



**OSHA Academy**<sup>TM</sup>  
Occupational Safety & Health Training

# Healthcare Pharmacy Safety

Health care workers who prepare or administer hazardous drugs (e.g., those used for cancer therapy, some antiviral drugs, hormone agents, and bioengineered drugs) or who work in areas where these drugs are used may be exposed to hazards in the workplace. This course will provide ways to decrease the exposure and potential injury risks when working in a pharmaceutical setting. It also takes a look at workplace violence involving hazardous drugs.

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# OSHAcademy Course 630 Study Guide

## Healthcare: Pharmacy Safety

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Contact OSHAcademy to arrange for use as a training document.

This study guide is designed to be reviewed off-line as a tool for preparation to successfully complete OSHAcademy Course 630.

Read each module, answer the quiz questions, and submit the quiz questions online through the course webpage. You can print the post-quiz response screen which will contain the correct answers to the questions.

The final exam will consist of questions developed from the course content and module quizzes.

We hope you enjoy the course and if you have any questions, feel free to email or call:

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## Course Introduction

Health care workers who prepare or administer hazardous drugs (e.g., those used for cancer therapy, some antiviral drugs, hormone agents, and bioengineered drugs) or who work in areas where these drugs are used may be exposed to these agents in the workplace.

About 8 million U.S. healthcare workers are potentially exposed to hazardous drugs, including:

- pharmacy and nursing personnel
- physicians
- operating room personnel
- environmental services workers
- workers in research laboratories
- shipping and receiving personnel

Studies have shown workplace exposures to hazardous drugs can cause both acute and chronic health effects such as skin rashes, adverse reproductive outcomes (including infertility, spontaneous abortions, and congenital malformations), and possibly leukemia and other cancers.

The health risk depends on how much exposure a worker has to these drugs and how toxic they are. Workers can be protected from exposures to hazardous drugs through engineering and administrative controls, and proper protective equipment. This course specifically looks at ways to prevent dangerous exposure to hazardous drugs in the pharmaceutical setting.

## Course Components

When you complete this course, you will have the knowledge in the following components:

- health effects of hazardous drugs
- creating a hazardous drug safety and health plan
- use of hazardous drugs
- hazardous drug handling practices
- personal protective equipment
- workplace violence
- ergonomic injuries

## Module 1: Hazardous Drugs

### Introduction

OSHA says worker exposure to hazardous drugs is a major health concern for workers in healthcare facilities and the pharmaceutical industry. The preparation, administration, manufacturing, and disposal of hazardous medications are the primary activities that may expose hundreds of thousands of workers to potentially significant workplace levels of these chemicals.

### Health Effects

Hazardous drugs can cause serious acute and chronic health effects such as skin rashes, fertility problems, genetic damage, birth defects, organ toxicity, and possibly leukemia and other cancers.

Potentially harmful exposure can occur when you handle or work around hazardous drugs. These drugs include antineoplastic cytotoxic medications, anesthetics, anti-viral drugs, hormones, and others.

### Antineoplastic Drugs

The numbers and types of work environments, including pharmacies that contain antineoplastic drugs are expanding as these agents are used increasingly for nonmalignant rheumatologic and immunologic diseases and for chemotherapy in veterinary medicine. The likelihood that a worker will experience adverse effects from antineoplastic and other hazardous drugs increases with the amount and frequency of exposure and the lack of proper work practices. The following case illustrates one example of the health effects reported after exposure to antineoplastic drugs.

### Case

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A 41-year-old patient-care assistant working on an oncology floor developed an itchy rash approximately 30 minutes after emptying a commode of urine into a toilet. She denied any direct contact with the urine, wore a protective gown and nitrile gloves, and followed hospital policy for the disposal of materials contaminated with antineoplastic drugs. The rash subsided after 1 to 2 days. Three weeks later, she had a similar reaction approximately 1 hour after performing the same procedure for another patient.

Upon investigation, it was found both hospital patients had recently been treated with vincristine and doxorubicin. The patient-care assistant had no other signs or symptoms and reported no changes in lifestyle and no history of allergies or recent infections. After treatment with diphenhydramine (intramuscular) and oral corticosteroids, her symptoms disappeared. Although the cause could not be definitely confirmed, both vincristine and

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doxorubicin have been associated with allergic reactions when given to patients. The aerosolization of the drug present in the urine may have provided enough exposure for symptoms to develop.

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Click for: [2012 NIOSH List of Antineoplastic and Other Hazardous Drugs](#)

### **Hazardous Drug Exposure**

Exposure occurs during manufacturing and packaging, receiving, preparation and administration, and cleaning and disposal activities. Clinical and non-clinical workers with potential exposure include:

- pharmacists and pharmacy technicians
- nurses
- physician assistants
- physicians
- nursing home, home health care, and assistive care staff
- housekeeping and environmental services staff (custodial, laundry, and waste handling workers)
- shipping and receiving personnel
- veterinarians and veterinary technicians and assistants

### **Exposure Routes**

Exposures to hazardous drugs may occur through inhalation, absorption, ingestion, or injection. The most common route of entry for chemical substances is through inhalation (i.e., breathing). Absorption through the skin, unintentional ingestion from hand-to-mouth contact, and unintentional injection by needlesticks or sharps are also possible.

### **Hazard Communication Standard**

Employers should implement a written program which meets the requirements of the [Hazard Communication Standard \(HCS\)](#) for employees who are handling or exposed to the chemicals, including drugs that represent a health hazard to employees. Manufacturers are responsible for evaluating their chemical products, and creating the Safety Data Sheet (SDS), which is the most comprehensive written information about that chemical.

The written program must provide for worker training, warning labels, and access to Safety Data Sheets (SDSs). HCS Labeling and SDS best practices include the following actions:

- Always check container labels before starting any task involving a chemical.
- Labels placed on containers are basic and typically do not include pertinent, detailed information so in some instances refer to the Safety Data Sheet or SDS.

- Any chemical transferred from its original container to a secondary container must be labeled with at least the basic information from the original container.

### Hazardous Drug Safety and Health Plan

As part of the HCS, a written Hazardous Drug Safety and Health Plan should also be developed. It should be readily available and accessible to all employees, including temporary employees, contractors, and trainees.

OSHA says the plan should include each of the following elements and indicate specific measures that the employer is taking to ensure employee protection:

- Standard operating procedures relevant to safety and health considerations to be followed when health care workers are exposed to hazardous drugs.
- Criteria the employer uses to determine and implement control measures to reduce employee exposure to hazardous drugs, including engineering controls, the use of personal protective equipment, and hygiene practices.
- A requirement that ventilation systems and other protective equipment function properly, and specific measures to ensure proper and adequate performance of such equipment.
- The plan should have a provision for information and training and medical examinations of potentially exposed personnel.
- The circumstances under which the use of specific hazardous drugs require prior approval from the employer before implementation.
- Employers should designate a responsible person to implement the Hazardous Drug Safety and Health Plan. This includes assigning a Hazardous Drug Officer (who is an industrial hygienist, nurse, or pharmacist health and safety representative) and, if appropriate, establishment of a Hazardous Drug Committee or a joint Hazardous Drug Committee/Chemical Committee.

Download this excellent sample [Hazardous Drug Program](#) developed by the Washington State Department of Labor & Industries.

### HCS Information and Training

HCS information and training are a critical part of the hazard communication program. It is through effective information and training that employees will learn to read and understand labels and SDSs, determine how to acquire and use them in the pharmacy, and understand the risks of exposure to the chemical as well as the ways to protect themselves.

According to the Hazard Communication Standard (HCS), the employer must provide information and training to each pharmacy employee who may be "exposed" to hazardous chemicals. "Exposure" or "being exposed" means that an employee has contacted a hazardous

chemical at work through any route of entry and is subject to its effects. Employees must be trained on how to safely handle hazardous chemicals to which they may be exposed prior to initial assignment and whenever the chemical hazard changes. Topics for HCS training include:

- the requirements of the HCS;
- any operations in their work area where hazardous chemicals are present; and,
- the location and availability of the written hazard communication program, including the required list(s) of hazardous chemicals, and SDSs required by the HCS.

### **Employer Responsibilities**

Departments with employees who handle hazardous drugs on a regular basis must:

- Ensure employees follow the procedures in the hazardous drug safety and health plan.
- Develop additional written procedures as appropriate.
- Ensure all hazardous drugs are labeled properly and safety data sheets are available for all drugs in liquid, powdered, and gaseous form.
- Develop a plan for cleaning up hazardous drug spills and provide spill kits to all areas where hazardous drugs are administered. Whenever possible, spills of liquid hazardous drugs will be handled by employees in the area of the spill.

### **Employee Responsibilities**

Employees who handle hazardous drugs should:

- Comply with the procedures outlined in the plan and with department- or site-specific procedures related to handling hazardous drugs.
- Report any exposures (skin or eye contact or inhalation of an aerosol or dust) to their supervisors.

### **Hazard Assessment**

The hazard assessment is conducted to help you identify what tasks have the potential for exposure, which employees may be exposed, and how to control exposure. It will form the foundation of your Hazardous Drug Control Program.

### **Written Hazard Assessment**

Here are some steps to help you conduct your hazard assessment:

1. Develop an inventory of hazardous drugs stored, transported, or otherwise handled in your facility.
2. Identify the tasks performed where an employee may be reasonably anticipated to have exposure to a hazardous drug.
3. Characterize the potential exposure for each task, including exposure by contact, injection, or inhalation.

4. Determine the preventive methods that will be used for each of the identified tasks and exposures for your work operations and worksites.
5. Complete a diagram of the physical layout of your work areas where hazardous drugs may be located or used; however, a diagram will not be needed for temporary worksites.

### HCS Exemptions

OSHA requires SDSs only for materials that meet OSHA's definition of "hazardous," and are "known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency".

Drugs regulated by the U.S. Food and Drug Administration (FDA) are covered by the HCS. However, section (b)(6)(vii) of the HCS exempts FDA drugs when they are:

- in solid, final form for direct administration to the patient (e.g., tablets or pills)
- drugs which are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs)
- drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies)

Examples of those needing SDS's for drugs would include pill manufacturing facilities and pharmacies (if the drug is compounded, crushed etc.).

There are other exceptions to the standard, such as:

- Drugs dispensed by a pharmacy to a health care provider for direct administration to a patient (e.g., tablets or pills).
- OSHA considers most office products (such as pens, pencils, adhesive tape) to be exempt under the provisions of the rule, either as articles or as consumer products.
- "Articles" such as paper clips, pencils, office equipment, and furniture, etc.
- Food and food products which are sold, used, or prepared in commercial establishments, and foods intended for personal consumption.
- Cosmetics packaged for sale to consumers, or intended for personal consumption by employees.
- Tobacco and tobacco products.
- Wood or wood products, including lumber when the only hazard they pose is the potential for flammability or combustibility.
- Biological hazards are exempt under the HCS if the only hazard they pose is biological. Examples include microbes, vaccines, and cell cultures.

## Module 1 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

**1. A written hazardous drug safety and health plan must include which of the following components?**

- a. Use of hazardous drug
- b. Warning labels
- c. First aid procedures
- d. Discipline strategies

**2. When a hazardous drug safety and health plan is developed, it should be \_\_\_\_\_ to all employees.**

- a. denied
- b. accessible
- c. hidden
- d. given

**3. Employers should designate a responsible person to \_\_\_\_\_ the Hazardous Drug Safety and Health Plan.**

- a. create
- b. implement
- c. oversee
- d. provide training on

**4. Employees must be informed of which of the following requirements of the Hazard Communication Standard?**

- a. Discipline problems
- b. Employee feedback options
- c. Any operation in work area where hazardous drugs are present
- d. Hiring/firing procedures

**5. Employees who handle hazardous drugs should do which of the following?**

- a. Ignore the procedures outlined in the plan
- b. Report any exposures to their supervisors
- c. Protect co-workers before anything else
- d. Call emergency personnel, if they think a spill will occur

## Module 2: The Use of Hazardous Drugs

### Hazardous Drug Training

All personnel who are involved in ANY aspect of the handling of hazardous drugs, such as physicians, nurses, pharmacists, housekeepers, and employees involved in receiving, transporting, or storing) must receive information and training to protect them in the work area.

The training should include methods of observation to detect the presence or release of an HCS-covered hazardous drug. For example, the monitoring conducted by the employer, continuous monitoring devices, or the visual appearance or odor.

The training should also include these components:

- physical and health hazards of the covered hazardous drugs in the work area
- measures employees can take to protect themselves from these hazards (including specific procedures the employer has implemented to protect employees from exposure)
- appropriate work practices
- emergency procedures for spills or employee exposure

### Recommended Good Work Practice Procedures

There are other necessary work practice procedures to protect workers against hazardous drugs. For example, nursing stations on floors where hazardous drugs will be administered should have spill and emergency skin and eye decontamination kits available and relevant MSDSs for guidance.

Also, a list of drugs covered by hazardous drug policies and information on spill and emergency contact procedures should be posted or easily available to employees.

### Biological Safety Cabinets

Approved Biological Safety Cabinets (BSC) should be used when preparing hazardous medications.

- Class II, type B, or Class III BSCs that vent to the outside are recommended.
- OSHA does not recommend Horizontal BSCs for the preparation of hazardous drugs, since they increase the likelihood of drug exposure.

The BSC should also contain:

- covered needle containers for needle disposal
- covered waste container for excess fluids disposal

## Decontamination

Decontamination of a BSC must consist of surface cleaning with water and detergent, followed by a thorough rinsing. Spray cleaners should be avoided because of the risk of spraying the HEPA filter. Ordinary decontamination procedures which include fumigation with a germicidal agent, are inappropriate in a BSC because such procedures don't remove or deactivate the hazardous drugs.

Removable work trays should be lifted in the back of the BSC to be cleaned. During cleaning, the worker should wear appropriate personal protective equipment (PPE) similar to those used for spills. The exhaust fan/blower should be left on and cleaning should proceed from least to most contaminated areas. The drain spillage trough area should be cleaned at least twice since it can be heavily contaminated.

## Hazardous Drugs During Preparation

Employees can be exposed to hazardous drugs during preparation because of ineffective engineering, or work practice controls, or personal protective equipment (PPE).

The outside of bags or bottles containing the prepared drug should be wiped with moist gauze. Entry ports should be wiped with moist alcohol pads and capped. Transport should occur in sealed plastic bags and in containers designed to avoid breakage. Shipped hazardous drugs that are subject to Environmental Protection Agency regulation as hazardous waste, are also subject to Department of Transportation regulations.

**Non-liquid HD's:** The handling of non-liquid forms of hazardous drugs requires special precautions as well. Tablets which may produce dust or potential exposure to the handler should be counted in a BSC. Capsules, such as gel-caps or coated tablets, are unlikely to produce dust unless broken in handling. These are counted in a BSC on equipment designated for hazardous drugs only, because even manual counting devices may be covered with dust from the drugs handled. Automated counting machines should not be used unless an enclosed process isolates the hazard from the employee(s).

## Personal Protective Equipment

OSHA requires the use of effective PPE when working with hazardous drugs.

Here are some examples:

### Gloves

- The thickness of the gloves used in handling hazardous drugs is more important than the type of material. The best results have been seen with latex gloves.
- Double gloving is recommended because all gloves are permeable to some extent, and their permeability increases with time.

- When double gloving, one glove should be placed under the gown cuff and one over. The glove-gown interface should be such that no skin on the arm or wrist is exposed.
- To limit transfer of contamination from the BSC into the work area, the outer gloves should be removed after each task or batch, and should be placed in "zipper" closure plastic bags or other sealable containers for disposal.
- Gloves should be changed hourly or immediately if they are torn, punctured, or contaminated with a spill.
- Thicker, longer, latex gloves that cover the gown cuff are recommended with minimal or no powder since the powder may absorb contamination.
- Hands should be washed before gloves are put on and after they are removed.

### **Gowns**

- A protective disposable gown must be made of lint-free, low-permeability fabric with a closed front, long sleeves, and elastic or knit closed cuff should be worn.

### **Respiratory Protection**

A NIOSH-approved respirator appropriate for the hazard must be worn to afford protection until a BSC is installed. The use of respirators must comply with OSHA's Respiratory Protection Standard 105. The [standard](#) outlines the aspects of a respirator program, including selection, fit testing, and worker training.

Surgical masks are not appropriate since they do not prevent aerosol inhalation. Permanent respirator use, in lieu of BSC's, is imprudent practice and should not be a substitute for engineering controls.

### **Eye and Face Protection**

Whenever splashes, sprays, or aerosols of HD's may be generated that can result in eye, nose, or mouth contamination, chemical-barrier face and eye protection must be provided and used in accordance with [29 CFR 1910.133](#). Eyeglasses with temporary side shields are inadequate protection.

When a respirator is used to provide temporary protection as described above, and splashes, sprays, or aerosols are possible, employee protection should be:

- respirator with a full face piece
- plastic face shield or splash goggles complying with ANSI standards<sup>2</sup> when using a respirator of less than full-face piece design

Eyewash facilities should also be made available.

## Restricted Preparation Areas

OSHA and the American Society of Hospital Pharmacists recommend hazardous drug preparation should be performed in a restricted area. This area should have visible signs to restrict the access of unauthorized personnel.

- Bins or shelves where hazardous drugs are stored should be designed to prevent breakage and to limit contamination in the event of leakage, with bins with barrier fronts, or other design features that reduce the chance of drug containers falling to the floor.
- Warning labels should be applied to all hazardous drug containers, shelves, and bins, where these containers are stored.

The American Society of Hospital Pharmacists (ASHP) recommends hazardous drugs requiring refrigeration be stored separately from non-hazardous drugs in individual bins designed to prevent breakage and contain leakage.

## Restricted Activities

Smoking, drinking, applying cosmetics, or eating where hazardous drugs are prepared, stored, or use increases the chance of exposure, and should be prohibited.

## Handling Practices

Workers can be exposed to hazardous drugs through improper handling practices, needle or sharps handling and disposal, and priming IV lines or labeling.

When handling these hazardous drugs, good work practice should be in place. The hazardous drugs should be prepared by pharmacists, not nurses or physicians without proper PPE and engineering controls. The risk of exposure to hazardous drugs through inhalation or direct skin contact, is present in procedures such as:

- transferring hazardous drugs from one container to another, reconstituting or manipulating them
- withdrawal of needles from drug vials
- expulsion of air from a drug-filled syringe

## Sharps Handling

OSHA and the American Society of Hospital Pharmacists (ASHP) recommend all syringes and needles used in the course of preparation be placed in "sharps" containers for disposal without being crushed, clipped or capped.

## Priming of Tubing for Hazardous Drugs

OSHA recommends drug administration sets be attached and primed within the BSC prior to addition of the drug. This eliminates the need to prime the set in a less well-controlled

environment. The priming should be done with non-drug containing solution or a back-flow closed system should be used.

### Labeling Practices

In addition to standard pharmacy labeling practices, all syringes and IV bags containing hazardous drugs should be labeled with a warning label such as, "Special Handling/Disposal Precautions."

### Hazardous Drugs During Administration

Workers can be exposed to hazardous drugs during administration; therefore, personnel should wear gowns, latex gloves, and chemical splash goggles or equivalent safety glasses.

When administering aerosolized drugs, additional precautions may be necessary to protect employees from exposure such as:

- wearing NIOSH-approved respirators
- using treatment booths with local exhaust ventilation systems, or isolation rooms with separate HEPA filtered ventilation systems

The American Society of Hospital Pharmacists (ASHP) recommends these guidelines when administering hazardous drugs:

- Only those trained to administer hazardous drugs should be allowed to perform this function.
- Disposable gloves and gowns should be worn. The glove and gown cuffs should be worn in a manner that produces a tight fit (e.g., loose glove tucked under gown cuff; tight glove fitted over gown cuff).
- Intravenous containers designed with venting tubes should not be used.
- The use of plastic backed absorbent liners under I.V. tubing during administration of hazardous drugs to absorb any leakage and prevent the solution from spilling onto patient skin.
- Work at waist level, if possible; avoid working above the head or reaching up for connections or ports.
- Until the reproductive risks associated with handling hazardous drugs have been substantiated, staff who are pregnant or breast-feeding should avoid contact with these drugs.

### Disposal of Hazardous Drugs

OSHA requires bags containing materials contaminated with hazardous drugs be covered under the [Hazard Communication Standard](#) and must be properly labeled.

Thick, leak-proof plastic bags, colored differently from other hospital trash bags, should be used for routine collection of discarded gloves, gowns and other disposable material, and labeled as "Hazardous Drug-related wastes." The waste bag should be kept inside a covered waste container clearly labeled "Hazardous Drug WASTE ONLY." At least one such receptacle should be located in every area where the drugs are prepared or administered. Waste should not be moved from one area to another. The bag should be sealed when filled and the covered waste container taped.

Hazardous drug-related wastes should be disposed of according to EPA, state and local regulations for hazardous waste. This disposal can occur at either an incinerator or a licensed sanitary landfill for toxic wastes, as appropriate. Commercial waste disposal is performed by a licensed company. While awaiting removal, the waste should be held in a secure area in covered, labeled drums with plastic liners.

## Module 2 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

**1. A list of drugs covered by hazardous drug policies and information on spill and emergency contact procedures should be \_\_\_\_\_ employees.**

- a. hidden from
- b. posted for
- c. unavailable to
- d. denied to

**2. Decontamination of a biological safety cabinet must consist of surface cleaning with \_\_\_\_\_.**

- a. water and detergent
- b. soap only
- c. water only
- d. disinfectant solution

**3. When transferring hazardous drugs, what should you use to avoid breakage?**

- a. Paper bags
- b. Glass container
- c. Paper towels
- d. Sealed plastic bags and containers

**4. All syringes and IV bags containing hazardous drugs should be labeled with a warning label.**

- a. True
- b. False

**5. All personnel who are involved \_\_\_\_\_ aspect of the handling of hazardous drugs must receive information and training to protect them in the work area.**

- a. in any
- b. in a small
- c. in a large
- d. in a limited

## Module 3: Other Hazards in Pharmacy Setting

### Workplace Violence

Violence in hospitals usually results from patients and occasionally from their family members who feel frustrated, vulnerable, and out of control.

Violence against pharmacists differs from violence experienced by other healthcare workers. Increasingly, pharmacists face violence from robberies at their workplace. Across the United States, reports of pharmacy robberies specifically related to the theft of OxyContin and Vicodin have been reported. These prescription pain killers may be used for the robber's own addiction or sold on the street for a significant amount of money.

### Violence Prevention Program

A secure physical environment is the first line of defense in pharmacy safety from workplace violence. Violence against pharmacists differs from violence experienced by other healthcare workers. Increasingly, pharmacists face violence from robberies at their workplace. OSHA recommends employers establish and maintain a violence prevention program as part of their facilities safety and health program. The program could include:

- installing plexiglass in the payment window of the pharmacy area
- providing better visibility and lighting in the pharmacy area
- providing training for staff in recognizing and managing hostile and assaultive behavior
- implementing security devices such as:
  - panic buttons
  - beepers
  - surveillance cameras
  - alarm systems
  - two-way mirrors
  - card-key access systems
  - security guards

### Violence Effects

The effects of violence can range in intensity and include the following:

- minor physical injuries
- serious physical injuries
- temporary and permanent physical disability
- psychological trauma
- death

Violence may also have negative organizational outcomes such as low worker morale, increased job stress, increased worker turnover, reduced trust of management and coworkers, and a hostile working environment.

### Violence Prevention Programs

A program for workplace violence prevention, incorporated into an organization's overall safety and health program, offers an effective approach to reduce or eliminate the risk of violence in the workplace. The building blocks for developing an effective workplace violence prevention program include:

- **Management commitment and employee involvement.** Management commitment, including the endorsement and visible involvement of top management, provides the motivation and resources for workers and employers to deal effectively with workplace violence. Through involvement and feedback, workers can provide useful information to employers to design, implement and evaluate the program.
- **Worksite analysis.** A worksite analysis involves a mutual step-by-step assessment of the workplace to find existing or potential hazards that may lead to incidents of workplace violence.
- **Hazard prevention and control.** After the systematic worksite analysis is complete, the employer should take the appropriate steps to prevent or control the hazards that were identified.
- **Safety and health training.** Education and training are key elements of a workplace violence protection program, and help ensure that all staff members are aware of potential hazards and how to protect themselves and their coworkers through established policies and procedures.
- **Recordkeeping and program evaluation.** Recordkeeping and evaluation of the violence prevention program are necessary to judge its overall effectiveness and identify any deficiencies or changes that should be made. The program evaluation should be completed at least annually and after every incident of violence.

### Elements of an Effective Violence Prevention Program

A written program for job safety and security, incorporated into the organizations overall safety and health program, offers an effective approach for larger organizations. In smaller establishments, the program does not need to be written or heavily documented to be satisfactory.

Clear goals and objectives are needed to prevent workplace violence. It should be suitable for the size and complexity of the workplace operation and adaptable to specific situations in each establishment. Employers should communicate information about the prevention program and startup date to all employees.

At a minimum, workplace violence prevention programs should:

- Create and disseminate a clear policy of zero tolerance for workplace violence, verbal and nonverbal threats and related actions. Ensure that managers, supervisors, coworkers, clients, patients and visitors know about this policy.
- Ensure that no employee who reports or experiences workplace violence faces reprisals.
- Encourage employees to promptly report incidents and suggest ways to reduce or eliminate risks. Require records of incidents to assess risk and measure progress.
- Outline a comprehensive plan for maintaining security in the workplace. This includes establishing a liaison with law enforcement representatives and others who can help identify ways to prevent and mitigate workplace violence.
- Assign responsibility and authority for the program to individuals or teams with appropriate training and skills. Ensure that adequate resources are available for this effort and that the team or responsible individuals develop expertise on workplace violence prevention in health care and social services.
- Affirm management commitment to a worker-supportive environment that places as much importance on employee safety and health as on serving the patient or client.
- Set up a company briefing as part of the initial effort to address issues such as preserving safety, supporting affected employees and facilitating recovery.

### Baseline Surveys

One important screening tool is an employee questionnaire or survey to get employees' ideas on the potential for violent incidents and to identify or confirm the need for improved security measures. Detailed baseline screening surveys can help pinpoint tasks that put employees at risk.

Periodic surveys—conducted at least annually or whenever operations change or incidents of workplace violence occur—help identify new or previously unnoticed risk factors and deficiencies or failures in work practices, procedures or controls. Also, the surveys help assess the effects of changes in the work processes. The periodic review process should also include feedback and follow-up.

Independent reviewers, such as law enforcement or security specialists and insurance safety auditors, may offer advice to strengthen programs. These experts can also provide fresh perspectives to improve a violence prevention program.

### Conducting a Workplace Security Analysis

The team or coordinator should periodically inspect the workplace and evaluate employee tasks to identify hazards, conditions, operations and situations that could lead to violence.

To find areas requiring further evaluation, the team or coordinator should:

- Analyze incidents, including the characteristics of assailants and victims, an account of what happened before and during the incident, and the relevant details of the situation and its outcome. When possible, obtain police reports and recommendations.
- Identify jobs or locations with the greatest risk of violence as well as processes and procedures that put employees at risk of assault, including how often and when.

### Employer Responses to Incidents of Violence

Post-incident response and evaluation are essential to an effective violence prevention program. All workplace violence programs should provide comprehensive treatment for employees who are victimized personally or may be traumatized by witnessing a workplace violence incident. Injured staff should receive prompt treatment and psychological evaluation whenever an assault takes place, regardless of its severity. Provide the injured transportation to medical care if it is not available onsite.

Victims of workplace violence suffer a variety of consequences in addition to their actual physical injuries. These may include:

- short-and long-term psychological trauma
- fear of returning to work
- changes in relationships with coworkers and family
- feelings of incompetence, guilt, powerlessness
- fear of criticism by supervisors or managers

For more information on preventing workplace violence in the healthcare setting, see [OSHAcademy course 776](#).

### Ergonomics Hazards

Ergonomics is the science of fitting the job to the worker. Pharmacists may be exposed to musculoskeletal disorders (MSDs), such as carpal tunnel syndrome, tendonitis, and tenosynovitis from activities that involve repetitive tasks, forceful exertions, awkward postures or contact stress, such as opening/closing bottle lids.

The work of pharmacists generally consists of computer workstation tasks, such as entering and verification of medication orders. Technicians also carry, lift, push, and pull materials, which can contribute to both chronic and acute injuries.

In the next tab, we'll take a closer look at these types of injuries.

### Acute Injuries

Acute injuries are those that occur immediately after a single traumatic event, such as lifting a heavy box of supplies and hurting your lower back or slipping on a wet floor and twisting your ankle.

## Chronic Injuries

Chronic injuries occur over time as a result of repeated overuse of a certain body part. Symptoms can develop in the affected part and may lead to recurring discomfort. Here are some examples of chronic injuries:

- shoulder, elbow, or wrist tendinitis
- wrist pain from repetitive typing at a computer workstation
- sore feet, swelling of the legs, varicose veins, general muscular fatigue, low back pain, stiffness in the neck and shoulders from prolonged standing

Here are some possible solutions to help prevent MSDs in a pharmacy setting:

- Use assistive devices to eliminate the need to do the task (e.g., use devices designed to open bottle lids for pharmacists)
- Modification of pharmacy tasks to decrease incidence of work-related MSDs
- Provide ergonomically comfortable work stations including:
  - wrist pads
  - adjustable padded chairs
  - anti-fatigue mats
  - keyboard tray
  - monitors at a comfortable height

For general information on preventing ergonomic injuries, please see OSHAcademy [course 711 Introduction to Ergonomics](#).

### Module 3 Quiz

Use this quiz to self-check your understanding of the module content. You can also go online and take this quiz within the module. The online quiz provides the correct answer once submitted.

**1. How does violence against pharmacists differ from violence against others in the healthcare field?**

- a. Unhappy patients
- b. Robberies
- c. Violence against co-workers
- d. Selfish customers

**2. Employers should communicate information about the violence prevention program and startup date to \_\_\_\_\_ employees.**

- a. some
- b. all
- c. many
- d. selected number of

**3. Which of the following is listed as a consequence of violence in the workplace?**

- a. Fear of returning to work
- b. Quitting
- c. Retaliation
- d. Divorce

**4. Which type of ergonomic injury occurs immediately after a single traumatic event?**

- a. Acute injury
- b. Chronic injury
- c. Delayed injury
- d. Denied injury

**5. Wrist pain from repetitive typing at a computer workstation is what type of ergonomic injury?**

- a. Chronic injury
- b. Acute injury
- c. Delayed injury
- d. Denied

## Endnotes

1. Occupational Safety and Health Administration. (2014). Pharmacy. Retrieved from: <https://www.osha.gov/SLTC/etools/hospital/pharmacy/pharmacy.html>
2. Occupational Safety and Health Administration. (2011). Hazardous Drugs. Retrieved from: <https://www.osha.gov/SLTC/hazardousdrugs/index.html>
3. Occupational Safety and Health Administration. (1999). Controlling Occupational Exposure to Hazardous Drugs. Retrieved from: [https://www.osha.gov/dts/osta/otm/otm\\_vi/otm\\_vi\\_2.html#5](https://www.osha.gov/dts/osta/otm/otm_vi/otm_vi_2.html#5)
4. Centers for Disease Control and Prevention. (2009). Violence Against Pharmacists. Retrieved from: <http://blogs.cdc.gov/niosh-science-blog/2009/02/17/pharmacists/>