

VITALITY ATLAS

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Employers, Providers Adapting to Era of Consumer Engagement

By Karen O'Hara

In many respects, occupational health is a micro version of the macro health care environment.

To understand the nuanced occupational health landscape, it helps to follow national health care and consumer trends. This article discusses some of those trends and related predictions from industry observers.

Behavior Change

Experts say dramatic shifts in U.S. health care delivery models and outcomes are unlikely to occur without an investment on the part of health care consumers.

"People need to understand the issues and have skin in the game. Otherwise, they will continue to consume, consume, consume," said Peter P. Greaney, M.D., president, CEO and medical director of WorkCare.

Generally speaking, people who take time to learn how to prevent injury and illness and better manage their personal health risks are healthier, happier and more productive than those who disregard behaviors that contribute to poor health and rely on medical interventions for relief or a cure.

Studies show personal behavior drives the need for medical care about 40 percent of the time. By comparison, genetics and family history dictate the need for care 30 percent of the time; the remaining 20 percent is connected to environmental and social factors. To realign these percentages, consumers must be persuaded to acknowledge and correct unhealthy behaviors.

[The Case for More Active Policy Attention to Health Promotion](#), an influential 2002 report published in *Health Affairs*, summed it up this way: "Behavior patterns represent the single most prominent domain of influence



Health & Safety Tip!

Many wintertime injuries occur at the end of the work or recreational day when the temperature drops, surfaces get icy, and people are fatigued and/or dehydrated. To reduce injury risk, dress appropriately, drink lots of water during the day and be sure to get adequate rest at night.

Refer to WorkCare's Fact Sheet on [Safety in Cold Work Environments](#)

over health prospects in the United States. The daily choices we make with respect to diet, physical activity and sex; the substance abuse and addictions to which we fall prey; our approach to safety; and our coping strategies in confronting stress are all important determinants of health.”

These observations still apply 14 years later.

Everyone Pays

The Centers for Disease Control and Prevention report more than 75 percent of U.S. health care dollars are expended on people with largely preventable conditions such as heart and respiratory disease, stroke, cancer, diabetes, obesity, dental problems and depression.

In interviews with 94,000 American adults who work 30 hours or more per week, the 2013 Gallup-Healthways [Well-Being Index](#) found:

- \$24.2 billion in annual lost productivity attributed to poor worker health
- an average cost to employers of \$341 per daily worker absence
- across 14 occupations, 77 percent of workers either above normal weight or diagnosed with at least one preventable chronic condition

All Americans are subject to burdens associated with rising health care costs, including higher insurance premiums, co-pays and out-of-pocket expenditures, and quality and access issues.

In 2014, national health expenditure grew 5.3 percent to \$3 trillion, or \$9,523 per person, accounting for 17.5 percent of gross domestic product (GDP). Spending on health care is expected to grow at an average annual rate of 5.8 percent per year and 1.1 percent faster than GDP per year through 2024, according to the [Centers for Medicare and Medicaid Services](#). The share of the economy devoted to health care is expected to increase from 17.4 percent (as of 2013) to 19.6 percent by 2024.

“ Spending on health care is expected to grow at an average annual rate of 5.8 percent per year and 1.1 percent faster than GDP per year through 2024 ”

Companies with international operations recognize that medical cost inflation is not exclusively a U.S. problem. In response to a 2015 Medical Trends Survey sponsored by Mercer Marsh Benefits, 165 insurers in 48 countries indicate the cost of providing medical care to employees outpaces inflation in 29 major economies.

Beyond Wellness

Workplace wellness programs typically contain educational and incentive components designed to promote behavior change. To encourage workers to stop smoking or lose weight, for example, employers may:

- Provide free health coaching
- Enforce tobacco-free workplace policies
- Promote healthy food choices and fitness activities on- and off-site
- Offer cash incentive payments and gift cards for behavior change
- Apply insurance-premium discounts/surcharges linked to health improvement goals

Many companies offer employee assistance programs that provide confidential counseling services to workers and their families. And when a medical condition requires long-term case management, motivational interviewing, peer engagement, behavior modification support and coaching are among recommended interventions.

Beyond traditional offerings, experts say it's important to incorporate motivational principles that support consumers' ability to make informed decisions on self-care and health management goals. When providing care guidance to employees at the onset of a work-related injury or illness, for example, WorkCare clinicians apply principles such as collaborative assessment and education about the nature of the condition. This approach offers reassurance and helps establish reasonable expectations for safe work during recovery, as appropriate.

Employee Engagement

As parents and teachers know, a child's attitude (e.g., cooperative/uncooperative, enthused/

Table 1: Employee Engagement

Employee Engagement and Health		
	Actively disengaged % Yes	Engaged % Yes
Experienced stress yesterday	56	32
Obese (based on reported height/weight)	28	24
Experienced physical pain yesterday	23	14
Diagnosed with high blood pressure	19	15
Diagnosed with depression	16	9
Diagnosed with high cholesterol	15	11

Controlling for age, gender, marital status, education, income, race and work category. Gallup-Healthways Well-Being Index.

Source: www.gallup.com

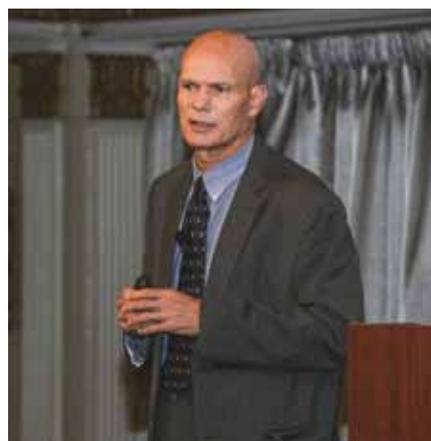
unenthusied) has a lot to do with his or her behavior. The same is true for working adults.

Survey results suggest employee attitudes about work affect health, productivity, company profitability and customer relations. Findings from the [Gallup Employee Engagement tracking series and the Gallup-Healthways Well-Being Index](#) show “U.S. employees who are actively disengaged at work are more likely than their engaged peers to say they experience health issues ranging from physical pain to depression,” it says in a Dec. 18, 2015 report.

Gallup measures degrees of engagement based on how workers rate certain workplace conditions. On one hand, engaged employees report feeling enthusiastic about and committed to their work. On the other hand, disengaged employees have a tendency to act on their dissatisfaction

by attempting to undermine their engaged co-workers’ accomplishments. *Table 1

Gallup reports that actively disengaged employees have 2.17 unhealthy days a month, on average, compared to 1.25 unhealthy days for engaged employees. In addition, an engaged worker aged 40 to 49 costs \$127 per month in lost productivity due to unhealthy days, while an actively disengaged worker in the same age range costs \$236—an 85 percent increase.



Pete Knox, Executive Vice President and Chief Learning and Innovation Officer, Bellin Health, Green Bay, Wis.

Population Health Management

In a keynote presentation at the National Association of Occupational Health Professionals/Ryan Associates 2015 national conference, Pete Knox, executive vice president and chief learning and innovation officer at Bellin Health, Green Bay, Wis., described the model Bellin uses to engage both employers and workers.

“Employers want to contribute to a higher order of results,” Knox said. “They want a better workplace. They want to contribute and give back to their communities. Companies stare down the future and wonder what to do. They need the win.”

Bellin conducted a survey and found up to 85 percent of responding employees were willing to make lifestyle changes to maintain or improve their health. Even so, Knox said, “engaging people in their own health and well-being is sometimes pretty hard to do.” Without appropriate incentives and interventions, experience shows it is especially difficult to reach the small percentage of the population that is resistant to change (often due to psychosocial issues) and accountable for a disproportionate share of health care spending.

“We have learned that it’s not about the individual, it’s about the system we have designed to address the person’s needs,” Knox said. “When we think about designing a system that wraps around people—a system that talks about what matters to

them, not what matter to us as a health system—we start to get engagement.”

Plan design is a key element. While high-cost, high-deductible, out-of-pocket health plans are effective in some ways, Knox said their design may discourage people from getting the care they need.

“We asked ourselves, ‘How can we change these plans to remove costs associated with chronic care management?’ We work with our employer-customers to accomplish that. If people get care and are engaged and activated with a care management team, it reduces overall costs and improves outcomes.”

Bellin’s strategy includes analyzing specific workforce health risks and developing plans to help employers help their employees better manage costly co-morbid conditions.

Related performance measures include positive changes in health risk assessment scores, annual health care cost savings and number of participants in a “Steps for Good” wellness program.

“We’ve also learned that workers’ compensation affects what we do with the health plan. We assess the workplace, identify opportunities for improvement and better alignment, and create a plan of action to improve health and safety. We create a total solution,” Knox said.

Well-being Solutions

In addition to wellness programs, Gallup tells organizations to “look

for ways to integrate purpose, social, financial, community and physical well-being principles through company-sponsored benefits and manager education programs.”

“Workers want and need to be involved in creating healthy workplaces,” according to [Healthy, Engaged Employees Are Your Business Advantage](#), a 2015 white paper from Virgin Pulse published by *Employee Benefit News*.

“One of the best ways to show employees you care is by offering up holistic benefits and programs that support their well-being across the board,” said Chris Boyce, CEO at Virgin Pulse. “These programs don’t just show how much you value them. They make it easier for employees to be on top of their lives by getting and staying healthy, meaning they can be their best selves every day.”

Randy Van Straten, a vice president at Bellin Health who has devoted much of his career to developing employer-oriented solutions, suggests increased application of long-term pay for performance arrangements, at-risk or shared-savings guarantees for wellness



Randy Van Straten, Vice President at Bellin Health

programs, and the introduction of total health management models in which leaders establish a “foundation for acceptance.”

“Occupational health will be an integral part of the overall health care delivery model when it is perceived as providing the right care, at the right time, at the right cost,” Van Straten said. “Employers need more help with getting and keeping employees, fast-tracking their training and ensuring they are fit for their job. I see this as an issue we need to address as a nation.”

Key components may include 24/7 injury triage and managed referrals, he added.

Big Picture

Over the next five years, experts say advances in information technology and analytics will help stimulate behavior change. For example, consumers can expect to be rewarded for using personalized technology such as mobile devices and apps to make informed health care and fitness choices. “To be competitive in this market, companies must be willing to provide better value, error-free health care, consumer rewards and a better patient experience,” an expert panel concluded during a [2016 Health Predictions](#) webinar.

“Web-based applications and mobile devices that facilitate access to personal health information, medical records and individual providers allow for democratization in access. It’s quite transformational,” said Arthur M. Southam, M.D., M.B.A., M.P.H, executive vice president,

Emotional Attachment to Work a Sign of Well-being



I love my work!

Efforts to increase affective organizational commitment (AOC)—defined as “the employee’s emotional attachment to, identification with and involvement in the organization”—may lead to a happier, healthier workforce and lower turnover.

A study published in the *Journal of Occupational and Environmental Medicine* examines how AOC influences psychological well-being and other health-related outcomes in about 5,000 Danish eldercare workers, organized into 300 groups. The results show a significant correlation between self-reported positive well-being and high AOC scores. Groups with high AOC also had lower sickness absence rates and fewer sleep disturbances, as reported by workers.

Within work groups, high AOC may act as “emotional contagion”—with “effects on individual-level well-being that are relatively independent of the level of AOC of the individual,” researchers said. They suggest that strategies aimed at enhancing AOC might help address high rates of burnout and turnover among employees in health care and eldercare services.

References: [Does group-level commitment predict employee well-being?](#) A prospective analysis; Clausen T, Christensen KB, Nielsen K.; *J Occup Environ Med.*, 57(11):1141-6, 2015.



Arthur Southam, M.D.

Health Plan Operations, Kaiser Foundation Health Plan, Inc., and Kaiser Foundation Hospitals.

During a keynote presentation at the 2015 Workers’ Compensation and Disability Conference & Expo, Dr. Southam reminded the audience that prevention is the fulcrum on which the future of U.S. health care delivery balances. In short, there is a call to get back to basics.

“We are a very medically oriented society. The realization that the current medical model won’t work is one of the most important advances we need to make in terms of social and cultural awareness in America,” he said.

According to Dr. Southam, extraordinary advances in health care technology and medicine justifiably capture attention because they save lives. However, he believes the next generation of leaders will be challenged to

redistribute resources to address fundamental issues including:

- Waste in systems and organizations
- Disparities in care quality based on location, patient demographics, income, ethnicity and other factors
- Preventable medical errors
- Changes in incentives for both medical professionals and patients.
- Information technology and knowledge management for good decision-making
- Broader use of electronic medical records, interoperability and the use of quality metrics

Looking ahead, Dr. Southam predicts:

1. Employers will make it easier for employees to be active during the workday. “Improving the walk-ability of our workforce is one of the highest-yield things we can do,” he said, noting that sedentary lifestyles contribute to costly, disabling conditions.
2. Worksite-based and freestanding occupational clinics will be part of the movement to ensure safe, timely, efficient, patient-centered care.
3. Mechanisms will be developed to connect people, departments and organizations operating in silos. Service integration will benefit all consumers.
4. Coding used for provider reimbursement will be updated to incorporate preventive interventions.

Smart Buyers

About half of the American population receives health insurance coverage through an employer. Consequently, employees and employers are advised to select health plans wisely. In 2016, more employers are expected to introduce consumer-driven health plans, further shifting responsibility

for savings onto employees. In turn, consumers may turn to cost-effective innovations such as virtual doctor's visits, according to the [Society for Human Resource Management](#).

To improve overall outcomes, Jeffrey T. Kullgren, M.D., a research scientist at the Veterans Affairs Center for Clinical Management Research in Ann Arbor, Mich.,

recommends "teaching consumers how to act like consumers."

"Health plans, employers and state governments increasingly expect Americans to use information about pricing when making health care decisions," Dr. Kullgren writes in a [Harvard Business Review article](#) on *How to Teach People About Health Care Pricing*.

Dr. Greaney Sees Changes on the Horizon



The following are among predictions Peter P. Greaney, M.D., president, CEO and medical director of Workcare, made during a presentation on the future of occupational medicine at the 2015 National Association of Occupational Health Professionals/Ryan Associates annual national conference:

1. Keeping workers fit and productive is paramount to success. Consequently, 24-hour telephonic triage, telehealth services using mobile devices, and onsite clinics with immediate care capabilities will continue to gain traction.

2. The use of Uber-like apps to redeploy medical providers and deliver equipment where the need is greatest are likely scenarios.
3. Employers will seek assistance from providers to find qualified onsite personnel such as paramedics and athletic trainers to help address the nation's shortage of occupational health nurses and physicians.
4. Reimbursement models will be changed to reward clinicians who effectively manage work-related injuries and return to work.
5. Regulated companies with significant exposure risk, multiple locations and aging workers will rely on occupational health professionals to establish exposure baselines upon hire, perform medical monitoring for the duration of employment and remain involved in post-employment surveillance.
6. Rising costs associated with mental health issues, coupled with ineffective employee assistance programs, will drive requests for a broader range of worksite-based psycho-social services. Providers will be expected to clearly demonstrate the value of an employer's investment in these types of services.
7. In response to the increasing use of opioid pain medications and legalized marijuana in the working population, occupational health providers will be expected to assess potential physical and mental impairment in connection with the use of medications and offer guidance on reasonable accommodations and interventions.
8. Paid family and medical leave will become the norm. For example, the proposed Family and Medical Insurance Leave Act (FAMILY Act) would entitle U.S. workers to paid leave—in essence expanding provisions of the Family and Medical Leave Act (FMLA) that allow workers to take up to 12 weeks of unpaid, job-protected leave.

In addition, Dr. Greaney said, as part of broader health consumer education efforts, "we've got to get the message to kids before they develop unhealthy behaviors" and enter the workforce.



“Educating consumers in how to find and evaluate health care pricing information is essential for capitalizing on its availability.”

The way he describes it, buying health care is not much different from other purchasing decisions that require budgeting, shopping, price comparisons and negotiations.

Being Held Accountable

In a recent presentation, Dale Bugay, executive director, Occupational Accountable Care LLC, a Columbus, Ohio-based firm, said he envisions the integration of risk management and occupational health solutions through the development of cooperative agreements among providers, employers and claims administrators. He recommends the establishment of accountable care relationships that “document quality improvement in the health and productivity of employed populations.”

Among his predictions:

1. Customer satisfaction ratings, rather than patient satisfaction scores, will be key drivers of performance incentives.
2. Safe return to work following an injury or illness, with or without accommodations, will be an essential component of accountable care programs.
3. Occupational health professionals will become much more engaged with employers' risk management and cost control programs.
4. Payers will recognize occupational health programs for providing high-quality, cost-effective injury management services.
5. Increased access to medical and disability cost data will be used to support comprehensive case management and reimbursement for care coordination.

Optimally, occupational health service providers will act as population health guardians and care coordinators, he said.

Reducing Work-Related Traumatic Brain Injury Risk

The 2015 holiday release of the movie *Concussion* has focused national attention on traumatic brain injury (TBI) risks in professional football.

TBI is one of the most common, costly and disabling occupational injuries in the United States.

Falls are the leading cause of TBI across all age groups. Other common causes of a head or brain injury at work include being hit by a moving object, bumping against a fixed object and vehicle crashes, which are the second leading cause of TBI-related deaths nationwide.

Injuries may be prevented and severity reduced by the use of helmets and other personal protective equipment.

OSHA's Personal Protective Equipment standard, 29 CFR, Part 1910.135 on head protection, requires employers to ensure that employees wear a protective helmet whenever there is a potential for head injury. Head protection must comply with American National Standards Institute consensus standards, as outlined in the rule. Helmets must resist penetration, absorb the shock of a blow and protect against electrical shock.

The Walking/Working Surfaces Standard, 29 CFR 1910.22(a)(1), requires employers to keep all places of employment clean, orderly and in a sanitary condition.

Successful reduction of TBI injury and fatality rates depends on a collaborative approach to improve workplace health and safety culture and provide continuous workforce education, National Institute for Occupational Safety and Health officials say.

To learn more, refer to WorkCare's Fact Sheet on [Reducing Work-Related Traumatic Brain Injury Risk](#).

Regulatory Update for 2016

The agency's Serious Event Reporting Online Form is available at www.osha.gov/pls/ser/serform.html



Occupational Safety and Health Administration

In 2016, the Occupational Safety and Health Administration (OSHA) is expected to continue its drive to cite and publicize “bad actors” as part of its emphasis on enforcement.

Civil penalties issued by OSHA will increase for the first time in 25 years under a provision in the Bipartisan Budget Act of 2015, signed Nov. 2 by President Obama.

OSHA must first issue an interim final rule increasing its penalties to adjust for inflation between 1990 and 2015, which will raise proposed fines by about 80 percent. The one-time adjustment must occur before Aug. 1, 2016. OSHA can subsequently adjust penalty levels based on annual inflation.

Other OSHA Activities

In other activity, the agency is seeking public comments as part

of efforts to update its voluntary *Safety and Health Program Management Guidelines*, originally published in 1989. Key principles reflected in the guidelines include finding and fixing hazards before they cause injury or illness, and ensuring that workers have a voice in safety and health. OSHA also is requesting comments on a whistleblower guidance document.

Reference: www.OSHA.gov

OSHA-Recordable Reporting Function Now Available Online

OSHA's new severe injury reporting rule went into effect Jan. 1, 2015.

Until recently covered employers were directed to report all work-related in-patient hospitalizations, amputations and losses of an eye to OSHA within 24 hours of learning of them. To report, employers were directed to call the OSHA office in their region during business hours or a 24-hour hotline. Now there is a third, much-anticipated option: online reporting.

Reporting employers must be prepared to supply the business name, names of affected employees, location and time of the incident, a brief description of the incident, and a company contact name and phone number.

“Hospitalizations and amputations are sentinel events, indicating that serious hazards are likely to be present at a workplace and that an intervention is warranted to protect the other workers at the establishment,” Dr. David Michaels, assistant secretary of labor for Occupational Safety and Health, said when the rule was first introduced. “Before 2015, employers only had to report to OSHA work-related fatalities or incidents where three or more workers were hospitalized. But we have seen that when we inspected after these tragic events, the worksites reporting a fatality often had previous serious injuries and amputations that we had never known about. These were red flags that there were serious hazards in this workplace that needed to be prevented.”

In the first year of the new requirement, OSHA received about 12,000 reports. The agency is expected to release a report with final numbers and an analysis on the new requirement in comparison to prior years in early 2016.

National Institute for Occupational Safety and Health

In 2016, the National Institute for Occupational Safety and Health will establish research priorities for the next 10 years as it prepares for the third decade of the National Occupational Research Agenda (NORA). Outcomes from the previous 20 years, resources and funding allocations will be reviewed as part of this process. NORA is a partnership program designed to stimulate research and improve workplace safety in certain industry sectors.

Reference: www.cdc.gov/niosh/nora/decadereview.html

Departments of Justice and Labor

The Departments of Justice and Labor have introduced a collaborative effort to more effectively prosecute employers for endangering the health and safety of employees, officials announced Dec. 17.

The Justice Department's Environment and Natural Resources Division and the U.S. Attorneys' Offices will work with OSHA, the Mine Safety and Health Administration and the Wage and Hour Division (WHD) to investigate and prosecute worker endangerment violations.

"On an average day in America, 13 workers die on the job, thousands are injured and 150 succumb to diseases they obtained from exposure to carcinogens and other toxic and hazardous substances while they worked," said Deputy Attorney General Sally Quillian Yates. "Given the troubling statistics on workplace deaths and injuries, the Department of Justice is redoubling its efforts to hold accountable those who unlawfully jeopardize workers' health and safety."

Background

In 2014, the Departments of Justice and Labor began planning for a joint effort to increase the frequency and effectiveness of criminal prosecutions of worker endangerment violations. Planning culminated in a decision to consolidate authorities to pursue worker safety statutes within the Department of Justice's Environment and Natural Resource Division's Environmental Crimes Section.



In a memo sent to 93 U.S. Attorneys across the country, Yates urges federal prosecutors to work with the Environmental Crimes Section to pursue alleged worker-endangerment violations.

Worker safety statutes generally provide for misdemeanor penalties. However, prosecutors are being encouraged to consider using Title 18 and environmental offenses, which often occur in conjunction with worker safety crimes, to enhance penalties and increase deterrence.

The Environment and Natural Resources Division has also been strengthening its efforts to pursue civil cases that involve worker safety violations.

To learn more, visit www.justice.gov/enrd/worker-endangerment/

Workers' Compensation

Workforce and wage growth, medical inflation and rising interest rates are all expected to have a significant impact on workers' compensation premiums in 2016. Employment growth is expected to spur increases in claim frequency and indemnity severity. Consequently, insurance carriers will focus more attention on hiring and job training practices.

Reference: [Workers' Compensation Outlook for 2016](#), WGA Insurance blog

Clinical Conversations

Early Injury Reporting Reduces Disability Days, Study Shows

Shorter injury reporting and intervention lag times are related to shorter lengths of disability, according to a new study from the Liberty Mutual Research Institute for Safety.

Researchers analyzed reporting lag times associated with 64,004 low-back claims: the time between when an injury occurred and 1) when it was first reported to the workers' compensation insurer; 2) when a worker first received medical treatment; 3) and when a worker first took time off work or initiated light duty work as a result of that injury. Shorter lag times in all three categories were shown

to reduce disability days among workers expected to go out on work disability for low back pain.

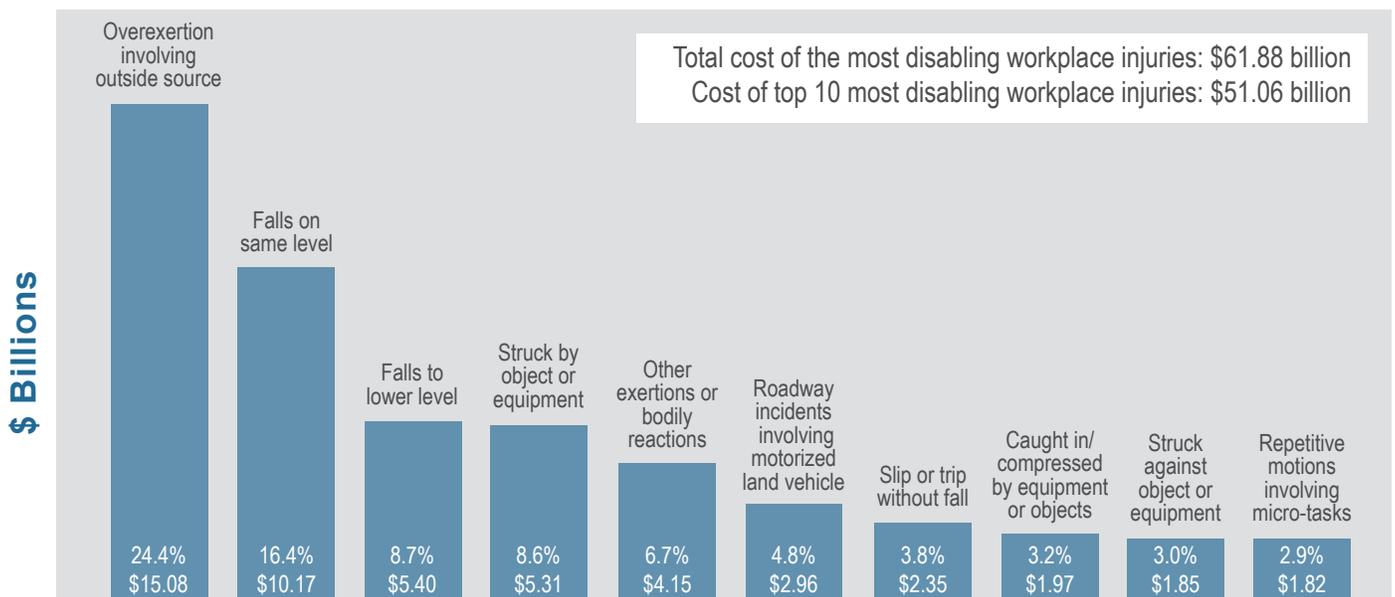
WorkCare's experience with early reporting and care guidance provided by an occupational nurse and/or physician ([Incident Intervention](#)) at injury onset and first report (before a claim is filed) corroborates these findings. In addition, early reporting is shown to reduce long-term disability once a claim is filed. For example, Pacific Gas & Electric, a major utility company, reported at the annual Workers' Compensation and Disability Conference that using WorkCare's 24/7 Nurse Report Line helped reduce workers' compensation case migration to long-term disability from 64 percent of injury claims in 2012 to

31 percent as of June 2015, saving the company millions of dollars. WorkCare will be publishing a case study on these and other findings in early 2016.

Reference: [Lag Times in Reporting Injuries, Receiving Medical Care, and Missing Work](#): Associations With the Length of Work Disability in Occupational Back Injuries; Besen E; Harrell M; Pransky G; JOEM, Vol. 58, Issue 1, p. 53-60, January 2016.



Top 10 Causes and Direct Costs of the Most Disabling U.S. Workplace Injuries



2016 Liberty Mutual Workplace Safety Index (based on 2013 injury data)

Opioid Drug Users Get Refills After Overdose

More than 90 percent of individuals who survived a prescription drug overdose were able to get another prescription for the same drug after overdosing, 70 percent the time from the same physician, according to a study published Dec. 29, 2015 in the [Annals of Internal Medicine](#).

The study involved 2,848 commercially insured patients aged 18 to 64 years who had a non-fatal opioid overdose during long-term treatment for non-cancer pain between May 2000 and December 2012.

Lead study author Marc Larochelle, M.D., of Boston Medical Center told Reuters news service physicians may not have been aware that their patients had experienced an overdose when making the decision to continue to prescribe opioids. "This lack of knowledge may be a symptom of our fragmented health care system where there is no clear mechanism to communicate events from emergency department or inpatient settings to providers in the community," he said.

To close gaps, physicians need to pay careful attention to signs of opioid abuse and consider treatments other than opioids for chronic pain. "In addition to any potential opioid use disorder, we need to communicate alternative options for treatment of chronic pain, and all modalities should be considered, including non-opioid medications, physical therapy, and complementary and alternative treatments," Dr. Larochelle told Reuters.



'Popcorn Lung' Chemical Found in E-Cigarette Flavoring

In a newly released study, researchers urge further analysis of potential exposure risks associated with the use of electronic cigarettes that use flavoring chemicals.

The researchers found at least one flavoring chemical in 47 of 51 of the e-cigarette flavors that were tested. Diacetyl was detected above the laboratory limit of detection in 39 flavors. Two other chemicals, 2,3-pentanedione and acetoin, were detected, respectively, in 23 and 46 of flavors tested. There are more than 7,000 flavored e-cigarette products on the market.

Diacetyl is linked to "popcorn lung," which was discovered in 2000 after a group of former microwave popcorn plant workers

developed obstructive respiratory disease. Since then, lung biopsies of microwave popcorn and flavoring plant workers have detected constrictive bronchiolitis obliterans, a serious disease that scars airways (bronchioles) and blocks air movement, according to the [Centers for Disease Control and Prevention](#).

The researchers conclude that "due to associations between diacetyl, bronchiolitis obliterans and other severe respiratory diseases among workers inhaling heated vapors containing diacetyl, urgent action is recommended to further evaluate the extent of exposure to flavoring compounds in e-cigarettes."

References: [Flavoring Chemicals in E-Cigarettes: Diacetyl, 2,3-Pentanedione, and Acetoin in a Sample of 51 Products, Including Fruit-, Candy-, and Cocktail-Flavored E-Cigarettes](#); Allen JG, et al.; *Environmental Health Perspectives*, advance publication, Dec. 8, 2015.



New Year's Resolutions for the Workplace

Personal Growth

Astute employers pay attention to employees' personal improvement goals and respond accordingly, in turn supporting recruitment and retention. According to a [Career Builder survey](#)¹ the following are the top-six work-related resolutions for 2016:

RESOLUTION	% RESPONDENTS
Save more of my pay	38%
Be less stressed	28%
Get a raise or promotion	26%
Change jobs	21%
Eat healthier at work	19%
Learn something new (courses, training, seminars)	17%

1. The survey was conducted online in the U.S. by Harris Poll on behalf of CareerBuilder among 3,252 employees age 18 and over (employed full time, not self-employed, non-government) Nov. 4 – Dec. 1, 2015. Percentages for some questions are based on a subset of responses to certain questions.

Attitude Adjustment

[Monster](#) advises employees at all levels to discard negative attitudes and habits that can hinder success:

1. Reduce counter-productive behaviors such as whining, gossiping and non-constructive criticism.
2. Rein in social media obsessions.
3. When you make a mistake, acknowledge the error, learn from it and move on.

4. Take steps to avoid stagnation. Talk to your boss about a project you can get excited about. Do not use your workspace to isolate yourself or blend into the woodwork.
5. Avoid burning bridges. It pays to stay on good terms with professional acquaintances.

Set Realistic Goals

The [American Psychological Association](#) offers these recommendations to help you comply with your resolutions:

1. Set incremental, attainable goals. For example, resolve to increase your time at the gym to three or four days a week, not every day.
2. Target one unhealthy behavior at a time. If you want to improve your sleep habits, for example, start there. Once you have a new routine established, pursue other goals such as stress reduction, diet and exercise.
3. Don't go it alone: Join a support group, talk to a therapist, get a work-out buddy.
4. Be kind to yourself. No one is perfect. If you fall off the wagon, climb back on.

Be Safe at Work

The [National Safety Council](#) suggests the following to help ensure a safe and healthy work environment in 2016:

1. Measure safety progress over time. Leverage technology for real-time tracking of hazards, near-misses, incidents and corrective actions.
2. "Safety culture" means different things to different people. To get employee engagement, clearly define what it means in your organization and act accordingly.
3. Provide high-quality training, the foundation of a strong safety culture.
4. Recognize people for the hard work they put into preventing injuries and saving lives.

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Executive Editor | William E. Nixon
Chief Financial Officer, WorkCare

Editor-in-Chief | Karen O'Hara
Director, Marketing and
Communications, WorkCare

Graphic Design | Jessica Ha
Senior Graphic Designer,
Communications and Multimedia,
WorkCare

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Please send your questions, comments and editorial contributions to
karen.ohara@workcare.com

WorkCare is a company specializing in worker protection, workplace injury management and other occupational health services in the U.S. and abroad.

www.workcare.com
(800) 455-6155

