

Occupational Health and Safety Specialists and Technicians

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Significant Points

- About 2 out of 5 worked in Federal, State, and local government agencies that enforce rules on health and safety.
- Many employers, including the Federal Government, require 4-year college degrees in safety or a related field for some specialist positions.
- Projected average employment growth reflects a balance of continuing public demand for a safe and healthy work environment against the desire for smaller government and fewer regulations.

Nature of the Work

Occupational health and safety specialists and technicians, also known as occupational health and safety inspectors, industrial hygienists, environmental protection officers, or ergonomists, help prevent harm to workers, property, and the environment, as well as the general public. They promote occupational health and safety within organizations by developing safer, healthier, and more efficient ways of working. (Industrial engineers, including health and safety—who have similar goals—are discussed elsewhere in the *Handbook*.)

Occupational health and safety specialists analyze work environments and design programs to control, eliminate, and prevent disease or injury caused by chemical, physical, and biological agents or ergonomic factors that involve the impact of equipment design on a worker's comfort or fatigue. They may conduct inspections and enforce adherence to laws, regulations, or employer policies governing worker health and safety.

Occupational health and safety technicians collect data on work environments for analysis by occupational health and safety specialists. Usually working under the supervision of specialists, they help implement and evaluate programs designed to limit risks to workers.

The specific responsibilities of occupational health and safety specialists and technicians vary by industry, workplace, and types of hazards affecting employees. In most settings, they initially focus on identifying hazardous conditions and practices. Sometimes they develop methods to predict hazards from experience, historical data, and other information sources. Then they identify potential hazards in systems, equipment, products, facilities, or processes planned for use in the future. After reviewing the causes or effects of hazards, they evaluate the probability and severity of accidents that may result. For example, they might uncover patterns in injury data that implicate a specific cause such as system failure, human error, incomplete or faulty decision making, or a weakness in existing policies or practices. Then they develop and help enforce a plan to eliminate hazards, conducting training sessions for management, supervisors, and workers on health and safety practices and regulations, as necessary. Lastly, they may check on the progress of the safety plan after its implementation. If improvements are not satisfactory, a new plan might be designed and put into practice.

Many occupational health and safety specialists examine and test machinery and equipment, such as lifting devices,

machine guards, or scaffolding, to ensure the machinery and equipment meet appropriate safety regulations. They may check that personal protective equipment, such as masks, respirators, protective eyewear, or hardhats, is being used in workplaces according to regulations. They also check that dangerous materials are stored correctly. They test and identify work areas for potential accident and health hazards, such as toxic fumes and explosive gas-air mixtures, and may implement appropriate control measures, such as adjustments to ventilation systems. Their investigations might involve talking with workers and observing their work, as well as inspecting elements in their work environment, such as lighting, tools, and equipment.

To measure and control hazardous substances, such as the noise or radiation levels, occupational health and safety specialists and technicians prepare and calibrate scientific equipment. Samples of dust, gases, vapors, and other potentially toxic materials must be collected and handled properly to ensure safety and accurate test results.

If an accident occurs, occupational health and safety specialists help investigate unsafe working conditions, study possible causes, and recommend remedial action. Some occupational health and safety specialists and technicians assist with the rehabilitation of workers after accidents and injuries, and make sure they return to work successfully.



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Frequent communication with management may be necessary to report on the status of occupational health and safety programs. Consultation with engineers or physicians also may be required.

Occupational health and safety specialists prepare reports including observations, analysis of contaminants, and recommendation for control and correction of hazards. Those who develop expertise in certain areas may develop occupational health and safety systems, including policies, procedures, and manuals.

Working Conditions

Occupational health and safety specialists and technicians work with many different people in a variety of environments. Their jobs often involve considerable fieldwork, and some travel frequently. Many occupational health and safety specialists and technicians work long and often irregular hours.

Occupational health and safety specialists and technicians may experience unpleasant, stressful, and dangerous working conditions. For example, health and safety inspectors are exposed to many of the same physically strenuous conditions and hazards as industrial employees, and the work may be performed in unpleasant, stressful, and dangerous working conditions. Health and safety inspectors may find themselves in adversarial roles when the organization or individual being inspected objects to the process or its consequences.

Employment

Occupational health and safety specialists and technicians held about 41,000 jobs in 2002, primarily in government agencies. Local governments employed 17 percent, State governments employed 14 percent, and the Federal Government—chiefly the Department of Labor—employed 6 percent. Other occupational health and safety specialists and technicians were employed in manufacturing firms; hospitals; educational services, including colleges, universities, and professional schools; employment services; management, scientific, and technical consulting services; management of companies and enterprises; electric power generation, transmission, and distribution; support activities for mining; scientific research and development services; and architectural, engineering, and related services.

Within the Federal government, most jobs are as Occupational Safety and Health Administration (OSHA) inspectors, who enforce U.S. Department of Labor regulations that ensure adequate safety principles, practices, and techniques are applied in workplaces. Employers may be fined for violation of OSHA standards. Within the U.S. Department of Health and Human Services, occupational health and safety specialists working for the National Institute of Occupational Safety and Health (NIOSH) provide private companies with an avenue to evaluate the health and safety of their employees without the risk of being fined. Most large government agencies also employ occupational health and safety specialists and technicians who work to protect agency employees.

Most private companies either employ their own occupational health and safety personnel or contract with occupational health and safety professionals to ensure OSHA compliance.

Training, Other Qualifications, and Advancement

Requirements for becoming an occupational health and safety specialist or technician include a combination of education, experience, and passing scores on written examinations. Many employers, including the Federal Government, require a 4-year college degree in safety or a related field for some specialist positions. Experience as an occupational health and safety professional is also a prerequisite for many positions.

All occupational health and safety specialists and technicians are trained in the applicable laws or inspection procedures through some combination of classroom and on-the-job training. In general, people who want to enter this occupation should be responsible and like detailed work. Occupational health and safety specialists and technicians should be able to communicate well. Recommended high school courses include English, mathematics, chemistry, biology, and physics.

Certification is available through the Board of Certified Safety Professionals (BCSP) and the American Board of Industrial Hygiene (ABIH). The BCSP offers the Certified Safety Professional (CSP) credential, while the ABIH offers the Certified Industrial Hygienist (CIH) and Certified Associate Industrial Hygienist (CAIH) credentials. Also, the Council on Certification of Health, Environmental, and Safety Technologists, a joint effort between the BCSP and ABIH, awards the Occupational Health and Safety Technologist (OHST) credential. Requirements for the OHST credential are less stringent than those for the CSP, CIH, or CAIH credentials. Once education and experience requirements have been met, certification may be obtained through an examination. Continuing education is required for recertification. Although voluntary, many employers encourage certification.

Federal Government occupational health and safety specialists and technicians whose job performance is satisfactory advance through their career ladder to a specified full-performance level. For positions above this level, usually supervisory positions, advancement is competitive and based on agency needs and individual merit. Advancement opportunities in State and local governments and the private sector are often similar to those in the Federal Government.

With additional experience or education, promotion to a managerial position is possible. Research or related teaching positions at the college level require advanced education.

Job Outlook

Employment of occupational health and safety specialists and technicians is expected to grow about as fast as the average for all occupations through 2012, reflecting a balance of continuing public demand for a safe and healthy work environment against the desire for smaller government and fewer regulations. Additional job openings will arise from the need to replace those who transfer to other occupations, retire, or leave the labor force for other reasons. In private industry, employment growth will reflect industry growth and the continuing self-enforcement of government and company regulations and policies.

Employment of occupational health and safety specialists and technicians is affected less by general economic fluctuations than employment in other occupations. Federal, State, and local governments, which employ about 2 out of 5 of all specialists and technicians, provide considerable job security.

Earnings

Median annual earnings of occupational health and safety specialists and technicians were \$46,010 in 2002. The middle 50 percent earned between \$34,280 and \$58,230. The lowest 10 percent earned less than \$25,080, and the highest 10 percent earned more than \$71,450. Median annual earnings of occupational health and safety specialists and technicians in 2002 were \$44,260 in State government and \$42,430 in local government.

Most occupational health and safety specialists and technicians work for Federal, State, and local governments or in large private firms, most of which generally offer more generous benefits than smaller firms.

Related Occupations

Occupational health and safety specialists and technicians ensure that laws and regulations are obeyed. Others who enforce laws and regulations include agricultural inspectors, construction and building inspectors, correctional officers, financial examiners, fire inspectors, police and detectives, and transportation inspectors.

Sources of Additional Information

Information about jobs in Federal, State, and local government as well as in private industry is available from State employment service offices.

For information on a career as an industrial hygienist and a list of colleges and universities offering programs in industrial hygiene, contact:

► American Industrial Hygiene Association, 2700 Prosperity Ave., Suite 250, Fairfax, VA 22031. Internet: <http://www.aiha.org>

For information on the Certified Industrial Hygiene or Certified Associate Industrial Hygiene credential, contact:

► American Board of Industrial Hygiene, 6015 West St. Joseph Hwy., Suite 102, Lansing, MI 48917. Internet: <http://www.abih.org>

For more information on professions in safety and a list of colleges and universities offering safety and related degrees, including correspondence courses, contact:

► American Society of Safety Engineers, 1800 E Oakton St., Des Plaines, IL 60018. Internet: <http://www.asse.org>

For more information on professions in safety and the Certified Safety Professional credential, contact:

► Board of Certified Safety Professionals, 208 Burwash Ave., Savoy, IL 61874. Internet: <http://www.bcspp.org>

For information on the Occupational Health and Safety Technologist credential, contact:

► Council on Certification of Health, Environmental, and Safety Technologists, 208 Burwash Ave., Savoy, IL 61874. Internet: <http://www.cchest.org>

For additional career information, contact:

► U.S. Department of Health and Human Services, Center for Disease Control and Prevention, National Institute of Occupational Safety and Health, Hubert H. Humphrey Bldg., 200 Independence Ave. SW., Room 715H, Washington, DC 20201. Internet: <http://www.cdc.gov/niosh>

► U.S. Department of Labor, Occupational Safety and Health Administration, 200 Constitution Ave. NW., Washington, DC 20210. Internet: <http://www.osha.gov>

Information on obtaining positions as occupational health and safety specialists and technicians with the Federal Government is available from the Office of Personnel Management through a telephone-based system. Consult your telephone directory under U.S. Government for a local number or call (703) 724-1850; Federal Relay Service: (800) 877-8339. The first number is not tollfree, and charges may result. Information also is available from the Internet site: <http://www.usajobs.opm.gov>.