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Healthcare workers account for 12% of the total private workforce in the United States.[1] Ironically, the healthcare workplace is also one of the most dangerous settings for workers. In 2011 alone, healthcare employees reported more than 631,000 incidents of injuries or illnesses in connection with their work.[2] Compared with U.S. national averages, a healthcare worker is 1.6 times more likely to be injured at work and three times more likely to incur a workplace illness.

In addition to the personal adversity endured by healthcare workers who are injured at work, workplace injuries and illnesses also result in significant economic consequences for healthcare institutions. One estimate puts the annual cost of injuries and illnesses in the healthcare workplace at more than $13 billion.[3] At a time when the cost of delivering healthcare services is being closely scrutinized, improving worker health and safety in the healthcare workplace represents a significant opportunity for savings.

In practice, the most effective solutions for addressing health and safety in the healthcare workplace are those that foster the development and maintenance of a culture of safety. An effective safety culture is more than just a collection of individual workplace safety initiatives. Instead, it represents an overall organizational philosophy that makes workplace safety everyone's concern, and which achieves results through integrated programs designed to reduce risks, increase safety communication across multiple disciplines and stimulate continuous learning. In this way, a safety culture complements patient safety efforts, supports the overall mission of a healthcare organization and addresses industry and regulatory requirements.

This UL white paper discusses the benefits of improving workforce health and safety in the healthcare environment, and it outlines the steps necessary to develop and sustain a safety culture. Beginning with background on healthcare workplace safety issues, the paper presents the costs and consequences of an unsafe workplace. The white paper then details the importance of cultivating a strong safety culture, followed by an analysis of the steps required for implementation. The paper concludes with a case study that illustrates the development of a safety culture in a specific healthcare setting.

Worker Safety in Healthcare Environments

The business of providing healthcare services represents a major component of the U.S. employment picture. In 2011, almost 1 out of 8 American workers were directly employed in the delivery of healthcare services. With more than 15 million workers, the U.S. healthcare system employs more people than the combined total of all U.S.-based manufacturing facilities.[4] Looking ahead, an aging U.S. population and longer life expectancies will drive a projected 29% increase in healthcare industry employment by 2020, accounting for 3.5 million new jobs.[5]

As the healthcare industry expands to more effectively meet the demand for services, the healthcare work environment has grown beyond traditional settings to include ambulatory care centers, nursing and residential care facilities, and even private residences. Indeed, ambulatory care centers, which include nonemergency medical facilities, walk-in clinics and physicians' offices, have replaced hospitals as the largest employer of healthcare workers, employing more than six million people compared with approximately five million workers in hospitals. Employment in nursing and residential care facilities has also experienced rapid growth, with over three million workers employed in these settings. Also included in healthcare employment statistics are an estimated one million workers involved in the delivery of home healthcare services, a setting in which employers have limited control over the work environment.

Regardless of the specific setting, healthcare environments pose heightened health and safety risks to workers. Risks include exposure to pathogens and infectious agents transmitted through the air, through contact with contaminated surfaces, or exposure to infected blood and other bodily fluids. Exposure risk can also stem from certain medications, chemicals and other agents used in healthcare procedures and examinations or for instrument, equipment and surface sterilization and disinfection. Exposure risks are of particular concern, since infected or compromised workers also place patients at increased risk.

In addition to exposure risks, healthcare workers are subject to physical risks and injury from lifting or moving patients and from other repetitive tasks, and even from physical violence. Musculoskeletal injuries and disorders account for a significant portion of injuries sustained by healthcare workers, and include sprains and strains of various parts of the body, such as the back, shoulders, legs, arms and wrists. Although all workers are at risk of physical injury regardless of age, older workers are especially vulnerable, and an aging healthcare workforce increases the overall risk from such injuries.

The Consequences of an Unsafe Healthcare Workplace

These and other health and safety risks make healthcare environments significantly less safe for workers than other workplace settings. In 2011, one of out every 20 full-time U.S. healthcare workers experienced a non-fatal injury or illness, an incident rate second only to workers in agriculture, forestry, fishing and hunting occupations.[6] Some healthcare settings, such as nursing homes and residential care facilities, experienced even higher incident rates of injuries or illnesses, due in part to the higher than average incidence of musculoskeletal injuries attributable to moving patients.

In light of these and other data affirming the greater safety risk faced by healthcare workers, the Occupational Safety and Health Administration (OSHA) has increased inspections of certain U.S. healthcare facilities and stepped up enforcement activities. The 2012 OSHA site-specific targeting (SST) program includes the inspection of hospitals with DART ("Days Away from Work, Restricted or Transferred") rates of 15 or greater.[7] In a separate action, approximately 1,000 nursing homes are currently being targeted for inspection under OSHA's 2012 National Emphasis Program on Nursing and Residential Care Facilities. These inspections will focus on ergonomic hazards related to the moving and handling of patients, exposure to bloodborne pathogens and tuberculosis, and slips, trips and falls.[8]

The financial consequences for failing to address workplace safety hazards are significant. OSHA inspections that identify serious violations of workplace safety requirements can result in financial penalties of up to $7,000 per violation. Repeat violations and willful violations in which an organization knowingly violates OSHA requirements can result in penalties of up to $70,000 per violation.

An even greater consequence of an unsafe healthcare workplace is the potential impact on an organization's financial performance. UL has estimated that the healthcare industry spent $13.1 billion to cover 179,020 lost work time injuries to workers in 2011. Based on the healthcare industry's cost structure, offsetting this added cost would have required nearly $142 billion in incremental healthcare billings,[9] implementing significant cost-cutting measures, or a combination of both. Operating under these financial constraints, healthcare institutions are being forced to raise prices while cutting costs, which has been achieved mainly by reducing staffing levels. This results in a less than optimal outcome for both patients and healthcare workers.

Unfortunately, the most significant consequences of an unsafe healthcare workplace are borne by both healthcare workers and patients. Aside from having to deal with the physical effects of an injury or illness, workers whose condition prevents them from working may suffer lost income, putting them and others under economic stress. In addition, worker absences can result in increased workloads for remaining staff, placing otherwise healthy workers at greater risk. Ultimately, these and other factors can adversely impact the quality of patient care.

Defining a Safety Culture in the Healthcare Workplace

The goal of reducing health and safety risks for healthcare employees is inextricably linked with the goals of improved patient safety and quality of care. Individual safety improvement initiatives that separate worker health and safety issues from those experienced by patients often fail to address root causes that are common to both, squandering well-intentioned efforts and perpetuating the risks. For these reasons, healthcare organizations that are most successful in reducing worker health and safety risks focus their primary efforts on developing an organization-wide culture of safety that addresses all safety issues without regard to who is impact.

A safety culture is a common set of beliefs, assumptions and normative behaviors that actively influence how participants think and act with regard to safety issues. A safety culture is not a policy, program or procedure, nor is it distinct from the prevailing organizational culture. Instead, a safety culture is a reflection of the extent to which people take personal responsibility for their own safety and that of co-workers and patients into account, as well as their willingness to adopt behaviors that further improve safety and reduce risks.

Developing and sustaining a healthcare safety culture brings a number of benefits to healthcare institutions, workers and patients. An effective safety culture can:

- Lower rates of worker injuries and illnesses
- Improve staff morale and worker retention
- Reduce transmission of diseases and transfer of pathogens and other infectious agents from workers to patients, protecting patients from infection-related complications
- Help initiate process changes that increase the quality of patient care while improving operational efficiencies and driving down delivery costs

A healthcare safety culture cannot be simply mandated by organization leaders and implemented over night. Instead, the development of an effective safety culture takes time and requires continuous attention and maintenance to remain effective. Here are some of the essential elements of an effective safety culture:

- **Organization-wide commitment to safety** — A commitment to safety is everyone's business, from an organization's senior leadership to administrative and custodial personnel to outside vendors and suppliers.
- **Visibility and transparency** — Goals and objectives of an effective safety culture are understood and accepted by everyone. Information and results regarding specific initiatives are shared across the organization and used to stimulate further improvements.
- **Learning as a key prevention tool** — Ongoing education and instruction on specific procedures that can reduce health and safety risks raises awareness and helps increase commitment to safe work practices.

Instances where injuries have been avoided can serve as case studies to further educate personnel and prevent incidents.

- **Focus on leading indicators** — An effective safety culture focuses on controllable measures that serve as leading indicators for anticipated improvements. For example, efforts to reduce infection rates are best implemented by measuring specific activities, such as hand washing.
- **Continuous communication** — Continuous communication around safety culture helps maintain "top of the mind" awareness among workers, reinforcing and strengthening its importance.
- **Recognition and rewards** — Workers who are recognized and rewarded for achieving specific safety goals and objectives are more likely to perform in a manner consistent with those goals and objectives.
- **Eliminates fear of reprisal for reporting** — In an effective safety culture, workers report instances of non-compliance without fear of reprisal or retaliation, redirecting attention away from recriminations and toward improvement.
- **Commitment to continuous improvement** — An effective safety culture embodies a commitment to continuous improvement. Each successive initiative to reduce health and safety risks builds on the foundation of prior initiatives and supports future efforts.

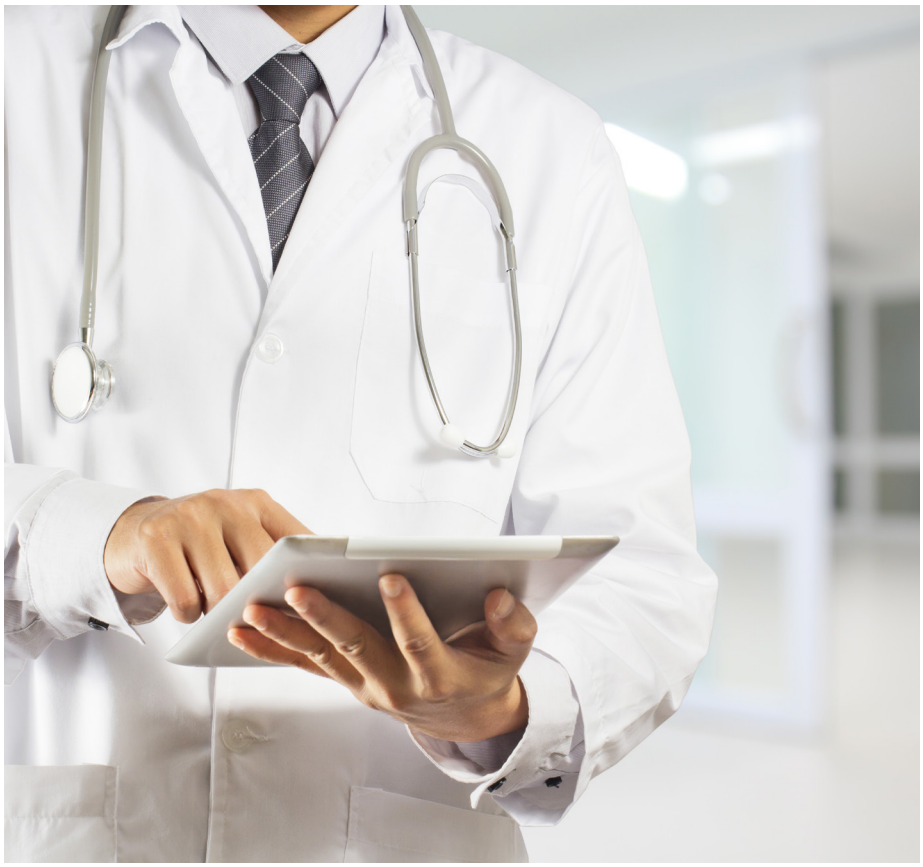
Ultimately, a successful safety culture depends on creating and sustaining a workplace environment in which the everyday behaviors and actions of healthcare workers embody these essential elements.

Applying Risk Management to Healthcare Workplace Health and Safety Issues

The effectiveness of a safety culture also depends on systematically identifying and addressing specific workplace health and safety issues. One approach to this task is to apply a formal risk management process – a prescribed set of actions that evaluates root cause issues and implements workflow changes to reduce or eliminate specific risks.[10] An effective risk management process also complements the goals of a safety culture by addressing health and safety issues affecting both workers and patients.

At a minimum, a well-defined risk management process includes the following steps:

1. **Identify and define the risk** — Problems are not always what they seem. Often, the actual cause of a health or safety risk is not immediately apparent



or is masked by other factors. Conducting a thorough analysis to determine the actual root cause (or causes) of a health or safety risk increases the chances that an applied solution will reduce or eliminate the risk.

2. **Collect and analyze risk data** — Once the root cause of a risk has been accurately defined, data on the severity and frequency of the risk can be collected for analysis and to help prioritize corrective actions.
3. **Identify and implement workflow and process changes** — Once baseline data have been collected and evaluated, specific changes to reduce health and safety risks can be identified and implemented. Changes often involve minor modifications in standardized processes, workflows or job functions. They frequently involve little or no additional financial investment or expense.
4. **Evaluate the impact of change initiatives on risk** — As changes are implemented, the data collection process is continued so that post-intervention results can be compared with baseline performance. In cases where initial changes do not produce the desired outcomes, additional interventions can be introduced to achieve prescribed health and safety goals.

In addition to supporting a strong safety culture, a robust risk management process can contribute to improvements in overall operational and financial performance. By focusing on root causes instead of mere symptoms, a risk management approach can lead to fundamental changes that streamline workflow and increase operating efficiencies, thereby improving worker safety and overall quality of patient care. And, because changes are often implemented at little or no additional cost, the economic benefit from these increased efficiencies can have a significant impact on profitability.

Other Tools for Strengthening and Sustaining a Safety Culture in Healthcare

Beyond an effective risk management process, institutions and providers can take other actions to support and sustain a culture of safety within a healthcare environment. Additional actions can include:

- **Early reporting of potential health and safety risks** — One of the most effective ways to reduce injuries and illnesses is to prevent them from happening in the first place. Healthcare workers should be encouraged to continuously evaluate possible safety risks associated with their routine tasks and report them promptly without fear of recrimination. In this way, risk awareness and prevention becomes an essential part of every job.
- **Use leading indicators to pave a path for change** — A reduction in health and safety risks is best achieved when attention is focused on activities that result in desired changes. Initiatives that focus solely on outcomes can leave workers unclear about how their activities can contribute to improved safety. On the other hand, safety initiatives that prescribe and measure specific activities empower workers to focus on what they can control.
- **Make continuous learning an essential part of a safety culture** — Learning has the greatest impact when educational initiatives are integrated into work activities on a continuous basis. So-called "one-off" training, such as a single class or workshop or training efforts that are not directly linked to actual work practices, are important but insufficient for long term retention and practice. Such efforts can be supplemented with less formal work group-based learning activities, including "lunch-and-learn" sessions and roundtable discussions.

A Safety Culture in Practice

Physical injuries incurred by workers while moving patients represents a significant source of healthcare workplace injuries. For example, a 2012 report by the Research Triangle Institute found that more than 60% of nursing assistants working in nursing homes sustained at least one injury during a 12-month period, with two-thirds of those injured incurring more than one injury during that time.[11] Recorded injuries included back injuries and strained or pulled muscles, as well as bruises, scratches and black eyes.

At St. Luke's Hospital in Duluth, Minn., hospital administrators and employees have spearheaded the introduction of a Safe Patient Handling Initiative that has reduced such physical injuries, even while the hospital has increased the size of its workforce. Beginning in the mid-2000s, the hospital began chronicling incidents involving workplace injuries, investigating each accident, looking for underlying root causes and completing an accident investigation form. With these data in hand, hospital leaders began a series of discussions with healthcare workers, seeking their input and ideas on possible solutions to reduce the number of incidents. A Safe Patient Handling Committee was formed to implement the recommended solutions and monitor outcomes from key initiatives.

As a result of these initiatives, St. Luke's has reduced the number of employee injuries and workers' compensation claims for five consecutive years. Specifically, the hospital has seen a nearly 35% reduction in workers' compensation claims while the hospital workforce increased by 12%. Importantly, this progress has also contributed to significant decreases in the hospital's workers' compensation premium rate, which dropped more than two thirds from $1.36 for every $100 of payroll to just 43 cents.

In addition, St. Luke's Safe Patient Handling Initiative has helped improve employee morale. Indeed, in recognition of the success of its Safe Patient Handling Initiative in creating a safer environment for healthcare employees, St. Luke's was the 2012 winner of the Psychologically Healthy Workplace Award given by the Minnesota Psychological Association. The hospital was also named one of nine 2013 Best Practices Honorees by the American Psychological Association.[12]

Summary and Conclusion

The healthcare industry is one of the nation's largest employers, and healthcare workers face safety risks comparable to some of most dangerous jobs in the U.S. Health and safety risks in a healthcare environment not only affect healthcare workers. They also impose significant costs on healthcare institutions, driving up the cost of medical care for everyone and compromising the quality of patient care.

Efforts to reduce health and safety risks in the healthcare workplace can positively impact workers, patients and communities. Institutions that focus on developing and maintaining a culture of safety position themselves to effectively reduce risks across the board. A safety culture can also lead to significant process improvements, creating greater operational efficiencies and increasing profitability.

UL offers a range of consulting services and proprietary software systems to assist healthcare institutions in their efforts to reduce workplace risk, manage safety initiatives and support training efforts. For additional information, contact Kelley Maier at kelley.maier@ul.com.

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[2] "Workplace Injuries and Illnesses—2011," News Release, Bureau of Labor Statistics, U.S. Department of Labor, October 25, 2012. Web, April 11, 2013, http://www.bls.gov.news.release/osh.pdf.

[3] "Lost-time employee injuries cost healthcare billions," Knowledge at Work, Underwriters Laboratories, January 14, 2013. Web, February 11, 2013, http://www.knowledgeatwork.com/lost-time-employee-injuries-cost-healthcare-billions/.

[4] "Economic News Release," see Note 1.

[5] "Occupational Outlook Handbook: Projections Overview," U.S. Bureau of Labor Statistics, March 29, 2012. Web, February 16, 2013, http://www.bls.gov/ooh/About/Projections-Overview.htm.

[6] "Workplace Injuries and Illnesses—2011," see Note 2

[7] "OSHA Notice, Directive Number 13-01 (CPL 02), Site-Specific Targeting 2012 (SST-12)," Occupational Safety and Health Administration, U.S. Department of Labor, January 4, 2013. Web, April 26, 2013, http://www.osha.gov/OshDoc/Directive_pdf/CPL_02-13-01.pdf.

[8] "OSHA Notice, Directive Number CPL 03-00-016, National Emphasis Program – Nursing and Residential Care Facilities," Occupational Safety and Health Administration, U.S. Department of Labor. April 5, 2012. Web, April 26, 2013, http://www.osha.gov/OshDoc/Directive_pdf/CPL_03-00-016.pdf.

[9] "Lost-time employee injuries cost healthcare billions," see Note 3.

[10] For further information about the application of risk management principles in the healthcare environment, see "Enterprise Risk Management," monograph by the American Society for Healthcare Risk Management, January 2006. Web, February 27, 2013, http://www.ashrm.org/ashrm/education/development/monographs/ERMmonograph.pdf.

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[12] "Safe Patient Handling Program Recognized Nationally," press release issued by St. Luke's Hospital. Web, 25 April 2013, http://www. slhduluth.com/Newsroom/News/Safe-Patient-Handling-Program-Recognized-Nationa.aspx.