

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

INJURY AND ILLNESS PREVENTION PROGRAM

**For Compliance With
California Code of Regulations
Title 8, Section 3203**

SIC Code 8221

INQUIRIES SHALL BE DIRECTED TO:
OFFICE OF ENVIRONMENTAL HEALTH & SAFETY
50 MEDICAL CENTER WAY
SAN FRANCISCO, CA 94143-0942

PHONE: 476-1300 / FAX: 476-0581

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Table of Contents

- I. Introduction
- II. Implementing Authorities and Responsible Parties at the University of California, San Francisco (UCSF)
- III. Effective Communications With Employees
- IV. Compliance with Health and Safety Standards
- V. Responsibilities with Regard to Maintaining Records and Files of Safety Information
- VI. Safety Committees
- VII. Hazard Evaluation and Correction
- VIII. Investigation of Accidents and Occupational Injuries/Illnesses
- IX. Injury Illness Prevention Program (IIPP) Training

Appendices

Appendix A: Employee Safety Suggestion/Hazard Report

Appendix A-1: OEH&S Investigation Report

Appendix B: OR Course Registration Form

Appendix C: Health and Safety Committee Meeting Attendance Sheet

Appendix C-1: Health and Safety Committee Meeting Minutes

Appendix D: Periodic Inspection/Audit Schedule, UCSF

Appendix E: UCSF Accident Investigation Follow-Up Report Form

Appendix F: Checklist for Self Evaluation for IIPP Compliance

I. Introduction

The purpose of this written Injury and Illness Prevention Program (IIPP) is to provide a comprehensive plan demonstrating the integration of the requirements of California Code of Regulations, Title 8, section 3203 into ongoing health and safety compliance activities at the University of California, San Francisco (UCSF).

This written program also reinforces the University of California's Systemwide Policy on Health, Safety, and Environmental Protection, and incorporates this Policy by reference.

California Senate Bill 198 (SB 198), passed by the legislature in 1989, expanded the Injury and Illness Prevention Program requirements stated in the General Industry Safety Orders, California Code of Regulations, Title 8, section 3203. This written IIPP was prepared to conform with the requirements of the implementing legislation and the standards adopted by the Cal/OSHA Standards Board in January 1991.

A. University of California Systemwide Policy Statement

The University of California is committed to maintaining a safe environment for its students, academic appointees, staff, visitors, and members of the general public. Further, it is dedicated to minimizing the impact of its operations on the environment surrounding its campuses and laboratory sites.

The University has a commitment to promote effective loss reduction and loss prevention measures for the University's property and casualty exposures. Based on recognized principles and published standards of environmental protection, academic excellence, fiscal responsibility, and public service, the University will promote comprehensive injury and illness prevention, as well as hazardous materials and environmental management programs in an atmosphere that encourages employees, students, and other campus members to communicate about occupational and environmental health and safety matters without fear of reprisal.

It is the policy of the University to conduct its operations in conformance with applicable laws, regulations, and relevant published standards and practices for health, safety and environmental protection.

B. Responsibilities

1. Chancellors and Laboratory Directors are responsible for ensuring the implementation of the Policy on Health, Safety and Environmental Protection at all facilities under their control.
2. Vice Chancellors, and Deputy and Associate Laboratory Directors are responsible for implementing the Policy in all facilities within their respective jurisdictions.
3. Deans, Directors, Department Heads, Principal Investigators, and all other managers and supervisors are responsible for compliance with this Policy as it relates to operations under their control and in carrying out their day-to-day responsibilities.

4. All employees, students, and other campus members are responsible for adherence to this Policy in carrying out their day-to-day responsibilities.

II. **Implementing Authorities and Responsible Parties at the University of California, San Francisco (UCSF)**

The authority and responsibility for the overall implementation and maintenance of the Injury and Illness Prevention Program (IIPP) in accordance with University of California Systemwide Policy and the California Code of Regulations, Title 8, section 3203 has been delegated to the Director of the Office of Environmental Health and Safety (OEHS). In order to build an effective IIPP, it must be integrated throughout the entire Medical Center and Campus. As each organizational unit must share in the implementation and maintenance of the IIPP, supporting responsibilities are assigned to them.

A. Campus - Wide

At the University of California, San Francisco (UCSF), the authority and responsibility for the overall implementation and maintenance of this program in accordance with University of California Systemwide Policy and California Code of Regulations, Title 8, section 3203 has been delegated to the following individual:

Name: Robert Eaton, MS, CIH, CHMM, CSP, REHS

Title: Director, Office of Environmental Health and Safety (OEHS)

Description of Authority and Responsibility Related to the Campus - Wide Implementation of this program.

1. Overall oversight of Health and Safety Programs.
2. Implementation of UCSF Health and Safety Policies.
3. Liaison with oversight Committees and Regulatory Agencies.
4. Identification of hazards and implementation of preventive measures.
5. Advise the Chancellor and the Campus of appropriate health and safety requirements.

The Director of OEHS has designated the OEHS Department Safety Advisors (DSAs) to assist individual departments or units on UCSF campus to implement this IIPP.

B. Medical Center

The authority and responsibility for the implementation and maintenance of the IIPP for the Medical Center and the Hospitals, in accordance with University of California Systemwide Policy and California Code of Regulations, Title 8, section 3203 is held by the following individuals:

Name: **Robert Hunn,**

Title: Medical Center Safety Officer

Description of Authority and Responsibility Related to the Medical Center and Hospital Implementation of the IIPP.

1. Implementation of safety standards in hospital areas.
2. Monitoring of individual department managers.
3. Liaison with Oversight Committee and regulatory agencies
4. Identification of hazards and implementation of preventive measures
5. Advise the Chancellor and the Medical Center of appropriate health and safety requirements.

C. Langley Porter Psychiatric Institute (LPPI)

The authority and responsibility for the implementation and maintenance of the IIPP for Langley Porter Psychiatric Institute, in accordance with University of California Systemwide Policy and California Code of Regulations, Title 8, section 3203 is held by the following individuals:

Name: **Eileen Lloyd**

Title: LPPI Safety Officer

Description of Authority and Responsibility Related to Langley Porter Psychiatric Institute Implementation of the IIPP.

1. Implementation of safety standards in hospital areas.
2. Monitoring of individual department managers.
3. Liaison with Oversight Committee and regulatory agencies
4. Identification of hazards and implementation of preventive measures
5. Advise the Chancellor and the Campus of appropriate health and safety requirements.

D. Operational Units and Departments

Operational units such as departments, or schools or research institutes will establish their individual IIPP as directed by the Vice Chancellors.

The authority and responsibility for the implementation and maintenance of the IIPP for Operational Units and Departments, in accordance with University of California Systemwide Policy and California Code of Regulations, Title 8, section 3203 is held by the following individuals:

Name: _____

Department/Title: _____

Signature: _____

Date: _____

Description of Authority and Responsibility Related to Operational Units and Departments Implementation of the IIPP.

1. Implementation of safety standards in administrative and laboratory areas.
2. Monitoring of individual department managers and Principal Investigators.
3. Liaison with Oversight Committee and regulatory agencies.
4. Identification of hazards and implementation of preventive measures.
5. Advise the Chancellor and the Campus of appropriate health and safety requirements.

III. Effective Communications With Employees Have Been Established Using the Following Methods:

The University of California, San Francisco, (UCSF) uses the following methods to ensure effective safety communication:

- A. The Office of Environmental Health and Safety (OEHS) provides support and resources to Administrative Units to meet training and information requirements. OEHS reviews and approves all safety training programs and information materials. Campus and Medical Center safety committees develop appropriate training programs and materials in conjunction with OEHS. OEHS and Administrative Units are required to implement the training function.
- B. Forms of employer-to-employee communications on health and safety topics include:

1. Program Documents
 - a. Chemical Hygiene Plan
 - b. Hazard Communication Program
 - c. Fire Plans
 - d. Emergency Action Plans
2. Safety Manuals
 - a. Campus Manuals
 - i. Biosafety Manual
 - ii. Chemical Safety Manual
 - iii. Radiation Safety Manual
 - iv. Controlled Substances Program Manual
 - v. Other Campus Safety Manuals:
<http://www.ehs.ucsf.edu/Manuals/oehsManuals.asp>
 - b. Medical Center Manuals
 - i. Infection Control Manual
 - ii. Environment of Care Manual
 - iii. Radiation Protection Handbook
 - iv. Medical Center Emergency and Disaster Procedures Manual
 - v. Refer to the following Link for additional Medical Center Manuals: <http://manuals.ucsfmedicalcenter.org/>
3. OEH&S Newsletters and Bulletins
4. Safety Committee Meetings
5. Material Safety Data Sheets (MSDSs)
6. Posters and Signs
7. Warning Labels
8. New Employee Safety Orientation and Ongoing Safety Training

- C. The following methods are available, as necessary, to ensure that health and safety communications are readily understandable by all affected employees:
 - 1. Multilingual translators/trainers
 - 2. Sign language
- D. Employees are encouraged to bring to UCSF's attention any potential health or safety hazard that may exist in the work area. UCSF provides an Employee Safety Suggestion/Hazard Report Form (see Appendix A) for this purpose. Forms are available at the OEH&S website at www.ehs.ucsf.edu/Forms/Eform-Clin001.pdf; employees may also communicate safety concerns to OEHS directly by phone.

Employees are advised there will be no reprisals or other job discrimination for expressing any concern, comment, suggestion or complaint about a safety-related matter. Employees may file the Employee Safety Suggestion/Hazard Report form anonymously.

- E. Employees are expected to follow UCSF and legal health and safety standards. Adherence to safe work practices and the proper use of required Personal Protective Equipment will be monitored. Compliance will be reinforced by Supervisors and Principal Investigators. Non-compliance will be addressed through Personnel procedures, including progressive discipline and performance evaluations. Specific procedures are referenced in the UCSF Personnel Policies for Staff Members Manual, and union contracts.

IV. Compliance with Health and Safety Standards

Supervisors and principal investigators are required to inform employees of the provisions contained in their IIP Program. Employees are expected to follow UCSF and legal health and safety standards. Adherence to safe work practices and the proper use of required personal protective equipment will be monitored. Compliance will be evaluated and reinforced by supervisors and principal Investigators. Non-compliance will be addressed under existing personnel policies and collective bargaining agreements through performance evaluation, corrective action and progressive discipline, up to and including dismissal. Managers and supervisors should consult with their Labor & Employee Relations Analyst if they have questions regarding how to address employee non-compliance with safe and healthy work practices.

In addition, it is the supervisor's responsibility to provide training to workers whose safety performance is deficient. Specific procedures are referenced in the *UCSF Personnel Policies for Staff Members Manual*, and union contracts.

V. Responsibilities With Regard to Maintaining Training Records, Inspection Records, and Files of Safety Information are Designated as Follows and are Summarized in Table I:

- A. Office of Environmental Health and Safety (OEH&S)

1. OEH&S maintains a master electronic file of Material Safety Data Sheets (MSDSs). Selected MSDSs are available from campus and medical center departments. OEH&S has also identified and distributed the locations of MSDSs at the OEH&S webpage at: <http://www.ehs.ucsf.edu/MSDS/oehsMSDS.asp>
 2. A database of training records is maintained by OEH&S. All training is to be documented (Appendix B) and entered into RITS for classroom training. Online training records are electronically stored in the OEH&S database.
 3. OEH&S maintains inspection records for radiation safety, biological safety, fire and life safety, physical safety, asbestos control, and chemical laboratory safety, buildings and grounds, etc. OEH&S also maintains records of particular hazard inspections and environmental measurements performed by OEH&S.
- B. Medical Center and Langley Porter Administration also maintain health and safety inspection records independent of OEH&S.
- C. Occupational Health Service maintains medical monitoring records as required by regulation.
- D. Disability Management Services - Workers' Compensation Unit prepares and maintains the Cal-OSHA Form 300 and the Employer's First Report of Injury. UCSF's third party administrator, Sedgwick CMS is the agent responsible for maintaining Worker's Compensation claim files.

**TABLE I
INJURY AND ILLNESS PREVENTION RECORDKEEPING
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO (UCSF)**

RECORD	RETENTION PERIOD	DEPARTMENT RETAINING RECORD	
		OEHS	OTHER (SPECIFY)
Cal-OSHA Form 300	5 Years	No	Disability Management Services - Workers' Compensation Unit
Employer First Report of Injury	5 Years	No	Disability Management Services - Workers' Compensation Unit
Accident Investigations	3 Years	No	Disability Management Services - Workers' Compensation Unit
Worker's Compensation Claims	Permanent	No	Sedgwick CMS
Medical Surveillance Records	Permanent	No	Occupational Health Service
Safety Committee Minutes	3 Years	Yes	
Worksite Inspection Forms	3 Years	Yes	
Employee Safety Suggestion/Hazard Report Form	3 Years	Yes	
Material Safety Data Sheets	Permanent	Yes	Available On-Line
Exposure Monitoring	Permanent	Yes	
Employee Training	3 Years	Yes	
Cal-OSHA Inspection Reports	3 Years	Yes	
Emergency Response Forms	Permanent	Yes	
Community Environmental Monitoring	5 Years	Yes	

VI Safety Committees

The University of California, San Francisco (UCSF) has established safety committees to address policies and procedures for safe operations and facilities. Two types of safety committees have been instituted:

- Campus and Medical Center health and safety policy committees to develop policies and procedures for the safe use, handling, storage and disposal of hazardous materials; these committees are listed below.
- Interactive management - employee safety committees have been mandated to enhance communication between employees and management for any health and safety issue; these committees are discussed below.

A. Campus and Medical Center Health and Safety Policy Committees

The policy committees, which are advisory to the Chancellor, are composed of faculty and staff with expertise in the use and handling of a specific class of hazardous material (Biological, Chemical, Radiological). The committees are responsible, in collaboration with the Office of Environmental Health and Safety (OEHS), for recommending to the Chancellor health and safety policy and procedures for the use, handling, storage and disposal of hazardous materials. In addition, they arbitrate disagreements on work practices and procedures and make recommendations to the Chancellor regarding those who fail to comply with established health and safety standards. The committees are listed below

1. Campus Safety Committees

- a. Radiation Safety Committee
 - b. Chemical and Environmental Safety Committee
 - c. Biosafety Committee
 - d. OEH&S User Committee
 - e. Hazards Emergencies Response and Recovery Committee
 - f. Health and Safety Policy Committee
 - g. Chancellor's Steering Committee on Nuclear, Biological and Chemical Terrorism (BCT) Committee
 - h. Emergency Planning Bioterrorism and Communicable Disease Committee (BCDC)
2. Medical Center Committees
- a. Infection Control Committee
 - b. Medical Center Environmental of Care Committee
 - c. Medical Center Emergency Planning, Bioterrorism, and Communicable Disease Committee
 - d. Committee on Mass Casualty Incidents (Comcit)

B. Operational entities who choose to implement safety committees will use the following method. Establishment of a safety committee is recommended.

UCSF has mandated interactive management - employee safety committees to address unsafe operations and areas. These safety committees facilitate the communication of health and safety issues to and from employees.

Schools and departments are expected to either establish interactive management - employee safety committees or delegate safety committee responsibilities (which are discussed below) to existing committees. These committees assist in implementing general safety standards and the policies and procedures developed by the Campus and Medical Center health and safety policy committees. Interactive management - employee safety committees are expected to:

- 1. Meet regularly, not less than quarterly.
- 2. Prepare and make available to employees minutes of committee meetings reporting on health and safety issues discussed at the meetings. UCSF provides an example reporting form in Appendices C and C-1.
- 3. Review results of selected periodic, scheduled inspections.

4. Review OEH&S investigations of occupational accidents and incidents related to injury and illness, as appropriate.
5. Review OEH&S investigations of alleged hazardous conditions brought to the attention of any committee member.
6. Submit recommendations to assist in the evaluation of employee safety suggestions.
7. With assistance from OEH&S, establish policies that govern the abatement actions taken to correct hazards or deficiencies.

VII Hazard Evaluation and Correction

Hazard evaluation and control is the heart and soul of an effective injury and illness prevention program. Periodic inspections and correction and control procedures provide a method of identification, elimination and control of existing or potential hazards in the workplace. The hazard evaluation and control system is also the basis for developing safe work procedures, and injury and illness prevention training.

OEH&S is responsible for performing a variety of hazard audits. These include hazard evaluations, facility or worksite inspections (see Appendix D for a inspection/audit schedule), accident investigations and exposure monitoring. These audits are conducted routinely, as needed, or in response to specific requests. Table II shows the audit schedule. In addition to the routine audit schedule, whenever a new radioactive or biohazardous substance process, procedure or equipment is introduced into the workplace, a department safety advisor from OEH&S should be invited to inspect the workplace to assess any potential associated hazards and work with the laboratory to determine what control processes are needed to mitigate those hazards. The laboratory supervisor or principal investigator is responsible for implementing the necessary control processes recommended by the department safety advisor.

Hazard Correction:

The conditions observed or evaluated are compared with occupational safety and health standards, predetermined agreement with regulatory agencies, or current good practice. Once identified and evaluated, hazards shall be corrected as promptly as possible. For those that can't be immediately corrected, an action plan should be developed based on the probability and severity of an injury, illness, or property damage that would result from the hazard. Interim protection for employees may have to be implemented until the hazard is abated. OEH&S coordinates corrective actions and interim protection, if needed, with responsible departments and effected employees as appropriate.

VIII Investigation of Accidents and Occupational Injuries/Illnesses

Upon receipt from Disability Management Services - Workers' Compensation Unit of a Supervisor Report of Injury Form (SR1), OEH&S will evaluate the report and perform investigations as appropriate. The investigation records (see Appendix E) are maintained by OEH&S. Copies are filed in the department in which the accident or injury

or illness took place and at the Disability Management Services - Workers' Compensation Unit office.

IX Injury and Illness Prevention Program (IIPP) Training

- A. Injury and Illness Prevention Program (IIPP) training, covering both general safe work practices and job specific hazard training, is provided according to the following criteria:
1. Supervisors are provided training to familiarize them with the safety and health hazards to which employees under their immediate direction and control may be exposed. At the University of California, San Francisco (UCSF), this training is provided by qualified individuals from OEHS.
 2. New employees are trained in general safe work practices and campus policy and procedures by qualified individuals from OEHS. Job specific hazard training is provided by their departments.
 3. All employees given new job assignments are provided appropriate training by qualified individuals from the affected departments and/or OEHS.
 4. All employees working with hazardous materials are trained by OEHS.
 5. Whenever new substances, processes, procedures or equipment, which represent a new hazard, are introduced to the workplace; affected employees will then be trained by qualified individuals from their department and/or OEHS.
 6. Whenever the campus is made aware of a new or previously unrecognized hazard, OEHS will evaluate the hazard and determine appropriate control actions. Then affected employees will be trained by qualified individuals from their department and/or OEHS.
- B. OEHS is available to assist with the development and review of new departmental safety programs. In addition, OEHS should be contacted to review existing departmental safety programs. OEHS may be contacted to conduct training or to provide training materials (videotapes, slides, handouts, etc.). Training may include, but is not limited to, the following topics:
1. Injury and Illness Prevention Program
 2. Hazard Communication
 3. Emergency Action Plan
 4. Fire Safety
 5. Equipment Operation
 6. Radiation Safety

7. Biological Safety
 8. Chemical Safety
 9. Physical Safety
 10. Hazardous Waste Materials Handling and Disposal (Chem., Rad., Bio.)
- C. All training will be documented using the Office of Research Training Attendance Form (see Appendix B). OEH&S maintains a training records database.
- D. UCSF Schools, Departments, and Units are encouraged to periodically conduct self-evaluations of their IIPP. Appendix F is an example of an IIPP Self Evaluation Checklist.

APPENDICES

Appendix A: Employee Safety Suggestion/Hazard Report

Appendix A-1: OEH&S Investigation Report

Appendix B: OR Course Registration Form

Appendix C: Health and Safety Committee Meeting Attendance Sheet

Appendix C-1: Health and Safety Committee Meeting Minutes

Appendix D: Periodic Inspection/Audit Schedule, UCSF

Appendix E: UCSF Accident Investigation Follow-Up Report Form

Appendix F: Checklist for Self Evaluation for IIPP Compliance

Appendix G: *Coxiella burnetii* (Q fever) Management at UCSF

APPENDIX A

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
OFFICE OF ENVIRONMENTAL HEALTH & SAFETY (OEHS)

EMPLOYEE SAFETY SUGGESTION/HAZARD REPORT *

This form is for use by any employee who wishes to provide a safety suggestion or report a hazardous workplace condition or practice. Complete this side of this form; check appropriate boxes and fill in requested information.

Date: _____

Given to: Supervisor Dept. Safety Committee OEHS
Box 0942; Fax 476-0581

Subject: Hazard Report Safety Suggestion

Condition: Biological Chemical Radiation
Fire Safety Physical Safety

Potential Injury: Trip, Slip, Fall Struck By Strain, Sprain
Cuts, Abrasion Chemical Burn Heat Burn
Electrocution Exposure - Biological Exposure - Chemical
Exposure - Radiation

Location of Hazard (building, room, other description): _____

Description of Hazard (include whether it is CHEMICAL, BIOLOGICAL, PHYSICAL, etc.): _____

Suggestion for Improving Safety / Correction of Hazard: _____

OPTIONAL - COMPLETE IF YOU WANT A WRITTEN RESPONSE.
(IF YOU WISH TO REMAIN ANONYMOUS, DO NOT COMPLETE THIS SECTION.)

Employee Name: _____ Telephone Number: _____
Department: _____

*** NOTE:**

1. Employees are advised that use of this form or other reports of unsafe conditions or practices are protected by law. It would be illegal for the employer to take any action against an employee in reprisal for exercising rights to participate in communications involving safety.
2. OEHS will investigate all reports or questions submitted and provide a written response to the employee who provided the information or the workers in the affected area.

APPENDIX A - 1

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO
OFFICE OF ENVIRONMENTAL HEALTH & SAFETY (OEHS)

OEHS INVESTIGATION REPORT

TO: _____ DATE: _____
FROM: _____ RE: _____
(OEHS Investigator) (Hazard Evaluated)

Date of Evaluation of Hazard: _____

OEHS Evaluation of Hazard: _____

1. Recommended Corrective Action: _____

2. Interim Corrective Action: _____

3. Follow Up: _____

4. Date Corrective Action Completed: _____

APPENDIX B

OR COURSE REGISTRATION FORM

Date:

Time:

Title:

Location:

Instructor:

Instructor:

Last Name	First Name	SSN	Title	Supervisor/PI	Department	Box #	Phone	Signature	Score

Entered By: _____
Date: _____

APPENDIX D

PERIODIC INSPECTION / AUDIT SCHEDULE UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

TYPE OF INSPECTION	FREQUENCY OF INSPECTION	DEPARTMENT OF INSPECTION		CONDUCTING OTHER (SPECIFY)	INSPECTION RECORD LOCATION
		OEHS			
JCAHO Safety and Facilities Review 1) For Patient Care Areas; 2) For Non-Patient Care Areas	1) semi-annually; 2) annually	yes			Med. Center Admin.
Radiation Safety	quarterly	yes			OEHS
Biosafety	annually	yes			OEHS
Chemical Laboratory Safety	annually	yes			OEHS, Admin. Units
Food Service	annually	yes			OEHS
Animal Care Facilities	annually	yes		Animal Care Facilities	OEHS, ACF
Fire and Life Safety	annually	yes		State Fire Marshal's Ofc.	OEHS, CSFMO
Fire Extinguishers	annually	yes		FM, Outside Contractor	FM
Medical Center Fire Drills	quarterly	yes		Medical Center Admin.	Med. Center Admin.
Medical Center Disaster Drills	semi-ann.	Yes		Medical Center Admin.	OEHS, Med. Center
Fume Hood Evaluation	annually	yes			OEHS
Deluge Shower, Eyewash Testing	monthly	yes			OEHS, Admin. Units
Office Environments	annually	yes			OEHS
Industrial Hygiene Evaluations	periodic	yes			OEHS
Noise Evaluations	periodic	yes			OEHS
Shop Safety Inspections	annually	yes			OEHS
FM Work Environments	annually	yes			OEHS
Storehouse Work Environments	annually	yes			OEHS
Laundry Work Environments	annually	yes			OEHS
Hazardous Material Inventories	annually	yes			OEHS
Accident/Injury/Illness Investigation	as needed	yes			OEHS, Admin. Units
Asbestos Inspections	periodic	yes			OEHS, Admin. Units
VDT/Ergonomics	as needed	yes			OEHS, Admin. Units
Non-Ionizing Radiation	periodic	yes			OEHS, Admin. Units

APPENDIX



50 Medical Center Way,
University of California, San Francisco
San Francisco, CA 94143-0942
Tel: 415-476-1300
Fax: 415-476-0581
Web: www.ehs.ucsf.edu

University of California, San Francisco Accident Investigation Follow-up Report Form

Investigation Information: The injured party is no longer working at UCSF or in this department:

Form with fields for Date of accident, Location of accident, Name of injured, Employee position title, and Phone # & Box #.

Did you seek medical advice / help for your condition? [] Yes [] No (Private Physician ____ EHS ____)

Were unsafe conditions corrected? [] Yes [] No

Have there been any changes in the area since the reported incident? [] Yes [] No

Have you received any further instructions or training after the reported incident? [] Yes [] No

Has anyone else in the area had a similar problem? [] Yes [] No

Is any further investigation required? [] Yes [] No

Follow-Up Investigator Date

APPENDIX F

Checklist for self evaluation for IIPP compliance

The following is a general list of responsibilities and control measures that supervisors and/or principal investigators are responsible for providing to employees working in laboratories:

1. Display the Cal/OSHA poster *Safety and Health Protection on the Job* in a prominent location where all employees are likely to see it.
2. Inform their employees on the provisions of the IIP Plan, emergency action plan and fire prevention plan.
3. Provide a clean and orderly workplace and ensure spilled materials and liquids are cleaned up immediately.
4. Provide an eye wash station and deluge shower within work areas where workers are exposed to hazardous materials.
5. Ensure that aisle ways and passageways are kept clear.
6. Provide instruction to employees on the proper manner of lifting heavy objects.
7. Allow sufficient rest breaks to relieve stress from repetitive-motion tasks.
8. Instruct employees who operate vehicles on public thoroughfares on safe driving practices.
9. Maintain an inventory list of hazardous chemicals kept in the workplace.
10. Implement and follow the UCSF campus chemical hygiene plan.
11. Implement and follow standard operating procedures when cleaning up chemical spills.
12. Provide appropriate personal protective equipment outlined in UCSF safety manuals to employees.
13. Implement exposure control procedures including ventilation, universal precautions, good workplace practices, and personal protective equipment.
14. Provide free of charge any necessary medical surveillance including Hepatitis B Virus evaluation and vaccination when warranted.
15. Ensure incompatible laboratory chemicals are separated in storage.
16. Ensure all containers of hazardous substances are properly labeled with product identity and hazard warning.
17. Ensure all personnel receive the necessary safety training including training required and offered by EH&S. Supervisors must also provide specific safety training on procedures unique to the workplace.
18. Report any complaints by employees of dermatitis, dizziness, headaches, nausea, irritation or other factors of discomfort when working in the laboratory.
19. Ensure that all pieces of furniture are properly adjusted, positioned and maintained so that tasks can be performed comfortably.
20. Ensure all tools, instruments and equipment is shaped, positioned and handled so that tasks can be performed comfortably.
21. Prohibit and discourage horseplay and any behavior which contributes to an unsafe working environment.
22. Provide provisions for medical services and first aid including emergency procedures.

APPENDIX G

Appendix to the UCSF Injury and Illness Prevention Program ***Coxiella burnetii* (Q fever) Management at UCSF**

[note: numbers in square brackets in this draft related to the 24 numbered points in the 1979 California Occupational Safety and Health Administration (CalOSHA) Special Order for handling sheep and their tissues at UCSF; three of those points were one-time only and no longer apply: ## 15, 23 and 24]

Work with live sheep and their tissues has long been considered to present an occupational risk for coxiellosis (Q fever) in laboratory workers. *Coxiella burnetii* organisms are present in highest numbers in amniotic fluid and associated tissues, though they can be present in any tissue and excreted through multiple routes. Historically, University of California, San Francisco has followed a program of *Coxiella* containment. This document details the program for *Coxiella* exclusion in the animal facilities, based on purchase and monitoring of Q-negative sheep. It also documents plans for *Coxiella* containment in the laboratory when working with tissue from potentially infected sheep. This document does not refer to laboratory studies which require propagation of *Coxiella burnetii* organisms.

Personnel at Risk

Personnel at risk of exposure to contaminated sheep tissues are the persons who will transport the tissues, conduct experiments using the tissues, and dispose of the tissues. The person could have any of the job titles listed below. Non-essential persons will not be allowed access into the laboratory rooms during tissue use requiring Biosafety Level 3 (BSL 3) or Biosafety Level 2* (BSL 2*) containment.

Job Title

Professor, Assistant Professor, Associate Professor, Staff Research Associate, Post-Doctoral Researcher, Departmental Safety Associate, Graduate Student, Veterinarian, Registered Veterinary Technician, Animal Resources Manager, Animal Care Technician, Animal Care Supervisor, Drivers, Cage-wash Technicians, Facilities Management Personnel (plumber, electrician).

Hazard identification

Pregnant sheep are used for fetal research, and the potential to spread amniotic fluid and products of conception is high. Fetal research and other studies also use non-pregnant sheep of either sex and any age.

Live sheep will be brought to the UCSF Laboratory Animal Research Center (LARC) exclusively from Thomas D. Morris, Inc. in Reisterstown, Maryland. This vendor has provided over five years worth of sheep serology reports in which no on-site animal has tested positive. They will undergo additional testing at UCSF to verify that they have remained Q-negative. [1]

Stored sheep tissues or tissues obtained from other sources will be treated as potentially infected with *Coxiella*. They will not be allowed into the LARC. In the laboratory, they will be handled under BSL-3 conditions. Details of handling must be approved in the research investigator's Biological Materials Use Authorization as reviewed by the UCSF Biosafety Committee. (BSC) [1]

Live sheep: housing, husbandry, and transportation

Sheep will be housed upon receipt indoors or outdoors at LARC's Hunter's Point facility. Access to this property is limited to UCSF personnel. It has a paved paddock and paved, roofed outdoor pens that have been used in the past for housing sheep and dogs, and which have been vacant for approximately 8 years, and an enclosed building on the property as well. Either the paddock, pens, or a building on the property, will be used. [1]

Sheep will be transported between Hunter's Point and the Parnassus Services Building (PSB) and/or China Basin in steel carts in LARC vehicles. Both the carts and the trucks will be disinfected after each use. Disinfection methods may include washing with sodium hypochlorite solution or fogging with "Sporclenz" (hydrogen peroxide), either by passing through the LARC rack-washer or by sanitizing in place. [14, 16]

At any time after their initial staging at Hunter's Point, Q-negative sheep will be housed in the Parnassus Services Building in rooms PS 363 and 351 (and possibly 349 and 349a), or at the China Basin research facility

APPENDIX G

(non-pregnant sheep only). Sheep may be moved interchangeably among these three campuses. Sheep housing rooms will be maintained at negative pressure relative to adjoining corridors.

Sheep will be cared for using procedures comparable to those currently employed for swine and dogs. These are not containment facilities, though exhaust air is High Efficiency Particulate Air (HEPA)-filtered in the PSB facility. [2, 12] Husbandry materials, supplies and waste will not be autoclaved prior to removal from the facility, with the exception of materials contaminated with amniotic fluid (such as during a spontaneous birth or abortion, or during fetal surgery). [13, 14]

Live sheep: research facilities

Support labs and surgery room (rooms PS 330, 330a, 330b and 328) are adjacent to the PSB housing rooms. Sheep are not transported through the halls to get to and from the laboratory spaces. A loading dock, necropsy room and cold storage for carcasses are all on the same floor in PSB as the housing and surgery areas; only UCSF personnel have key-carded access to this hallway. [5]

Rooms designated for survival surgery will be maintained according to USDA standards for sterile surgery, except that surgery room air will be at negative pressure relative to hallways and at positive pressure relative to the adjoining animal rooms. Surgery rooms are washed and sanitized with hypochlorite after each use. [10]

The China Basin facility includes space for short-term (2-7 day) animal housing. Non-pregnant sheep may be housed in the same room with swine at some times. Moving sheep from the loading dock to the research and housing rooms requires movement through a general access hallway. Sheep will be moved in a steel wheeling cage covered with a sanitizable plastic tarp.

Personnel: access and PPE [3, 6, 7]

Only UCSF personnel have access to the Hunter's Point facilities described. In PSB, UCSF personnel have access to the general facility, but contact with sheep will be limited to those enrolled in the Communicable Disease Prevention Program (CDP) and identified as sheep users. Only UCSF personnel have access to the China Basin animal housing and procedure rooms.

In housing rooms, personnel will don shoe protection (disposable, or dedicated to the facility), laboratory coats, coveralls or similar, and gloves. This clothing will be laundered or disposed of after use. Masks, hair covers and surgical gowns are required for sterile surgery only. Respirators (N-series 95% efficient (N95) or similar) will be provided for people with allergies who have been fit-tested for their use. [22]

Sanitary wash up facilities with hot and cold running water and soap shall be provided in all sheep housing areas. [8]

Personnel: training and health monitoring [9, 20, 21]

UCSF will maintain a *Coxiella* surveillance program for all personnel with contact with live sheep or sheep tissues. All new sheep users and care staff will undergo a Q-fever-oriented health check by the UCSF Communicable Disease Prevention Program (except for Facilities Management personnel, who use UCSF Occupational Health Services). All current, continuing sheep users and care staff will undergo an annual Q-fever-oriented health check each year. This check will include general health status, screening for risk factors, symptom review and assessment, and testing for *Coxiella* antibodies. People who have already tested positive may be screened annually for their own health information, not as an indicator of new infection. Individual discussion regarding Q fever infection risk factors, prevention and symptoms takes place at time of hire with new employees and is reviewed during the annual Q fever screening process. All medical surveillance is conducted confidentially in compliance with the Health Insurance Portability and Accountability Act (HIPAA) standards.

The Institutional Animal Care and Use Committee training and compliance staff conducts hands-on training sessions for new sheep users, including how to access the facilities and standards for personnel hygiene and PPE. Training topics include signs and symptoms of *Coxiella* infection, the history and rationale of the Q-fever containment and exclusion programs at UCSF, and mode of transmission of the infection. Trainees receive a pamphlet summarizing health risks of working with sheep.

Laboratory principal investigators are responsible for training staff on techniques within the laboratory, including the use of engineering controls such as biosafety cabinets and notification for emergencies and spills.

APPENDIX G

Failure of personnel to participate in the Occupational Health Program would result in loss of the BSC approval to use sheep tissue in experiments and in lost access to live sheep.

Sheep infection monitoring:

Pregnant and non-pregnant sheep shall be obtained exclusively from the Morris facility. Only animals who have had at least one serum sample tested (and negative) at the vendor will be received. Other vendors will be considered only if they can demonstrate several years' worth of consistently negative testing on a sufficiently large sampling of their flock.

The contract with Morris shall stipulate that vendor must notify UCSF within five business days if any one of their sheep tests positive for *Coxiella*.

All sheep from Morris will be tested serologically within 3-5 business days of arrival, and again in 3-5 weeks, if they are maintained that long at UCSF. Samples will be submitted to the Chomel laboratory in Davis, California, or a comparable diagnostic laboratory. Sentinel mice will be housed with the sheep in all indoor locations and tested for Q-fever seroconversion every two to three months.

Amniotic fluid will be collected from pregnant sheep at the time of surgery, and stored frozen. Frozen amniotic fluid is available for Polymerase Chain Reaction (PCR) testing at University of California Davis and other laboratories, if deemed necessary.

After at least one year of consistently negative serologic testing, this may be scaled back to no less than 50% of received sheep being tested on arrival and no less than 50% of sheep being tested after 3-5 weeks at UCSF. After at least one additional year of consistently negative serologic testing, this may be further scaled back to no less than 20% of received sheep being tested on arrival and no less than 20% of sheep being tested after 3-5 weeks at UCSF. Sentinel mice will continue to be housed with the sheep in all indoor locations and tested for Q-fever seroconversion every two to three months.

Handling and labeling sheep tissues: [1, 11, 17, 18, 19]

Diagnostic and research materials (blood samples, amniotic fluid, aborted fetuses) will be transported and stored in sealed plastic containers with a Biohazard label affixed. Only personnel knowledgeable and trained on the hazards of the specimens will transport the specimens.

All specimens will be stored inside a secure area and not in public areas. Storage rooms must have doors that lock and freezers or other storage containers must be kept locked.

Low-risk tissues are those from sheep from a consistently *Coxiella* negative flock, who have then tested negative twice at UCSF, or tissues that have been directly tested for *C. burnetii*. Low-risk tissues will be handled using BSL-2 containment criteria in the animal facility and in research laboratories.

Fresh or frozen sheep tissue from other sources must be considered potentially contaminated and must be handled using BSL-3 or augmented BSL-2 containment practices, as individually reviewed and approved by the Biosafety Committee.

All manipulations involving sheep specimens requiring BSL 2 or 3 containment that generate aerosols and/or splashing must be conducted inside a certified Class II biological safety cabinet. When a procedure cannot be conducted within a biological safety cabinet, then appropriate combination of personnel protective equipment and physical containment devices must be used.

All sheep specimens used will be disposed of in the biomedical waste stream as pathology waste and containerized, transported, and treated as required by the California Medical Waste Management Act. Equipment and work areas will be decontaminated immediately following experiments/uses or at the end of the day or shift, and after a spill using an appropriate disinfectant such as 0.525% bleach solution or they will be autoclaved using an appropriate time, temperature, and pressure to inactivate any biohazard contaminants.

All specimens will be stored inside a secure area and not in public areas. Storage rooms must have doors that lock and freezers or other storage containers must be kept locked.

Signage and labeling of room:

Sheep housing area will be labeled "Authorized Personnel Only." Information about *Coxiella* will be posted. [3,4, 5]

Laboratories where sheep fluids or tissues are handled will be labeled as stated in the in the Centers for Disease Control/National Institutes of Health (CDC/NIH) publication, "Biosafety in Microbiological and

APPENDIX G

Biomedical Laboratories", current edition. BSL 2 and BSL 3 laboratories will be signed with a biohazard door card on the entry door when work with sheep-derived materials is in progress. Equipment in the BSL 2 or 3 laboratory that could possibly become contaminated with the sheep materials will be labeled with a biohazard label. [1, 3, 4, 5, 11, 17, 18,19]

Program oversight

Individual research labs must maintain an up-to-date Biological Materials Use Authorization (BUA) and are audited quarterly by Office of Environmental Health and Safety Departmental Safety Advisors. The BUA contains details of sample handling, processing and disposal in the laboratory. [21] If an approval by the Biosafety Committee is not granted or is withdrawn then the experiments involving sheep tissues will not be allowed to be conducted.

Laboratory Animal Research Center maintains Standard Operating Procedures for animal husbandry and veterinary practices. LARC facilities are inspected semi-annually by the Institutional Animal Care and Use Committee and audited quarterly by an Office of Environmental Health and Safety Departmental Safety Advisors. [21]

If a human case is identified, or a sheep tests positive [9, 20, 21, 22]

The program is directed at excluding the agent to such a degree that the risk is extremely low.

In the event of finding a seropositive sheep or sentinel mouse, the Laboratory Animal Research Center will notify the Communicable Disease Prevention Program and the Office of Environmental Health and Safety and will provide to the CDP nurse a list of personnel who were in the facility and potentially exposed.

The CDP nurse epidemiologist and physician will initiate an epidemiological investigation to determine risk of further exposure, other at-risk personnel, and the need for notification, counseling and education.

The seropositive sheep will be isolated or euthanized. If available, amniotic fluid from the animal, or from in-contact animals, will be sent to Davis for confirmatory PCR testing.

The CDP nurse and physician will notify personnel at risk. The CDP nurse will perform an initial risk assessment, clinical assessment, symptom review, and obtain Q fever titers, as appropriate. If there are positive symptom reviews or titers, the physician and nurse epidemiologist will determine whether: a) external predisposing factors were present, and b) whether the sero-conversion is possibly or definitely work-related.

If external predisposing factors were present and the sero-conversion is not work related, then the individual will be referred to their personal provider for infectious disease consultation.

If the sero-conversion is possibly or definitely work-related, the employee will be referred for evaluation through workers' compensation at the UCSF Employee Health Clinic located at Mount Zion. The CDP will provide education and offer counseling to the potentially exposed personnel.

The CDP will report the case to the director of Environmental Health & Safety, the director and veterinary staff of LARC, the director of Institutional Animal Care and Use Committee (IACUC), the Biosafety Officer, and Occupational Health Services.

The CDP will report cases to the San Francisco Public Health Department. The director of Environmental Health and Safety (EH&S) will report the case to CalOSHA.

The CDP will report the final outcome to the Biosafety Committee and the director of EH&S, the director of LARC, and the director of IACUC.

Personnel who report symptoms consistent with Q fever, or who are found on annual screening to have seroconverted, will be evaluated by the CDP as above. CDP will inform LARC veterinarians, who will conduct additional testing of sheep (including amniotic PCR testing) to determine if the infection is of workplace origin.

If vendor reports that they have identified a seropositive animal in their flock, UCSF shall immediately halt any pending purchases from vendor. All sheep at UCSF will be tested for Q-fever (serology ELISA) regardless of how long they have been at UCSF. No further purchases shall be permitted until vendor can satisfactorily demonstrate that the flock has remained uncontaminated.

Approved 10/3/05, Associate Vice Chancellor Ara Tahmassian PhD