



AEROSOL TRANSMISSIBLE DISEASE (ATD) and TUBERCULOSIS (TB) ANNUAL SAFETY TRAINING

Infection Prevention and Control
(747) 210-3624

Training Objectives

- Introduction to Aerosol Transmissible Diseases (ATD)
- Examples of ATD / Signs / Symptoms
- Modes of Transmission
- Tuberculosis
- Risk Identification
- Engineering and Work Practice Controls
- Personal Protective Equipment (PPE)
- Donning and Doffing
- Decontamination and Disposal of PPE
- Respirator Protection
- High Hazard Procedures
- Exposure Procedure and Medical Follow-up
- Vaccines Available to Staff



Training Requirement



This is an annual mandatory training that is applicable to everyone working at OVMC. At the completion of this module, you must complete the post test.

The law requires that you have an opportunity for interactive questions and answers during this training. If you reach a point in this training when you do have a question, **STOP** and contact your department **Safety Coordinator**.

Introduction to the Aerosol Transmissible Disease (ATD) Plan

- The ATD Exposure Control Plan replaced the Tuberculosis Exposure Control Plan - broadening the hazard analysis from just TB to all aerosolized pathogens.
- Aerosol Transmissible Diseases (ATDs) are diseases that are transmitted through dissemination of airborne droplet nuclei, such as small particle aerosols or dust particles containing the disease agent.
- Airborne Precautions or Droplet Precautions are required for Aerosol Transmissible Diseases. There are a wide variety of diseases that are considered ATDs including, Influenza, Tuberculosis (TB), Pertussis (Whooping Cough), Meningitis, and Pneumonia.
- California Code of Regulations, Title 8, Section 5199, Aerosol Transmissible Diseases can be found at the following website: <http://www.dir.ca.gov/title8/5199.html>
- OVMC ATD Plan can be obtained by going to the Intranet under Infection Prevention and Control Policies.



If you have any suggestions or input as to the effectiveness of the OVMC ATD Plan, please email:

ovminfectionprevention@dhs.lacounty.gov

Examples of
ATD's that are
transmitted by
aerosols which
require either
Droplet or
Airborne
Isolation

DROPLET

- Diphtheria
- Influenza
- Meningitis
- Meningococcal disease
- Mumps
- Mycoplasma pneumonia
- Pertussis
- Plague
- Pneumonia caused by certain
- organisms
- Rubella
- SARS
- Scarlet Fever
- Streptococcal disease
- Viral hemorrhagic fevers

AIRBORNE

- Anthrax
- Avian influenza
- Chickenpox (Varicella)
- Measles
- Monkey Pox
- Smallpox
- TB
- Novel or unknown pathogens
 - *SARS-COVID 19*

Signs and Symptoms of ATDs



Potential TB can have the following symptoms:

- Cough lasting more than 3 weeks
- Unexplained weight loss
- Night sweats
- Fever
- Chronic fatigue / malaise
- Coughing up blood

Other ATD's such as COVID-19 can have the following symptoms :

- Fever
- Chills
- Cough
- Shortness of breath/difficulty breathing
- Fatigue
- Runny or stuffy nose
- Muscle or body aches
- Headache

Modes of Transmission

Aerosol Transmissible Diseases can be transmitted in a variety of ways. Since the disease is transmitted through dissemination of airborne droplet nuclei, small particle aerosols, or on dust particles containing the disease, it makes the presence of the disease more likely.

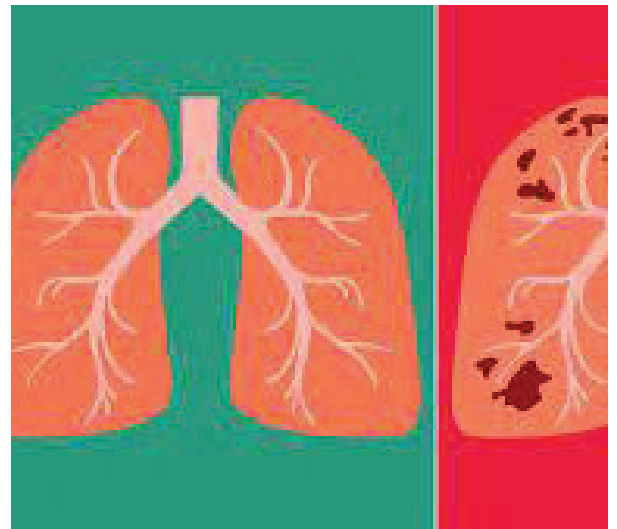
The following are common modes of transmission:

- An uncovered cough or sneeze that produces droplets (highest risk 3 – 6 feet).
- Close contact with an ill person (Example: drinking from the same beverage)
- Aerosols that are present in the air and inhaled by someone else
- Touching surfaces /objects that contain the disease



Tuberculosis

- Is a contagious disease caused by the organism known as *Mycobacterium tuberculosis*
- Serious chronic illness; can be fatal if untreated
- While it's most often a pulmonary – or lung – disease, it can also affect other parts of the body including the kidneys, brain and bone
- Symptoms: fever, chills, night sweats, fatigue, cough > 2weeks, cloudy/bloody sputum, decrease appetite, weight loss, SOB, Chest pain
- When someone with active TB coughs or sneezes, microscopic particles, called droplet nuclei, are expelled into the air
- Exposure occurs when another person inhales that air
- Health care workers who provide services to high-risk groups are themselves considered to be at high risk for contracting TB
- Transmission generally requires repeated, prolonged exposure to someone with active TB. Active is the operative word here, because a person with a latent TB infection – or LTBI – is not infectious
- Respirator such as CAPR PAPR or N95 should be worn when providing care to patients
- *Approval by Los Angeles Department of TB Control is required prior to discharging a TB patient*



Risk of TB Infection and Disease

Highest Risk for TB Infection

- Medically under-served population
- Low income
- Foreign born person from high TB prevalence areas
- IV drug users
- Persons in correctional facilities
- Close contacts to suspect/known cases
- Healthcare workers serving high risk patients

Highest Risk for Progression to TB Disease

- HIV infected, or otherwise immunocompromised
- Recently infected with TB
- Certain chronic medical conditions
- IV drug abusers
- History of inadequately treated TB

Tuberculosis Latent vs. Active

Latent TB

- Infected with *M. tuberculosis*, but do not have TB disease
TB bacteria found in the body but inactive
- People with latent infections – LTBI – often don't realize it because they have no symptoms and feel well
- Skin test or blood test result indicating TB infection
- Normal chest x-ray and a negative sputum
- Need treatment for latent TB infection to prevent TB disease
- Completing the entire regimen is essential to prevent future development of the disease
- Stopping treatment regimen prematurely can make the infection resistant to curative drugs
- **Persons with latent TB infection are not infectious and cannot spread TB infection to others**

Active TB

- A person's risk of developing active tuberculosis is greatest in the two years immediately following infection, although it persists throughout his or her lifetime
- Symptoms of the disease include a cough of more than three weeks duration, bloody sputum, fever, fatigue, night sweats, loss of appetite and weight loss
- Skin test or blood test result indicating TB, abnormal chest x-ray, along with positive sputum cultures
- Need treatment to treat TB disease
- It's essential to complete the regimen to prevent the complication of drug resistance
- People with drug-resistant TB can remain infectious for an extended period
- **Persons with TB disease are considered infectious and may spread TB bacteria to others**

TB Surveillance Program

OVMC Employee Health Services (EHS) screens all employees upon hire and annually thereafter

If an occupational TB Exposure occurs EHS will send out a notification to the exposed employee for follow-up

Employees must report all known exposure incidents to their supervisor or manager

Managers or supervisors made aware of TB exposures must notify EHS and Infection Prevention and Control

Engineering and Work Practice Controls

Source Control Measures:

- TB Screening/early identification
- Masking and prompt isolation of suspected ATD patients
- Hand Hygiene Stations (tissues, alcohol sanitizer, masks)
- Respiratory Hygiene / Cough Etiquette Practices
- Signs/posters
- Isolation signs
- Dedicated waiting rooms
- Communication between staff prior to transfer of patient
- Hand Hygiene
- Personal Protective Equipment (PPE)
- Decontamination
- Respirators

Engineering / Work Practice Controls:

Engineering controls for airborne infectious diseases (AirIDs) include:

- airborne infection isolation rooms or areas (AIIRs),
- local exhaust ventilation
- high-efficiency particulate air (HEPA) filtration



How to recognize exposure activities

Exposure to an ATD may occur when:

1. In the same room as (or within 6 feet of) a suspected or confirmed ATD patient.
2. Performing direct patient care tasks on a suspected or confirmed ATD patient.
3. Performing (or present during) a task that may send ATD pathogens into the air (aerosolize).
4. Entering the room of a patient placed in Airborne Isolation precautions within an hour after the patient has left the room.

In all these situations, you must use appropriate exposure prevention measures such as personal protective equipment (PPE) to prevent exposure.



Personal Protective Equipment (PPE)

Gloves

- Wear when contact with blood, bodily fluids or infectious agents
- Hand hygiene before donning and after removing
- Never wear same pair of gloves between patients or rooms
- Do not touch your face when wearing gloves
- Do not wear in the common areas i.e. hallway, transporting, elevator, etc

Gown

- Wear when entering a contact/enhanced precaution isolation room
- Wear if anticipating contact with blood or bodily fluids
- Fully cover torso from neck to knees
- Secure the gown by the ties at the neck and waist
- Remove inside the room prior to exiting or anteroom
- Do not use gowns in common areas, i.e. hallways, elevators, cafeteria, etc.

Mask

- For ATD requiring droplet isolation
- Wear a mask that fits snugly from nose to chin
- Mask must fully cover mouth, nose and chin
- Perform hand hygiene prior to removing mask, touching only the straps or ties
- Don't wear mask below the nose, around neck or on forehead
- Don't touch or adjust mask without performing Hand Hygiene

Face Shield/Goggles

- Place over the face and eyes and adjust to fit
- Remove from the back by lifting the head band without touching the front
- Perform hand hygiene after removal
- Dedicated to one person
- If reusable, clean immediately after completion of task
- Check the integrity prior to doffing

Respiratory/N95

- Tight-fitting mask that when properly fitted to the face protects the wearer from very small particles that float in the air (e.g. Tuberculosis, measles or chicken pox).
- Wear for airborne ATD's patients
- Must be fit tested
- Ensure proper fit and cover nose and mouth
- Don't wear if wet or spoiled (get new N95 respirator)
- Don't touch the front of respirator
- Perform Hand Hygiene after removal

Personal Protective Equipment (PPE)

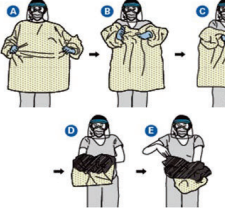
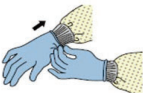
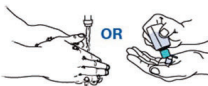
- PPE should be disposed of when damaged or soiled.
- Employees must inspect all PPE prior to use for evidence of damage, missing or defective parts, correctness of size/fit, and any other condition which could affect its use. Any PPE with worn or defective parts must be repaired or replaced prior to use.
- PPE which isn't discarded after single use should be cleaned and/or disinfected, depending on the condition, use and type of the PPE.
- Clean PPE must be stored in a location and in a way which will keep it clean between uses.
- Goggles, non-disposable gloves, hard-hats, and other PPE shouldn't be exchanged among employees for use unless they've been cleaned and sanitized.





Donning and Doffing PPE

- [Education Compliance Program \(sharepoint.com\)](#)

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)	HOW TO SAFELY REMOVE PERSONAL PROTECTIVE EQUIPMENT (PPE) (EXAMPLE 2)
The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet and airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the type of PPE. 1. GOWN • Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back • Fasten in back of neck and waist 	It is another way to safely remove PPE without contaminating your clothing, skin, or mucous membranes with potentially infectious materials. Remove all PPE before exiting the patient room except a respirator, if worn. Remove the respirator in the patient room and closing the door. Remove PPE in the following sequence: GOWN AND GLOVES Gown front and sleeves and the outside of gloves are contaminated! If your hands get contaminated during gown or glove removal, immediately wash your hands or use an alcohol-based hand sanitizer. Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands. While removing the gown, fold or roll the gown inside-out into a bundle. As you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands. Place the gown and gloves into a waste container. 
2. MASK OR RESPIRATOR • Secure ties or elastic bands at middle of head and neck • Fit flexible band to nose bridge • Fit snug to face and below chin • Fit-check respirator 	GOGGLES OR FACE SHIELD Outside of goggles or face shield are contaminated! If your hands get contaminated during goggle or face shield removal, immediately wash your hands or use an alcohol-based hand sanitizer. Remove goggles or face shield from the back by lifting head band and without touching the front of the goggles or face shield. If the item is reusable, place in designated receptacle for reprocessing. Otherwise, discard in a waste container. 
3. GOGGLES OR FACE SHIELD • Place over face and eyes and adjust to fit 	MASK OR RESPIRATOR Front of mask/respirator is contaminated — DO NOT TOUCH! If your hands get contaminated during mask/respirator removal, immediately wash your hands or use an alcohol-based hand sanitizer. Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front. Discard in a waste container. 
4. GLOVES • Extend to cover wrist of isolation gown 	WASH HANDS OR USE AN ALCOHOL-BASED HAND SANITIZER IMMEDIATELY AFTER REMOVING ALL PPE 
USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION • Keep hands away from face • Limit surfaces touched • Change gloves when torn or heavily contaminated • Perform hand hygiene 	PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE 

Understanding the Difference Between Surgical Mask and N95 Respirator

Surgical Mask

- ▶ Cleared by the U.S. Food and Drug Administration (FDA)
- ▶ Fluid resistant and provides protection against large droplets, splashes, or sprays of bodily or other hazardous fluids. Protects the patient from the wearer's respiratory emissions.
- ▶ Loose-fitting
- ▶ Disposable. Discard after each patient encounter. It should also be discarded when it becomes damaged or deformed; no longer forms an effective seal to the face; becomes wet or visibly dirty; breathing becomes difficult; or if it becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients

N95 Respirator

- ▶ Evaluated, tested, and approved by NIOSH as per the requirements in 42 CFR Part 84
- ▶ Reduces wearer's exposure to particles including small particle aerosols and large droplets (only non-oil aerosols).
- ▶ Requires fit testing
- ▶ Must be tight fitting to form a seal
- ▶ Should be discarded after each patient encounter and after aerosol generating procedures. It should also be discarded when it becomes damaged or deformed; no longer forms an effective seal to the face; becomes wet or visibly dirty; breathing becomes difficult; or if it becomes contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients

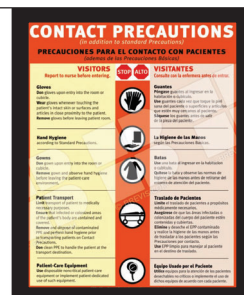
For patients with **confirmed or suspected Covid-19**



Private room in almost all cases
 Negative pressure room if AGP*
 Staff and visitors also wear gloves, gowns and eye protection
 Eye protection = face shields or goggles
 No open-sided disposable glasses
 Strict hand hygiene
 Universal staff and patient masking during pandemic

*Aerosol-generating procedure (AGP) Examples: Intubation, CPR, high-flow oxygen, nebulizer treatment, etc. CAPR is **required**

For diseases spread by direct contact with an infected or colonized person

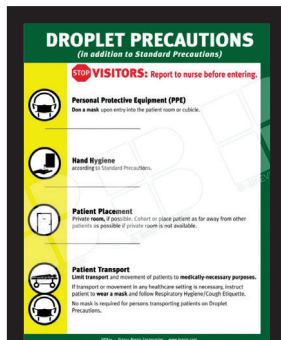


Contact
Multidrug Resistant organisms (MDRO's)
Candida Auris*
VRE
MRSA
C.diff*
ESBL
RSV **
Head lice
Scabies

Private rooms at all times for CRE and C-diff
 Private rooms preferred for other MDROs
 Staff and visitors use gloves and gowns

For diseases spread by respiratory droplets over short distances (<3 feet)

Droplet
Bacterial Meningitis
Meningococcal Disease
Mumps
Pertussis
Influenza



Private room preferred, but may place with non-infected or like disease
 Staff and visitors wear surgical mask if ≤ 3 feet from patient
 Patients wear surgical mask when outside the room

For diseases spread through air over long distances (>3 feet)

Airborne
Tuberculosis
Measles
Chickenpox

Private room with negative pressure ventilation
 Keep door closed
 Staff wears **N95 respirator** when inside room
 Visitors wear surgical mask when inside room
 Patients wear surgical mask when outside room
 Strict hand hygiene

Put N95 on before entering an Airborne Precaution room!
Remove outside the room!



Decontamination and Disposal of PPE

Employees must remove any PPE before leaving the work area or when the PPE becomes contaminated or torn and place it in appropriate containers for storage, washing, decontamination or disposal.

The exception is your respirator, which must be removed after leaving the patient room. Consider the front of the respirator and facemask contaminated after use. Dispose of your N95 in regular trash after use.

Decontaminate and store PAPRs/CAPR's according to hospital policy and/or departmental procedures.

Always practice good hand hygiene after the removal of PPE!

High Hazard Procedures

High Hazard Procedures are aerosol-generating procedures performed on an individual who has a suspected or confirmed ATD.

Employees who participate in “high hazard” procedures on patients suspected or confirmed to have

an Airborne Infectious Disease (AirID) must wear a PAPR or equivalent protection, procedure should be performed in a negative pressure Isolation room.

These procedures include:

- ❖ **Sputum induction**
 - ❖ **Bronchoscopy**
 - ❖ **Endotracheal Intubation/extubation**
 - ❖ **Open suctioning of airways**
 - ❖ **Cardiopulmonary resuscitation**
 - ❖ **Aerosolized administration of Pentamidine or other medications**
 - ❖ **Pulmonary function test**
 - ❖ **Clinical, surgical and laboratory procedures that may generate aerosols**
- *Additionally, PAPRs/CAPR's are required when performing autopsies on cadavers potentially infected with ATDs.*

Exposure Procedure & Medical Follow-Up

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An employee who is exposed is to an ATD is to notify their supervisor as soon as possible. The supervisor who becomes aware of an exposure is to notify Employee Health and Infection Control and provide a list of employees suspected to have had an exposure.

Exposed employees will be notified as soon as possible of potential exposures. A post exposure evaluation will be conducted for those employees with a significant exposure by Employee Health

Notification to Supervisor

 ADT_AttachmentG_23.pdf
66 KB

Hello Directors/Managers/Supervisors,

Your department has been recognized as a location where care/services were provided for **source patient Doe John** who has tested positive for COVID-19. Please see ATD report (attachment G).

Please review work assignments and interview staff to identify any staff that were NOT using a N95, PAPR/CAPR and appropriate eye protection entering the source patient's room under the Infection Prevention Control tab in Persinda.

Please log into [Persinda](#), go to My Staff, click on Infection Control List, and identify any of your staff that were potentially exposed. If no staff meet exposure criteria, mark the box called "No Known Exposure".

You will receive this message daily until staff are identified.

Sincerely,

Infection Prevention and Control and Employee Health Services

- Supervisors identified receive an auto email notification
- Employee Health email is copied
- Exposure analysis ATD is attached
- Instructions:
 - Within 48 hours must reply
 - Log into Persinda and identify staff potentially exposed
 - My Staff
 - Infection Control List
 - After 48 hours, will receive email every 24 hours till there is a response

Notification to Workforce Member

Subject: WFM Exposure Notification
Importance: High

You have been identified as having a possible exposure to COVID-19.

Please log into [Persinda](#) and complete the COVID exposure questionnaire. You have the option to present

You will receive this message daily until the required form is completed.

Sincerely,

Infection Prevention and Control and Employee Health Services

- Workforce Members identified receive an auto email notification
- Exposure Notification is attached
- Instructions:
 - Log into Persinda and complete Tuberculosis exposure evaluation
 - Option:
 - Contact EHS via phone for eval
 - Email will be sent every 24 hours till there is a response

Vaccinations

- Healthcare workers (HCWs) are at risk for exposure to serious, and sometimes deadly, diseases.
- Getting appropriate vaccines will reduce the chance to get or spread vaccine-preventable diseases.
- Vaccination is a safe, effective, and reliable method of controlling the spread of infectious diseases
- Vaccinations are available to all county employee free of charge
- Employees who decline the seasonal influenza vaccination must sign a declination form

Vaccinations offered/required

- Hepatitis
- MMR (Measles, Mumps, and Rubella)
- Tetanus, Diphtheria, and Pertussis (Tdap)
- Varicella
- Influenza (during flu season)
- Covid-19
- Meningococcal (Laboratory)



Questions?

Please complete the Annual
Safety Post Test and submit to
your Safety Coordinator