

Aerosol Transmissible Diseases

Employees in health care and other high risk environments face new and emerging infectious disease threats, such as Severe Acute Respiratory Syndrome (SARS), and H1N1 influenza, as well as long standing or re-emerging threats such as tuberculosis (TB) or pertussis. Measures can be taken to prevent disease in workers who care for or are in contact with infected persons. These measures also protect the healthcare system itself, since it can not function without these employees.

An Aerosol Transmissible Disease (ATD) is a disease or pathogen transmitted through airborne droplets or particles. The most serious ATDs referred to as Airborne Infections Disease (AirID). AirIDs have been identified by the Centers for Disease Control (CDC) or state public health department as requiring isolation or caused by a new or unknown pathogen. Infection control procedures, ranging from simple precautions to airborne infection isolation, are needed to prevent transmission of these diseases. A list of ATDs can be found at the end of this document.

Facilities which may be affected by ATDs include:

- Hospitals
- Skilled nursing facilities
- Clinics, medical offices and other outpatient facilities
- Facilities that perform high-hazard procedures
- Home health care
- Long-term health care facilities and hospices
- Medical outreach services
- Paramedic and emergency medical services, including firefighters and other emergency responders
- Facilities, services or operations that receive persons from scenes of uncontrolled hazardous-substances releases involving biological agents
- Medical transport services
- Police officers who must transport and/or detain persons who might be "reasonably anticipated" to be infected with ATDs

- Public health services
- Correctional facilities, homeless shelters and drug treatment programs
- Facilities where aerosol-generating procedures are performed on cadavers
- Laboratories that perform procedures with materials containing ATDs or ATDs transmitted by animals (zoonotic pathogens)
- Maintenance, service or repair operations involving air-handling systems that may be reasonably anticipated to be contaminated with ATDs
- Hazardous waste and emergency response operations
- Dental offices

These facilities fall into one of three groups. Each has a set of safety practices and precautions tailored to the level of healthcare-related service provided, ranging from day-to-day management of a potentially infectious patient to emergency surges that may be brought on by a pandemic.

Hospitals and Other High Risk Environments

The first group includes hospitals and other high risk environments. These are the facilities that provide services to airborne infectious disease (AirID) cases or suspected cases. This includes work settings such as hospitals, emergency medical service providers, tuberculosis clinics, correctional facilities or long term care facilities that treat, rather than refer AirID cases or suspected cases, and facilities such as mortuaries when aerosol-generating procedures are performed on cadavers that may be infected with aerosol transmissible pathogens.

The highest levels of protection should be applied in these environments, This includes:

- Written exposure control plan
- Feasible engineering and work practice controls to minimize exposure to AirID
- Respiratory protection
- Decontamination procedures

- Minimize contact with other employees
- Procedures for airborne infection isolation rooms
- Medical services for employees
- Applicable vaccinations
- Employee training
- Recordkeeping

For additional information or assistance, contact your Zenith Safety and Health Consultant.

Referring Employers

The second group includes “referring employers”, those who may come in contact with a suspected ATD case first, and then send that person to a health care facility for treatment. These employers do not provide further medical services beyond first aid, initial treatment or screening and referral, or transportation, housing or isolation of suspected cases. This includes work settings such as most medical offices and clinics, homeless shelters, drug treatment programs, hospices, long term care facilities and correctional facilities.

A less-extensive level of protection is needed, and would involve screening persons they come in contact with for airborne infectious diseases and referring those cases. This includes:

- Written exposure control plan
- Communication with employees and other employers on the infectious state
- Risk reduction measures
- Medical services for employees
- Provision of seasonal influenza vaccination
- Employee training
- Recordkeeping

Laboratories

The third level group includes laboratories handling biological samples that may include infectious substances. These facilities should implement feasible engineering and work-practice controls to minimize employee exposures. They should also follow their established biosafety plan.

Zoonotic Pathogens

Occupational exposure to animals infected by aerosol transmitted pathogens that can cause human disease (zoonotic pathogens) have a special set of precautions which are outlined in RMB#157, Zoonotic Aerosol Transmissible Diseases.

Aerosol Transmissible Diseases

The following diseases or pathogens are considered aerosol-transmissible diseases. They are classified in two groups.

Diseases/Pathogens requiring airborne infection isolation include:

- Aerosolizable spore-containing powder or other substances capable of causing serious human disease, e.g., Anthrax/*Bacillus anthracis*
- Avian influenza/Avian influenza A viruses (strains capable of causing serious disease in humans)
- Varicella disease (chickenox, shingles)/Varicella zoster and Herpes zoster viruses, disseminated disease in any patient
- Measles (rubeola)/Measles virus
- Monkeypox/Monkeypox virus
- Novel or unknown pathogens
- Severe acute respiratory syndrome (SARS)
- Smallpox (variola)/Variola virus
- Tuberculosis
- Any other disease for which public health guidelines recommend airborne infection isolation

Diseases requiring droplet precautions include:

- Diphtheria pharyngeal
- Epiglottitis, due to *Haemophilus influenzae* type b
- *Haemophilus influenzae* Serotype b (Hib) disease
- Influenza, human (typical seasonal variations)/influenza viruses
- Meningitis
- *Haemophilus influenzae*, type b known or suspected
- *Neisseria meningitidis* (meningococcal)
- Meningococcal disease sepsis, pneumonia (see also meningitis)
- Mumps (infectious parotitis)/Mumps virus
- Mycoplasmal pneumonia
- Parvovirus B19 infection (erythema infectiosum)
- Pertussis (whooping cough)
- Pharyngitis in infants and young children/Adenovirus, Orthomyxoviridae, Epstein-Barr virus, Herpes simplex virus
- Pneumonia
- Pneumonic plague/*Yersinia pestis*
- Rubella virus infection (German measles)/Rubella virus
- Severe acute respiratory syndrome (SARS)
- Streptococcal disease (group A streptococcus)
- Viral hemorrhagic fevers due to Lassa, Ebola, Marburg, Crimean-Congo fever viruses
- Any other disease for which public health guidelines recommend droplet precautions