people actually doing the work, day-to-day. While there is a tendency to go to "the experts" for safety solutions, he said, the workers actually may be the experts. As an example, his employer has a joint safety committee with four members from the company and an equal number from the union, and these members represent different managerial responsibilities and sectors of the workforce.

Nancy Lessin, United Steelworkers–Tony Mazzocchi Center, noted that the Occupational Safety and Health Administration's permissible exposure limits are outdated and that NIOSH has, in many cases, come up with more protective recommended exposure limits. She challenged employers to consider:

- First, has the use of toxic substances been analyzed, in order to identify substances or processes that could be problematic, and their use eliminated or reduced by changing the process or using safer substitutes?
- If use is unavoidable, are they controlled to NIOSH's recommended level?

Only the employer can do this, she said; the worker cannot.

Even with Lincoln Industries' emphasis on wellness, attention to safety has not subsided. The total number of injuries among its workers declined from 46 in 2011 to 14 in 2013, and now stands at a rate below the industry average. Howe described an approach of looking at occupational risk by department—focusing on some concrete, current problem—and not trying to introduce a company-wide initiative in the beginning. Then the safety conversation can be expanded, under the notion that what is wanted is to look at the "whole human."

Even though federal law requires adherence to specific safety standards, among the first 100 small businesses that Newman's project has worked with in Colorado, 70 "have nothing going on in safety at all. There is no assessment of chemicals, nothing, zero." This is another area in which good data can be useful, inasmuch as summary measures of safety may obscure heightened risks and opportunities for prevention in a particular work unit, department, or product line.

LEARNING WHAT WORKS

The Colorado certification project has launched some community-level interventions in order to learn more about what works in smaller employment settings, Newman said. In the pilot project, Health Links Colorado,[2] program managers provide education and advice for employers for starting an integrated wellness and safety program, information, and resources—especially local and free resources—and some funding. The project also connects employers with other small businesses attempting similar initiatives. For companies, the certification process begins with an online application that provides feedback, which is followed by an advising visit where project personnel discuss the safety and wellness profiles of the company, following the Total Worker Health model. The program includes an annual recertification, which focuses on continued improvements measured at the organizational level.

To keep management support, integrated health and wellness programs must be regarded as beneficial to both workers and employers, and be equitable and sustainable, Newman said. Although the evidence base is thin, programs should be evidence based to the extent possible and coordinated across health and safety. In any case, research will be a continuing challenge in working with the wide array and diversity of small

[2]For more information, see www.HealthLinksColorado.org (accessed July 21, 2014).

employers. Small businesses and labor can establish consortia, collaboratives, coalitions, and information exchanges that may enable some of the innovations to move forward, including the necessary supporting research, Goetzel said.[3]

The Colorado project trains community health workers to talk to small businesses about a range of issues—safety, chronic disease, prevention, smoking cessation—depending on the employer's interest. In the reactors panel at the end of the workshop, Nicolaas Pronk, Vice President for Health Management and Chief Science Officer, HealthPartners, Inc., said, this community piece is the key to future sustainability.

EMPLOYEE RELATIONS

As mentioned, concerns over privacy may be heightened in a small organization. Employees worry about the confidentiality of their health data, and managers worry about violating federal privacy requirements. Especially when a small employer uses an outside vendor to manage its wellness program, it needs to be sure that both data safeguards and quality measures are in place so it can trust the information provided about employees' health status. Nguyen said there can be a conflict of interest, if reporting high rates of health problems would lead to a request for more vendor-supplied interventions. Also, in the reactors panel at the end of the workshop, Margaret Robbins, National Director, Occupational Safety and Health, Coalition of Kaiser Permanente Unions, said, management must ensure programs are truly voluntary, regardless of who is carrying them out, and voluntary in fact, not just by design, as coercive programs have engendered worker opposition.

In cases where safety programs are lacking, Newman said, the wellness programs management wants to introduce can be a Trojan horse. With an integrated approach, you can come in to work on wellness and introduce the idea of safety (e.g., hazardous substances control) as well, he said. But Lessin argued that only when the workplace is considered safe and free of hazardous chemicals, when hours, workload, and staffing are reasonable—all those issues that are solely under the employer's control—

[3]An example provided was the Council of Smaller Enterprises, with 14,000 members, which is the Cleveland region's largest small business support program and includes advice and resources related to wellness programs. See http://www.cose.org/Manage%20Employees/Employee%20Benefits%20Consultation%20and%20Programs/Wellness%20Programs.aspx (accessed July 22, 2014).

can an employer credibly start talking to people about its concerns for their health.

6

Reactors Panel and Discussion

The company has to be in a good place itself if it wants to do this well.

—Nicolaas Pronk

If [workers] sense a lack of true commitment to their health as evidenced by a safety program that is considered ineffective, you are not going to get anywhere.

—Margaret Robbins

During the course of the workshop itself, several points were repeated, demonstrating the dynamic tensions between workplace safety and health protection efforts and health promotion activities. These included the importance of privacy issues (Chang, McLellan, Nguyen); the need for more evidence on Total Worker Health interventions (Lessin, Newman); and the need for a workplace culture that supports and promotes the principles of Total Worker Health (Carson, Duval, Howe, McLellan, Scibelli, Wald).

In this final workshop session, moderated by Glorian Sorensen, Professor of Social and Behavioral Sciences, Harvard School of Public Health, and Vice President for Faculty Development, Dana-Farber Cancer Institute, a four-person reactor panel presented their impressions of the day's presentations and identified several additional themes, followed by a brief discussion period. Reactors included LuAnn Heinen, Director, Institute on Health, Productivity and Human Capital, and Vice President, National Business Group on Health; Nicolaas Pronk, Vice President for Health Management and Chief Science Officer, HealthPartners, Inc; and

Margaret Robbins, National Director, Occupational Safety and Health, Coalition of Kaiser Permanente Unions.

REACTORS PANEL

Several common elements come to the fore in the kinds of programs discussed during the workshop, including (1) leader recognition and prioritization of Total Worker Health in the business's culture; (2) a comprehensive perspective on workplace safety and hazard reduction, including systemic factors that should be addressed; and (3) attention to the wellness and health promotion activities that can produce healthier, happier, more satisfied workers, which ultimately can have a positive effect on business goals.

Heinen reflected on the fact that while the topics discussed are very relevant to her audience (mostly private, large, self-insured employers), many have not overcome their organizational silos. They have wellness programs. They have safety programs. But they are not well-integrated at this point in time. She lauded the workshop participants as being leaders in Total Worker Health, noting their corporate support and visionary, committed, and long-tenured program leaders.

Even if employer concerns about health care costs were to disappear tomorrow, she said, their interest in safety and wellness would continue, through their interest in business outcomes like absenteeism and presenteeism as well as attracting and keeping healthy workers on the job. Some data from the National Business Group on Health suggest that employee engagement and wellness programs are highly correlated with recruitment, retention, and reduced workers' compensation claims, independent of health care cost impact. To employers, these are important measures of productivity. Heinen concluded by saying that more documentation of positive outcomes is needed to make the business case for Total Worker Health, and that "every individual organization and every company needs its own very specific business case for why this matters."

Pronk first pointed to the need for a "human-centered approach" that includes building trust and respect. This also includes using participatory approaches that intentionally include the views and opinions of workers so when it comes to operating the programs, "You make sure that you have representation from every level of the organization," he said. Other factors he noted to be important to successful integration of health and safety include leadership support, training at multiple levels (including

managerial), the formation of integrated multifunctional teams, and setting measurable goals at multiple levels. He also noted a focus on community ties. Pronk indicated that there are challenges associated with trying to define what a "culture of health" really means. Certainly, substantial variability exists in what it means for one company versus another company, he said.

Pronk noted several barriers to integration, including leadership support and training, accountability at multiple levels of the organization, building the business case for action, and bridging silos. Additionally, cost to an organization, particularly the small- and medium-sized businesses, may be a big barrier, he said.

Pronk also noted that health and well-being has many components and should not be viewed as simply one single number; health and well-being is multidimensional and complex. It is related to indicators of individual health but also to the physical, psychosocial, and socioeconomic environments of people. Measuring it is notoriously difficult and challenging. He said there may be an opportunity to think about a summary measure of health and well-being, a summary measure of safety, and then a summary measure of integration. Finally, in terms of scalability and sustainability of successful programs, "connecting to the community is absolutely key," Pronk said, and organizations should look for partners in their local community (including non-traditional partners) to be part of the conversation.

Teamwork across the many different health and safety domains, as well as human resources, benefits, employee assistance programs, and so on, is not necessarily easy, said Robbins. An initial step is to acknowledge each domain brings a perspective and approach about worker health and safety and how to improve it that others may not share. Building a shared understanding about ways to accomplish Total Worker Health together, respecting everyone's perspective, would be a significant accomplishment.

For an employer's Total Worker Health program to take hold requires that the following preconditions be in place, she said:

- Adequate wages, basic health and related benefits, and an effective safety program, in order to demonstrate concern for workers' health and well-being, which can lead to worker buy-in and participation;
- Commitment to assessing work environments and processes longer term;

- Having employee representative participation from the outset, including participation in defining for the program what health is and how money is spent on the workers' behalf; and
- Voluntary nature of the program.

On this last theme, Robbins said there is a need for a community approach to Total Worker Health. In the past, when more health departments had occupational health staff and greater outreach capacity, they could reach worker communities not touched by employer programs—small workforces, contingent, part-time, seasonal, or marginal workers, for example.

DISCUSSION

Now it takes greater effort and some tailoring to determine which parts of a community should be part of the wellness conversation for a specific employer, said Robert McLellan of Dartmouth-Hitchcock. In some situations, the Chamber of Commerce might be a good partner; in others, it might be a local migrant group.

In Colorado, Lee Newman, Colorado School of Public Health and Axion Health, Inc., said his team has learned that what "friends and family" think of the employee wellness program is very important. He also emphasized the importance of the "evisceration" of local public health focused on occupational health and safety. He noted that in the coming year, they will be enlisting community health workers in local health departments to be trained in talking to small businesses about Total Worker Health principles.

Following on the theme of the importance of community, Nancy Lessin, United Steelworkers–Tony Mazzocchi Center, used the example of cancer prevention saying that while a lot of attention has been paid to lifestyle issues, employers first need to ensure that exposures to carcinogens in the workplace are removed or mitigated.

Employers have three principal motivations for launching a Total Worker Health program, said Greg Howe, Lincoln Industries:

1. The humanistic motivation—simply, a belief in the importance of workers' health and a healthy company culture;
2. The need to adhere to regulations that are enforced; and

3. The economic imperative, which may turn out to be the most important, if these programs and practices do ultimately connect with good business outcomes.

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A

Workshop Agenda

Total Worker Health: Promising and Best Practices in the Integration of Occupational Safety and Health Protection with Health Promotion in the Workplace—A Workshop

May 22, 2014

National Academy of Sciences Building
2101 Constitution Avenue, NW
Room 120
Washington, DC 20418

Sponsored by:
National Institute for Occupational Safety and Health (NIOSH)

Workshop Objectives

- Identify best or promising practices associated with the design, implementation, and evaluation of an integrated approach to worker health, including factors associated with successful implementation.
- Discuss barriers to implementing integrated occupational safety and health protection and health promotion programs and ideas for overcoming those barriers.
- Explore measures being used or considered for evaluating the effectiveness of programs that integrate occupational safety and health protection with health promotion.

8:45 a.m. **Welcome and Opening Remarks**
Glorian Sorensen, *Workshop Chair*
Harvard School of Public Health and
Dana-Farber Cancer Institute

SPONSOR'S REMARKS
NIOSH VISION OF TOTAL WORKER HEALTH

9:00 a.m. John Howard
NIOSH

KEYNOTE: TOTAL WORKER HEALTH IN THE REAL WORLD

9:30 a.m. Robert McLellan
Dartmouth-Hitchcock Medical Center

SESSION I
WHAT IS THE VALUE IN PURSUING TOTAL WORKER HEALTH?

10:00 a.m. **Introductions**
Pamela Hymel *(Moderator)*
Walt Disney Parks and Resorts

10:05 a.m. **Speakers**
Jules Duval
Smithsonian Institution

Kathleen M. McPhaul
U.S. Department of Veterans Affairs

Peter Wald
USAA

10:50 a.m. **Discussion with Speakers and Audience**

11:15 a.m. **A Labor Perspective on the Value in Total Worker Health**
Nancy Lessin
United Steelworkers–Tony Mazzocchi Center

11:30 a.m. **Discussion with Speakers and Audience**

11:35 a.m. **LUNCH**

SESSION II
LARGE BUSINESSES

Questions:

- How are you approaching integration? What could it look like ideally?
- What innovative approaches are being used to achieve integration?
- What are the barriers to full integration, and what strategies are being used to overcome those barriers?
- Are there different approaches for different workforces?

12:15 p.m. **Introductions**
Ron Z. Goetzel *(Moderator)*
Johns Hopkins Bloomberg School of Public Health and Truven Health Analytics

12:20 p.m. **Speakers**
Michael Carson
The Dow Chemical Company

Maribeth Rouseff
Baptist Health South Florida, Inc.

Andrew Scibelli
NextEra Energy, Inc.

Laura Welch
Center for Construction Research and Training (CPWR)

1:20 p.m. **Discussion with Speakers and Audience**

1:50 p.m. **BREAK**

SESSION III
SMALL- AND MEDIUM-SIZED BUSINESSES

Questions:

- How are you approaching integration? What could it look like ideally?
- What innovative approaches are being used to achieve integration?
- What are the barriers to full integration, and what strategies are being used to overcome those barriers?
- Are there different approaches for different workforces?

2:15 p.m. **Introductions**
Chia-Chia Chang *(Moderator)*
NIOSH

2:20 p.m. **Speakers**
Greg Howe
Lincoln Industries

Lee S. Newman
Colorado School of Public Health and Axion Health, Inc.

Joe Nguyen
IUE-CWA Local 84913

3:05 p.m. **Discussion with Speakers and Audience**

SESSION IV
REACTORS PANEL AND DISCUSSION

3:30 p.m.	**Reactors** Glorian Sorensen *(Moderator)* Harvard School of Public Health and Dana-Farber Cancer Institute LuAnn Heinen National Business Group on Health Nicolaas P. Pronk HealthPartners, Inc. Margaret Robbins Coalition of Kaiser Permanente Unions
3:50 p.m.	**Discussion with Speakers and Audience**
4:00 p.m.	**ADJOURN**

B

Speaker and Moderator Biographical Sketches

Michael Carson, D.O., M.P.H., FACPM, is the Global Director of Operations and Consulting for Health Services at The Dow Chemical Company. He is responsible for leading the medical support to Dow in product safety, business development, external advocacy, government affairs, medical outreach, and issue management, and leads Dow's epidemiology department for human health research. In addition, Dr. Carson has responsibility for overall health services operations, including coordinating service and leadership teams, and regional service delivery of employee health services. During his 24 years with Dow, Dr. Carson has published numerous studies assessing employee health, and has provided strategic and implementation direction for Dow's health strategy involving Total Worker Health integrating safety, wellness, and clinical care to optimize employee health outcomes in a healthy workplace culture.

Chia-Chia Chang, M.B.A., M.P.H., leads initiatives for the National Institute for Occupational Safety and Health (NIOSH) Total Worker Health™ program to develop partnerships and best practices on the integration of health protection and health promotion. In her previous work in the NIOSH Office of the Director, her responsibilities included leading enrollment and outreach for the World Trade Center Health Program, serving as Assistant Portfolio Coordinator for Emergency Preparedness and Response, and completing a review of the customer service of the NIOSH dose reconstruction program and a mid-decade review of the National Occupational Research Agenda, a national research and translation partnership program. Ms. Chang started her federal career as a Presidential Management Fellow, during which she organized forums around the

country for the Social Security Administration to highlight initiatives that facilitate return to work of people with disabilities, and completed detail assignments that included developing Medicaid and health financing policies for the Office of Management and Budget and the Senate Committee on Health, Education, Labor, and Pensions. Before joining the government, she conducted health research project activities at RTI International. Ms. Chang received an M.B.A. from the University of Maryland, an M.P.H. from the University of Michigan, and a B.S. (summa cum laude) from the University of Alabama at Birmingham.

Jules Duval, M.D., served in the U.S. Air Force for 8 years after finishing medical school in 1996. During this time, he provided mission-related medical care for active-duty troops as well as primary care for both them and their dependents. Dr. Duval also served on medical evaluation boards whose function is to determine the ability of servicemen and servicewomen to fulfill the requirements of their job. At his last Air Force assignment, he assumed an administrative leadership role at the base primary care clinic mentoring junior physicians, physician assistants, nurses, and medical technicians as he continued to provide clinical services. He was also routinely sought out by his superiors to handle delicate medical issues pertaining to some of the most senior officers on base. Shortly after leaving the Air Force, Dr. Duval accepted the position of Medical Director of Occupational Health Services at Smithsonian Institution. He leads a team of nurses and mid-level practitioners who provide occupational medicine services to Smithsonian employees working across the nation and around the world. Over the past 8 years, he and his team created a clinical wellness program that has significantly enhanced employee health and productivity while also decreasing sick leave utilization. This accomplishment was the main reason that the American College of Occupational and Environmental Medicine (ACOEM) recognized Smithsonian Institution in 2012 with its highly prestigious Corporate Health Achievement Award.

Ron Z. Goetzel, Ph.D., wears two hats. He is a Visiting Professor and Director of the Institute for Health and Productivity Studies (IHPS) at the Johns Hopkins Bloomberg School of Public Health and Vice President of Consulting and Applied Research for Truven Health Analytics. The mission of the IHPS is to bridge the gap between academia, the business community, and the health care policy world—bringing academic resources into policy debates and day-to-day business decisions, and bring-

ing health and productivity management issues into academia. Before moving to Johns Hopkins, Dr. Goetzel was on the faculty at Emory and Cornell Universities. Dr. Goetzel is responsible for leading innovative research projects for health care purchaser, managed care, government, and pharmaceutical clients interested in conducting cutting-edge research focused on the relationship between health and well-being, medical costs, and work-related productivity. He is a nationally recognized and widely published expert in health and productivity management, return on investment, program evaluation, and outcomes research. Dr. Goetzel has published well over 100 peer-reviewed articles and book chapters and frequently presents at international business and scientific forums.

Dr. Goetzel served as principal investigator (PI) for a project sponsored by the National Heart, Lung, and Blood Institute focused on obesity prevention at the workplace. He was PI for the Centers for Medicare & Medicaid Services Senior Risk Reduction Demonstration, New Opportunities for Healthy Aging in Medicare initiatives, and other demonstrations focused on cancer prevention and treatment for ethnic and racial minorities, chiropractic care, vision rehabilitation, and health improvement incentive structures for Medicaid beneficiaries. He also served as PI for the Federal Employee Worksite Health and Wellness Initiative administered by the Office of Personnel Management. For the Centers for Disease Control and Prevention (CDC), Dr. Goetzel was PI for a New York City–based project supporting collaboration between the private and public sectors directed at employer health promotion programs. He was PI on a CDC Cooperative Agreement focused on promoting health policy and disease prevention, with a specific task related to estimating the cost burden of vaccine-preventable diseases in adults (Zoster).

As PI for a study funded by the National Association of Chronic Disease Directors, and with close cooperation of CDC, Dr. Goetzel identified the characteristics of promising practices in workplace health and productivity management programs. He also worked with the U.S. Department of Defense on two health promotion and resilience training demonstrations for the U.S. Army and Air Force. He is now supporting the Office of the Secretary of Defense in measuring the impact of the Healthy Base Initiative focused on managing obesity and tobacco use in the military.

In the private sector, Dr. Goetzel has led multiple evaluations of health promotion and disease prevention programs at Boeing, Chevron, Dow Chemical, Citibank, Johnson & Johnson, IBM, Procter & Gamble, Duke University, University of Michigan, Vanderbilt University, Motorola,

Novartis Pharmaceuticals, PepsiCo, Prudential, PPG, Mass Mutual, Whirlpool, and others. Public-sector partners have included King County, Washington; Cayuga County, New York; and the State of Delaware. Health plan and insurance company collaborators include Blue Cross Blue Shield Federal Employee Program, Blue Cross Blue Shield of Michigan, Blue Shield of California, Highmark, American Specialty Health, Blue Cross Blue Shield Association, Mayo Clinic, and Kaiser Permanente. Dr. Goetzel also works with several associations and nonprofits, including the Care Continuum Alliance, National Institute for Health Care Management, Health Enhancement Research Organization, Mid-America Coalition on Health, Partnership for Prevention, and The Health Project. Finally, Dr. Goetzel has established strong working relationships with vendors in the health promotion industry, including StayWell, Johnson & Johnson, WebMD, Health Fitness Corporation, Alere, On Life, Discovery Vitality, and Pfizer. Dr. Goetzel's international work includes projects with Discovery Health in South Africa, the Ministry of Health in Israel, Social Service of Industry in Brazil, and The Health Promotion Board of Singapore.

Dr. Goetzel is a Task Force Member of the Guide to Community Preventive Services housed at CDC, and President and chief executive officer (CEO) of The Health Project, which annually awards organizations the prestigious C. Everett Koop prize for demonstrable health improvement and cost savings from health promotion and disease prevention programs. He was also a member of the Institute of Medicine Committee on Department of Homeland Security Workforce Resilience.

LuAnn Heinen, M.P.P., is Vice President of the Washington, DC-based National Business Group on Health, representing large self-insured employers; she leads health and well-being initiatives as Director of its Institute on Innovation in Workforce Well-Being. The institute guides large employers on effective worksite health improvement programs. Each year the institute recognizes U.S. employers who are leading the way in wellness with its Best Employers for Healthy Lifestyles award. She also directs the Institute on Health, Productivity and Human Capital, a leading resource for large employers on benchmarking metrics and engagement strategies for health and productivity management. This institute annually hosts the National Conference on Health, Productivity and Human Capital.

Heinen earned a Master of Public Policy from the Kennedy School of Government at Harvard University and an A.B. in human biology with distinction from Stanford University.

John Howard, M.D., M.P.H., J.D., L.L.M., is the Director of NIOSH in the U.S. Department of Health and Human Services (HHS). Dr. Howard also serves as the Administrator of the World Trade Center Health Program in HHS. Dr. Howard was first appointed NIOSH Director in 2002 during the George W. Bush administration and served in that position until 2008. In 2008 and 2009, Dr. Howard worked as a consultant with the U.S. government's Afghanistan Health Initiative. In September of 2009, Dr. Howard was again appointed NIOSH Director in the Barak Obama administration. Prior to his appointments as NIOSH Director, Dr. Howard served as Chief of the Division of Occupational Safety and Health in the State of California's Labor and Workforce Development Agency from 1991 through 2002. Dr. Howard received a Doctor of Medicine degree from Loyola University of Chicago, a Master of Public Health degree from the Harvard School of Public Health, a Doctor of Law degree from the University of California, Los Angeles, and a Master of Law degree in administrative law and economic regulation from The George Washington University in Washington, DC. Dr. Howard is board certified in internal medicine and occupational medicine. He is admitted to the practice of medicine and law in the State of California and in the District of Columbia, and he is a member of the U.S. Supreme Court bar. He has written numerous articles on occupational health law and policy.

Greg Howe, M.A., has more than 7 years of experience in the health and wellness field. He currently serves as Wellness Manager for Lincoln Industries. He is responsible for advising management in policy and program matters, developing long-range strategy, and identifying emerging trends. The Lincoln Industries wellness program has received the C. Everett Koop National Health Award and the American Heart Association Platinum award. Lincoln Industries has been featured in the *Wall Street Journal* and *Forbes*. Mr. Howe serves as a member of the Health Enhancement Research Organization (HERO) Think Tank, and is Board President of Partnership for a Healthy Lincoln. Mr. Howe received his master's and bachelor's degrees from the University of Nebraska at Lincoln.

Pamela Ann Hymel, M.D., M.P.H., is Senior Director of Integrated Health and Chief Medical Officer for Walt Disney Parks and Resorts. Previously she was Director of Integrated Health and Corporate Medical Director at Cisco Systems, where she was responsible for the strategy and design of Cisco's HealthConnections program, a health and produc-

tivity program for Cisco employees worldwide. She was also responsible for Cisco's on-site health clinic and childcare center at Cisco headquarters in San Jose, California, and developed a global strategy for integrated health programs. In 2007, Cisco's HealthConnections program won a Best Employers for Health Lifestyles Gold Award from the National Business Group on Health, and a California Fit Business Award, as well other national recognition. Prior to joining Cisco, Dr. Hymel worked as a Senior Vice President at Sedgwick Claims Management Services and as Vice President of Human Resources, Medical Services, and HR Systems for Hughes Electronics. Her work at Hughes was recognized with an ACOEM Corporate Health Achievement Award and a C. Everett Koop Award honorable mention.

Board certified in both internal medicine and occupational medicine, Dr. Hymel is a nationally recognized leader in the field of benefits, occupational medicine, and health-related productivity. She has authored or co-authored a number of studies and research papers on disability management and health and productivity management and is a frequent speaker nationally on these subjects.

Dr. Hymel has held a variety of leadership positions in medical and health-related organizations. She currently serves as President of ACOEM, the nation's largest association representing occupational and environmental physicians. She served on the ACOEM Board of Directors from 1999 to 2003 and again from 2005 to the present. She served as treasurer of ACOEM from 2001 to 2003.

In addition to her work on the ACOEM Board, Dr. Hymel serves on the boards of the National Business Group on Health, the Integrated Benefits Institute, and the Pacific Business Group on Health. She served on the Institute of Medicine Committee to Assess Worksite Preventive Health Program Needs for NASA employees in 2004–2005. She has chaired numerous task forces and committees. She was also President of the Western Occupational and Environmental Medicine Association in 2001.

Born in New Orleans, Louisiana, Dr. Hymel received a bachelor's degree in biology from the University of California, Irvine, and a master's degree in public health from Tulane University. She received her M.D. degree from the Louisiana State University Medical School.

Nancy Lessin, M.S., is Senior Staff for Strategic Initiatives for the United Steelworkers–Tony Mazzocchi Center. She has worked in the field of occupational safety and health for 35 years. She served for 5 years as a member of the National Advisory Committee on Occupational

Safety and Health (NACOSH), and she also served for 5 years on the NIOSH National Occupational Research Agenda (NORA) "Organization of Work" Workgroup. She currently serves on the U.S. Department of Labor/Occupational Safety and Health Administration (OSHA's) Whistle-blower Protection Advisory Committee. She is a member of the AFL-CIO's Staff Subcommittee on Occupational Safety and Health; a member of the Massachusetts Department of Public Health's Occupational Health Surveillance Program Advisory Committee; and serves on the Massachusetts Department of Industrial Accidents' Health Care Services Board. She has served as adjunct faculty for the University of Massachusetts Amherst's Labor Relations Research Center, and for the National Labor College. She has presented workshops and programs on occupational safety and health issues in Australia, Canada, Europe, South America, and the United States.

Robert McLellan, M.D., M.P.H., serves as the Chief of the Section of Occupational and Environmental Medicine of Dartmouth-Hitchcock Medical Center and is Associate Professor of Medicine, Community, and Family Medicine at The Dartmouth Institute at the Geisel School of Medicine at Dartmouth. He also serves as Medical Director of Live Well/Work Well, a comprehensive, integrated health promotion and health protection program for Dartmouth-Hitchcock's employees and their families. He is a past president of the American College of Occupational and Environmental Medicine, as well as the New England College of Occupational and Environmental Medicine. He received his B.A., M.D., and M.P.H. from Yale University. Dr. McLellan has extensive experience as an occupational and environmental medical consultant in a wide range of economic sectors and has maintained a clinical practice in occupational and environmental medicine for more than 30 years. He has been the PI of several grants related to occupational and environmental medicine and was a co-recipient of NIOSH's NORA Award for Innovative Research. He is the recipient of numerous other awards including the New Hampshire Public Heath Association's Roger Fossum Award for dedicated commitment and leadership in environmental and public health, two President's Awards from ACOEM, and the Harriet Hardy Award from the New England College of Occupational and Environmental Medicine for a physician who exemplifies the highest ideals of occupational and environmental medicine practice.

Kathleen M. McPhaul, Ph.D., M.P.H., R.N., is the Chief Consultant of the U.S. Department of Veterans Affairs (VA), Public Health, Occupational Health group. She joined the VA as the Deputy Chief Consultant of the Occupational Health group in 2012. She is a widely published researcher, educator, and occupational health consultant specializing in the health care work environment. She completed a B.S. in nursing at the University of Virginia, an M.P.H. at the Johns Hopkins University School of Hygiene and Public Health, and a Ph.D. at the University of Maryland School of Nursing. Prior to coming to the VA, she spent more than 20 years at the University of Maryland where she directed clinical research protocols in the Occupational Medicine program, coordinated clinical occupational health activities, and consulted for state and local public health agencies. She joined the faculty of the School of Nursing in 2004 when she completed her Ph.D. and participated in a 10-year program of research on workplace violence prevention. Lastly, she directed the Community/Public Health Nursing program from 2010 to 2012. Dr. McPhaul managed the depleted uranium surveillance program at the Baltimore VA Medical Center from 1994 to 1996 where she stood up the joint Department of Defense/VA surveillance program. Her formal research interests have included depleted uranium in Persian Gulf Veterans, occupational lead exposure in construction, workplace violence prevention in mental health and addictions settings, bloodborne pathogen interventions in home health care, coworker conflict in public employees and occupational health, and safety and health needs of the aging health care workforce. Dr. McPhaul's expertise also includes development of joint labor–management safety interventions, developing training programs, and building capacity within systems for health and safety programs. She has authored many publications and is widely viewed as an expert in occupational health in the health care work environment.

Lee Newman, M.D., M.A., FCCP, FACOEM, is a professor, physician, and digital health entrepreneur. Dr. Newman is an expert in the field of worker health, safety, worksite wellness, and health informatics. He is Professor of Environmental and Occupational Health in the Colorado School of Public Health. He is Director of the Center for Worker Health and Environment, Director of the Mountain and Plains Education and Research Center, and founder and former CEO and current Chief Medical Informatics Officer of Axion Health, Inc., a health informatics company that develops Web-based software for occupational health practice (Westminister, Colorado). Dr. Newman is also a Professor of

Medicine in the Division of Allergy and Clinical Immunology and Division of Pulmonary Sciences and Critical Care Medicine in the School of Medicine at the University of Colorado, Anschutz Medical Campus. Integrated worksite health promotion and health protection is a focus of Dr. Newman's research and teaching in his role in academia. He is co-founder and Co-Director of Health Links™, a nonprofit initiative of the Center for Worker Health and Environment to promote worksite wellness and safety, especially in small businesses by providing certification, advising, training of community advisors, and linkage to resources and vetted vendors that can assist enterprises in managing health promotion and health protection. He conducts research on how to improve worksite wellness in small businesses and on the impact of health risk management programs in small business on worker health risks and productivity, as well as worker's compensation claims and costs. Additionally, as a small business owner, he has real-life experience integrating the concepts of Total Worker Health. Dr. Newman received his Bachelor of Arts degree in psychology from Amherst College and his Masters of Arts degree in social psychology from the Cornell University Graduate School of Arts and Sciences. He earned his M.D. from Vanderbilt University School of Medicine, completed internship and residency in Internal Medicine at Emory University School of Medicine, and pulmonary fellowship at the University of Colorado Denver/National Jewish Health, including 3 years postdoctoral research in both immunology and occupational/environmental medicine. He is board certified in internal medicine and pulmonary medicine.

Joseph Nguyen has worked for RACO since 2003 and has been involved in his local union since 2006. Mr. Nguyen held the office of Trustee from 2006 to 2008, Vice President from 2008 to 2011, and President of his local from 2011 to the present. Mr. Nguyen had the pleasure of being selected for, and graduating from, the Communication Workers of America's 2012 class of The Minority Leadership Institute.

Nicolaas P. Pronk, Ph.D., FACSM, FAWHP, is the Vice President for Health Management and Chief Science Officer for HealthPartners, Inc. Dr. Pronk is also a Senior Research Investigator at the HealthPartners Institute for Education and Research; an Adjunct Professor for Society, Human Development, and Health at the Harvard School of Public Health; Visiting Research Professor in Environmental Health Sciences at the University of Minnesota, School of Public Health; member of the

Task Force on Community Preventive Services; and founding and past-President of the International Association for Worksite Health Promotion. His research expertise lies in the areas of population health improvement, the role of physical activity in health, and the impact of multiple health behaviors on health outcomes. Dr. Pronk is particularly interested in improving population health in context of the employer setting, the integration of health promotion with occupational safety and health, and the integration of health promotion, behavioral health, and primary care. He is Senior Editor of *American College of Sports Medicine's Worksite Health Handbook*, 2nd ed. (2009) and the author of the scientific background paper for the U.S. National Physical Activity Plan for Business and Industry. Dr. Pronk received a Ph.D. in exercise physiology from Texas A&M University and completed postdoctoral studies in behavioral medicine at the University of Pittsburgh Medical Center and the Western Psychiatric Institute and Clinic in Pittsburgh.

Margaret Lynn Robbins, M.P.H., has been the National Director of Occupational Safety and Health for the Coalition of Kaiser Permanente Unions since 2011. She has more than 20 years of experience in occupational safety and health, primarily for or with unions, in a variety of industries and roles, including as a writer, educator, curriculum developer, researcher, and union leader. In her current role, she leads and coordinates the work of national and regional labor leaders on workplace safety issues. She also assures labor's voice is present in national programs and committees related to workplace safety and health.

Maribeth Rouseff, M.B.A., is the Assistant Vice President of Employee Health Services and Wellness Advantage for Baptist Health South Florida. Ms. Rouseff joined Baptist Health in 1986 as the Nurse Recruiter for Baptist Hospital. Over the years, she has held several different positions, including Corporate Director of Recruitment and Assistant Vice President. Her responsibilities included recruitment, community education, quality, ambulatory surgery, pharmacy, employee health, medical staff office, and service excellence. Ms. Rouseff also served as Director of SkunkWorks, an internal think tank that encourages employees within large organizations to use outside-the-box thinking to develop innovative programs. Consequently, her focal point since 2000 has been the conceptualization, implementation, and management of Wellness Advantage, Baptist Health's employee wellness program. Wellness Advantage has been recognized repeatedly at the national level

as one of the most effective programs in America. It serves more than 15,000 employees and their dependents and has brought about significant positive shifts in behavior and health metrics. Current initiatives include research validating the effectiveness of programs, the implementation of electronic medical records and the application of big data in the journey to improve the lives of employees, their families, and the community. Ms. Rouseff is a Miami native with a bachelor's degree from Tulane University and an M.B.A. from Nova University.

Andrew Scibelli, M.B.A., M.A., is Manager of Employee Health and Well-Being at NextEra Energy, Inc., a Florida-based company. His responsibilities are the strategic and overall management of a comprehensive company-wide health and well-being program for employees and their families. NextEra Energy has been recognized nationally for its ongoing commitment to employee health and well-being. Prior to his 20-year tenure at NextEra Energy, Mr. Scibelli served as Vice President of Health Care Services at Doctor's Hospital Coral Gables, Florida, and Director of Health Management at United Technologies. Mr. Scibelli has served as an Adjunct Professor in the department of exercise science of Florida Atlantic University. Mr. Scibelli is a founding board member of the National Business Group on Health's Institute for Innovation in Workforce Well-Being. He has been published in numerous health journals, and has been interviewed by the *Wall Street Journal*, *New York Times*, and *CFO* magazine. Mr. Scibelli has appeared on ABC World News. He holds both a master's degree in business administration and a master's in education/exercise physiology.

Glorian Sorensen, Ph.D., M.P.H., is Professor of Social and Behavioral Sciences in the Harvard School of Public Health, and Faculty Vice President for Faculty Development at the Dana-Farber Cancer Institute, where she also directs the Center for Community-Based Research.

The core of Dr. Sorensen's cancer prevention research is randomized worksite- and community-based studies that test the effectiveness of theory-driven interventions targeting individual and organizational change. A theme of this work is to test the efficacy of behavioral and organizational interventions that are embedded in the social context or environment in which people live and work. Her research has focused on a range of settings, particularly worksites and labor unions. She conducted the first randomized controlled worksite intervention trials to integrate occupational health and health behaviors, and has designed and tested cancer

prevention interventions across a range of industries, including manufacturing, construction, health care, social service, and transportation, and with small and large worksites. These interventions aim in particular to address disparities in worker health outcomes and to be effective for low-income, multiethnic populations. Dr. Sorensen's research also examines disparities in tobacco control and consumption in India; she has developed strong collaborations with investigators at the Healis-Sekhsaria Institute of Public Health in Mumbai. Her research in India currently includes two studies funded by the National Cancer Institute to design and test tobacco use cessation interventions with teachers in the state of Biharand with manufacturing worksites in Mumbai. Dr. Sorensen's research has included a P01 program project, several U01s, and multiple R01s funded by the National Cancer Institute (NCI), the National Institute of Environmental Health Sciences, CDC, and NIOSH, as well as through foundations, including the Robert Wood Johnson Foundation.

Dr. Sorensen is the Principal Investigator for the Harvard School of Public Health Center for Work, Health, and Well-being, funded by NIOSH. She also leads the Harvard Cancer Prevention Education Program and the Training Program in the Lung Cancer Disparities Center, which train pre- and post-doctoral fellows in cancer prevention.

Peter Wald, M.D., joined USAA in December 2002. He is a physician executive with 27 years experience in population health care management, medical data infrastructure, and occupational and preventive medicine. In addition, he has published numerous peer-reviewed articles in occupational medicine and toxicology, including the benchmark textbook *Physical and Biological Hazards of the Workplace*. In 2006, USAA's Wellness Program *Take Care of Your Health* was the sole winner of the C. Everett Koop National Health Award. Mr. Wald is currently the Finance Chair and serving on the Executive Steering Committee of the Mayor's Fitness Council of San Antonio, and is the President of the San Antonio Business Group on Health. Mr. Wald's prior employers include ARCO where he served as Corporate Medical Director; Mobil Oil, where he served as Western Region Medical Director, and Lawrence Livermore National Laboratory, where he served as Occupational Toxicologist and Assistant Medical Director. During his time at ARCO, he served as the head of the Medical Data Infrastructure Project for the Pacific Business Group on Health. He is board certified in occupational medicine, internal medicine, and medical toxicology.

Laura Welch, M.D., is Medical Director for the Center for Construction Research and Training (CPWR), a research and development institute affiliated with the Building and Construction Trades of the AFL-CIO, and professorial lecturer in the Department of Environmental and Occupational Health at George Washington University. She previously held full-time faculty positions at the Albert Einstein, Yale, and George Washington University Schools of Medicine. She is the author of more than 100 peer-reviewed publications, abstracts, and technical reports, and she has served as a consultant to many federal agencies, including OSHA, NIOSH, CDC, and the National Institutes of Health, as well as serving in leadership roles for the American Public Health Association and the Association of Occupational and Environmental Clinics. She has worked with several union-management committees on health and safety issues, including United Auto Workers-Boeing, the American Association of Railroads-United Transportation Union, and the Sheet Metal Occupational Health Trust, the labor-management trust of the sheet metal industry. She frequently provides occupational medicine expertise to the AFL-CIO. As CPWR's Medical Director, she manages two nationwide medical screening programs for construction workers and coordinates research portfolios on research to practice and on ergonomics. She helped create a return-on-investment calculator that showcases the financial benefits of using safer work practices, equipment, and materials. She directs a research project evaluating the effectiveness of participatory ergonomics in the construction industry, and another analyzing the causes of early retirement among construction workers.