



CHAPMAN
UNIVERSITY

**Enterprise Risk
and Safety**

Environmental Health and Safety

Aerosol Transmissible Disease Exposure Control Plan

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Table of Contents

1. Program Description	3
2. Scope	3
3. Definitions	3
4. Responsibilities The Institution	7
5. Program Components	8
6. Training Requirements and Competency Assessment	11
7. Information and External References	12

1. Program Description

The Aerosol Transmissible Diseases (ATD) Plan was developed to comply with the Aerosol Transmissible Diseases Standard as well as to provide a safe and healthy work environment at the University. The initial ATD Standard was written by Cal/OSHA as a direct result of the experiences involving Severe Acute Respiratory Syndrome (SARS), Avian Influenza, and the Novel Influenza H1N1. The standard was adopted by the Cal/OSHA Board on May 21, 2009 and became effective on August 5, 2009. It is the first standard of its kind to acknowledge that the predominant cause of transmission for a variety of lower respiratory infections is due to inhalation exposure. It requires laboratories to adopt standard biosafety practices to protect laboratory workers when handling materials containing pathogens that could be spread through aerosols potentially leading to serious disease.

The California Department of Health publishes the standard at:
<https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/ATDStd.aspx>

2. Scope

This plan applies to Chapman University laboratories, Student Health Services, Public Safety response functions, anatomy laboratories, and other university units with identified ATD exposure risks.

The following job classifications may have occupational exposure to aerosol transmissible diseases at Chapman:

- A. Principal investigators and personnel with laboratory operations involving any of the agents specified in Appendix D of the ATD Standard.
- B. Physicians, nurses or other licensed health care professionals working at the University Student Health Services Center involved in diagnosis, triage, direct patient care and treatment.
- C. Public Safety
- D. Personnel working in the anatomy lab

3. Definitions

Aerosol transmissible disease (ATD) or aerosol transmissible pathogen (ATP): A disease or pathogen for which droplet or airborne precautions are required, as listed in Appendix A of the standard.

Aerosol transmissible pathogen -- laboratory (ATP-L): A pathogen that meets one of the following criteria: (1) the pathogen appears on the list in Appendix D of the standard, (2) the Biosafety in Microbiological and Biomedical Laboratories (BMBL) recommends biosafety level 3 or above for the pathogen, (3) the biological safety officer recommends biosafety level 3 or

above for the pathogen, or (4) the pathogen is novel or unknown.

Airborne infectious disease (AirID): Either: (1) an aerosol transmissible disease transmitted through dissemination of airborne droplet nuclei, small particle aerosols, or dust particles containing the disease agent for which airborne infection isolation (All) is recommended by the CDC or CDPH, as listed in Appendix A of the standard, or (2) the disease process caused by a novel or unknown pathogen for which there is no evidence to rule out with reasonable certainty the possibility that the pathogen is transmissible through dissemination of airborne droplet nuclei, small particle aerosols, or dust particles containing the novel or unknown pathogen.

Airborne infectious pathogen (AirIP): Either: (1) an aerosol transmissible pathogen transmitted through dissemination of airborne droplet nuclei, small particle aerosols, or dust particles containing the infectious agent, and for which the CDC or CDPH recommends All, as listed in Appendix A of the standard, or (2) a novel or unknown pathogen for which there is no evidence to rule out with reasonable certainty the possibility that it is transmissible through dissemination of airborne droplet nuclei, small particle aerosols, or dust particles containing the novel or unknown pathogen.

Biological safety officer(s): A person who is qualified by training and/or experience to evaluate hazards associated with laboratory procedures involving ATPs-L, who is authorized by Chapman to establish and implement effective control measures for laboratory biological hazards.

Biosafety in Microbiological and Biomedical Laboratories (BMBL): Biosafety in Microbiological and Biomedical Laboratories, Sixth Edition, CDC and National Institutes for Health, 2020, which is hereby incorporated by reference for the purpose of establishing biosafety requirements in laboratories.

Exposure Control Plan: A plan to protect employees from aerosol transmissible pathogens by reducing occupational exposure and providing appropriate treatment and counseling for potentially exposed to these pathogens.

Exposure incident: An event in which all of the following have occurred: (1) An employee has been exposed to an individual who is a case or suspected case of a reportable ATD, or to a work area or to equipment that is reasonably expected to contain ATPs associated with a reportable ATD; and (2) The exposure occurred without the benefit of applicable exposure controls required by this section, and (3) It reasonably appears from the circumstances of the exposure that transmission of disease is sufficiently likely to require medical evaluation.

Exposure incident (laboratory): A significant exposure to an aerosol containing an ATP-L, without the benefit of applicable exposure control measures required by this section.

Health care provider: A physician and surgeon, a veterinarian, a podiatrist, a nurse practitioner, a physician assistant, a registered nurse, a nurse midwife, a school nurse, an infection control

practitioner, a medical examiner, a coroner, or a dentist.

Health care worker: A person who works in a health care facility, service or operation, or who has occupational exposure in a public health service.

High hazard procedures: Procedures performed on a person who is a case or suspected case of an aerosol transmissible disease or on a specimen suspected of containing an ATP-L, in which the potential for being exposed to aerosol transmissible pathogens is increased due to the reasonably anticipated generation of aerosolized pathogens.

Laboratory: A facility or operation in a facility where the manipulation of specimens or microorganisms is performed for the purpose of diagnosing disease or identifying disease agents, conducting research or experimentation on microorganisms, replicating microorganisms for distribution or related support activities for these processes.

Local health officer: The health officer for the local jurisdiction responsible for receiving and/or sending reports of communicable diseases, as defined in Title 17, CCR.

Note: Title 17, Section 2500 requires that reports be made to the local health officer for the jurisdiction where the patient resides.

Novel or unknown ATP: A pathogen capable of causing serious human disease meeting the following criteria:

- (1) There is credible evidence that the pathogen is transmissible to humans by aerosols; and
- (2) The disease agent is:
 - (a) A newly recognized pathogen, or
 - (b) A newly recognized variant of a known pathogen and there is reason to believe that the variant differs significantly from the known pathogen in virulence or transmissibility, or
 - (c) A recognized pathogen that has been recently introduced into the human population, or
 - (d) A not yet identified pathogen.

Note: Variants of the human influenza virus that typically occur from season to season are not considered novel or unknown ATPs if they do not differ significantly in virulence or transmissibility from existing seasonal variants. Pandemic influenza strains that have not been fully characterized are novel pathogens.

Occupational exposure: Exposure from work activity or working conditions that is reasonably anticipated to create an elevated risk of contracting any disease caused by ATPs or ATPs-L if protective measures are not in place. In this context, "elevated" means higher than what is considered ordinary for employees having direct contact with the general public outside of the facilities, service categories and operations listed in the standard. Whether a particular employee has occupational exposure depends on the tasks, activities, and environment of the employee, and therefore, some employees of a covered employer may have no occupational exposure. For example, occupational exposure typically does not exist where a hospital

employee works only in an office environment separated from patient care facilities, or works only in other areas separate from those where the risk of ATD transmission, whether from patients or contaminated items, would be elevated without protective measures. It is the task of employers to identify those employees who have occupational exposure so that appropriate protective measures can be implemented to protect them as required. Employee activities that involve having contact with, or being within exposure range of cases or suspected cases of ATD, are always considered to cause occupational exposure.

Employees working in laboratory areas in which ATPs-L are handled or reasonably anticipated to be present are also considered to have occupational exposure.

Physician or other licensed health care professional (PLHCP): Means an individual whose legally permitted scope or practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by this section.

Reportable aerosol transmissible disease (RATD): A disease or condition which a health care provider is required to report to the local health officer, in accordance with Title 17 CCR, Division 1, Chapter 4, and which meets the definition of an aerosol transmissible disease (ATD).

Respirator: A device which has met the requirements of 42 CFR Part 84, has been designed to protect the wearer from inhalation of harmful atmospheres, and has been approved by NIOSH for the purpose for which it is used.

Source control measures: The use of procedures, engineering controls, and other devices or materials to minimize the spread of airborne particles and droplets from an individual who has or exhibits signs or symptoms of having an ATD, such as persistent coughing.

Susceptible person: A person who is at risk of acquiring an infection due to a lack of immunity as determined by a PLHCP in accordance with applicable public health guidelines.

Suspected case: Either of the following:

- (1) A person whom a health care provider believes, after weighing signs, symptoms, and/or laboratory evidence, to probably have a particular disease or condition listed in Appendix A of the standard.
- (2) A person who is considered a probable case, or an epidemiologically-linked case, or who has supportive laboratory findings under the most recent communicable disease surveillance case definition established by CDC and published in the Morbidity and Mortality Weekly Report (MMWR) or its supplements as applied to a particular disease or condition listed in Appendix A of the standard.

4. Responsibilities

The Institution

All Chapman employees have the right to a safe and healthful workplace. With the assistance of Environmental Health & Safety (EH&S), the institution ensures that Chapman complies with applicable health, safety and environmental laws, regulations and requirements; and, that activities are conducted in a manner that protects students, faculty, staff, visitors, the public, property, and the environment. Chapman is committed to excellence in health, safety and environmental performance and strives to achieve:

- Zero injuries or illnesses
- Zero environmental incidents
- Zero property loss or damage

Achieving these goals is the responsibility of everyone and supervisors have particular responsibility for individuals reporting to them.

Biosafety Officer (BSO)

The institution will appoint a Biosafety Officer (BSO) that is qualified by training and/or experience to evaluate hazards associated with laboratory procedures involving ATPs and ATPs-L. Training includes aerosol transmission recognition, outbreak response procedures, and proper use of source control during public health emergencies. The BSO is authorized by the institution to establish and implement effective control measures for laboratory biological hazards. Additional responsibilities of the BSO are as follows:

- (1) Perform a risk assessment in accordance with the methodology included in Section II of the BMBL for each agent and procedure involving the handling of ATPs-L.
- (2) Conduct annual inspections of laboratories where ATPs-L are present to ensure compliance with established procedures.
- (3) Investigate laboratory accidents and report problems, violations, and injuries or illnesses associated with biohazardous research activities to the Institutional Biosafety Committee (IBC).
- (4) Provide advice and assistance to Principal Investigators concerning containment procedures and practices, laboratory security, recommended laboratory containment equipment, rules, regulations, and other matters as may be necessary.
- (5) Provide oversight and assurance that laboratory safety containment equipment is functioning properly.

Environmental Health and Safety

- (1) Provides safety support for all laboratory operations.
- (2) Disposes of all infectious waste in compliance with all applicable federal, state, and local ordinances.
- (3) Assists, as necessary, in the emergency response, cleanup, and decontamination of biological spills and accidents.
- (4) Administers the campus Occupational Health program.
- (5) Coordinate institutional ventilation assessments, respiratory protection programs, and outbreak response across all Chapman campuses.

Principal Investigator (PI) or Non-Laboratory Supervisor

- (1) Complete and annually update the Biological Use Authorization (BUA) based on the nature of research or other activities being performed in their facilities. The plan will remain on file in a central location within the laboratory/work place along with other relevant Chapman safety documents for all personnel to access.
- (2) Assure that these faculty, staff, and students complete required safety training involving Aerosol Transmissible Diseases.
- (3) Ensure adequate supplies of personal protective equipment and other necessary equipment to minimize exposure to ATPs during normal operations and emergency situations. Respiratory protection may include N95s, elastomeric respirators, or PAPRs based on task-specific risk assessments and availability.
- (4) All eligible faculty, staff, or students will be offered medical services, including vaccinations for ATPs and/or ATPs-L as recommended by the Biosafety Officer and Occupational Health Physician on a case-by-case basis depending on the agents used and availability of the vaccines at no cost to the employee.
- (5) If an exposure to ATPs-L occurs, the PI/Non-Laboratory Supervisor will immediately report the incident to the Chapman Health Center and review the exposure incident with EH&S to determine and document which personnel had significant exposures. The documentation should include the names and employee identifiers for such individuals and, if applicable, the basis for determination that an employee did not have a significant exposure or because a PLHCP determined that the employee is immune.

5. Program Components

The ATD standard requires employers to have feasible engineering and work practice controls in place to minimize employee exposure to aerosols. Employers must also provide personal protective equipment and respirators to control exposures to ATPs and/or ATPs-L. In addition,

the employer is required to develop, implement, and annually review, a written Exposure Control Plan (ECP). This plan must include the following:

- Identification of qualified biosafety officer(s) who will be responsible for implementing the ECP.
- A list of job classifications, tasks and procedures in which employees may be exposed to ATPs and/or ATPs-L.
- A list of the ATPs and/or ATPs-L that are known to be present in the workplace.
- A stated requirement that all incoming materials containing ATPs-L are treated as containing virulent or wild-type pathogens until the pathogen has been deactivated or attenuated.
- Engineering controls to minimize exposure, including equipment such as biosafety cabinets.
- Safe handling procedures and a list of prohibited practices that may increase employee exposure to infectious agents.
- Effective decontamination and disinfection procedures for surfaces and equipment.
- Description of personal protective equipment (PPE), including respirators.
- Identification of operations or conditions that require the use of respiratory protection.
- Emergency procedures for uncontrolled releases within the facility and untreated releases outside of the facility.
- Procedures for communication of hazards and initial and annual employee training.
- Procedures for annual inspections of laboratory facilities.

In addition, the ATD Standard also requires employers to keep records of training, medical services (including respiratory protection), exposure incidents, inspections, and evaluation of engineering controls and other control measures.

ATD Training

All employees with occupational exposure to ATPs and/or ATPs-L must participate in a training program. All personnel must be informed of the hazards associated with the work performed and proper safety precautions. Training includes aerosol transmission recognition, outbreak response procedures, and proper use of source control during public health emergencies. ATD training is required at the time of initial assignment to tasks where occupational exposure may occur and annually thereafter. In addition, training is required when changes occur, such as the introduction of new engineering or work practice controls or modification of tasks and procedures.

Medical Services

A. Respiratory Protection

The PI or Non-Laboratory Supervisor shall provide all employees with occupational exposure to ATPs and/or ATPs-L with a respirator that is at least as effective as an N95 filtering facepiece

respirator; unless the BSO's evaluation of respiratory hazards determines that a more protective respirator is necessary. The following employees are required to participate in the university Respiratory Protection Program and receive medical evaluation in accordance with California code of Regulations, Title 8, Section 5144 prior to fit testing:

- Employees performing repairs, replacements, or maintenance on air systems or equipment that may contain or generate aerosolized pathogens.
- Employees working in an area where an AirID case or suspected case is present, or during decontamination after the person has left the area.

B. Prevention and surveillance

Vaccination

Principal Investigators or Non-Laboratory Supervisors are responsible for ensuring that all employees with potential occupational exposure to ATPs and/or ATPs-L are offered the applicable vaccinations (at no charge to them). Vaccinations shall be made available to all employees with occupational exposures unless the employee has already received the vaccine or it is determined the employee has immunity, or the vaccine is contraindicated for medical reasons. Supervisors (or their designate) must inform all new employees of the vaccination program within 10 working days of their employment start date. If an employee declines to be vaccinated, the Supervisor must ensure that the employee signs the Vaccination Declination Statement and that a copy is on file in EHS records. If the vaccine is unavailable, supervisors (or their designate) must document efforts made to obtain vaccine and inform employees of vaccine availability status.

C. Exposure Incidents/Post-Exposure

Any exposure (e.g. inhalation of ATPs or ATPs-L) resulting in direct, unprotected contact with ATPs or ATPs-L gives you the right to prompt medical evaluation and treatment with a qualified physician familiar with evaluations and treatment protocols as recommended by the Centers for Disease Control and Prevention. These services will be provided to you at no cost.

After any direct exposure to ATPs-L through a needlestick, immediately wash the affected area with soap and water and notify your supervisor. For splashes with ATPs-L, remove contaminated clothing and dispose as biohazard waste, and rinse the affected area for 15 minutes. If necessary, seek medical attention. If ATP or ATPs-L inhalation has occurred, immediately seek medical attention.

If an exposure to ATPs-L occurs, the PI/Non-Laboratory Supervisor will immediately report the incident to the Chapman Health Center and review the exposure incident with EHS to determine and document which personnel had significant exposures. The documentation should include the names and employee identifiers for such individuals and, if applicable, the

basis for determination that an employee did not have a significant exposure or because a PLHCP determined that the employee is immune.

The PI/Non-Laboratory Supervisor will notify all employees who had significant exposures of the date, time and nature of the incident within 96 hours of becoming aware of the potential exposure (or sooner if the disease has time restraints for administration of vaccine or prophylaxis, like varicella or meningococcal disease).

Inspections and Evaluation of Controls within the Laboratory

The BSO will be kept informed of any renovations of a facility where ATPs-L are used to ensure construction and renovation are in accordance with Biosafety in Microbiological and Biomedical Laboratories (BMBL) 6th Edition and 8CCR Sec. 5199.

The PI/Non-Laboratory Supervisor is responsible for registering research involving materials that may contain airborne pathogens with the Institutional Biosafety Committee (IBC) prior to the start of research. Laboratory inspections will be conducted at least annually for laboratories working with ATPs-L. Laboratory inspection forms will be kept on file with EH&S.

6. Training Requirements and Competency Assessment

In addition to laboratory and agent specific training received in the lab, training is provided to each employee with occupational exposure to ATPs or ATPs-L. All employees must complete all EH&S required training. Training includes aerosol transmission recognition, outbreak response procedures, and proper use of source control during public health emergencies.

7. Information and External References

- Cal/OSHA Aerosol Transmissible Diseases Regulation
<http://www.dir.ca.gov/title8/5199.html>
- Cal/OSHA Aerosol Transmissible Diseases - Zoonotic Regulation
<http://www.dir.ca.gov/title8/5199-1.html>
- Appendix D: Aerosol Transmissible Pathogens – Laboratory List
<http://www.dir.ca.gov/title8/5199d.html>
- Cal/OSHA Respiratory Protection Program Regulation
<http://www.dir.ca.gov/title8/5144.html>
- California’s Local Health Resources
<https://www.cdph.ca.gov/Programs/CCLHO/pages/healthofficerresources.aspx>
- Centers for Disease Control’s Respiratory Hygiene/Cough Etiquette Guidelines
<http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>
- CDC Biosafety in Microbiological and Biomedical Laboratories, 5th Edition
<http://www.cdc.gov/biosafety/publications/bmb15/> 6th Edition