Chemical Hygiene Plan

**Audience**  All personnel in the Pulmonary Laboratories: Pulmonary Function Clinic, Bronchoscopy Service and Center for Pulmonary Rehabilitation.

**Purpose**  The purpose of the Chemical Hygiene Plan (CHP) is to define work practices and procedures to help ensure that employees of the Pulmonary Laboratories are protected from health hazards associated with hazardous chemicals with which they work.

**Policy**  Compliance with the Chemical Hygiene Plan is required to ensure that all staff is protected from health hazards associated with hazardous chemicals in their workplace. Laboratory workers are required to know and follow the rules and procedures of the plan. The Pulmonary Function Clinic plan will comply with the University’s Environment of Care Plans and Safety Manual.

**Definition**  
- **Acute** – An adverse effect with symptoms of high severity coming quickly to a crisis.  
- **Carcinogen** – A substance capable of causing cancer.  
- **Chemical Agents** – A wide variety of fluids that have a high potential for body entry by various means. Some are more toxic than others and require special measures of control for safety and environmental reasons.  
- **Combustible** – Able to catch on fire and burn.  
- **DOT** – Department of Transportation.  
- **EPA** – Environmental Protection Agency.  
- **Flammable** – Capable of being easily ignited and of burning with extreme rapidity.  
- **Hazardous Chemicals** – Any chemical that poses a physical and/or health risk.  
- **Health Hazard Chemicals** – A chemical that is a health hazard that has statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed individuals.  
- **Infectious Agents** – Microorganisms capable of causing infections either by inhalation, ingestion, direct contact or inoculation.  
- **Laboratory Scale** – Work with chemicals that can easily and safely be manipulated by one person excluding the commercial production of chemicals for sale.  
- **Laboratory Use** – A workplace where relatively small quantities of hazardous chemicals are used on a non-production basis.  
- **LC 50** – The concentration of a substance in air that causes death in 50% of the animals exposed by inhalation. A measure of acute toxicity.  
- **LD 50** – The dose that causes death in 50% of the animals exposed by swallowing a substance. A measure of acute toxicity.  
- **MSDS** – Material Safety Data Sheets.
Mutagen – Capable of changing cells in such a way that future cell generations are affected. Mutagenic substances are usually considered suspect carcinogens. 

HSS – Health and Safety Services at UTMB.

OSHA – Occupational Safety and Health Administration, the regulatory branch of the Department of Labor concerned with employee safety and health.

PEL – Permissible Exposure Limit. This is the legally allowed concentration in the workplace that is considered a safe level of exposure for an 8-hour shift, 40 hours per week.

pH – A measure of how acidic or caustic a substance is on a scale of 1 to 14. A pH less than 7 indicates that a substance is acidic. A pH greater than 7 indicates that a substance is basic.

PPE – Personal Protective Equipment.

Physical Chemical Hazards – A chemical that is a physical hazard that has scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, unstable or water-reactive.

Sensitizers – Agents to repeated exposure over time creating an allergic reaction at some point in time.

Sterility – Changes made in male or female reproductive systems resulting in inability to reproduce.

Teratogens – A substance that causes a deformity in newborns if a significant exposure exists during pregnancy.

TLV – Threshold Limit Value. The amount of exposure allowable for an employee in an 8-hour day.

Responsibilities

The Medical Director of the Pulmonary Laboratories has delegated the safe operation to the Practice Manager of the Pulmonary Laboratories.

Employee Responsibilities

Employees must follow all of the following health and safety standards and rules:

- Report all hazardous conditions to the supervisor.
- Wear prescribed protective equipment.
- Report any job related injuries or illnesses to the supervisor and seek treatment immediately.
- Refrain from the operation of any equipment without proper instruction and authorization.
- Remain aware of the hazards of the chemicals in the clinic and how to handle hazardous chemicals safely.
- Request information and training when unsure how to handle a hazardous chemical or procedure.

Guidelines for Working with Chemicals

The following should be done in the event of an accident:

Eye Contact – Promptly flush eyes with water for a prolonged period (20minutes) and seek medical attention.
Ingestion – Seek medical attention immediately.

Skin Contact – Promptly flush the affected area with water and remove any contaminated clothing. Use a safety shower when contact is extensive. If symptoms persist after washing, seek medical attention.

Clean-up – Promptly clean up spills using appropriate PPE and equipment. Follow procedures for proper disposal of hazardous waste. Document major spills of hazardous chemicals by completing the Workers Compensation form.

- Avoid unnecessary exposure to chemicals.
- Before handling any chemical, read the container label and the appropriate MSDS.
- Do not smell or taste chemicals.
- Avoid inappropriate behavior that might startle, confuse or distract another worker.
- Keep chemicals properly labeled and stored.
- Use protective apparel and equipment as appropriate.

- Avoid eating, smoking, gum chewing or application of cosmetics in areas where laboratory chemicals are present. Wash hands before conducting these activities.
- Avoid storage, handling or consumption of food or beverages in areas that are used for laboratory operations.
- Keep work area clean and uncluttered.

Protective Equipment

The following items should be readily accessible:

- Protective apparel compatible with the required degree of apparel and protection necessary.
- An eyewash station.
- Fire extinguisher.
- Fire alarm and telephone for emergency use.
- Any other items deemed necessary by the laboratory supervisor.

Housekeeping

Housekeeping staff is responsible for the following:

- Floors should be cleaned regularly.
- Work countertops should be disinfected daily.

MSDS

The clinic relies on the chemical manufacturer’s information to ascertain whether or not the chemical is hazardous. Missing MSDS sheets can be obtained from Health and Safety Services, the manufacturer or by using the internet.

Chemical Waste or Disposal
Health and Safety Services determines what chemicals are permissible for drain disposal according to city and state regulations. Only those chemicals reasonably soluble in water are suitable for drain disposal. A compound is considered water soluble if it dissolves to the extent of at least 3%. These compounds are flushed with at least 100 volumes of excess water.

**Medical Consult & Examination**

Any employee needing medical attention because of exposure to a chemical is to use the Employee Health Services during its hours of operation or the Trauma Center for after hours. All medical examinations and consultations are requesting on a Workers Compensation form. The exams are performed by or under the direct supervision of a licensed physician without cost to the employee and without loss of pay.

This form documents the approval and history of the policies and procedures for the Pulmonary Function Laboratory. The Medical Director signs all policies verifying initial approval. Annually thereafter, the Director and/or designee may approve reviews and revisions.

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