Subject: **AIRBORNE TRANSMISSIBLE DISEASE EXPOSURE CONTROL PLAN**	Original Issue Date: 11/2009	**Policy No.** IPC-24
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Departments Consulted: Environmental Health & Safety Laboratories and Pathology Employee Health Services Epidemiology & Infection Control	**Reviewed & Approved by**: Paul Holtom MD, Hospital Epidemiologist Noah Wald-Dickler MD, Associate Epidemiologist	**Approved by:** Brad Spellberg, MD Chief Medical Officer

Purpose

To prevent the transmission of contagious respiratory pathogens in LAC+USC Medical Center settings, including seasonal & pandemic influenza, tuberculosis, measles, pathogenic coronaviruses (e.g., SARS, MERS and SARS-CoV-2 which causes COVID-19) and other novel pathogens which are spread via aerosolized particles (airborne transmission). This includes future or currently undescribed pathogens of airborne potential that may be spread by airborne routes. If there is community evidence of a respiratory viral pandemic, also refer to “LAC+USC Pandemic Plan”.

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I. Policy Overview & References

LAC+USC Medical Center will provide a safe, healthy, and secure workplace for all employees by implementing an effective safety program. This Aerosol Transmissible Diseases (ATD) Exposure Control Plan applies not only to employees in high risk work environments and with job tasks having the potential for ATD exposure, but also all job classifications of all Medical Center employees, including contract employees, who work in Medical Center facilities.

The measures in the ATD Policy are based on several regulations, standards, and guidelines including:

- LA County Department of Health Services (DHS) Covid-19 Expected Practices. Available on the LAC and DHS intranet homepages at: https://lacounty.sharepoint.com/sites/DHS-COVID19.
- Cal/OSHA ATD Standard - California Code of Regulations, Title 8, Chapter 4, Section 5199(d)
- CDC Isolation Precautions Guidelines: Preventing Transmission of Infectious Agents in Healthcare Settings
- Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC)
- National Institute for Occupational Safety and Health (NIOSH) Proceedings of the Workshop on

Engineering Controls for Preventing Airborne Infections in Workers in Healthcare and Related Facilities

II. Definitions

Aerosol Transmissible Disease (ATD): a disease or pathogen for which Airborne precautions, a form of transmission-based precautions, are recommended as listed in Appendix A. Such diseases are transmitted via dissemination of airborne droplet nuclei (1-5 *μ*m), small particle aerosols or dust particles containing the disease agent.

Airborne Infection Isolation (AII): Infection Control procedures designed to reduce the risk of transmission of infectious airborne pathogens. Airborne isolation includes placement of patients in single-occupant rooms under negative pressure with respect to adjacent spaces (e.g. outer corridor). Such Airborne Infection Isolation rooms (AIIR) also maintain higher air exchanges (>12 per hour for spaces built since 2001) and have a dedicated anteroom. Air in negative pressure rooms is preferentially exhausted to the outside but can be recirculated if return air is filtered through a high efficiency particulate air (HEPA) filter. All staff entering a room of a patient in Airborne Isolation Precautions must wear an appropriately fitted N95 respirator or equivalent respiratory protection.

CDC Guidelines for Isolation Precautions: refers to the document entitled *Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (2007)* which is available at: https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html. CDC Guidelines for Isolation Precautions are hereby incorporated for the purpose of establishing requirements for droplet and contact precautions.

CDC Guidelines for Preventing TB Transmission: refers to the document entitled *Guidelines for Preventing the Transmission of* Mycobacterium tuberculosis *in Health-Care Settings (2005)*, available at: https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5417a1.htm which is hereby incorporated for the purpose of establishing requirements for airborne precautions.

Droplet Isolation Precautions: Infection Control procedures to reduce the risk of transmission of infectious agents through contact of the conjunctivae or mucous membranes of the nose or mouth of a susceptible person with large-particle droplet (> 5 μm) containing micro-organisms from an infected person infected

Employee: means any person employed by, contracted by, or under the supervision and control of LAC+USC Medical Center. Referred to sometimes as "Health Care Workers" or "Health Care Providers" but here applies to all employees or contractors, of all job classifications, who work or perform duties at LAC+USC Medical Center.

Exposure Incident: an event in which an employee has been exposed to an individual with a confirmed or suspected ATD **without** the benefit of applicable exposure control measures (including personal protective equipment and/or prior vaccination against the ATD) and it reasonably appears from the circumstances of the exposure that transmission of disease is sufficiently likely to require medical evaluation and/or quarantine. Exposure incidents may also occur in laboratory settings when an employee is exposed to infectious, aerosolized clinical specimens or waste without applicable exposure control measures.

HEPA filter: refers to **H**igh **E**fficiency **P**articulate **A**ir filters which, as defined by the US Environmental Protection Agency, filter and remove at least 99.97% of any airborne particles above 0.3 microns in size.

High hazard procedures: procedures performed on a patient with a confirmed or suspected ATD, or on a laboratory specimen suspected of containing an ATD pathogen, in which the potential for being exposed to aerosol transmissible pathogens is increased due to the reasonably anticipated generation small aerosolized particles from the patient's respiratory tract. Such procedures include, ***but are not limited to***:

endotracheal intubation, sputum induction, bronchoscopy, pulmonary function testing, upper endoscopy, transesophageal echocardiography, exercise stress testing, lung biopsy or ablation, sinus debridement, administration of high-flow nasal cannula oxygen or nebulized medications. High hazard procedures may also include autopsy, clinical, surgical and laboratory procedures that may aerosolize pathogens.

Local exhaust ventilation: refers to ventilation provided by a device, e.g. an enclosed or semi-enclosed exhaust hood, booth or tent, which removes airborne contaminants at or near their source.

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, California Code of Regulations (CCR) § 2500. NOTE: CCR § Section 2500(b) requires that reports be made to the local health officer for the jurisdiction where the patient resides.

Negative Pressure: a relative difference in air pressure between two spaces. The pressure in an airborne isolation infection room (AIIR) or area that is under negative pressure is lower an in adjacent areas. This keeps potentially contaminated air from flowing out of the containment room/area in adjacent areas.

Novel or Unknown ATP: a pathogen capable of causing serious disease meeting the following criteria:

1). There is credible evidence the pathogen is transmissible to humans by aerosols; **and**
2). The new disease agent is:
   a. a newly recognized pathogen, or
   b. a newly recognized variant of a known pathogen with evidence to believe the variant differs significantly from the prior known pathogen in virulence or transmissibility, or
   c. a recognized pathogen recently introduced into human populations, or
   d. an as-yet unidentified but suspected pathogen

NOTE: Variants of human influenza or SARS-CoV-2 (which causes Covid-19) that occur sporadically or seasonally are not considered novel or unknown airborne transmissible pathogens if they do not differ significantly in virulence or transmissibility from existing variants.

Occupational Exposure: exposure to an infectious pathogen from work activity or work conditions that is reasonably anticipated to create an elevated risk of contracting an ATD if protective measures are not in place. In this context "elevated risk" means higher than what is considered ordinary for employees having direct contact with the general public outside their usual work facilities, service categories, and operations. Determination of an occupational ATD exposure, performed by Infection Prevention and Employee Health investigation & interview, depends on an employees' task(s) performed, environment and use (or lack thereof) of appropriate personal protective equipment by an employee during the time of the exposure.

Person Under Investigation (PUI): a person with compatible signs and symptoms of a potential ATD for whom diagnostic testing has been initiated, but for whom test results are either still pending, inconclusive or negative despite persistent clinical suspicion by the clinical team of the presence of an airborne transmissible disease. Patients who are PUI's are considered ATD suspects and are treated identically as confirmed ATD cases with respect to treatment, isolation precautions and engineering controls.

Personal Protective Equipment (PPE): equipment worn to minimize exposures to hazards that may cause serious injuries or illness. For ATDs such equipment may include but is not limited to: respirators and surgical/procedural face masks, eye protection (goggles or face shield), gloves and gowns.

Powered Air-Purifying Respirator (PAPR): a class of respiratory protective devices used to protect against inhalation of noxious fumes or aerosolized biologic hazards. A Controlled Air-Purifying Respiratory

(CAPR©) is a proprietary version of a PAPR which fulfills the same function as a PAPR but with a blower and motor unit incorporated into a helmet as opposed to the belt-mounted, hose-connected blower and motor unit of a traditional PAPR. All PAPR's and CAPR's provided for use by LAC+USC employees are approved by and meet standards of the National Institute of Occupational Safety & Health (NIOSH).

Respiratory Hygiene/Cough Etiquette: refers to universal source control practices and procedures to prevent the transmission of **all** respiratory infections in healthcare and other settings. Summarized in the CDC document entitled *Respiratory Hygiene/Cough Etiquette in Healthcare Settings (2009)* available at: https://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm. See Appendix B.

Screening: the initial assessment of persons with potential ATD in order to determine whether additional medical evaluation or other source control measures are required, including quarantine or isolation precautions. Screening by non-healthcare personnel does not include diagnostic testing or clinical examination, rather readily observable signs and self-reported symptoms.

Source control measures: the use of procedures, engineering controls, relevant isolation precautions and personal protective equipment to minimize the spread of airborne particles and droplets from individuals suspected or confirmed to have an ATD.

III. Delegation of Responsibilities

A. Hospital Epidemiologist: department physician-lead with training and board certification in clinical Infectious Diseases who has completed Society of Healthcare Epidemiology of America (SHEA)-certified training in hospital epidemiology and Infection Prevention. He/she will have overall responsibility for the administration of the ATD Plan and will provide leadership and oversight of the Infection Control Department including responses to individual or large-scale ATD cases, clusters, outbreaks and pandemics. He/she will develop and oversee regular, and at least annual, review and updates of this written ATD plan and ensure its compliance with Cal/OSHA and other local or system requirements and regulations. He/she will coordinate and serve as a consultant in the development and implementation of appropriate (including novel) diagnostic testing strategies for potential ATDs. He/she will oversee the operations of the Medical Center's Infection Control & Prevention Department including surveillance of, and implementation of appropriate isolation for, patients with ATDs. He/she will serve as the liaison to the Los Angeles County Department of Health Services (DHS) Infection Control Workgroup and in that role develop, plan, coordinate and align local measures with DHS-wide ATD practices and procedures. He/she will serve as co-administrator of the Respiratory Protection Plan together with Employee Health & Environmental Safety.

B. Environmental Safety Officer: will identify tasks and work environments where potential ATD exposures could occur. He/she will ensure effective engineering procedures are developed, implemented and maintained in accordance with this ATD Plan. He/she will review, and in conjunction with Infection Control, approve all PPE and sterilization products to be distributed to employees. He/she will be knowledgeable in Infection Control principles as they apply to the Medical Center's facilities, services and operations. He/she will serve as co-administrator of the Respiratory Protection Plan together with Employee Health & Epidemiology.

C. Infection Preventionists (IPs): registered nurses in the Department of Infection Control and Prevention who possess high-level knowledge of Infection Control principles and practices and their applications in all units of the Medical Center. Under the direction of the Hospital Epidemiologist, IPs will develop and adopt department-specific procedures and provide training to frontline staff to supplement & reinforce the contents of the ATD Policy. IPs will be involved in assurance of implementation of appropriate isolation precautions, personal protective equipment use and other relevant measures to prevent the spread of ATDs in the Medical Center. IPs will work with unit managers and supervisors to provide ATD education and perform regular audits of compliance with the measures outlined in this ATD Policy. IPs will also work with Employee

Health and affected employees in assessing potential work-related occupational exposures to an ATD.

D. Department Managers and Supervisors: will ensure that the requirements in this ATD Policy are implemented and that personnel in their respective units are identified, trained, and follow proper control procedures outlined in the ATD Policy. They will work with the Department of Infection Control and Prevention to ensure this program is working properly and that staff remain appraised of relevant updates. When significant ATD exposures are identified, managers will interview and identify potentially exposed employees/supervisees in their units and report these individuals to Epidemiology and through the electronic DHS Exposure Module.

E. Supply Chain Division and Administration: will work with local and DHS administration to ensure that decontamination supplies and personal protective equipment required by this ATD Policy meet the requirements to control exposures and risks associated with ATDs. Supply Chain will work with Infection Control staff and DHS administration to ensure that equipment and materials required by the ATD Policy are available in adequate variety and number to meet the needs of Medical Center staff and employees.

F. Affected Employees: will comply with the provisions of this ATD Policy and will attend and understand training on Aerosol Transmissible Diseases. Employees will comply with all required source control measures including appropriate PPE use and any other relevant DHS Expected Practices. Employees are also responsible for notifying Employee Health and their supervisors about potential or confirmed exposures to an ATD, including those that occur at home or outside their work areas, in order to facilitate prompt contact tracing, quarantine procedures, or other relevant diagnostic evaluation or therapeutic interventions. Employees are expected to notify their supervisors and stay home if they are sick and experiencing symptoms of an ATD. **Within 24 hours or prior to their next work shift** (whichever comes first) employees must also report results of a confirmed ATD diagnosis or exposure to their supervisors. Additionally, for **work-place/occupational ATD exposures**, employees must notify the LAC+USC Epidemiology Department at (323) 409-6645. For **non-work-related ATD diagnoses or exposures** (e.g. to family members) con, employees must contact LAC+USC Employee Health Services at (323) 409-5236 or lacusc-ehs@dhs.lacounty.gov. Employees will also refer to and follow criteria outlined in any pertinent DHS Workforce Member Guidance or Expected Practices relevant to a particular ATD.

G. Employee Health Services (EHS): will be responsible for the intake and evaluation of employee non-occupational ATD exposures and diagnoses. Where applicable and in concordance with relevant DHS Expected Practices, LAC+USC Employee Health will provide diagnostic testing for symptomatic employees with suspected ATD and will also provide immunization or other relevant surveillance (e.g. annual latent tuberculosis screening) to all employees. Employee Health will maintain vaccination records of all employees as well as exposure incident reports. Employee Health will also administer annual respirator fit testing for all employees and will co-administer the Respiratory Protection Plan together with Employee Epidemiology & Environmental Safety.

H. Facilities Management: will be responsible for the inspection, maintenance and timely repair of HVAC systems. In conjunction with Epidemiology, Facilities Management will also be responsible for the construction and installing of barriers, units or other measures deemed necessary to control the spread of infectious pathogens and to be able to provide safe patient care throughout the Medical Center.

I. Visitors and Patients: will be expected to comply with all Medical Center regulations and procedures. In times of widespread community transmission of an ATD, additional measures may be implemented. Such measures may include but are not limited to: limited visitation hours and numbers, social distancing, use of masks, and participation in basic ATD symptom screening questions upon building entry.

IV. List of High Hazard Jobs and Procedures

As in above Policy Overview, the ATD Plan applies to all LAC+USC Medical Center employees and contractors in all job classifications. However, we have conducted a risk assessment and determined that employees in the following job categories have elevated risk of occupational exposure to ATDs while performing job duties. All employees, regardless of job classification, may request and will be provided with an appropriately fitted, medical center-issued N95 respirator, particularly during times of high community transmission rates of a particular ATD. Although representative, this list is not exhaustive, and elevated risk of occupational exposure may be higher for additional employee job classifications.

High Hazard Jobs

- Emergency Medical Services Personnel
- ED providers, nurses & support staff
- Correctional officers
- Respiratory Therapists
- Acute care Medical, Surgical & Observation providers, nursing staff and care companions
- 4th and 5th floor ICU providers & nurses
- Bronchoscopy unit personnel
- GI Endoscopy unit personnel
- Medical Procedure Unit (including OR) staff
- Pathology and laboratory personnel
- Microbiology personnel
- Facilities Management personnel
- Environmental Services personnel
- Patient Transport personnel
- Discharge Waiting Unit personnel
- Any staff member with direct interaction with patients with ATDs or in Airborne Isolation Precautions

The following lists a number of procedures for which aerosols may be generated, theoretically increasing the risk of aerosolization of airborne particles and ATD transmission. Although representative, this list is not exhaustive and does not preclude the presence of other medical procedures or diagnostics which may pose an increased risk of ATD transmission.

High Hazard Procedures

- Transesophageal echocardiography
- Exercise (e.g., treadmill) stress testing
- Aerosolizing dental & oral procedures
- Upper GI endoscopy and ERCP
- Lung biopsy, ablation, embolization, stenting
- Bronchoscopy
- Pulmonary function tests
- Noninvasive positive pressure ventilation (e.g., CPAP, BiPAP)
- Delivery of high flow nasal cannula oxygen
- Administration of nebulized or aerosolized medications
- Invasive nasolacrimal/conjunctival procedures
- Invasive nasal sinus or oropharyngeal procedures
- Invasive head & neck surgeries & procedures
- Endotracheal intubation & extubation
- Tracheostomy & tracheostomy care
- Airway suctioning
- Sputum induction
- Any procedure during which the generation of aerosolized secretions from the lungs, airways, mouth or sinuses are reasonably anticipated to occur.

All staff performing, or present during, high hazard or aerosol-generating procedures on patients with confirmed or suspected ATDs are required to wear appropriate PPE and respiratory protection – e.g., N95 respirator or equivalent.

V. Source Control Measures

The best way to control employee and patient exposure to ATD pathogens is to combine engineering controls and work practice controls with effective personal protective equipment in the presence of confirmed or suspected ATD.

ATD Source Control Measures will include:

A. **Early identification**: all patients presenting for care will be screened for the presence of symptoms of potentially communicable respiratory infection. When ATD symptoms are identified, patients will be placed into a separate room with appropriate Isolation Precautions. As warranted, particularly in the face of widespread community transmission of a particular ATD, all visitors will also be screened by building security for the presence of respiratory illness symptoms prior to building entry.

B. **Visual Alerts** (in appropriate languages including Spanish) posted at entrances to outpatient facilities (e.g., Emergency Department and outpatient Clinics) instructing patients and visitors to inform staff of symptoms of respiratory illness when they first register. Signs will also be posted at entry ways and in common areas (e.g. waiting rooms and elevators) reminding patients and visitors of appropriate Respiratory Hygiene/Cough Etiquette (see Appendix B). Visual alerts will also include the use of laminated signs for placement on patient room doors indicating type of Isolation / Transmission-Based Precautions and PPE required prior to room entry.

C. **Respiratory Hygiene**: shall be followed at all intake areas and in all locations through the medical center. While employees are expected to remain at home if experiencing symptoms of respiratory infections, Respiratory Hygiene includes the following for all patients with such symptoms:

   i. Covering the nose/mouth when coughing or sneezing
   ii. Using tissues to contain respiratory secretions & disposing of them in trash after use
   iii. Performing hand hygiene by hand washing with soap & water, alcohol-based hand rub, or approved antiseptic handwash after having contact with respiratory secretions and objects contaminated by respiratory secretions
   iv. Adequate materials for patients and visitors to adhere to Respiratory Hygiene shall be provided in waiting areas including tissues, non-touch receptacles for tissue disposal, and conveniently located dispensers of alcohol-based hand sanitizer.
   v. Where sinks are available, supplies for hand washing, including soap and disposable towels shall be consistently available and replenished by Environmental Services when low.

D. **Provision of Surgical Masks**: patients with confirmed or suspected ATD will be provided surgical masks to wear to reduce exhaled aerosol transmission. Additionally, during periods of widespread transmission of a highly contagious ATD, all patients and visitors will be provided with a surgical mask to be worn at all times absent certain exceptions, including but not limited to: intubated patients or those on BiPAP, children under age 2, during eating, prohibitive medical conditions, or intellectual disability.

E. **Provision of Respiratory Protection**: consistent with DHS Policy No. 925.405 Respiratory Protection Fit Testing, all employees are required to have annual (and as needed depending upon model availability & supply) N95 respirator fit testing with Employee Health. Appropriately fitted N95 masks will be readily available for all employees whose job duties require direct patient interactions with patients who have a confirmed or suspected ATD or are in Airborne Precautions. Additionally, all employees will be provided with an approved, Medical Center-issued, fitted N95 mask upon request regardless of employee job duties, particularly during times of widespread community

transmission of a particular ATD. Any employee who cannot be appropriately fitted for an N95 will be provided with an equally protective form of respiratory protection, e.g. a CAPR©, provided they have completed appropriate training on its use.

F. **Provision of Other PPE**: where appropriate, employees will also be provided with eye protection, gowns and gloves when performing duties that require such PPE. See Appendix C for instructions on appropriate additional PPE donning/doffing procedures which will be posted in anterooms of high-use airborne infection isolation rooms (AIIR).

G. **Standard Precautions**: are applied for ***all*** patients, even when additional/specialized precautions are required. Standard precautions include hand hygiene, use of appropriate PPE such as gloves, gowns, masks and eye protection when there is a risk of blood or body fluid splash or exposure. Hands must be washed with soap and water, or alcohol-based hand sanitizer may be used. If a spore-forming transmissible pathogen is present or suspected, for example *C. difficile*, alcohol-based hand sanitizer is not acceptable and soap and water must be used to perform hand hygiene after each patient encounter. PPE must be removed promptly after caring for patients or upon leaving the area. Fluid resistant gowns and gloves will be worn if clothes are likely to be contaminated with blood or other bodily fluids and secretions. Gloves will be exchanged in between patient encounters; hands must be washed immediately after removing gloves and/or gowns.

H. **Droplet Precautions**: will be used for the duration of illness in those with droplet-transmissible diseases. Droplet precautions involve the use of surgical or procedural masks for all patient interactions as well as gowns and gloves where there is expected to be gross splashing of respiratory secretions. Diseases requiring droplet precautions include, but are not limited to: seasonal influenza, Covid-19 without aerosol-generating procedures, pertussis, adenovirus, rhinovirus, and invasive meningococcal disease (latter requiring droplet precautions until 48 hours of antibiotic therapy).

I. **Airborne Precautions**: involve the use of higher level engineering controls and respiratory PPE than Droplet Isolation Precautions. Patients with confirmed or suspected ATDs will be placed in Airborne Isolation in separate, designated, negative pressure rooms with staff required to wear N95 respirators or equivalent upon room entry and during any direct patient contact. See below "Engineering Controls". See also Appendix A for a list of diseases requiring Airborne Precautions.

J. **Vaccinations**: Employee Health will provide relevant vaccinations to all employees and contractors, including annual influenza vaccination. As a condition of employment, employees are required to demonstrate vaccination or immunity to measles, mumps, rubella and varicella. Employee Health will provide vaccination against those pathogens to nonimmune employees. Employees are also required to either a) receive annual influenza vaccination or b) after documented vaccine declination, to wear a surgical mask at all times at work for the entire duration of annual respiratory viral seasons. Where such countermeasures are available, Employee Health will also provide FDA Emergency Use Authorized vaccinations to employees for novel ATD pathogens. Additional vaccination series provided at no cost by Employee Health Services include:

• Hepatitis A • Hepatitis B • Measles, mumps, rubella (MMR)	• Meningococcal - MCV4 (Menveo/Menactra) - Group B (Trumenba) • Varicella vaccination • Annual influenza vaccination	• Tetanus/diphtheria/pertussis • Covid-19 Vaccines - BNT-162b2 (Pfizer) - Ad26.COV2-S (Janssen)

VI. Engineering & Process Control Measures

Once suspected or under evaluation for a potential ATD, patients will remain in appropriate Isolation Precautions unless the Epidemiology Department or Infectious Disease Consult Service determines the precautions are no longer necessary. Refer to the Tuberculosis Control Policy as well as the DHS Covid-19 Expected Practice entitled "Removal of COVID Patients from Isolation or Quarantine" for additional details on specific criteria for discontinuation of isolation precautions for TB and Covid-19 suspects and cases.

A. Patients with suspected or confirmed ATDs will be placed in negative pressure, Airborne Infection Isolation Rooms (AIIRs) located on each unit as outlined in the table below.

Floor	Negative Pressure Airborne Infection Isolation Rooms (AIIRs)
1st Floor	1E 104, 106, 124
2nd Floor	2E 122
3rd Floor	3A 122, 3H218, 3B 124 3C 126, 128
4th Floor	4A 112, 120, 122, 134, 142, 144, 152 4B 112, 120, 122, 134, 142, 144, 152 4C 112, 120, 122, 134, 142, 144, 152 4D 104, 112, 114, 122 4M 126, 128
5th Floor	5A 112, 120, 122 5B 112, 120, 122, 134, 142, 144, 152 5C 112, 120, 122, 130 5D 106, 108 5F 134, 142, 144, 152 5M 128, 130
6th Floor	6A 126, 128, 130, 132, 154, 156, 158, 160 6B 126, 128, 130, 132, 154, 156, 158, 160 6C 126, 128, 130, 132, 154, 156, 158, 160 6D 126, 128, 130, 132, 154, 156, 158, 160
7th Floor	7A 126, 128, 130, 132, 156, 158 7B 156, 158 7C 126, 128, 130, 132, 154, 156, 158, 160 7D 126, 128, 130, 132, 154, 156, 158, 160
8th Floor	8A 134, 136,138 8B 132, 134 8C 138, 140 8D 112, 120,122, 130

B. **AIIR Quality Control**: AIIRs have alarms in place which sound if the room's air environment is not within negative pressure parameters. There is also a simple visual check installed in each AIIR – a "ball in the wall" device – whose position easily indicates the presence of the room's negative pressure relationship. When occupied with an ATD patient, nursing will document daily a visual check of the "ball in the wall" to ensure that negative pressure is being maintained.

C. **AIIR Air Exchanges**: consistent with CDC environmental control guidelines, all negative pressure Airborne Infection Isolation rooms will maintain a minimum of 12 air changes per hour.

D. **Hand Hygiene & PPE**: all persons entering an AIIR will clean their hands and must wear an appropriately fitted, hospital-issued N-95 mask and other PPE as required for the particular ATD (see Appendix A). Laminated signs will be posted to instruct those entering the room on required PPE for any set of Isolation Precautions.

E. **Limiting Travel Outside Room**: for patients requiring Airborne or Droplet precautions, patient travel outside the room shall be limited as much as possible while still delivering necessary care. Patients will be given a mask (and gown and gloves where appropriate) to wear during transport, and transporting staff will wear all required PPE during patient transport outside their assigned AIIR.

F. **Handling & Processing of Potential ATD-Containing Laboratory Specimens**: all high-risk specimens are processed under an approved Biological Safety Cabinet (BSC). Specimens suspected of containing tuberculosis are processed under a BSC in a negative pressure room.

VII. Education & Training:

All new employees will receive training on the ATD Policy and transmission-based precautions during mandatory New Employee Orientation (NEO). Employees will read and attest to Infection Control re-education material including ATD content material and complete a post-test assessment. After their NEO, all employees will also complete formal Infection Prevention, including ATD, education annually with compliance and records to be maintained by employees' department managers. Annual education will also incorporate any new ATD-related policies, procedures or modifications to current policies and procedures that may affect employees' occupational exposures or ATD control measures. Training will also include instructions on how to access a copy of this ATD Policy from the hospital's intranet homepage.

VIII. Record Keeping:

Medical records will be kept confidential. All employee/workforce member (WFM) records are maintained for the duration of employment & at least 2 years after termination.

Record Type	Responsible Party	Comments
Medical Records	Employee Health Services	Maintained in EHS Portal. WFM access via MyPersinda.
Vaccination Records	Employee Health Services	Maintained in EHS Portal. WFM access via MyPersinda.
Tuberculosis Screening	Employee Health Services	Maintained in EHS Portal. WFM access via MyPersinda.
ATD Exposure Documents	Employee Health Services	Maintained in EHS Portal. See Appendix F.
Training Records	Individual Department Managers / Supervisors	Includes training dates, contents, instructors, and names & job titles of all persons attending training.
Annual ATD Plan Review	Epidemiology Department.	Changes & annual review documented in Infection Control Meeting minutes.
Vaccine Inventory	Pharmacy Department	Internal logs maintained of all pharmaceutical stock, including vaccine supply & inventory
Inspection, Testing, and Maintenance of Engineering Controls	Facilities Management Department	Maintained in HEMS Facility Management Database
Respiratory Protection Program	Co-administrated by: EHS, Epidemiology & Environmental Safety	Records of employee fit-testing and respiratory PPE training are maintained by EHS in Persinda.

IX. Personal Protective Equipment (PPE)

Employees will be provided with all necessary PPE required for their job duties as well as training in its proper use and disposal. See Appendices C, D, and E for instructions on proper PPE use.

A. **N95 Respirators**: Employee Health will provide annual N95 respirator fit testing for all employees in high risk areas and with high risk job duties that may increase their risk of exposure to an ATD. Those who cannot be fitted (e.g., due to face size or facial hair) are fitted for and instructed in the use of Powered Air Purifying Respirators (PAPRs). All employees involved in direct patient care or contact with patients with confirmed or suspected ATDs are required to wear a fitted N95 (or equivalent PAPR) for the duration of airborne isolation. N95 respirators or equivalent should be worn by employees while performing or present during any aerosol-generating procedure (AGP) on patients with an ATD requiring airborne isolation and are available on request for any AGP.

B. **Powered Air Purifying Respirators**: a PAPR or CAPR© is an acceptable alternative to an N95 respirator and face shield combination. In situations where an employee has failed N95 fit testing or has facial hair or other conditions that prevent a good seal between the face and sealing edge of an N95 respirator, a PAPR or CAPR© can be considered an alternative in consultation with Employee Health Services and appropriate employee training. If an employee has been trained and deemed eligible for its use, a PAPR or CAPR© can be assigned to them if supplies are sufficient to do so. See Appendix E for instructions on CAPR© use.

C. **Surgical/Procedural Masks**: in certain instances, including during influenza season for unvaccinated employees, surgical masks must be worn by employees at all times on the Medical Center campus unless higher-level (e.g. N95) respiratory protection is required for a particular patient or procedure. Additionally, in times of high community transmission of a particular ATD and in accordance with local and state regulations and standards, employees and patients may be required to wear surgical masks at all times on the Medical Center campus, irrespective of specific job duties, responsibilities or types of patients cared for by an employee.

D. **Outside and/or Non-approved PPE**: employees are not permitted to bring their own PPE for use at work, either in patient care areas or elsewhere. All PPE products require review and approval from the facility Environmental Health and Safety Officer in conjunction with Infection Control.

X. Exposure Incidents, Evaluations, and Notifications

An exposure incident is an event where all of the following have occurred:

1) An employee has been exposed to an individual with a suspected or confirmed ATD, or to a work area, clinical laboratory specimen, or equipment, that is reasonably expected to contain an ATD pathogen.
2) The exposure occurred **without** the benefit of applicable exposure controls and/or PPE.
3) It reasonably appears from the exposure circumstances that disease transmission is sufficiently likely to require medical evaluation.

Not specific just to COVID-19 (as per California Assembly Bill 685 requirements), but for all ATDs including tuberculosis and others, LAC+USC Medical Center will provide written notice to all employees of potential workplace-related ATD exposures within 48 hours of becoming aware of the exposure.

The following procedures will be implemented upon identification of a potential employee ATD exposure.

Workplace Exposures Identified by Infection Control & Employee Notification

Infection Preventionists review all hospitalized patients for any confirmed or suspected ATD or other transmissible disease. They are also notified of any ATDs diagnosed in outpatient clinics and areas. When new diagnoses of an ATD are made, Infection Control will investigate the circumstances of the case,

including whether or not appropriate transmission-based precautions were implemented prior to and at the time of the ATD diagnosis.

In instances where Infection Control's investigation reveals a potential ATD exposure incident to tuberculosis or Covid-19*, a formal Exposure (aka "Infection Prevention Record") will be generated in the DHS-wide, electronic, Employee Health Database called "Persinda" (aka Infection Control Module). Each Exposure Case in the Infection Control Module will have a unique, identifying Case Index Number assigned for tracking. Prior exposure cases are also maintained in the Persinda Employee Health database for record keeping and future review.

During exposure investigations, Infection Preventionists will record several data elements for each Exposure Case to be able to track and identify potential affected personnel. See Appendix F for details of recorded information for each exposure. Given numerous potential affected employees in an area, the final step of each electronic Exposure Case log is the identification of area supervisors and managers who are sent notification of the exposure via automated email notification. Area supervisors will conduct an assessment of which employees may have been present and/or exposed during the specified exposure timeframe and log those employees into the case's Persinda log. This then trigger's automated email and text notifications to all potentially exposed, logged employees from the exposure, instructing them to present to Employee Health for a formal intake and evaluation, either in person or by phone at (323) 409-5236. See Appendix F for sample notification.

Non-Workplace ATD Exposures

Employees will report **non-workplace-related** exposures to an ATD, or outside diagnoses of an ATD, directly to Employee Health Services and their supervisors within 24 hours or prior to their next shift, whichever comes first. Employees will be evaluated and provided instruction on any applicable work restrictions by Employee Health Services.

Employee Responsibilities After an Exposure

Employees will refer and adhere to all aspects of the DHS Expected Practice document entitled "Workforce Members Guidance for COVID-19 Self-Monitoring, Exposures and Work Restrictions". This document may be found on the DHS SharePoint at https://lacounty.sharepoint.com/sites/DHS > COVID-19 > Expected Practices > Workforce. Although phrased for COVID-19, the terms of the guidance are applicable to other ATDs. For specific tuberculosis procedures, including our tuberculosis surveillance procedures, refer to the Medical Center's TB Exposure Control Plan.

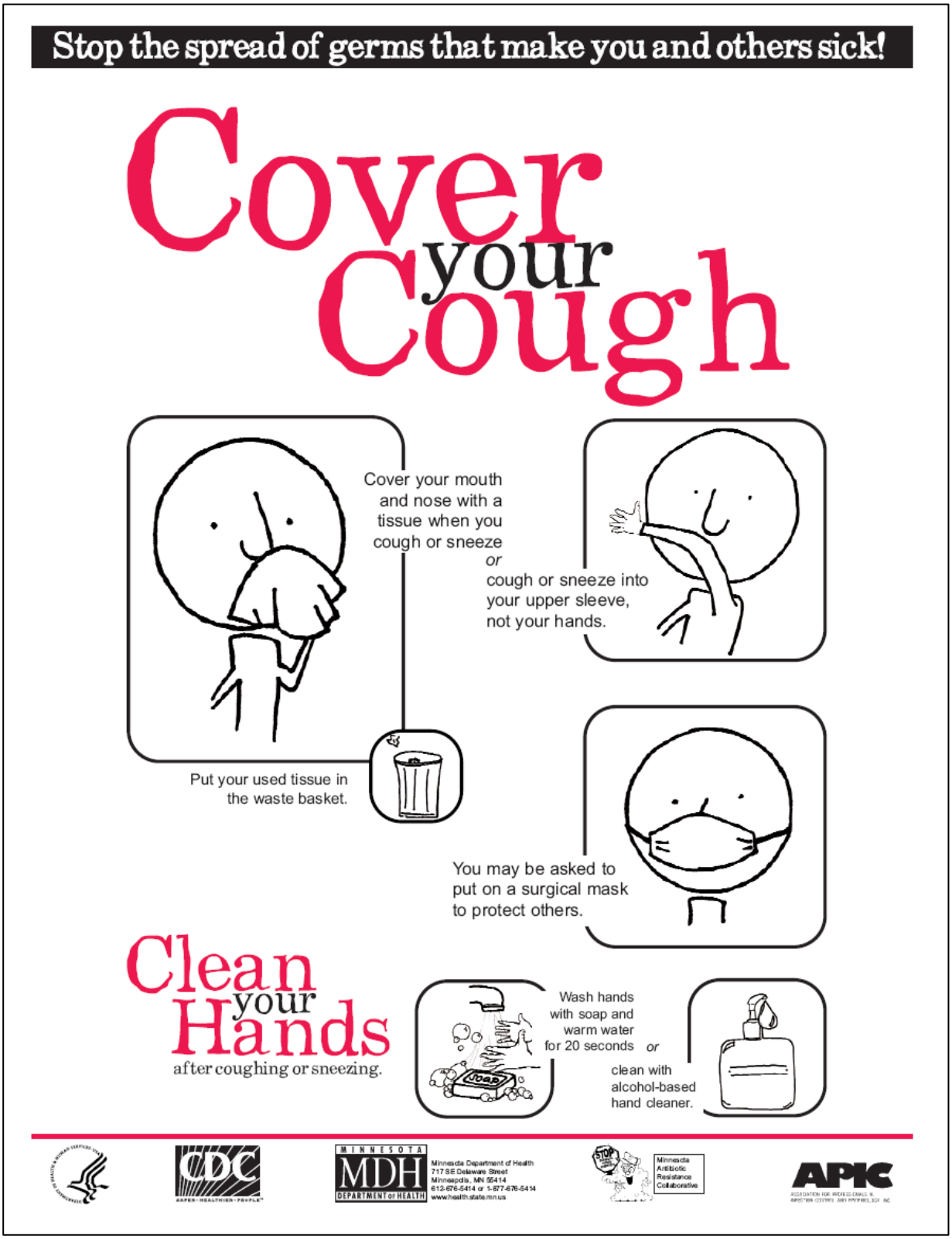
*As of spring 2021, the Persinda-based Infection Control Module is only for tuberculosis and Covid-19 exposures. Future revisions may permit documentation and utilize the same automated notification procedures for additional ATDs.

Appendix A: Airborne-Transmitted Pathogens and Diseases

For novel pathogens or those of unclear transmissibility, patients will be placed in Airborne and Contact Isolation Precautions with eye protection to be worn by any staff entering the room.

Disease Requiring Airborne Precautions	Additional Precautions/Comments
Chickenpox (primary varicella)	Also requires contact precautions
Covid-19 (SARS-CoV-2 virus)	Contact precautions & eye protection also required. Airborne isolation (including negative pressure room) required only for aerosol-generating procedures; otherwise droplet precautions are applied. Time-based discontinuation of Covid isolation precautions as per Public Health and DHS guidelines.
Disseminated Herpes Zoster	Defined as rash in >2 dermatomes. Also requires contact precautions, ***until all lesions are crusted over***.
Measles	
Middle East Respiratory Syndrome (MERS) Virus	Also requires contact precautions & eye protection.
Monkeypox	
Smallpox	Require Contact precautions as well
SARS and other pathogenic coronaviruses	Also requires contact precautions & eye protection.
Novel influenza (including avian & H1N1 influenza)	Require Contact precautions and goggles/face shield as well
Tuberculosis (active pulmonary)	Airborne isolation not typically required for strictly extra-pulmonary tuberculosis. Refer to TB Exposure Control Plan for more details.
Viral Hemorrhagic fevers (e.g., Lassa virus, Ebola & Marburg viruses)	Requires Contact precautions as well. Refer to separate Ebola Infection Control Policy.

Appendix B: Respiratory Hygiene/Cough Etiquette



Appendix C: Non-Respiratory PPE Donning/Doffing Procedures

SEQUENCE FOR DONNING PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required; e.g., Standard and Contact, Droplet or Airborne Infection Isolation.

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

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

3. GOGGLES OR FACE SHIELD
- Place over face and eyes and adjust to fit

4. GLOVES
- Extend to cover wrist of isolation gown

SECUENCIA PARA PONERSE EL EQUIPO DE PROTECCIÓN PERSONAL (PPE)

El tipo de PPE que se debe utilizar depende del nivel de precaución que sea necesario; por ejemplo, equipo Estándar y de Contacto o de Aislamiento de infecciones transportadas por gotas o por aire.

1. BATA
- *Cubra con la bata todo el torso desde el cuello hasta las rodillas, los brazos hasta la muñeca y dóblela alrededor de la espalda*
- *Átesela por detrás a la altura del cuello y la cintura*

2. MÁSCARA O RESPIRADOR
- *Asegúrese los cordones o la banda elástica en la mitad de la cabeza y en el cuello*
- *Ajústese la banda flexible en el puente de la nariz*
- *Acomódesela en la cara y por debajo del mentón*
- *Verifique el ajuste del respirador*

3. GAFAS PROTECTORAS O CARETAS
- *Colóquesela sobre la cara y los ojos y ajústela*

4. GUANTES
- *Extienda los guantes para que cubran la parte del puño en la bata de aislamiento*

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

UTILICE PRÁCTICAS DE TRABAJO SEGURAS PARA PROTEGERSE USTED MISMO Y LIMITAR LA PROPAGACIÓN DE LA CONTAMINACIÓN
- *Mantenga las manos alejadas de la cara*
- *Limite el contacto con superficies*
- *Cambie los guantes si se rompen o están demasiado contaminados*
- *Realice la higiene de las manos*

SEQUENCE FOR REMOVING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Except for respirator, remove PPE at doorway or in anteroom. Remove respirator after leaving patient room and closing door.

1. GLOVES
- Outside of gloves is contaminated!
- Grasp outside of glove with opposite gloved hand; peel off
- Hold removed glove in gloved hand
- Slide fingers of ungloved hand under remaining glove at wrist
- Peel glove off over first glove
- Discard gloves in waste container

2. GOGGLES OR FACE SHIELD
- Outside of goggles or face shield is contaminated!
- To remove, handle by head band or ear pieces
- Place in designated receptacle for reprocessing or in waste container

3. GOWN
- Gown front and sleeves are contaminated!
- Unfasten ties
- Pull away from neck and shoulders, touching inside of gown only
- Turn gown inside out
- Fold or roll into a bundle and discard

4. MASK OR RESPIRATOR
- Front of mask/respirator is contaminated — DO NOT TOUCH!
- Grasp bottom, then top ties or elastics and remove
- Discard in waste container

SECUENCIA PARA QUITARSE EL EQUIPO DE PROTECCIÓN PERSONAL (PPE)

Con la excepción del respirador, quítese el PPE en la entrada de la puerta o en la antesala. Quítese el respirador después de salir de la habitación del paciente y de cerrar la puerta.

1. GUANTES
- *¡El exterior de los guantes está contaminado!*
- *Agarre la parte exterior del guante con la mano opuesta en la que todavía tiene puesto el guante y quíteselo*
- *Sostenga el guante que se quitó con la mano enguantada*
- *Deslice los dedos de la mano sin guante por debajo del otro guante que no se ha quitado todavía a la altura de la muñeca*
- *Quítese el guante de manera que acabe cubriendo el primer guante*
- *Arroje los guantes en el recipiente de deshechos*

2. GAFAS PROTECTORAS O CARETA
- *¡El exterior de las gafas protectoras o de la careta está contaminado!*
- *Para quitárselas, tómelas por la parte de la banda de la cabeza o de las piezas de las orejas*
- *Colóquelas en el recipiente designado para reprocesar materiales o de materiales de deshecho*

3. BATA
- *¡La parte delantera de la bata y las mangas están contaminadas!*
- *Desate los cordones*
- *Tocando solamente el interior de la bata, pásela por encima del cuello y de los hombros*
- *Voltee la bata al revés*
- *Dóblela o enróllela y deséchela*

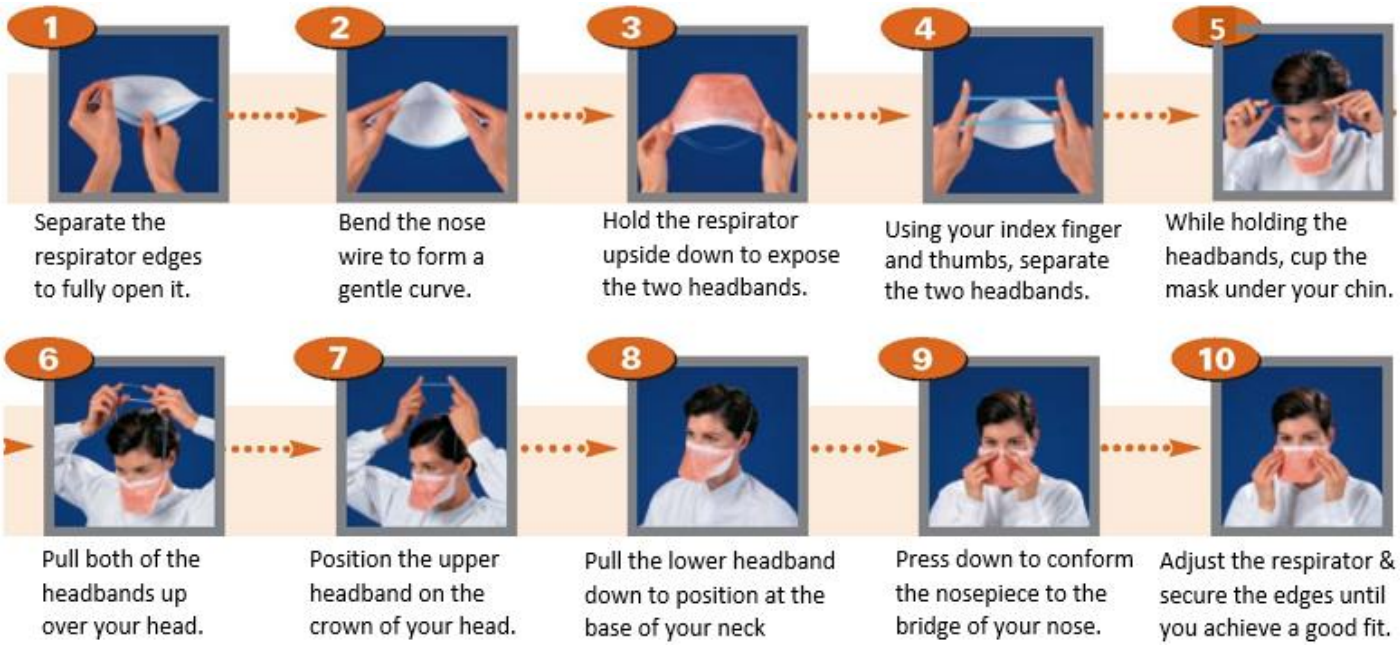
4. MÁSCARA O RESPIRADOR
- *La parte delantera de la máscara o respirador está contaminada — ¡NO LA TOQUE!*
- *Primero agarre la parte de abajo, luego los cordones o banda elástica de arriba y por último quítese la máscara o respirador*
- *Arrójela en el recipiente de deshechos*

PERFORM HAND HYGIENE IMMEDIATELY AFTER REMOVING ALL PPE

EFECTÚE LA HIGIENE DE LAS MANOS INMEDIATAMENTE DESPUÉS DE QUITARSE CUALQUIER EQUIPO DE PROTECCIÓN PERSONAL

Appendix D: N95 Respirator Donning, Fit Check, & Doffing

Donning of Kimberly Clark© and similar N95 Respirator Mask Models



Note: depending on DHS and Medical Center supply inventory, additional N95 respirator model types may be distributed to employees. Employees will familiarize themselves with new N95 respirator models, including donning, doffing and fitting, at the time they are fit tested for them by Employee Health. Employees should only use N95 models for which they have been appropriately fit tested. Employee Health will maintain records in the EHS portal of all employees' fit testing results, including specific N95 models. Employees may access these records in MyPersinda.

N95 Respirator Fit Check

- □ N95 Respirators must be checked before each use.
- □ To perform the fit check: place both hands around the respirator edge, then inhale & exhale sharply.
- □ The respirator should collapse and expand without leaking around the respirator.
- □ If air leaks around your nose, adjust the nosepiece as described above in step 9.
- □ If air leaks at the respirator edges, adjust the straps back along the sides of your head.
- □ Perform a fit check again if an adjustment is made.
- □ If you cannot achieve a proper fit: see your supervisor, and do not enter areas requiring respirators.

N95 Respirator Doffing

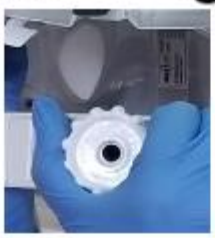
- □ Exit the room and wash your hands before doffing an N95 respirator.
- □ Without touching the respirator, lift the bottom strap from around your neck up and over your head.
- □ Lift the top strap to remove the respirator from your face. Do not touch the respirator.
- □ Holding the respirator by the straps, properly dispose of it in regular waste.
- □ Wash your hands.

Appendix E: Instructions for CAPR© Use

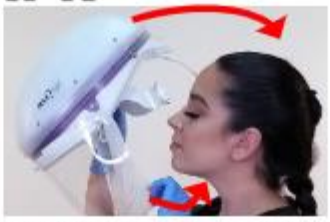
Don the Helmet DLC System

CAPR

1. Connect Helmet Power Cord to Battery; push Power Cord Connector into the Battery Receptacle until the Secure Connection audibly clicks.

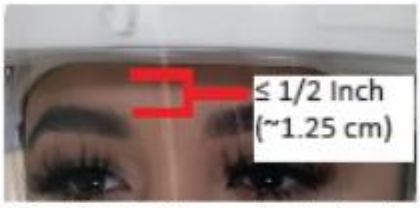


2. Loosen headband Ratchet Knob (counterclockwise).



3. Hold the Helmet by the rear headband in one hand. If the DLC is assembled, pull the front top edge of the DLC Cuff down, and place your chin into the DLC Cuff. Pull the Helmet over and down on to your head.

4. Slide your fingers between the Cuff and face from each temple down and under your chin to pull the DLC Flappers away from the lens, and to properly position the cuff.



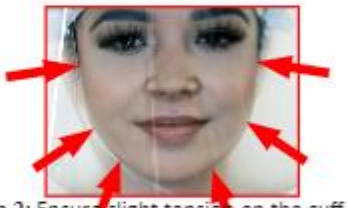
5. Position the Helmet so that the front headband is within 1/2 inch of the eyebrows and the rear headband is resting under the occipital bone above the vertebrae on the neck, and then tighten the adjustment knob clockwise to ensure the most secure fit of the Helmet on the head for all activities. Do not over tighten to cause discomfort.

CAUTION
Optimum setting is achieved when the helmet is secure on the head for all movements required and the front headband is within 1/2 inch of the eyebrows to allow good visualization of the LED Safety Status Indicators in the upper peripheral vision. Be sure to have both Height Adjustment tabs in the same position.

WARNING

If Conditions 1 and 2 Below both are not achieved, switch to the other size DLC and repeat Assemble the DLC and Don the Helmet DLC System before proceeding.

Condition 1: Ensure the DLC Flappers are away from the Lens, positioned perpendicular to your temples, and in front of



Condition 2: Ensure slight tension on the cuff is felt continuously while sliding the index or first finger between the cuff and the face all along the chin and up to the temples, from the right side of the face to the left.

Doff the System: Alternative A

1. Loosen the rear Headband adjustment Knob (turn counterclockwise.

2. Pull the DLC Cuff away from the chin and lift the Helmet up, forward and off

3. Disconnect Power Cord from the Battery - push Secure Connection Button down, pull Cord Connector out, release the Button.

4. Disconnect the Battery Belt from around the waist by unsnapping the buckle.

5. With the Charger connected to the mains wall power connect the charger Cord connector into the Battery Receptacle until its is fully

6. The entire CAPR System may be decontaminated, cleaned and/ or stored

Note: additional PAPR and CAPR© training, including video instructions and a training post test may be found on the LAC+USC Intranet SharePoint Homepage > Training and Guidelines > PAPR and CAPR link.

Appendix F: Persinda Exposure Module & Employee Notification

LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES
EHS
Infection Control

04/01/2021

Reporting Person Name: [redacted] **Work Number:** 323-409-6645 [redacted]

Exposure: Tuberculosis (TB) **Index Case No:** 160-2-2021-TB

DATE/TIME OF EXPOSURE :	**LOCATION OF EXPOSURE** *(Building Location, Work Area/Unit, Room No.)*:
* 03/23/2021 @ 20:53 to 03/26/2021 @ 11:35	* 03/23/2021 @ 20:53 to 03/26/2021 @ 11:35 : ED North/C6A

Source Information

Patient Last Name: [redacted] **First Name:** [redacted] **Middle Name:**

Medical Record #: [redacted] **DOB:** [redacted]

Physican/Service: LAC+USC Medicine Gold A/Pulmonolgy

Reason For Admission (If applicable): 60 year old male with history of ETOH cirrhosis DM, HTN, recent PNA c/b possible empyema, presents with worsening SOB, admitted for hypoxic respiratory failure.

Mode of Transport: Wheelchair/stretcher

Descripton of The Exposure Incident: Patient admitted for SOB on 3/23/21. Tested for COVID-19 on 3/23 @ 2146 with Negative result @ 0026. Patient placed in Standard Precautions at 2053 on 3/23. Patient moved to 6A126 on 3/23 @ 0200. Primary Care team decided to rule out TB on 3/26/21 @1135 am. Patient placed in Airborne precautions at that time and TB workup labs begin.

EXPOSURE PERIOD IS 3/23/21 @2052 TO 3/26/21 @1135

Other Significant Information (Coughing, MDR-Tb, HIV, etc.): On 3/27/21 AFB culture and smear obtained @1641 resulted with 2+ AFB-ID and susceptibility to follow. On same sample MTB/PCR resulted as "DETECTED".

You are required to have an exposure evaluation performed by Employee Health Services. You have the option to present in person to the Employee Health Department or call to have a phone evaluation.

We care for you so you can care for others.

Sincerely,
Employee Health Services
LAC+USC Medical Center (323) 409-5236