

women's health information, a Web site (women-health.gov), women's health campaigns, and networking opportunities. This office, coupled with several recent reviews and reports from federal agencies and medical organizations attempting to set the agendas about women's health, as well as the focus on women's health in the Affordable Care Act, helps ensure that the future for women's health remains promising. However, critical to all efforts to improve women's health domestically and internationally will be concerted efforts to improve family communication, public policies, provider-patient communication, health literacy, and health campaign efforts.

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See Also: Abuse: Child and Spousal; Affordable Care Act; Birth Control and Contraception; Body Images and Portrayals; Breast Cancer; Breastfeeding; Childbirth; Contraception; Eating Disorders; Fertility; Gender; Health Disparities: Overall; HIV/AIDS; Mother-to-Child Transmission; Human Papillomavirus; Human Rights; Mammography; Military Sexual Assault; Mother-Daughter Dyad Communication; Newborn Care; Pregnancy; Prenatal Health Promotion; Safer Sex; Sex Workers; Sexual Assault; Sexual Health; Sexually Transmitted Disease Prevention; Stress and Burnout: Home-Work Conflict; Teen Pregnancy.

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Work Site Safety

In 2010, the U.S. Bureau of Labor Statistics (BLS) estimated that half the population of the United States—approximately 154 million people—were employed in the public- and private-sector labor force. Each day, a significant number of these individuals suffer injury, disability, and death from workplace incidents. Given that workplace injuries and illnesses are largely foreseeable and preventable, workplace safety and health (also referred to as occupational safety and health, or OSH) is a broad discipline concerned with protecting the safety, health, and welfare of people engaged in work or employment. Professionals in this field include industrial hygienists, occupational health physicians, occupational health nurses, occupational safety and health specialists (e.g., certified safety specialists, safety engineers), epidemiologists, ergonomists, occupational health psychologists, and health communicators.

Under the Occupational Safety and Health Act of 1970, employers in the United States are responsible for providing a safe and healthy work environment for their employees, free of known and recognizable hazards. Workplace safety and health depends upon an adequate understanding of job-related hazards by all participants in the workforce, and effective communication is vital to this understanding. This includes, but is not limited to, the availability, comprehension, and use of safety information and organizations' inclination to address safety issues through training, health and safety campaigns, and other means. In short, communication in the workplace can serve as an interpretative frame through which to promote health and safety-related protections, intentions, and motivations.

This entry provides a brief background of the prevalence of workplace injury and illnesses in the United States, describes the critical role of health communication in OSH in preventing job-related morbidity and mortality, provides examples of risk communication in the workplace, and discusses some methods and theories underlying effective risk communication in and for organizations.

Prevalence of Workplace Injury and Illnesses

Injury and illness in the workplace result from the complex interaction of workers and the

environment, equipment, and materials used in work processes. This includes: the presence of physical, chemical, and biological hazards; hazards associated with machinery and tools; the development and implementation of safe work practices; the organizational safety culture; the availability and use of personal protective equipment (PPE), such as earplugs, gloves, and safety goggles; demographic characteristics of workers; and other economic and social factors.

According to 2010 data from BLS, 4,690 occupational injury deaths occurred in the United States—a rate of 3.6 fatalities per 100,000 full-time equivalent workers. In 2011, private industry employers reported nearly 3 million nonfatal workplace injuries and illnesses, an incidence rate of 3.5 cases per 100 equivalent full-time workers. Many job-related injuries and illnesses are difficult to quantify and thus understood to be vastly under-reported.

Workplace incidents cause significant financial and emotional hardship for workers and their families and present a serious public health problem. Each year, occupational injuries and illnesses require employers, employees, and society to pay substantial costs for workers' compensation and other insurance, medical expenses, and lost wages and productivity. Based on medical costs and productivity losses, in 2007 the cost of work-related fatalities and nonfatal injuries and illnesses was estimated at \$263 billion (in 2010 dollars). This amount exceeds the individual cost of cancer, coronary heart disease, stroke, and diabetes. Furthermore, occupational illnesses such as cancer and lung disease may occur many years or even decades after workers are exposed and are therefore seldom recorded in government statistics or employer surveillance activities.

Role of Health Communication

Given that work hazards can compromise human health, individuals in a wide range of environments must respond to increase job safety, reduce risk, and enhance worker well-being. Risk can be defined as the product of a hazard and exposure to the hazard. Communication about risk in the workplace—which links diverse (and sometimes divergent) individual and organizational interests and a multitude of workplaces and processes—is a form of preventive action intended to reduce

injury, illness, and death. Risk communication entails interaction among stakeholders—including employers, employees, regulators, and the general public—about risks to worker health and is the cornerstone of effective safety programs.

Workplace risk communication varies significantly in content, context, and form, as well as by level from the macro (social and political level) to the micro (organizational and individual level). At the organizational level, employers communicate with employees about hazards through written materials (such as brochures and posters) and through training, often delivered by a supervisor or through unions and nonprofit groups. Communication research indicates that first-line managers can be especially effective at delivering—by word and actions—safety-related messages to workers. Organizational safety research also points to the importance of supervisor interaction for achieving positive safety outcomes in the workplace. Additionally, communication with coworkers is vital in shaping attitudes about and perceptions of risk. Workplace risk is also “individualized” in that worker characteristics (e.g., demographics, education, training, personality-based factors) influence how workers define and negotiate risk.

At the social/political level, government agencies often use official channels to communicate occupational safety and health information. For instance, the Occupational Safety and Health Administration (OSHA) communicates with various agencies and stakeholders through notices of proposed rule-making published in the *Federal Register* when the agency adds, removes, or changes a regulation. The National Institute for Occupational Safety and Health (NIOSH) develops criteria documents to provide the basis for comprehensive occupational safety and health standards and to communicate critical scientific information to other government agencies. Researchers use scientific journals to communicate risk information, while safety professionals may communicate through formal presentations and conferences. Members of professional organizations (which include trade associations) and organizations that focus on occupational safety and health and environmental health issues, such as the American Industrial Hygiene Association (AIHA) and the American Society of Safety Engineers (ASSE), communicate with members

through policy proposals that may focus on newly identified hazards and methods for controlling them. Unions communicate risk through training materials, position statements, and advocacy materials. The general public communicates about workplace risk in public meetings with government officials, employees, and others. All stakeholders rely on electronic media (e.g., Web sites, social media, and newsletters) to share and disseminate information.

While the importance of risk communication in the workplace may seem evident, legislated mandates for it were deemed necessary. The OSHA Hazard Communication Standard (first promulgated in 1983 and more commonly known as worker “right to know”) is an example of one such mandate. Revised in 2012 to align with the United Nations’ Globally Harmonized System (GHS) of Classification and Labeling of Chemicals, the standard aims to benefit workers by reducing confusion about chemical hazards in the workplace, facilitating safety training, and improving understanding of hazards. Once fully implemented (in 2016), OSHA estimates that the new standard will prevent 585 injuries and illnesses and 43 deaths annually.

In organizations, information is a source of power and safety information may be particularly sensitive or restricted. The three objectives of effective risk communication in the workplace are autonomy, equity, and efficiency. The concept of autonomy suggests that workers freely decide what work they will do, based not only on information about their hours, wages, and benefits, but also about the potential risks they face. When confronted with harsh economic realities, however, workers may give up their right to choose the kinds of jobs they will, and will not, perform. The concept of equity is grounded in contract law and presupposes that the employee and the employer enter into a work arrangement on equal footing. However, this is rarely the case, as employers often have access to more information than employees about job-related hazards and risks, as well as about the resources available to mitigate them. This information asymmetry can lead to ineffective risk communication efforts, as workers must have full knowledge of the risks they face in order to voluntarily accept them. Finally, efficiency results when an open dialogue exists about

acceptable risks and agreed upon practices for lessening these risks. When information is freely available to all sides, stakeholders can engage in an open discussion about the appropriate levels of risk present in the workplace.

Trust can be another essential component of successful communication about hazards on the job. Research indicates that effective safety practices rely on open and frank communication between employers and employees, without which potentially dangerous or hazardous situations in the workplace could worsen over time. Furthermore, labor and environmental specialists, legislators and regulators, the general public, researchers, and other decision makers are involved in the wider communicative process that involves formulating, disseminating, and interpreting risk information. Effective workplace risk communication relies on stakeholders’ consensus for preventive action rooted in a shared or agreed upon interpretation of new risk and prevention knowledge.

Methods and Theories

In terms of theories of how risk communication in the workplace occurs, despite criticism, the transmission model remains a common way for understanding communication in occupational settings. This model is based on the idea that communication is a process of “packaging” and “transmitting” complex technical information so that lay audiences can “receive” it. This concept presupposes that if messages are packaged in a “clear” way, audiences will understand them as intended the first time, with no need for redundancy and feedback. These “conduit models” focus on translating scientific research into lay terminology, but overlook the complex, systems-level communication processes that entail much more than the physical “transfer” of information.

The relational, constructive, and transactional aspect of communication, not represented by transmission models, is important for communicating occupational safety and health risks as it promotes the ongoing interaction and participation of all stakeholders. Further, the critical perspective demonstrates how risk is defined and negotiated in the workplace through communicative processes that highlight the differing identities and interests of and power dynamics acted

out by stakeholders. Comprehensive theoretical models that portray communication as co-constructive, symbolic, interactional, and contextualized will be more effective for communicating risks and for promoting safety and health in the workplace.

Effective risk communication in the workplace can be achieved through methods common to health communicators and social marketers in other contexts. For example, audience segmentation—dividing the audience into smaller, more homogenous subgroups—is an important process for message design and dissemination. Subgroups may include employers and employees and may be further segmented by gender, age, and ethnicity (among other categories). Research indicates that communicators may benefit from dividing audiences based on their attitudinal or psychographic characteristics. Each segment may require a different communication strategy and different types of information. The channels, and the frequency of communicating through each channel, also require customization, based on research and analysis into the ways in which a particular audience interprets, internalizes, and acts on health and safety-based information. Message channels include interpersonal communication, training, print, video, social media (such as Facebook and Twitter), and the Internet. Understanding the importance of factors related to the source of health communication, who the audience is at a granular level, the kinds of messages to which they will be receptive, and where and how they receive these messages lies at the heart of effective workplace risk communication.

Communicators may divide individuals in the workplace by psychographic characteristics (e.g., values, attitudes, and interests). Rajiv Rimal and Kevin Real developed a framework for grouping workers based on their risk perception and efficacy beliefs (i.e., the belief that if faced with a risk, they can take positive actions to avoid the threat and those actions will be effective). Their research indicates that employees may be segmented according to these risk/efficacy profiles so that group-specific messages can be formulated to increase the effectiveness of work site safety campaigns. Their research suggests that when safety information is made available in the workplace, risk perception declines and workers' confidence

in their ability to stay safe (i.e., their safety efficacy) increases. This reinforces the idea that trust in communication between management and employees is key. Once individual workers believe that the organization will provide safety information that is accurate, dependable, and readily available, they will seek it and use it.

While large workplace disasters such as oil spills and mine collapses capture the public's attention, communicators are challenged to represent the mundane yet pernicious risks that workers face every day that can reduce the quality of—or even cut short—their lives. Workplace risk communication faces other challenges such as the need to address increasingly diverse audiences, including young and aging workers and new immigrants. Another obstacle is gaining the attention of individuals who are inundated with a multitude of media and messages. Despite these difficulties, efforts to communicate about risk in and to workplaces are vital and help protect the lives and livelihoods of all individuals who work.

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See Also: Audiences, Reaching; Risk Communication; Risk Perception Attitude Framework; Segmentation: Health Campaigns.

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