Total Worker Health: Connecting The Dots To Worker Well-being and Organizational Performance

Tonya Vyhliadal, M.Ed., CHPD
Director of WorkWell
Agenda

- History of workplace safety
- National health statistics driving TWH need
- Define Total Worker Health
- How to get started
In 1970

14,000 work-related fatalities per year (= 38 per DAY)
History

Occupational Safety and Health Act (1970)

Section (2)(b)

“... to assure so far as possible every man and woman in the Nation safe and healthful working conditions and to preserve our human resources...”

Occupational Safety and Health Administration
National Institute for Occupational Safety and Health
Occupational Safety and Health Review Commission
# Traditional Workplace Hazards

<table>
<thead>
<tr>
<th>Physical</th>
<th>Biological</th>
<th>Chemical</th>
<th>Biomechanical</th>
<th>Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>Pathogens</td>
<td>Gases</td>
<td>Force</td>
<td>Machines</td>
</tr>
<tr>
<td>Radiation</td>
<td>Molds</td>
<td>Vapors</td>
<td>Posture</td>
<td>Equipment</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td>Dusts</td>
<td>Repetition</td>
<td>Slips/trips/falls</td>
</tr>
<tr>
<td>Vibration</td>
<td></td>
<td>Fumes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Images of workplace hazards: safety helmets, protective clothing, welding sparks, work gloves, and a worker in winter gear.]
Evidence Of Progress

4585 work-related fatalities in 2013 (< 13 per day) with a workforce twice as large as in 1970
Cost's Of Injury and Illness

$250 Billion (in 2007)
- 8,564,600 work-related injuries → $192 billion
- 516,100 work-related illnesses → $58 billion

$31 billion more than costs of all cancers
$76 billion more than diabetes
$187 billion more than strokes

Age-adjusted Prevalence of Obesity and Diagnosed Diabetes Among US Adults

Obesity (BMI ≥30 kg/m²)

- **1994**
- **2000**
- **2013**

Diabetes

- **1994**
- **2000**
- **2013**

Prevalence of Self-Reported Obesity Among U.S. Adults by State and Territory  BRFSS, 2014
### Today’s Workforce Reality

#### Obesity by Occupation

A sampling of U.S. jobs and the prevalence of obesity in that occupational group

<table>
<thead>
<tr>
<th>Sample Jobs</th>
<th>Obesity Rate for Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGHEST</strong></td>
<td></td>
</tr>
<tr>
<td>Police officers, firefighters, security guards</td>
<td>40.7%</td>
</tr>
<tr>
<td>Social workers, clergy, counselors</td>
<td>35.6%</td>
</tr>
<tr>
<td>Home health aides, massage therapists</td>
<td>34.8%</td>
</tr>
<tr>
<td>Architects, engineers</td>
<td>34.1%</td>
</tr>
<tr>
<td>Bus drivers, truckers, crane operators, garbage collectors</td>
<td>32.8%</td>
</tr>
<tr>
<td><strong>LOWEST</strong></td>
<td></td>
</tr>
<tr>
<td>Janitors, maids, landscapers</td>
<td>23.5%</td>
</tr>
<tr>
<td>Cooks, bartenders, food servers</td>
<td>23.1%</td>
</tr>
<tr>
<td>Physicians, dentists, EMTs, nurses</td>
<td>22.0%</td>
</tr>
<tr>
<td>Artists, actors, athletes, reporters</td>
<td>20.1%</td>
</tr>
<tr>
<td>Economists, scientists, psychologists</td>
<td>14.2%</td>
</tr>
</tbody>
</table>

Note: Obesity defined as body mass index of 30 or above

Source: American Journal of Preventive Medicine’s 2014 report based on 2010 data

Risk Of Obesity & Number Of Stressors

Hazards: low decision latitude, poor co-worker support, heavy lifting, night work, physical assault at work in past 3 months
The work environment has become increasingly sedentary

Today’s Workplace/Workforce Reality

Church et al., PloS ONE, 2011
# Today’s Workplace/Workforce Reality

43% of all U.S. Jobs

<table>
<thead>
<tr>
<th>Category</th>
<th>METs Median (min, max)</th>
<th>Activity Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Jobs</td>
<td>3.0 (2.5, 4.5)</td>
<td>Moderate</td>
</tr>
<tr>
<td><strong>Goods-Producing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining and logging</td>
<td>3.8 (3.0, 8.0)</td>
<td>Moderate</td>
</tr>
<tr>
<td>Construction</td>
<td>4.0 (1.5, 7.5)</td>
<td>Moderate</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>3.0 (1.5, 4.0)</td>
<td>Moderate</td>
</tr>
<tr>
<td><strong>Service-Providing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade (wholesale &amp; retail),</td>
<td>2.0 (1.5, 3.0)</td>
<td>Light</td>
</tr>
<tr>
<td>transportation, and utilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>1.5 (1.5, 1.5)</td>
<td>Sedentary</td>
</tr>
<tr>
<td>Financial activities</td>
<td>1.5 (1.5, 1.5)</td>
<td>Sedentary</td>
</tr>
<tr>
<td>Professional and business</td>
<td>1.5 (1.5, 2.0)</td>
<td>Sedentary</td>
</tr>
<tr>
<td>services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education and health services</td>
<td>2.5 (1.5, 4.0)</td>
<td>Light</td>
</tr>
<tr>
<td>Leisure and hospitality</td>
<td>2.5 (1.5, 3.5)</td>
<td>Light</td>
</tr>
<tr>
<td>Other services</td>
<td>2.5 (1.5, 3.0)</td>
<td>Light</td>
</tr>
</tbody>
</table>

Church et al., PloS ONE, 2011
Sitting is the New Smoking

- Sedentary adults pay $1,500 more per year in healthcare costs than physically active adults.
- Being sedentary increases risks of mortality, coronary heart disease, and metabolic syndrome.
- Increased risk of developing high blood pressure and type 2 diabetes.
- Increased risk of certain cancers.
- Increased BMI leads to increased number of sick days, medical claims, and health care costs.
Expanding Workweek

Technology has pushed out walls creating Virtual Workspace

M. Samuelson
Where Do People Spend Their Time?

Time use on an average work day for employed persons ages 25 to 54 with children

- Sleeping (7.7 hours)
- Working and related activities (8.7 hours)
- Leisure and sports (2.5 hours)
- Household activities (1.1 hours)
- Eating and drinking (1.0 hours)
- Caring for others (1.3 hours)
- Other (1.7 hours)

Total = 24.0 hours

US Labor Force by Generation


In millions

- Boomers
- Gen Xers
- Millennials
- Silents

Note: Annual averages plotted 1995-2014. For 2015 the first quarter average of 2015 is shown. Due to data limitations, Silent generation is overestimated from 2008-2015.

PEW RESEARCH CENTER
Non-Traditional Hazards

Work Organization
- Workload demands
- Workplace violence
- Pace of work
- Flexibility
- Control
- Social Support

Adverse Health Outcomes
Sleep & Fatigue = Safety Concern

- 70% of workplace accidents are related to sleep deprivation.
- Not as alert = increased slips, trips and falls, poor decision making, moody behavior, and reduced performance
- Drowsy Driving
  - 20% of car crashes are caused by sleep deprivation.
  - Legally Intoxicated from Alcohol = BAC .08
  - 18 hours awake = BAC .05
  - 24 hours awake = BAC .10
Sleep & Fatigue = Performance Concern

- Impaired reaction time, judgment & vision
- Problems with information processing & short-term memory
- Decreased performance, vigilance & motivation
- Increased moodiness & aggressive behaviors
Workplace Stress

80% of workers feel stress on the job
- nearly half say they need help in learning how to manage stress (42% say their coworkers need help)

14% of respondents had felt like striking a coworker in the past year (but they didn’t)

25% have felt like screaming/shouting because of job stress
10% are concerned about an individual at work they fear could become violent
Workplace Stress

- 40% of job turnover is related to stress
- Healthcare costs are 50% higher for workers who report high levels of stress
- Insurance claims for stress related industrial accidents costs nearly 2x as much as non-stress related industrial accidents
- Depression - largest predictor of absenteeism and work related performance
  - For every $.47 spent on treating depression, $.53 indirectly spent on absenteeism, presenteeism and disability
Stress Across Generations

In 2015:

Millenials = 18-34
Gen Xers = 35 to 50
Baby Boomers = 51 to 69
Mature = 70 to 87
Greatest Generation = 88 to 100

Stress in America 2012
Millenial & Gen Xers: work, money and job stability
Boomers & Matures: health issues affecting families and themselves
Millenials more likely to use unhealthy/sedentary behaviors to manage stress: Eating unhealthy and playing video games

APA Stress in America 2012
Impact of Non-Traditional Work Factors

Work Factors
- Shift work
- Workplace assaults
- Lack of decision making authority
- Time pressure/workload
- Physical fatigue
- Lack of affordable childcare
- Low wages

Behavioral Effects
- Cigarette smoking
- Alcohol use
- Unhealthy eating/obesity
- Lack of leisure time exercise

Physical/Somatic Effects
- Low back pain
- High blood pressure
- Cardiovascular disease
- Depression

Workplace Effects
- Presenteeism
- Absenteeism
- Insurance costs
- Injury risks
Cost's Driving Poor Performance

- Workers Compensation
- Medical Expenses
- OSHA Fines/Penalties
- Decreased Productivity
- Lost Work Days
- High Turnover

Cost's Driving Poor Performance
Total Worker Health® is...

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.
How Work Shapes Worker’s Well-Being

Physical aspects of work and the workplace (environment)

Psychosocial aspects of work and how work is organized (experience of work itself)

Work-related resources and opportunities (wages and salaries, employee benefits, wellness programs)

Exposure to physical risks and hazards

Stress

Ability to obtain nutritious foods, adequate physical activity, healthy housing, medical care

Worker’s well-being (physical, mental, emotional, financial, spiritual)

Worker’s family’s well-being

Adapted from Robert Wood Johnson Foundation Egerter et al., 2008, www.commissionhealth.org
How Worker’s Well-Being Shapes Work

Worker’s family’s well-being (physical, mental, emotional, financial, spiritual)

Worker’s well-being

Exposure to physical risks and hazards

Physical aspects of work and the workplace (environment)

Stress

Psychosocial aspects of work and how work is organized (experience of work itself)

Ability to obtain nutritious foods, adequate physical activity, healthy housing, medical care

Work-related resources and opportunities (wages and salaries, employee benefits, wellness programs)

Adapted from Robert Wood Johnson Foundation Egerter et al., 2008, www.commissionhealth.org
Factors Influencing Worker Health and Performance

- Need for work flexibility and autonomy
- Demographic changes and realities
- Aging workforce
- Stress
- Contingent and low-wage work
- Increasing productivity demands (presenteeism, absenteeism, low motivation, depression, fatigue, etc.)
- Family dynamics
- Workplace culture
- Low EE decision making ability
- Business isolation – lack of cross over
The Link Between Workforce Health and Safety and the Health of the Bottom Line

Tracking Market Performance of Companies That Nurture a “Culture of Health”

Raymond Fabius, MD, R. Dixon Thayer, BA, Doris L. Konicki, MHS, Charles M. Yarborough, MD, Kent W. Peterson, MD, Filroy Isaac, MD, Ronald R. Loeppke, MD, MPH, Barry S. Eisenberg, MA, and Marianne Dreger, MA

Objective: To test the hypothesis that comprehensive efforts to reduce a workforce’s health and safety risks can be associated with a company’s stock market performance. Methods: Stock market performance of Corporate Health Achievement Award winners was tracked under four different scenarios using simulation and past market performance. Results: A portfolio of companies recognized as award winning for their approach to the health and safety of their workforce outperformed the market. Evidence seems to support that building cultures of health and safety provides a competitive advantage in the marketplace. This research may have also identified an association between companies that focus on health and safety and companies that manage other aspects of their business equally well. Conclusions: Companies that build a culture of health by focusing on the well-being and safety of their workforce yield greater value for their investors.

- Recently, an article by Loeppke and colleagues,\(^4\) reported that for every dollar of medical and pharmaceutical costs spent, an employer lost an additional $2.30 of health-related productivity costs. Health-related presenteeism (health risks and medical conditions impacting work performance) was shown to have a larger impact on lost productivity than absenteeism, with executives and managers suffering higher losses. Comorbidities demonstrated the largest effects on productivity loss.\(^4\)

These facts led to a hypothesis: Companies that create an environment for their employees and dependents that reinforces both conscious and unconscious safer and healthier lifestyle choices as well as provides more effective accessing of appropriate health care (i.e., surround them with a “culture of health”) should be more productive and that productivity should drive business performance and
## The Research

### TABLE 2. Award Winners

<table>
<thead>
<tr>
<th>Year</th>
<th>Recipient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996-1997</td>
<td>Hughes Electronics</td>
</tr>
<tr>
<td></td>
<td>Lockheed Martin</td>
</tr>
<tr>
<td>1997-1998</td>
<td>Boeing</td>
</tr>
<tr>
<td></td>
<td>IBM</td>
</tr>
<tr>
<td></td>
<td>Johnson &amp; Johnson</td>
</tr>
<tr>
<td></td>
<td>First Chicago</td>
</tr>
<tr>
<td>1998-1999</td>
<td>Glaxo Wellcome</td>
</tr>
<tr>
<td></td>
<td>AlliedSignal</td>
</tr>
<tr>
<td></td>
<td>Baltimore Gas &amp; Electric</td>
</tr>
<tr>
<td></td>
<td>City of Indianapolis</td>
</tr>
<tr>
<td>1999-2000</td>
<td>Sherman Health</td>
</tr>
<tr>
<td></td>
<td>Dow Chemical</td>
</tr>
<tr>
<td></td>
<td>GE Power</td>
</tr>
<tr>
<td>2000-2001</td>
<td>National Security Agency</td>
</tr>
<tr>
<td></td>
<td>Bristol-Myers Squibb</td>
</tr>
<tr>
<td>2001-2002</td>
<td>Eli Lilly</td>
</tr>
<tr>
<td></td>
<td>IBM</td>
</tr>
<tr>
<td></td>
<td>Kerr-McGee</td>
</tr>
<tr>
<td>2002-2003</td>
<td>BAE Systems</td>
</tr>
<tr>
<td></td>
<td>Marathon Oil</td>
</tr>
<tr>
<td></td>
<td>Union Pacific</td>
</tr>
<tr>
<td>2003-2004</td>
<td>Cianbro Corporation</td>
</tr>
<tr>
<td>2004-2005</td>
<td>Daimler Chrysler</td>
</tr>
<tr>
<td></td>
<td>QuadGraphics</td>
</tr>
<tr>
<td>2005-2006</td>
<td>No recipients</td>
</tr>
<tr>
<td>2006-2007</td>
<td>Caterpillar</td>
</tr>
<tr>
<td>2007-2008</td>
<td>No recipients</td>
</tr>
<tr>
<td>2008-2009</td>
<td>Southeastern Transportation Authority</td>
</tr>
<tr>
<td>2009-2010</td>
<td>Baptist Health System</td>
</tr>
<tr>
<td>2010-2011</td>
<td>EG&amp;G-URNS</td>
</tr>
<tr>
<td>2011-2012</td>
<td>Johnson &amp; Johnson</td>
</tr>
<tr>
<td></td>
<td>Smithsonian Institutions</td>
</tr>
<tr>
<td>2012-2013</td>
<td>American Express</td>
</tr>
</tbody>
</table>

**FIGURE 1. Portfolio starting at five winners versus S&P 500.**
Total Worker Health Importance

• Workplace trends are changing and so the paradigm of how we support the worker and workplace needs to change
• The integrated model of Total Worker Health has the potential of breaking down silo’s and providing for greater outcomes for the worker and the employer
• Research supports the Total Worker Health model and NIOSH guidelines have been produced
• Workplace culture directly impacts the capability of worksite wellness, safety, and health programs and their effectiveness
• Slowly stepping into the Total Worker Health strategy is a great first start
Ways to Connect with Total Worker Health™

Twitter (@NIOSH_TWH)

LinkedIn (NIOSH Total Worker Health)

TWH in Action! e-Newsletter

nebraska SAFETY COUNCIL

Thank you!

Tonya Vyhlidal
Director of WorkWell
402-483-2511 x109
tvyhlidal@nesafetycouncil.org