The *Total Worker Health*® Approach: The “Why” and the “How”

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The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health, and should not be construed to represent any agency determination or policy.
CURRENT ISSUES IN WORKER SAFETY & HEALTH
"the fusion of technologies across the physical, digital and biological worlds which is creating entirely new capabilities and dramatic impacts on political, social and economic systems”

Klaus Schwab, Founder of the World Economic Forum
Changing Employment Patterns
Precarious work, dual employers, etc

- Little job security
- Minimal advancement
- Hazardous work
- Health insurance
- Responsibility
- Representation
- Vulnerable populations
Diseases Linked to Shift Work

Gastrointestinal complaints & disorders

Psychological Complaints: mood, personality, personal relationships

Breast Cancer

Diabetes Mellitus

(Caruso et al. 2004; Knutsson & Boggild, 2010)

(Rohr et al. 2003)

Meta-analysis 13 studies (Megdal et al. 2005)

(Kroenke et al., 2007; Monk et al., 2013; Pan et al., 2011)

Slide courtesy of Dr. Claire Caruso, Research Health Scientist, National Institute for Occupational Safety and Health
Shift working men:
Less likely to eat vegetables & fruits

Shift working women:
More energy intake from saturated fat

Hemiö K, et. al. Food and nutrient intake among workers with different shift systems. Occup Environ Med 2015; 0: 1–8
Low-Wage Workers

- Increased risk of job stress
  - Decisional latitude, control, respect
- Job insecurity
- Forced overtime
- Discrimination
Long Hours

The Research Is Clear: Long Hours Backfire for People and for Companies

by Sarah Green Carmichael

AUGUST 19, 2015

https://hbr.org/2015/08/the-research-is-clear-long-hours-backfire-for-people-and-for-companies
Musculoskeletal Disorders

- 8 studies
- Increased risk of developing MSDs

## Access to Paid Leave and Other Supports in U.S. Jobs

<table>
<thead>
<tr>
<th>Policy</th>
<th>Total (%)</th>
<th>Wages In Bottom Quartile (%)</th>
<th>Part-Time (%)</th>
<th>Full-Time (%)</th>
<th>Small Business (%)</th>
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</thead>
<tbody>
<tr>
<td>Paid family leave</td>
<td>12</td>
<td>5</td>
<td>5</td>
<td>15</td>
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<td>Unpaid family leave</td>
<td>87</td>
<td>80</td>
<td>79</td>
<td>89</td>
<td>78</td>
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<tr>
<td>Short-term disability</td>
<td>40</td>
<td>17</td>
<td>14</td>
<td>49</td>
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<td>Paid vacation</td>
<td>76</td>
<td>48</td>
<td>34</td>
<td>91</td>
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<td>Paid sick leave</td>
<td>61</td>
<td>31</td>
<td>24</td>
<td>74</td>
<td>49</td>
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<tr>
<td>“Flexible workplace”</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>


Overworked Americans Aren’t Taking The Vacation They’ve Earned

July 12, 2016 - 1:40 PM ET
Heard on All Things Considered
The most commonly reported workplace stressors include:
- Supervisor relationship (40%)
- Amount of work (39%)
- Work-life balance (34%)
- Coworker relationships (31%)

“What does your office do to help alleviate stress in the workplace?”

13%: Extra time-off
11%: Ability to work from home
66%: Nothing

OCCUPATIONAL HEALTH

By AMERICAN HEART ASSOCIATION NEWS

Researchers evaluated 5,566 employed workers to determine how many met the ideals for blood pressure, body mass index, total cholesterol, blood sugar, physical activity, smoking and diet quality.

Some of the occupations that registered the worst numbers were:

1. Police and firefighters
2. Service occupations (Includes people who prepare food, do building and grounds keeping, cleaning, and deliver personal care—hair stylists, animal care, makeup artists, funeral services, healthcare support, and entertainment.)
3. Sales, office and administrative support

Some of the occupations that registered the best numbers were:

1. Management and professionals
2. Healthcare practitioners (doctors and nurses)
3. Arts, entertainment, sports and media

Sources: REasons for Geographic And Racial Differences in Stroke Study, National Institute for Occupational Safety and Health of the Centers for Disease Control, Bureau of Labor Statistics

American Heart Association News March 1, 2016, http://news.heart.org/study-older-workers-in-sales-have-great-heart-risks/
Policies, programs, and practices that integrate Protection from work-related safety and health hazards with promotion of Injury and illness prevention efforts to advance Worker well-being
Example of Integrated Approach
Sleep and Fatigue

Safe Staffing + Health-Supportive Policies + Sleep Education
Hierarchy of Controls: TWH

- **Eliminate**: Eliminate working conditions that threaten safety, health, and well-being
- **Substitute**: Substitute health-enhancing policies, programs, and practices
- **Redesign**: Redesign the work environment for safety, health, and well-being
- **Educate**: Educate for safety and health
- **Encourage**: Encourage personal change
Applying

Total Worker Health
Obesity: Improving the Job
Obesity: Improving the Job

Policies, Leadership, & Culture

Risk of obesity by number of work stressors [Nursing home study, CPHNEW]

Stressors: low decision latitude, poor co-worker support, heavy lifting, night work, physical assault at work in past 3 months.
(Multivariable models adjusted for gender, age, education and region.)

www.niml.edu/center/CPHNEW

Punnett L and the Center for the Promotion of Health in the New England Workplace. Recent trends and research in worker safety and health. February 25, 2014 NIOSH Total Worker Health® Webinar
Smoking: Improving the Job

Work environment factors and smoking [Radi et al. 2007]

Policies, Leadership, & Culture

Smoking: Improving the Job

Wages, Benefits, & EAP

Policies, Leadership, & Culture

# 1 Workforce Health Issue?

Source: 2013 Towers Watson Survey
Rank your level of stress you experience at your company due to the following:

- Missing information: 52%
- Problems with prioritization of tasks: 51%
- Unrealistic goals for projects: 49%
- Deadlines often moved around: 47%
- Undeclared leadership: 44%
- Undeclared task accountability: 44%
- Scope creep: 43%
- Lack of collaboration or coordination: 42%
- Team members not putting their weight on projects: 37%
- Lack of project sponsor involvement: 28%
- Not sure of what your role is within projects: 24%

Which of the following are your most common productivity roadblocks?

- Working on too many things at the same time: 60%
- Waiting for other people’s actions: 49%
- Responding to emails: 40%
- Unclear priorities: 31%
- Procrastinating: 30%
- Not having enough time to finish: 30%
- Too many new requests from managers or others: 28%
- Changes requested to what I’m working on: 28%
- Burnout from working too hard: 28%

Stress: Improving the *Job*

- Impact on daily life
- Training
  - Working & communication styles, tools
- Recognition of strengths, functions
- Clear performance management
- Supportive of risk taking
- Appreciation
- Return-to-work
Before Work

After Work
Issues Relevant to Advancing Worker Well-being
Through Total Worker Health®

Control of Hazards and Exposures
- Chemicals
- Physical Agents
- Biological Agents
- Psychosocial Factors
- Human Factors
- Risk Assessment and Risk Management

Organization of Work
- Fatigue and Stress Prevention
- Work Intensification Prevention
- Safe Staffing
- Overtime Management
- Healthier Shift Work
- Reduction of Risks from Long Work Hours
- Flexible Work Arrangements
- Adequate Meal and Rest Breaks

Built Environment Supports
- Healthy Air Quality
- Access to Healthy, Affordable Food Options
- Safe and Clean Restroom Facilities
- Safe, Clean and Equipped Eating Facilities
- Safe Access to the Workplace
- Environments Designed to Accommodate Worker Diversity

Leadership
- Shared Commitment to Safety, Health, and Well-Being
- Supportive Managers, Supervisors, and Executives
- Responsible Business Decision-Making
- Meaningful Work and Engagement
- Worker Recognition and Respect

Compensation and Benefits
- Adequate Wages and Prevention of Wage Theft
- Equitable Performance Appraisals and Promotion
- Work-Life Programs
- Paid Time Off (Sick, Vacation, Caregiving)
- Disability Insurance (Short- & Long-Term)
- Workers’ Compensation Benefits
- Affordable, Comprehensive Healthcare and Life Insurance
- Prevention of Cost Shifting between Payers (Workers’ Compensation, Health Insurance)
- Retirement Planning and Benefits
- Chronic Disease Prevention and Disease Management
- Access to Confidential, Quality Healthcare Services
- Career and Skills Development

Community Supports
- Healthy Community Design
- Safe, Healthy and Affordable Housing Options
- Safe and Clean Environment (Air and Water Quality, Noise Levels, Tobacco-Free Policies)
- Access to Safe Green Spaces and Non-Motorized Pathways
- Access to Affordable, Quality Healthcare and Well-Being Resources

Changing Workforce Demographics
- Multigenerational and Diverse Workforce
- Aging Workforce and Older Workers
- Vulnerable Worker Populations
- Workers with Disabilities
- Occupational Health Disparities
- Increasing Number of Small Employers
- Global and Multinational Workforce

Policy Issues
- Health Information Privacy
- Reasonable Accommodations
- Return-to-Work
- Equal Employment Opportunity
- Family and Medical Leave
- Elimination of Bullying, Violence, Harassment, and Discrimination
- Prevention of Stressful Job Monitoring Practices
- Worker-Centered Organizational Policies
- Promoting Productive Aging

New Employment Patterns
- Contracting and Subcontracting
- Precarious and Contingent Employment
- Multi-Employer Worksites
- Organizational Restructuring, Downsizing and Mergers
- Financial and Job Security
PROMISING PRACTICES
• Demonstrate leadership
  • Environmental, Health & Safety Value
  • Director of Global Wellness

• Share information with workers and seeking feedback for evaluation
  • Surveys at the corporate level and at individual sites
  • Real-time safety metrics: rates of near-misses and injuries, split by business segment, compared to the previous year’s metrics
  • Participation rates, aggregate health condition status, healthcare costs

• Integrate systems
  • Fatigue risk management group led by a cross-functional team
  • Recommendations, global guidelines on shift work and overtime
  • Permit process, including employee input, on deviations to the guidelines
  • Some businesses added rest breaks and facilities

Chang C. Innovating an integrated path forward at Alcoa. TWH in Action! Newsletter December 2014; 3(4) http://www.cdc.gov/niosh/twh/newsletter/twhnews3n4.html
L.L. Bean

- **Average age of 50**
- **Physically demanding jobs**
  - Materials handling in the warehouse
- **Organization of work:**
  - Most workers usually were assigned materials-handling activities only twice a week
  - Rotated to other tasks every couple of hours
  - Three sets of paid 5-minute rest and stretch breaks a day
- **Technologies:**
  - Vacuum lifts reduce weights to less than 10 pounds
  - Pallet positioners allow loads to be at optimal height
  - No back injuries have been reported while using this technology
  - Positive worker feedback

Jump-Starting Cardiovascular Fitness

- Aims to increase cardiovascular fitness and endurance, build muscle mass, improve flexibility
- Aerobic activity and strength-training program: Three times a week, for 12 weeks
- 45 minutes of paid company time during their work shift
- Improvements in muscle strength, endurance, and flexibility; resting heart rate and cardiovascular endurance
- 29% of the participants lost weight
- 62% of workers reported having more energy and 29% reported less stress
- Workers’ compensation cases were reduced from 10 to 2 cases in the same group of workers, with reductions in both compensation costs and medical costs.
Dartmouth-Hitchcock

- Academic Medical Center 8,500 employees
- 10,000 family members
- 900 physicians
- Multiple sites
Dartmouth-Hitchcock

Recognizable Problem
• Unsustainable health care costs
• Silo-ed resources
• Workforce sicker than benchmark organizations
• Patient safety depends on healthy employees

The Solutions
• Create a sustainable ‘culture of health’ that would support population health
• LiveWell WorkWell – a strategic priority
Dartmouth-Hitchcock

• **Electronic reporting of injuries (EROI):**
  – Immediate notification to occupational medicine, safety, human resources, and work ability programs

• **Safety Wellness Action Team (SWAT):**
  – Conducts an open-ended safety & socio-environmental assessment

• **Partners in Health, Environment, Wellness, and Safety (PHEWS) committee:**
  – Stakeholder representatives from the work unit, provide peer assistance

Dartmouth-Hitchcock

Interventions:

– Supervisor training
– Team and resiliency building
– Benefits design
– Environmental supports: access to healthier foods or changes to work schedules, and policy changes

Dartmouth-Hitchcock

• Relevant data streams
  – Hazard identification
  – Safety metrics
  – Workers Comp
  – Group health claims
  – HRA
  – Biometrics
  – Short and Long Term Disability
  – Engagement

• Analyze data
  – Segment population by risk
  – Group level correlations of data streams
    • Safety : Health Risk : Engagement
  – Case registries by health plan

### Defining element of TWH

<table>
<thead>
<tr>
<th>Defining element of TWH</th>
<th>Where we are now/What we do well</th>
<th>Where we want to be/What must be improved</th>
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<tbody>
<tr>
<td>Demonstrate leadership commitment to worker safety and health at all levels of the organization</td>
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<tr>
<td>Design work to eliminate or reduce safety and health hazards and promote worker well-being</td>
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<td>Promote and support worker engagement throughout program design and implementation</td>
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<tr>
<td>Ensure confidentiality and privacy of workers</td>
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<td></td>
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<tr>
<td>Integrate relevant systems to advance worker well-being</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Defining element of TWH</th>
<th>Needs identified</th>
<th>Who should we include?</th>
<th>What obstacles might we encounter?</th>
<th>What are some solutions to those obstacles?</th>
<th>What resources outside the workplace could we pull in to help?</th>
<th>What steps must we take to make this happen?</th>
</tr>
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<tbody>
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[https://www.cdc.gov/niosh/docs/2017-112/pdfs/2017_112.pdf](https://www.cdc.gov/niosh/docs/2017-112/pdfs/2017_112.pdf)
Fundamentals of Total Worker Health: Defining Elements

1. Demonstrate **leadership commitment** to worker safety and health at all levels of the organization

2. **Design work** to eliminate or reduce safety and health hazards and promote worker well-being

3. Promote and support **worker engagement** throughout program design and implementation

4. Ensure **confidentiality and privacy** of workers

5. **Integrate** relevant systems to advance worker well-being

https://www.cdc.gov/niosh/docs/2017-112/pdfs/2017_112.pdf
### Leadership Support

#### TABLE 1. Improvement in Employee Health Risk According to Level of Senior Leadership Support*

<table>
<thead>
<tr>
<th>Degree of Senior Leadership Support</th>
<th>No Improvement, %</th>
<th>Slight Improvement, %</th>
<th>Substantial Improvement, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very</td>
<td>10.7</td>
<td>36.6</td>
<td>44.7</td>
</tr>
<tr>
<td>Somewhat</td>
<td>42.6</td>
<td>47.6</td>
<td>44.7</td>
</tr>
<tr>
<td>Marginal</td>
<td>42.7</td>
<td>15.9</td>
<td>10.5</td>
</tr>
</tbody>
</table>

*\( \chi^2 = 20.27 (P = 0.0025, df = 5) \).*

#### TABLE 2. Improvement in Medical Cost Trend According to Level of Senior Leadership Support*

<table>
<thead>
<tr>
<th>Degree of Senior Leadership Support</th>
<th>No Improvement, %</th>
<th>Slight Improvement, %</th>
<th>Substantial Improvement, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very</td>
<td>18.5</td>
<td>36.6</td>
<td>46.3</td>
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<tr>
<td>Somewhat</td>
<td>51.9</td>
<td>48.8</td>
<td>46.3</td>
</tr>
<tr>
<td>Marginal</td>
<td>29.6</td>
<td>14.6</td>
<td>7.3</td>
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</table>

*\( \chi^2 = 13.40 (P = 0.0037, df = 5) \).*

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If they build it, they will come

Photo from Field of Dreams Movie Site http://www.fodmoviesite.com/25thanniversary/
Benefits

Do Worker Safety and Health Goals align with Business Goals?

Workplace Flexibility

17% Increased productivity

Reduced turnover.
Customer retention 96%
$6 million 2 years

1/3 turnover rate

Loepke RR, et. al. Integrating health and safety in the workplace: How closely aligning health and safety strategies can yield measurable benefits. JOEM 2015; 57(5): 585-597
Worker Well-Being: Draft Framework

Developed in partnership with RAND.
“Work is central to people's well-being.”

“Decent work sums up the aspirations of people in their working lives.”

--International Labour Organization (ILO)
Connect with Total Worker Health

Email: TWH@cdc.gov
Website: http://www.cdc.gov/niosh/twh

Twitter (@NIOSH_TWH)

LinkedIn (Search “NIOSH Total Worker Health”)

TWH in Action! e-Newsletter
http://www.cdc.gov/niosh/TWH/newsletter/

Thank you!
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