



SIMMONS

**300 The Fenway
Boston, Massachusetts 02115**

**SCHOOL OF NURSING AND HEALTH SCIENCES
ENVIRONMENTAL HEALTH AND SAFETY MANUAL**

Original Date: May 2017

Table of Contents

1.0	INTRODUCTION	1
2.0	REGULATIONS AND STANDARDS	2
2.1	Federal	2
2.2	State	3
2.3	Best Management Practices	3
3.0	RESPONSIBILITIES	3
3.1	School of Nursing and Health Sciences	3
3.2	Buildings and Grounds	3
3.3	Environmental Health and Safety	3
3.4	Talent and Human Capital Strategy and Public Safety	4
4.0	GENERAL EH&S RULES AND PROCEDURES	4
5.0	BIOLOGICAL SAFETY	5
5.1	Sharps	5
5.2	Infectious Diseases	6
5.3	Infection Control	6
6.0	CHEMICAL SAFETY	7
7.0	ERGONOMICS	8
8.0	PERSONAL PROTECTIVE EQUIPMENT	8
9.0	SLIPS, TRIPS, AND FALLS	10
10.0	WASTE DISPOSAL	10
11.0	TRAINING	11
12.0	EMERGENCY RESPONSE	11
12.1	Hazardous Spills	11
12.2	Medical Emergency	12
13.0	IMMUNIZATION AND MEDICAL RESTRICTIONS	12
13.1	Hepatitis B Vaccine	12
13.2	Other Medical Restrictions	12

FIGURES

Figure 1 – Hierarchy of Controls

TABLES

None

APPENDICES

None

1.0 INTRODUCTION

The purpose of the manual is to provide information to ensure a safe work environment in the School of Nursing and Health Sciences (Nursing) at Simmons College (Simmons). Activities associated with Nursing are conducted on Simmons' Academic Campus, which is located at 300 The Fenway in Boston, Massachusetts.

This manual provides students and staff with the information and training necessary to improve safety and health and to ensure compliance with environmental health and safety (EH&S) regulations. It provides methods to protect Simmons' employees and students, our most valuable assets. Work with potentially hazardous materials, processes, and/or equipment will be evaluated through the use of a hierarchy of controls as shown by Figure 1.

Figure 1 – Hierarchy of Controls

This manual will cover how to work with hazardous materials and processes associated with Nursing. It will not cover the Joint Commission for Accreditation of Hospital Organizations' requirements, clinical requirements, and non-EH&S topics associated with Nursing.

For additional information on working with hazardous materials, please refer to Simmons':

- Chemical Hygiene Plan for policies and procedures to improve safety and health and to prevent chemical-related injuries and illnesses
- Controlled Substance Policy, which assists Simmons' employees when investigating whether or not to use controlled substances and to provide guidelines and policies on how to ensure regulatory compliance when working with controlled substances within their departments

- Exposure Control Plan (ECP) for the policies and procedures to eliminate or minimize occupational exposure to bloodborne pathogens in accordance with the Occupational Safety and Health Administration (OSHA) Bloodborne Pathogen (BBP) Standard, 29 Code of Federal Regulations (CFR) 1910.1030
- Hazard Communication (HAZCOM) Program for information regarding labeling of chemical containers, Safety Data Sheets (SDSs), and HAZCOM training in accordance with OSHA's HAZCOM Standard, 29 CFR 1910.1200.

The Nursing' EH&S Manual will be reviewed annually by the Director of EH&S, at least one representative from Buildings and Grounds, and at least one representative from Nursing. It will be revised as necessary. Revisions will be documented in the table at the beginning of the document. An official copy of this manual is located in the Buildings and Grounds Offices, 300 The Fenway, Boston, MA 02115.

2.0 REGULATIONS AND STANDARDS

Federal, state, and local agencies have developed regulations and standards to assist colleges and universities with their Nursing' department. In some cases, these recommended guidelines are referenced in the state and local regulations, which enables them to be enforced as a law.

2.1 Federal

OSHA has developed various regulations to ensure a safe work environment under 29 CFR 1910. Below are the subparts to 29 CFR 1910, which are applicable to Nursing.

- A – General
- D – Walking-Working Surfaces
- E – Means of Egress
- G – Occupational Health and Environmental Control
- H – Hazardous Materials
- I – Personal Protective Equipment
- J – General Environmental Controls
- K – Medical and First Aid
- O – Machine Guarding
- P – Hand and Portable Powered Tools and Other Hand-Held Equipment
- S – Electrical
- Z – Toxic and Hazardous Substances

2.2 State

105 Code of Massachusetts Regulations (CMR) 480 – Minimum Requirements for the Management of Medical or Biological Waste (State Sanitary Code Chapter VIII) instituted by the Massachusetts Department of Public Health (MADPH) applies to Nursing.

2.3 Best Management Practices

In addition, guidelines from the following agencies, colleges, and organizations were reviewed and used in this document since they provide standards of care with regards to Nursing' EH&S programs:

- American Conference of Governmental Industrial Hygienists (ACGIH)
- American Public Health Association (APHA)
- American National Standards Institute (ANSI) Standards
- American Nurse Association (ANA)
- National Institute for Occupational Safety and Health (NIOSH)
- OSHA's Hospital eTool

3.0 RESPONSIBILITIES

This section outlines the specific responsibilities associated with this manual.

3.1 School of Nursing and Health Sciences

Nursing' employees and students are responsible for adhering to the EH&S policies and procedures outlined in this manual. Failure to adhere to these guidelines may result in disciplinary action. This manual will be available in the Buildings and Grounds office and electronically. Students will be instructed to review the contents upon admission to the clinical component of the curriculum and/or utilizing the practicum rooms.

3.2 Buildings and Grounds

The Department of Buildings and Grounds will assist in the testing and repairs to engineering controls, emergency equipment, and other facility related equipment used to contain or eliminate hazards. In addition, this department oversees the waste contractors.

3.3 Environmental Health and Safety

The Director of EH&S:

- Creates and revises safety policies and procedures.
- Monitors procurement, use, storage, and disposal of chemicals.
- Conducts regular inspections of areas and reports results to the appropriate persons.
- Maintains inspection, personnel training, and inventory records.
- Assists Nursing in developing and maintaining adequate facilities.
- Seeks ways to improve EH&S within Nursing.
- Advise Nursing' personnel on the implementation of components of this EH&S Manual.

- Conduct or hire someone to conduct exposure assessments, as needed.

3.4 Talent and Human Capital Strategy and Public Safety

Talent and Human Capital Strategy (THCS), which is Simmons' Human Resources Department, and Public Safety will assist with emergencies and exposures involving hazardous materials. THCS will also be responsible for assisting EH&S with occupational health/medical surveillance.

4.0 GENERAL EH&S RULES AND PROCEDURES

The following are general EH&S practices for Nursing:

- Nursing areas are locked unless occupied by faculty, adjuncts, and/or students during class or practice.
- Faculty and adjuncts are required to inform students about the hazards associated with a process or procedure and how to reduce or eliminate the exposure to these hazards.
- Students should practice safety and appropriate techniques while learning and practicing skills in the clinical and practicum areas.
- Students should be knowledgeable of the care, handling, and proper use of equipment prior to using it in the clinic/practice areas.
- Students should inform course coordinators of pregnancies, physical disabilities, injuries, illnesses, surgeries, or communicable diseases to faculty as soon as possible so that necessary precautions may be taken in the clinical setting. A medical clearance from a medical care provider as well as permission from a course instructor may be needed before students with aforementioned concerns will be allowed to participate in clinical experiences.
- If an individual has any health concerns related to exposure to bacteria, including being immunocompromised or pregnant, the individual should consult a physician to determine the appropriate level of participation. A medical clearance from a medical care provider as well as permission from a course instructor or supervisor may be needed before students and employees with aforementioned concerns will be allowed to participate in courses.
- Eating and drinking are prohibited in clinical/practical areas where blood, bodily fluids, and hazardous chemicals are in use or stored.
- All cabinet doors will be closed when not in use.
- Emergency equipment (e.g., fire extinguishers, drench showers, eyewash stations) will remain accessible at all times. Do not store items in front of, underneath, or within 12 inches of fire extinguishers, 16 inches of drench showers, and 6 inches for eyewash stations.

5.0 BIOLOGICAL SAFETY

This section outlines the EH&S policies and procedures when working with the following biological hazards:

- Sharps
- Infectious Diseases
- Infection Control

Refer to Simmons' Exposure Control Plan for details on how to work blood and other potentially infectious materials.

5.1 Sharps

Nursing staff use sharps as part of their activities. Below are examples on how injuries with sharps may occur:

- Injuries occur because of the following:
 - Passing or transferring equipment
 - Recapping contaminated needles
 - Colliding with coworkers
 - Decontaminating/processing used equipment
- Injuries occur from sharps left in unusual places:
 - Laundry
 - Mattresses
 - Tables, trays, or other surfaces

Here are some guidelines to prevent sharp injuries:

- Organize equipment at the point of use
- Make sure work space has adequate lighting
- Keep sharps pointed away from the user
- Locate a sharps disposal container, or have one nearby
- Assess the patient's ability to cooperate
- Get help if necessary
- Ask the patient to avoid sudden movement
- Maintain visual contact with sharps during use
- Be aware of staff nearby
- Control the location of sharps to avoid injury to yourself and others
- Do not hand pass exposed sharps from one person to another
- Use predetermined neutral zone for placing/retrieving sharps
- Be accountable for sharps you use
- Check procedure trays, waste materials, and bedding for exposed sharps before handling
- Look for sharps/equipment left behind inadvertently
- Transport reusable sharps in a closed container
- Secure the container to prevent spillage

- Inspect container
- Keep hands behind sharps
- Never put hands or fingers into sharps container
- Visually inspect sharps container for overfilling
- Replace containers before they become overfilled
- Keep filled containers for disposal in a secure area

5.2 Infectious Diseases

The primary routes of infectious disease transmission in US healthcare settings are contact, droplet, and airborne. Contact transmission can be sub-divided into direct and indirect contact. Direct contact transmission involves the transfer of infectious agents to a susceptible individual through physical contact with an infected individual (e.g., direct skin-to-skin contact). Indirect contact transmission occurs when infectious agents are transferred to a susceptible individual when the individual makes physical contact with contaminated items and surfaces (e.g., door knobs, patient-care instruments or equipment, bed rails, examination table). Two examples of contact transmissible infectious agents include Methicillin-resistant *Staphylococcus aureus* (MRSA) and Vancomycin-resistant enterococcus (VRE).

Droplets containing infectious agents are generated when an infected person coughs, sneezes, or talks, or during certain medical procedures, such as suctioning or endotracheal intubation. Transmission occurs when droplets generated in this way come into direct contact with the mucosal surfaces of the eyes, nose, or mouth of a susceptible individual. Droplets are too large to be airborne for long periods of time, and droplet transmission does not occur through the air over long distances. Two examples of droplet transmissible infectious agents are the influenza virus which causes the seasonal flu and *Bordetella pertussis* which causes pertussis (i.e., whooping cough).

Airborne transmission occurs through very small particles or droplet nuclei that contain infectious agents and can remain suspended in air for extended periods of time. When they are inhaled by a susceptible individual, they enter the respiratory tract and can cause infection. Since air currents can disperse these particles or droplet nuclei over long distances, airborne transmission does not require face-to-face contact with an infected individual. Airborne transmission only occurs with infectious agents that are capable of surviving and retaining infectivity for relatively long periods of time in airborne particles or droplet nuclei. Only a limited number of diseases are transmissible via the airborne route. Two examples of airborne transmissible agents include *Mycobacterium tuberculosis* which causes tuberculosis (TB) and the rubella virus which causes measles.

5.3 Infection Control

Universal precautions will be followed at all times when there is exposure or potential exposure to blood or other potentially infectious materials (OPIM). OSHA defines OPIM as:

(1) The following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid

that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids;

(2) Any unfixed tissue or organ (other than intact skin) from a human (living or dead); and

(3) Human immunodeficiency virus (HIV)-containing cell or tissue cultures, organ cultures, and HIV- or Hepatitis B virus (HBV)-containing culture medium or other solutions; and blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Universal precautions is an approach to infection control to treat all human blood and OPIMs as if they were known to be infectious for bloodborne pathogens (HIV, HBV, etc.) Refer to Simmons' Exposure Control Plan for details.

6.0 CHEMICAL SAFETY

Nursing employees and students may be exposed to industrial cleaners, floor strippers, pesticides, sterilizers, disinfectants, chemotherapy, and a multitude of other chemicals. Visiting Nursing students in occupational health settings and emergency departments may encounter chemically contaminated patients routinely.

Below are some general guidelines when working with hazardous chemicals. Additional information is provided in Simmons' Chemical Hygiene Plan.

- Evaluate the hazards:
 - Read the Safety Data Sheet (formerly called *Material* Safety Data Sheets) before beginning work with a chemical.
 - Follow hazard control plans for extremely hazardous materials.
 - Pay particular attention to control measures for chemicals that are known to be particularly high hazard or chemical carcinogens.
- Never underestimate risk.
 - Do not pipette by mouth.
 - Never smell chemicals to identify them.
 - Assume that:
 - Any mixture will be more hazardous than its most toxic component
 - All substances of unknown toxicity are highly toxic
- Do not eat, drink, store food, smoke, or apply cosmetics in areas where chemicals. Wash your hands frequently and before eating/drinking.
- Label secondary containers of hazardous chemicals in accordance with the HAZCOM standard.
- Use engineering controls (e.g., chemical fume hood, exhaust arm) when required doing so.
- Install a vacuum trap between the equipment and the vacuum source when using vacuum.
- Dispose of chemical waste in accordance with Simmons' waste disposal guidelines. See Section 10 for details.

7.0 ERGONOMICS

Nursing activities may result in unusual body positions, stresses, and strains. Ergonomics is the science of fitting a job to a person and helps prevent fatigue and Musculoskeletal Disorders (MSDs). Some examples of MSDs associated with Nursing are:

- Carpal tunnel syndrome
- Tendinitis
- Rotator cuff injuries
- Muscle strains
- Lower back injuries

Table 1 provides examples of how to eliminate or reduce ergonomic hazards.

Table 1 – Examples of Ergonomic Controls	
Type of Control	Workplace Examples
Engineering Controls	<ul style="list-style-type: none">● Use a device to lift and reposition heavy objects to limit force exertion● Reduce the weight of a load to limit force exertion● Reposition a work table to eliminate a long/excessive reach and enable working in neutral postures
Administrative and Work Practice Controls	<ul style="list-style-type: none">● Require that heavy loads are only lifted by two people to limit force exertion● Maintain a wide, stable base with feet.● Put the bed at the correct height (waist level when providing care, hip level when moving a patient)● Try to keep work in front to avoid rotating the spine● Keep the patient as close to your body as possible to minimize reaching● Establish systems so workers are rotated away from tasks to minimize the duration of continual exertion, repetitive motions, and awkward postures. Design a job rotation system in which employees rotate between jobs that use different muscle groups

8.0 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) is equipment worn to minimize exposure to serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits.

The routine use of PPE in daily clinical practice protects nurses from the specific threats of exposures to certain airborne biological particles (blood and body fluids), chemical agents, splashes, radiation exposures, and punctures. In general, when treating a patient who has been exposed or potentially exposed to a chemical or biologic, nurses should always adhere to the OSHA guidelines on PPE. The level

of PPE required for nurses varies depending on the agent involved, the risk of exposure to the contaminant, and the assigned responsibilities of the nurse during the event. Employees and students need to know where in their organization PPE supplies are stored, how to access it quickly, and who they can rely upon for assistance in ensuring the correct use. This is critically important as it relates to the use of PPE when caring for patients, using hazardous chemicals, and/or handling blood and OPIMs.

As a general rule, PPE should never be used as a substitute for engineering, work practice, and/or administrative controls. PPE should be used in conjunction with these controls to provide for Nursing employees and students safety and health at Simmons and off-site locations. Nursing employees and students should note that personal protective equipment includes all clothing, footwear and other work accessories designed to create a barrier against workplace hazards. According to OSHA, all PPE clothing and equipment should be of safe design and construction, and should be maintained in a clean and reliable fashion. Employers should take the fit and comfort of PPE into consideration when selecting appropriate items for their workplace as the use of (wearing) PPE creates a burden upon the health care provider. PPE that fits well and is comfortable to wear will encourage employee use of PPE. Most protective devices are available in multiple sizes and care should be taken to select the proper size for each employee. If several different types of PPE are worn together, the Nursing employee and student should make sure they are compatible with the hazards. If PPE does not fit properly, it can make the difference between being safely covered or dangerously exposed. It may not provide the level of protection desired and may discourage use.

PPE includes gloves, gowns, goggles, masks and face shields. A surgical mask is used to cover your nose and mouth and prevent germs from entering. In other situations, a mask called a respirator may be required. A respirator fits tightly and creates a seal around your nose and mouth, in order to prevent small droplets, vapor, or aerosols from entering the body. If you are required to wear a respirator, you are required to be medically cleared to wear the respirator and fit tested for the specific type of respirator. Refer to Simmons' Respiratory Protection Program for details. Goggles and face shields may be used to prevent body fluids and splashes from contact with the mucous membranes of the eyes and may be recommended depending on the procedure you. Gowns, gloves and shoe coverings may also be used to prevent contact with hazardous materials.

9.0 SLIPS, TRIPS, AND FALLS

Nursing employees and students exposure to wet floors or spills and clutter that can lead to slips/trips/falls and other possible injuries. Below are some guidelines to prevent slips, trips, and falls.

- Keep floors clean and dry. In addition to being a slip hazard, continually wet surfaces promote the growth of mold, fungi, and bacteria that can cause infections.
- Provide warning signs for wet floor areas.
- Where wet processes are used, maintain drainage and provide false floors, platforms, mats, or other dry standing places where practicable, or provide appropriate waterproof footwear.
- Keep all places of employment clean and orderly and in a sanitary condition.

- Keep aisles and passageways clear and in good repair, with no obstruction across or in aisles that could create a hazard. Provide floor plugs or plug covers for equipment, so power cords need not run across pathways.
- Keep exits free from obstruction. Access to exits must remain clear of obstructions at all times.
- Ensure spills are reported and cleaned up immediately.
- Use no-skid waxes and surfaces coated with grit to create non-slip surfaces in slippery areas such as toilet and shower areas.
- Use waterproof footwear to decrease slip/fall hazards.
- Use only properly maintained ladders to reach items. Do not use stools, chairs, or boxes as substitutes for ladders.
- Re-lay or stretch carpets that bulge or have become bunched to prevent tripping hazards.
- Aisles and passageways should be sufficiently wide for easy movement and should be kept clear at all times. Temporary electrical cords that cross aisles should be taped or anchored to the floor.
- Eliminate cluttered or obstructed work areas.
- Countertops or medication carts should be free of sharp, square corners.
- Use prudent housekeeping procedures such as cleaning only one side of a passageway at a time, and provide good lighting for all halls and stairwells, to help reduce accidents.
- Provide adequate lighting.
- Instruct Nursing employees and students to use the handrail on stairs, to avoid undue speed, and to maintain an unobstructed view of the stairs ahead of them even if that means requesting help to manage a bulky load.
- Eliminate uneven floor surfaces.
- Promote safe work in cramped working spaces. Avoid awkward positions, and use equipment that makes lifts less awkward.

10.0 WASTE DISPOSAL

Safe and environmentally sound management of waste is an integral part of Simmons environmental management mission. Failure to comply with regulatory requirements can result in significant fines and liability, increased costs, and adverse publicity. Simmons is committed to meeting stringent federal, state, and local hazardous waste regulations. Responsibility for compliance with waste regulations begins with those generating waste material.

Nursing employees and students may generate the following waste streams. Refer to the Waste Flowchart for the School of Nursing and Health Sciences on how to dispose of these waste streams.

- Hazardous chemical waste
- Biological waste
- Sharps
- Non-hazardous waste streams

11.0 TRAINING

Within one month of being hired, Nursing employees will be trained on the EH&S policies and procedures associated with their position. This training will be conducted in person by a supervisor or the Director of EH&S.

Nursing students will be required to complete the Clinical Placement Online Orientation prior to being placed at an off-site facility. In addition, the Nursing students will be required to attend the EH&S training associated with the off-site facility.

All EH&S training associated with Simmons must be documented by a training sign-in sheet or an online system.

12.0 EMERGENCY RESPONSE

Please refer to Simmons' Emergency Preparedness webpage developed by Public Safety for information on how to prepare for emergencies. Below are the guidelines for hazardous spills and medical emergencies.

12.1 Hazardous Spills

Below is the procedure for biological and chemical spills:

- Evacuate the area immediately. Turn off heat sources and equipment, if you are able to do it safely, and close all the doors and windows behind you.
- Call Public Safety immediately at 617-521-1111. If needed, Public Safety will notify 911.
- Try to describe the conditions and identify the material, if known. DO NOT attempt to clean up the spill.
- Follow all instructions from Public Safety officers and other local emergency responders about evacuating or sheltering in place.
- Notify others in the area about the spill.
- If a hazardous material spills/splashes on skin or eyes, flush the affected area immediately with water from an eyewash station or a drench shower for at least 15 minutes or until help arrives.
- If the spill or release occurs outdoors, move upwind from the spill location.

12.2 Medical Emergency

In case of a medical emergency:

- Notify Public Safety at 617-521-1111 and 911 immediately.
- Follow all instructions from Public Safety officers and other local emergency responders.
- Don't move an injured person unless you are able to do so safely and they face a greater danger by not moving.
- Protect yourself and others; be aware of your surroundings.

- Remain with the injured until medical personnel arrive.
- Administer first aid if you are trained and feel comfortable.
- Automated external defibrillators (AEDs) are available for use in the Holmes Sports Center and Health Services.
- Avoid contact with blood or bodily fluids.
- Keep area clear for medical personnel.

13.0 IMMUNIZATION AND MEDICAL RESTRICTIONS

Certain biological materials require personnel working with them to receive immunizations and/or have medical restrictions.

13.1 Hepatitis B Vaccine

Under the OSHA BBP Standard, a HBV vaccine is recommended for anyone working with human blood, body fluids, or OPIMs. OSHA requires that the vaccine be offered free of charge to employees who have the potential for occupational exposure. Those employees declining vaccination will be asked to sign the OSHA declination indicating that HBV vaccine has been offered and refused. Any questions should be directed to THCS or the Director of EH&S.

13.2 Other Medical Restrictions

Restrictions or recommendations will be made on an individual basis after discussion with either an occupational medicine practitioner or the affected individual's personal physician.

Examples of some conditions that might warrant special precautions are infection, immunosuppressive conditions, or drug therapy that suppresses the immune system. Therefore, anyone who has any of the above-mentioned conditions is encouraged to inform their personal physician about any issues that prevent them from being able to work with biological materials.