OSHA Strategic Assesment

Prepared by the
Situational Assesment
Working Group

May 2003

Occupational Safety
and Health Administration

OSHA Situational Assessment

Table of Contents

OSHA Situational Assessment

Introduction

OSHA is responsible for ensuring that workplaces in America are safe and healthful. Since the agency was created in 1971, workplace fatalities have been reduced by 62 percent and occupational injury and illness rates have declined 42 percent. The U.S. workforce has doubled in size during that same period.

As part of its mission, OSHA regularly examines the national occupational and safety and health landscape. It reviews past, present and future trends to assess programs and strategies, determine which priorities are appropriate and make adjustments as needed. This process enables the agency to identify the goals it plans to achieve and the process for achieving them.

In 2002, a team of OSHA experts conducted a comprehensive situational assessment of the agency, analyzing relevant trends and factors. This document summarizes the results of their findings.

From President's Management Agenda (FY 2002)

"Congress and the new administration face an array of challenges and opportunities to enhance performance and assure the accountability of the federal government. Increased globalization, rapid technological advances, shifting demographics, changing security threats, and various quality of life considerations are prompting fundamental changes in the environment in which the government operates. We should seize the opportunity to address today's challenges while preparing for tomorrow."

- Comptroller General David M. Walker

Section 1 – Labor Force Trends

1-1 Overview

The American workforce has changed significantly over the past 30 years. It is more diverse in terms of age, gender, race, and nationality. The economy is focused more on providing services than on producing goods. Fewer workers are employed in large, fixed industries such as manufacturing. More workers are employed in small businesses or temporary jobs. More work is contracted, outsourced or part time. These changes present challenges for workplace health and safety programs and affect how OSHA approaches its mission.[1]

1-2 Changing Demographics

More Older and Younger Workers

Profound changes in the U.S population will occur in the coming decades because the population is growing older and is becoming more diverse. We can expect to see a greater percentage of youth and older workers. In the next decade, the youth and older populations - ages 16 to 24 and those 55 years of age and older - are expected to increase as a share of the workforce. At the same time, the 25 to 54 age group is expected to decline. To underscore this point, the National Institute for Occupational Safety and Health (NIOSH) reports that 80 percent of young people are employed at some point before they leave school. Older workers will become an increasingly vital labor resource as the need for experienced and skilled workers continues to grow.

According to a National Academy of Sciences report, people with disabilities are also increasing their participation in the workplace: "The Americans with Disabilities Act of 1990 mandated reasonable accommodation for workers with a disabling condition; and, as a result, the number of employed persons with a disability has increased sharply in the 1990s." This trend is expected to continue.[2]

These demographic shifts influence occupational injury and illness rates and, therefore, impact OSHA's program strategies. For example, despite child labor laws that prohibit teenagers from engaging in the most dangerous occupations, young people have a higher rate of injury per hour worked than adults. "Women and older workers, on the other hand, have

[1] National Academy of Sciences. 2000. Safe Work in the 21st Century: Education and Training Needs for the Next Decade's Occupational Safety and Health Personnel.

[2] *Ibid.*

lower injury and illness rates than the labor force as a whole, although injured older workers take longer to return to work."[3]

Increased Diversity

The U.S. population is becoming more diverse, largely because of record numbers of immigrants. Between 1990 and 2000, the number of foreign-born people in the U.S. grew by 43 percent to total of more than 28 million. Though foreign-born residents make up about 10 percent of the overall U.S. population, in some parts of the country the numbers are considerably higher. For example, 26 percent of California's population comes from Mexico and Asia.

This more diverse population means that minorities will continue to represent a growing share of the workforce. African American, Hispanics, Asians, and other minorities are expected to make up 18 percent of the labor force by 2008, but will account for almost 60 percent of new workers between 1998 and 2008. The proportion of women in the workforce is expected to continue increasing as well. Women currently make up 47 percent of the U.S. workforce, up from about 42 percent in 1978.

1-3 Workforce Trends

The last few years of the 1990s saw a dramatic surge of productivity and economic growth, fueled in part by the nation's shift to a knowledge-based economy, the adoption of new technologies and a greater emphasis on market forces and competition. To compete more effectively, many companies restructured and downsized their workforces, increased their reliance on nontraditional employment practices such as temporary workers and contractor-supplied labor and adopted more flexible and lean production technologies. Workers in the United States are now logging the longest hours in the industrial world.

The nature of work has also changed. The traditional manufacturing economy has transformed into an economy based on the production of information and services. For most of the last two decades, high-technology manufacturing and knowledge-based services have grown at twice the rate of traditional manufacturing industries. The National Academy of Sciences report says that among goods-producing sectors, only the construction industry added jobs, while manufacturing and mining lost jobs. The report also says, "The majority of U.S. workers are now employed by firms with less than 100 employees; small firms showed the greatest growth in employment in the 1990s, and that trend is expected to continue…Substantial numbers of workers will hold multiple jobs, and they will change jobs more frequently. An increasing number of workers will work from home. In many sectors, the number of workers represented by unions is falling".[4]

These changes describe a workplace very different from the large, fixed-site manufacturing plants that previously garnered much of OSHA's attention. In addition, the globalization of the

[3] *Ibid.*

[4] *Ibid.*

world economy has had a tremendous impact on environmental and occupational safety and health in workplaces around the world. Such changes complicate the implementation of occupational safety and health programs and create the need for complementary changes in enforcement, consultation, compliance assistance, training and delivery systems.

The trend toward more contracted, outsourced and part-time work affects workplace safety and health and OSHA's ability to influence safety and health because it is more difficult to establish strong employer-employee relationships in these situations. Within general industry, for example, the arrangements between contracting parties can range from verbal contracts to detailed written contracts. At one end of the spectrum, an employer may claim that all employees are contractors. At the other end, an owner of a manufacturing facility may have written contracts with employee leasing companies to provide labor, payroll and supervisors, with the facility providing materials and equipment for the leased employees to use. The leased employees may perceive they work for the company when in reality they work for a sub-contractor.

The business environment in construction has also changed. There has been an evolving pattern for contractors to subcontract their work, resulting in liability for subcontractors who may have fewer safety and health resources. These subcontractors may subcontract portions of the work, further complicating workplace safety and health issues.. The result is that the construction industry has experienced a substantial increase in the number of small employers, those with less than ten employees. The accompanying deterioration in safety and health at the worksite is reflected in observations that show construction employers with less than 10 employees are more likely to have work-related fatalities.

In order to achieve a safe worksite, it is essential that someone is in control of workplace safety and health. Construction projects vary in duration and have an ever-changing work environment, often with several employers working at various stages of completion. Under OSHA's traditional methods of inspection, however, only a small percentage of construction worksites are inspected with the brief inspections providing only a single "snapshot" moment during the life of the project.

1-4 At-Risk Populations

Hispanic Workers

The Hispanic population is growing four times faster than the non-Hispanic population and is now the largest minority group in the country. Fatality rates among Hispanic workers are also increasing at significantly higher rates than for the general population. In fact, while the number of fatal work injuries among white (non-Hispanic) and black (non-Hispanic) workers declined in 2000, fatal injuries among Hispanic workers rose sharply. This increase in Hispanic worker fatalities was led by a 24 percent jump in construction fatalities involving Hispanic workers.

Hispanics are the fastest-growing ethnic group in the U.S. construction industry. Many of these workers have not received training in safety and health and are less likely to be familiar

with workers' rights and other protections provided by the federal government than workers from other ethnic groups.

Fatality rates may be the result of working in lower-skilled and more dangerous trades as well as not being trained in their native language.[5] Data from the Bureau of Labor Statistics, OSHA, other federal and state agencies and academia do not provide a complete picture of the problem. For instance, it is hard to document how often language barriers may have contributed to a fatal event or whether workers received health and safety training in a language they could understand. To answer some of these questions, OSHA is gathering information on immigrant status, nationality and language during its fatality investigations.[6]

Youth Workers

Workers under 18 years of age have special protections under child labor laws. Because of their age, they face unique health and safety risks on the job. Low levels of experience, limited health and safety training and lack of supervision may contribute to increased safety and health risks for young workers. Physical and psychosocial developmental factors may also play a role. Additionally, young workers may have increased susceptibilities to chemical exposures.

Each year in the United States, between 60 and 70 adolescents die from work-related injuries and an estimated 200,000 young workers seek emergency medical treatment. Non-fatal occupational injuries for workers under 18 years of age are more frequent than for adults.[7] Burns and lacerations are the most common injuries. The overall fatality rate for youth workers is similar to adults, even though the law does not allow them to work in more hazardous occupations. However, there are some injuries with higher youth fatality rates. For example, the risk of a youth dying while doing construction work is twice the risk to adult workers.[8]

The Institute of Medicine of the National Academy of Sciences Committee on the Health and Safety Implications of Child Labor reports that 50 percent of 15 to 17 year olds are employed each year and 80 percent of students work at some time during their high school years.[9] About 62 percent of young people aged 15 to 17 who were employed during the school months between 1996 and 1998 worked in retail trades, with food service accounting for the greatest share of young workers. Eight percent of male and two percent of female youths were employed in agriculture.

---

[5] Anderson, JTL, Hunting, KL, and Welch, LS (2000). Injury and Employment Patterns Among Hispanic Construction Workers. Journal of Occupational and Environmental Medicine. 42(2):176-186.

[6] http://omds.osha.gov/fsdb/Immlang.pdf

[7] MMWR. Vol. 50 / No. 16, April 27, 2001

4 BLS Report on the Youth Labor Force. Chapter 6: Occupational Injuries, Illnesses, and Fatalities. Revised November 2000.

[9] National Research Council. 1998. Protecting Youth at Work. Washington DC. National Academy Press.

Surveys from several different states indicate that the majority of young workers have never had occupational safety and health training. To increase the availability of age-appropriate safety and health training for youth workers, NIOSH funded three pilot projects beginning in 1995. These projects developed curricula for high school students, materials for employers and parents, strategies for providing effective training and approaches to increase awareness of occupational safety and health among young people.

The pilot projects demonstrated the importance of bringing many stakeholders together at the state level to develop and implement prevention strategies. This state-level approach is helpful because many state and federal agencies have responsibilities related to health and safety for working youth, but no single agency is responsible for coordination. The state teams created under the NIOSH project typically included the state departments of labor (responsible for child labor laws), education (responsible for school-to-career and vocational education programs) and health (responsible for occupational safety and health, injury prevention and adolescent health offices). Each state produced outreach materials and dissemination strategies geared to the needs of young workers in their state.

The Institute of Medicine report included recommendations to improve the health and safety of young workers. OSHA can provide leadership based on these recommendations in areas such as reviewing and stimulating the creation of age-appropriate course materials for young people, such as adapting the current OSHA 10-hour safety and health training course for young workers. There are additional opportunities to develop programs to train the trainers who work with young people. For example, providing secondary-level vocational education teachers access to the OSHA 40-hour course may increase opportunities for young people to receive the OSHA 10-hour training. OSHA can play additional proactive roles in reducing youth workers' injury and illness risks as well.

Workers' Families

Hundreds of case studies and reports document take-home exposures in which workplace contaminants are carried home, usually unknowingly, on workers' clothes, skin, hair or by other means, potentially exposing workers' families to the contaminants. Some family members, particularly children, pregnant women, the elderly, ill or disabled, may have increased vulnerability to such contaminants. Possible take-home contaminants include lead, beryllium, asbestos and pesticides.

The Workers' Family Protection Act of 1992 requires the Secretary of Labor to review available research and determine: 1) the need for additional education, emphasis or enforcement of existing regulations or standards and 2) the need for additional regulations or standards regarding take-home contamination. OSHA requirements for protective clothing and changing rooms provide the foundation for protecting family members. Training and education are critical to ensure proper use of available resources and protections.

Hard-to-Reach Employers and Employees

Hard-to-reach employers and employees pose special occupational safety and health challenges for OSHA. Mobile employees and temporary workers can be difficult to reach and often work in hazardous occupations. Some employers may be hard to reach, particularly

small businesses and immigrant employers who may be fearful of contacting government agencies for assistance because of language or other obstacles.

Mobile Employees

Mobile employees represent a significant challenge. It is difficult for OSHA to observe the working conditions of mobile employees because they tend to work at multiple and frequently changing locations and they may or may not report to a central office prior to going to field locations.

Examples of mobile employees and employers include:

- **Beverage and Similar Delivery Businesses--** Employees report to a distribution center and load trucks for one or more days. Injuries most often occur when work is performed at the delivery site. Although center may have high rates, work practices are hard to observe. In addition, there is no supervision at the delivery locations.

- **Oil and Gas Well Servicing --** These servicing units travel to different oil or gas wells every day to set up a mobile rig, swab out a well and return it to operation. This industry has a high rate of fatalities. OSHA Local Emphasis Programs (LEPs) for this industry are in place in some area offices, allowing observed rigs to be inspected under the LEP. This method of targeting is currently the only feasible way to locate these worksites.

- **Cable Companies and Other Service Industries --** These companies experience fatalities among installers primarily through contact with energized electrical lines. Addressing this issue is complicated because cabling companies often contract work to small companies or independent workers. Scheduling safety and health inspections in advance is difficult because the subcontractors' work schedule is unknown.

Temporary Employers, Workers and Day Laborers in Construction

Temporary, day labor and other hard-to-reach employees who work in construction may have low skill levels and little or no training in safety and health protection. They often meet at labor collection points and wait for construction crew leaders to come by and offer day jobs. They are paid in cash and are typically unaware of their rights to a safe work environment. Many of these workers are immigrants, some illegal, and would not consider filing complaints about wages or working conditions.

Temporary employers are becoming more common. They are characterized by the following:

- Individual construction worker or crew leader with specific trade skills, such as masonry, carpentry or roofing. This crew leader operates out of his home or truck, yet has no scheduled work.
- A crew leader, with crew and truck, will drive through areas rich in construction jobs, identify a construction site that may need the specialty that he offers and land a job. The jobs are often piecework, i.e., paid on the basis of bricks laid.

- Crews are often comprised of individuals with few job skills and no safety knowledge picked up from a drop site.
- The crews are paid in cash.
- Work continues on a site until a job ends. New work is found in the same manner.

1-5 Implications for OSHA

These trends have implications for how OSHA addresses worker safety issues, the relationship of disabilities and chronic diseases with workplace demands and reaches out to minority workers, workers with low levels of literacy and those for whom English is a second language. These requirements align with OSHA's Diversity Initiative to encourage the agency to develop the skills, capabilities and diversity to accomplish its mission by conducting comprehensive workforce skills assessments and implementing a workforce development plan.

A report by the National Academy of Sciences titled "Safe Work in the 21st Century: Education and Training Needs for the Next Decade's Occupational Safety and Health Personnel (2000)" presents recommendations for OSHA. The report recommends that:

- NIOSH, in collaboration with OSHA, should fund and evaluate large-scale demonstration projects that target training in small and mid-sized workplaces. These innovative training programs would encourage the use of new learning technologies, include recommended core competencies and encourage the creation of a new category of health and safety personnel—OSH managers in the workplace.

- OSHA should join with other government agencies, trade associations and labor unions to evaluate the efficacy of OSHA and other worker training programs and better define minimum training requirements.

- NIOSH, in collaboration with OSHA, should fund demonstration grants that target specific employment sectors as an incentive to develop model training programs for another category of health and safety personnel—OSH trainers.

Many of OSHA's activities, from enforcement to assistance and outreach, follow a model that works well with large and medium-sized workplaces. Yet the burden of largely preventable occupational diseases and injuries and the lack of adequate OSH services in many small to medium-sized workplaces demonstrates a need for greater emphasis at all levels.

For example, OSHA has developed job safety standards that include requirements for "qualified, designated or competent persons" to ensure health and safety standard enforcement without agreement as to which requirements must be met to satisfy these standards. OSHA mandates worker training in more than 100 of its standards, without specifying the quantity, quality or efficacy of the training. Few standards call for training employers or managers responsible for workplace safety and health.

Opportunities exist to address the changing construction work environment, such as:

- Implementing new methods of inspection (e.g., over the lifetime of the project);
- Developing new methods for targeting hazardous activities at worksites;
- Developing a policy that clearly defines what qualifies as an employer;
- Working with owners and industry associations to facilitate voluntary safety and health accountability on job sites;
- Establishing policies to clarify enforcement procedures where employer accountability is not contractually defined among contractors and owners;
- Expanding consultation efforts in areas with high fatality rates; and
- Exploring new site-based partnership opportunities.

Section 2 - Fatality, Injury and Illness Trends

2-1 General Industry Fatality Trends

The Situational Assessment Working Group examined a variety of data as part of its analysis, including fatalities using data from the Census of Fatal Occupational Injuries (CF01) from the Bureau of Labor Statistics. Results are presented in Table 1.

Table 1 – Industries with High Fatality Rates in General Industry (Non-Construction)

	Industry	Deaths among wage/salary workers, CY1998-2000	Employment (In 1,000s) CY2000	Fatality rate per 100,000 workers, CY1998-2000*
	Private industry	12,500	111,018	3.8
412	Taxicabs	153	31.9	161.6
241	Logging	259	78.9	108.1
452	Air transportation, nonscheduled	106	(1)	75.2
138	Oil/gas field services	166	182.8	30.8
421	Trucking/courier services	1,393	1,630.5	28.9
449	Water transportation services	100	127.3	26.7
495	Sanitary services	117	176.8	22.5
078	Landscape/horticultural services	223	528.9	14.9
327	Concrete, gypsum, plaster products	96	248.5	13.4
401	Railroads	73	237.2	10.4
754	Automotive services, except repair	76	253.7	10.3
491	Electric services	79	359.4	7.3
753	Automotive repair shops	124	678.6	6.3
554	Gas stations	86	651.6	5.1
019	General farms (crop)	94	(2)	(3)
072	Crop services	78	(2)	(3)
091	Commercial fishing	95	(2)	(3)

*Obtained by dividing the sum of the deaths from 1998-2000 by the sum of employment from 1998-2000.

(1) Employment data for non-scheduled air transportation are experimental, unpublished data from the Current Employment Survey at BLS.

(2) Employment data are unavailable.

(3) Fatality rates cannot be calculated because employment data are unavailable.

Notable patterns in the data include:

- Some fatality rates in general industry are higher than the average for the construction industry.

- Many high fatality rate industries involve mobile employees or employers, suggesting that approaches other than targeted inspections may be necessary to monitor workplace safety and health.

- In several high fatality rate industries, the most serious risks include factors that OSHA has not traditionally addressed, such as workplace violence and motor vehicle accidents.

- Fatality data primarily summarize deaths from injuries or short-term illnesses, such as hypothermia and tend to omit deaths from fatal illnesses with long latency periods.

- Victims of fatal injuries are overwhelmingly male.

2-2 Construction Fatality Trends

The construction industry experiences more fatalities than any other sector and presents unique challenges for OSHA. Not only are the numbers of deaths high each year, but the fatality rate is three times that of general industry and has remained virtually unchanged over the past decade. Changes in the industry present opportunities for OSHA to better address construction-related fatalities.

OSHA data show that the leading cause of construction-related deaths is falls, accounting for approximately one-third of all deaths, followed by "struck by," electrocutions and "caught in/between." Specialty trade contractors, including single-family housing, industrial buildings and warehouse construction, experience a disproportionate share of falls. By occupation, falls account for the highest level of fatalities among construction laborers, carpenters, roofers, structural metal workers, mechanics, repairers, welders and cutters.

According to a special study based on OSHA data conducted in Texas, specialty trade contractors (SIC1700) experienced the largest number of fatalities, followed by heavy construction/highway (SIC1600) and general building contractors (SIC 1500). While the leading cause of fatalities for SIC 1700 and 1500 was falls, "struck by" accounted for the most fatalities for SIC 1600.

Table 1: Total Number of Construction Fatalities in 2000 and Percent Due to Falls by SIC Code Using BLS Data			
SIC	**Description**	**Total Fatalities**	**% Fall Fatalities**
176	Roofing, Siding, Sheet metal	98	70
1791	Steel Erection	50	70
1741	Masonry, Stonework	31	61
172	Painting & Paper Hanging	45	53
1751	Carpentry Work	48	50
1742	Plastering, Drywall & Insulation	30	47
1521	Single Family House Construction	62	40
1541	Industrial Buildings & Warehouses	25	40
1795	Wrecking & Demolition	18	33
15,16,17	Private Construction Industry	1,154	32

Communication Towers

The increased demand for wireless communications has brought a ten-fold growth in the telecommunications tower industry in the last seven years. This industry has one of the highest fatality rates in construction. NIOSH and BLS data indicate that more than 150 workers died in this industry over the last decade, with falls from towers under construction or during maintenance accounting for a majority of these fatalities.

Tower worksites are difficult for OSHA to locate and normally operate only a few days. Improperly constructed towers may pose special safety concerns. When safety is not considered as a part of a project, tower companies that may have the well-maintained equipment and safety programs in place may be put at a disadvantage.

2-3 Amputation Trends

Nationwide, there were nearly 10,000 amputations in 1999, compared to about 12,000 in 1992. Amputation rates declined from 1.61 per 10,000 full-time workers in 1992 to 1.11 in 1999. Even though amputations have declined, they continue to be a serious concern. The overall results mask some important considerations related to occupation-related amputations. Amputations are clustered in particular industries, such as landscaping and horticultural services, sanitary services, water transportation services and meat processing. They also tend to cluster around certain types of machinery and objects, such as presses, cutting hand tools, forklifts, conveyors and saws.

Not surprisingly, workers who suffer amputations lose more work than many others injured on the job. The median number of days away from work for amputations is much higher than median days away from work for all types of injuries and illnesses reported. In 1998, the Bureau of Labor Statistics reported a median of five days away from work for all types of injury or illness compared to 15 days away from work for fingertip amputations and 29 days away for all other amputations.

About half of amputations occur in manufacturing. High ranking industries outside manufacturing include construction, wholesale trades and retail trades.

2-4 Occupational Illness Trends

Occupational illness continues to exact a large toll in the United States. In 1992, the occupational disease rate was estimated to be 826,200 new cases annually, resulting in 60,300 deaths and an estimated cost of $26 billion annually.[10] Fatalities from occupational disease account for more than 75 percent of the total cost of occupational disease.[11] This estimate may be low because it does not account for costs associated with pain and suffering or homecare provided by family members.

An accurate assessment of the impact of occupational illness is hampered by long latency periods for many diseases, a lack of recognition that an illness may be workplace-related, variances in estimates from different surveillance systems and misclassification and underreporting by employees and employers. The Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses provides estimates for annual illness trend analysis. However, these disease estimates are based on reports by employers and generally include only the incidence of acute diseases where work-relatedness is obvious. They often miss chronic diseases with long latency periods. Diseases with multiple causes may be difficult to recognize, leading to potential discrepancies in the occupational illness picture. For example, the number of new cases of occupational chronic obstructed pulmonary disease was estimated to be 150,000 in 1992 by *Leigh et al.*, while the Bureau of Labor Statistics estimated only 717 cases. The highest rates of workplace-related morbidity include repetitive trauma, chronic obstructed pulmonary disease, hearing loss, cancer, circulatory disorders and skin disease.

The Bureau of Labor Statistics reports that cases of occupational disease rose rapidly through the 1980s, from 100,000 cases to 500,000 cases by 1994. These numbers are driven by acute illness, repetitive trauma and skin disease. Other studies provide a mixed picture concerning the trends of specific occupational disease. Not withstanding the weakness of occupational disease surveillance, increasing trends have been suggested in occupational asthma, asbestosis, chronic obstructed pulmonary disorder and bladder cancer. Decreases have been seen in silicosis and hepatitis B infections among health workers.

Further studies must be performed to confirm estimates and trends of occupational disease, identify the most affected occupations and workplaces, develop new targeting schemes and determine if OSHA's industrial hygienists can be more effectively used to reduce occupational disease among American workers.

---

[10] Leigh JP, Markowitz SB, Fahs M, Shin C, Landrigan PJ. 1997. Occupational injury and illness in the United States. Estimates of costs, morbidity and mortality. Arch Intern Med 1997 Jul 28. 157(14):1557-68.

[11] Fahs MC, Markowitz SB, Leigh JP, Shin CG, Landrigan P. 1997. A National Estimate of the Cost of Occupationally Related Disease in 1992. Annals of the New York Academy of Sciences 837:440-455.

2-5 Implications for OSHA

Data analysis provides the opportunity for OSHA to best direct its resources to reduce injuries and illnesses. The ability of the agency to use and access accurate and complete data sources is critical to its mission. Data can be summarized by factors such as industry, occupation, event, source, age and time of event. The key is to summarize information in such a manner that promotes effective public policy. Following are some ways that various types of data may be useful to OSHA over the next five years.

As OSHA re-assesses its criteria for selecting new areas of emphasis, it may consider focusing on industries with:

- High lost workday injury and illness rates and numbers;
- High or expanding employment;
- High ratios of cases with three or more days away from work; and
- Increasing or slowly decreasing incidence rates.

Many industries identified with the above criteria are not those that OSHA has traditionally focused resources. Using this new method would result in increased focus on industries such as air transportation-scheduled, groceries/related products (wholesale) and pens/pencils/office/art supplies.

Another potential methodology would be to examine industries with elevated injury rates, high severity of injuries and causes for concern with regard to occupational illnesses. Examples of such industries include air transportation-scheduled, primary nonferrous metals, nonferrous foundries, health care, meatpacking, and leather tanning and finishing. It might be useful to consider expanding the SST program by incorporating additional factors, such as severity.

Fatality data may also be useful to help target OSHA resources. While fatalities are relatively rare and it is difficult to predict where they will occur, information gleaned from fatality investigations can identify common characteristics of hazardous work sites. New methods for analyzing non-fatal injury statistics may help overcome the challenge of working with less-detailed injury data.

Section 3 - Emerging Issues

Changes in economic conditions can affect occupational safety and health issues. OSHA must balance the need to address traditional occupational safety and health issues and the ability to respond to new ones.

3-1 Major Emerging Issues and Trends

Workers face many emerging health and safety issues that need to be considered as OSHA chooses its future direction. The assessment group identified numerous issues and categorized them based on several factors. The primary grouping used was severity/priority. The most severe and highest priority issues were grouped in category 1, moderately severe and medium priority issues were grouped in category 2 and issues of lower priority but that need to be monitored were grouped in category 3.

A second stratification of the issues distinguishes between those that are a priority for action and those that should be monitored.

Table 1 – High Priority Issues

Actionable Issues	Watch List Issues
Manufacture and packaging of pharmaceutical, hormonal compounds, and herbal medicines Combined effects of controlled drugs and worker chemical exposures Occupational asthma Fall hazards from wireless communications and HDTV tower construction Beryllium Dermal exposures and new assessment techniques of total body burden Mixed exposures to new combinations of chemicals Reactive chemicals Extended work shifts	Health risk from exposure to sulfuric acid (i.e., cancer hazard) Non-ionizing radiation (e.g., ULF radio waves, UV exposures, ultrasonic waves and lasers) Ultra fine particulates, including asbestos and man-made vitreous fibers (e.g., fiberglass)
General Comments: The term "reactive chemicals" is used generically to cover a group of (reactive) chemical substances not currently covered by the Process Safety Management standard.	

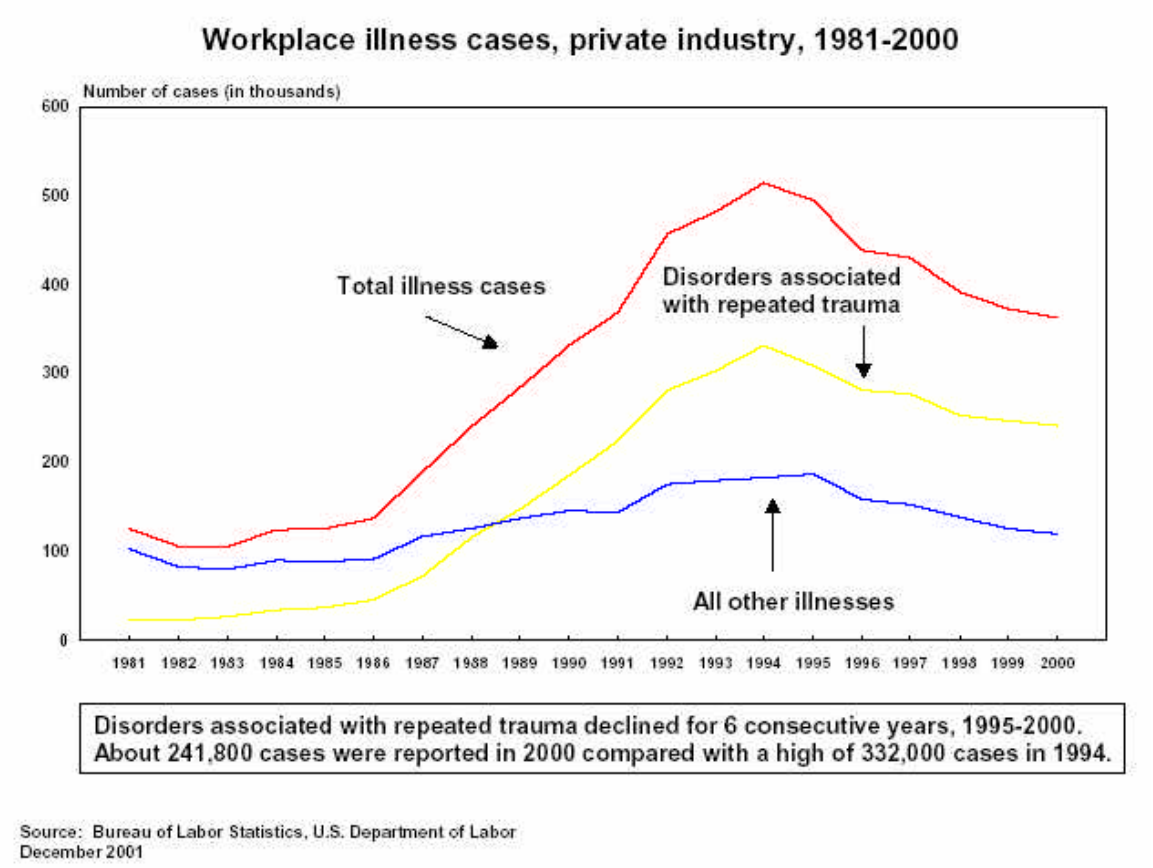
Table 2 – Medium Priority Issues	
Actionable Issues	**Watch List Issues**
New construction materials Hazards in the manufactured housing industry Noise in construction Legionnaire's Disease (preventive measures) Indoor air quality, including mold, passive tobacco smoke and other factors often linked to "sick buildings" Ship breaking *New Control Technology*: Real Time IH Monitoring Equipment *New Control Technology*: Robotics *New Control Technology*: Handheld computer applications to assist in evaluating workplaces Metal working fluids	Increased safety and health risk in industrial agriculture (e.g., large corporate farms, combines, etc.) Indoor air quality, including issues associated with mold and silica Thoracic particle sizes (<10um) and how OSHA respirable-sized (<3.5um) particulate standard is applied to ACGIH's new standard of <4um Worker use of controlled substances (including prescription medications) and herbal medicines
General Comments: Legionnaire's Disease is very under reported. Indoor air quality was included because it has a high public awareness level.	

Table 3 – Low Priority, But Potential Watch List Issues	
Actionable Issues	**Watch List Issues**
Infectious diseases, including those associated with immigrant workers	Biotechnology, genetic engineering, and bio-safety issues Synthetic fuel and lubricant production, distribution and use Workplace stress Endotoxins *New Control Technology*: Noise cancellation techniques *New Control Technology*: Advances in ventilation, including both local control and HVAC
General Comments: Problems resulting from workplace stress have many manifestations, including long-term illness and, in some cases, workplace violence.	

3-2 Musculoskeletal Disorders

Injuries involving ergonomic hazards and musculoskeletal disorders continue to be a priority for OSHA. Every year approximately 600,000 musculoskeletal injuries serious enough to cause lost time from work are documented. One-third of workers' compensation costs are attributed to these disorders. Direct and indirect costs combined amount to approximately $45 billion per year. Certain ergonomic injuries, such as carpal tunnel syndrome, involve significant time away from work – a median of 27 days.

Injuries and illnesses related to ergonomics, often called musculoskeletal disorders (MSDs), are on the decline in the workplace and OSHA hopes to accelerate that decline. See the illness chart below.[12]



Source: Bureau of Labor Statistics, U.S. Department of Labor
December 2001

Secretary of Labor Elaine Chao announced OSHA's comprehensive approach to ergonomics on April 5, 2001. This four-pronged approach includes industry and task-specific guidelines, enforcement, outreach and assistance and research. The approach is designed to help employers and employees quickly and effectively address MSDs in the workplace. The first three industry-specific guidelines are for nursing homes, grocery stores and poultry processing operations. OSHA is forming alliances with stakeholders to promote training,

12 It should be noted that lower back conditions, while musculoskeletal in nature, are designated as injuries, not illnesses, and do not appear in these statistics as a result.

education and outreach on ergonomics. The agency is using the general duty clause of the OSH Act for those cases that warrant enforcement and providing compliance assistance, outreach and training to reduce and prevent ergonomic injuries. The agency appointed ergonomic coordinators in each regional office to provide guidance and to assist with ergonomic enforcement and outreach issues. Finally, OSHA has formed the National Advisory Committee on Ergonomics to provide advice on ergonomic guidelines, gaps in research and methods of outreach and assistance.

3-3 Emergency Preparedness

The threat of terrorism has increased awareness of bio-weapons, chemical weapons and radiation hazards and heightened OSHA's awareness of the potential effects of terrorism in the workplace—especially the potential for sabotage in chemical plants and other workplaces where large amounts of chemicals are stored.

While OSHA's role in emergency preparedness is still evolving, the areas of focus are clear, including workplace preparedness, assistance to workplaces during terrorist threat or attack and participation in the federal response to terrorist incidents.

OSHA worked effectively with public and private sector partners in its response to the attacks of September 11, 2001 and the anthrax incidents. OSHA provided safety and health support for first responders, rescue and recovery operations and clean-up operations in the areas of hazard evaluation, personal protective equipment selection, environmental monitoring and decontamination. OSHA was the lead agency for monitoring and PPE expertise during the anthrax incidents. The agency has developed a Model Health & Safety Plan for the clean-up of facilities contaminated with anthrax spores. Assistant Secretary of Labor for Occupational Safety and Health John Henshaw appointed a Special Assistant for Emergency Preparedness and OSHA developed guidelines for assessing anthrax and emergency evacuations. OSHA is moving forward in many areas to address its responsibilities for workplace safety and health. These include:

- Development of a National Emergency Management Plan;
- Coordination with other federal agencies for outreach between employers and response organizations; and
- Involvement with Regional Response Teams and State and Local Emergency Planning Committees.

OSHA is participating in many federal initiatives to improve the nation's ability to respond to future terrorists incidents such as:

- National Response Team (NRT);
- Continuation of Operations Plan (COOP); and
- Incident Command System and Federal Response Plan.

In response to OSHA's emerging homeland security responsibilities, the agency should consider:

- Expanding abilities to monitor for unusual hazards such as weapons of mass destruction;
- Training additional OSHA staff in the National Response Plan, Federal Response Plan and the Continuation of Operations Plan;
- Training OSHA personnel about their role during a terrorism incident;
- Increasing participation in regional and local emergency planning efforts;
- Working with other federal agencies to identify chemical and biological agents that are most likely to be used as terrorism agents and to develop or refine strategies for addressing them;
- Providing additional guidance to employers and employees about emergency preparedness and response as it relates to terrorist incidents in the workplace;
- Defining policies and procedures for incident response at the regional and area office levels; and
- Developing policies to address equipment needs.

3-4 Implications for OSHA

Emerging occupational safety and health issues and new technologies have significant implications for OSHA and require the agency to identify strategies for resource allocation, set expectations for reasonable progress and select issues to be examined. Additional resources may be needed or diverted from other activities to address these implications.

There are significant opportunities for OSHA to play a leadership role in addressing emerging issues. Strategies to increase information and awareness about issues such as indoor air quality and workplace violence are needed.

OSHA may consider an aggressive approach, such as a comprehensive program focused on safety by design. The National Safety Council is promoting such a program based on the principle that "Designing safety prevents loss of life and minimizes destruction of health and property." Safety through design is applicable to products, buildings and machinery.

There also is a pressing need to organize a more comprehensive surveillance, intelligence and analytical capability within OSHA to better explore and use emerging technologies.

Section 4 - Other Significant Issues

1) OSHA should review the status of its standards, many of which are decades old. In some cases, such as woodworking, older standards remain in effect even though the fundamental technology has changed. Comparison with European standards may help.

2) OSHA should assess the impact of its regulations on safety and health programs, with emphasis on creating positive safe and health cultures in the workplace.

3) OSHA should enhance its intelligence capabilities by improving the timeliness, quality, availability and dissemination of analytical data.

4) OSHA needs to assess occupational disease data in terms of the effectiveness and how the agency uses scarce field resources.

5) OSHA should ensure that its partnerships with other government agencies, particularly NIOSH, are fully optimized.

6) Information and communication are essential elements of effective program operation. OSHA should implement a comprehensive enterprise architecture, improved IT systems and advanced tools, such as threaded discussions and ListServs, to allow the agency to develop more informed safety and health solutions based on the best available knowledge.

7) OSHA should highlight the importance of incorporating safety and health as a cultural value at an early age. Possible mechanisms include the Department of Labor's Youth Rules initiative, "First Job, Safe Job" and youth programs, such as scouting, that sponsor safety merit badges.

8) OSHA should conduct an assessment of safety and health as an occupation, concentrating on the level of training needed and the level of demand for safety and health professionals.

9) The agency should evaluate the implications of major current and prospective public policy decisions on government agencies, labor unions, businesses and others.

10) OSHA should examine process timeliness, bottlenecks and the impact of the review process, including required legal reviews.

Section 5 - Conclusions

The situational assessment highlights emerging issues and trends that will influence OSHA's strategic direction and require careful consideration and analysis during the planning process. In particular:

- Establishing a leadership role for OSHA to address safety and health issues through innovation and collaboration.

- Analyzing how OSHA performs and identifies strategies to address emerging labor force, safety and health trends. Adjusting OSHA's current way of doing business to enhance responsiveness to new threats and changing workforce and workplace issues.

- Identifying limitations of the existing legal and regulatory structure that challenge a safe and healthy work environment. Developing creative approaches to address these challenges.

- Exploiting technology to improve operational effectiveness and provide insights into day-to-day issues and trends.

- Strengthen alliances with NIOSH, other federal agencies and non-governmental organizations to conduct and disseminate research showing the value and profitability of safety and health programs, targeted at the more resistant sectors of business.