

**Review preventive measures on air borne diseases**
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**ABSTRACT:**

An **airborne disease** is any disease that is caused by pathogens that can be transmitted through the air. Such diseases include many of considerable importance both in human and veterinary medicine. The relevant pathogens may be viruses, bacteria, or fungi, and they may be spread through breathing, talking, coughing, sneezing, raising of dust, spraying of liquids, toilet flushing or any activities which generates aerosol particles or droplets.

**Keywords:** air borne diseases, infection, transmission

**INTRODUCTION:**

Airborne diseases include any that are caused via transmission through the air. Airborne disease can spread when an infected person coughs, sneezes, or talks, spewing nasal and throat secretions into the air. Certain viruses or bacteria take flight and hang in the air or land on other people or surfaces. While breathing in airborne pathogenic organisms, take up residence inside the body. Germs get picked up due to touch to an infected surface, and then touch to own eyes, nose, or mouth led to disease manifestation.

**Incidence:**

Airborne diseases happen all around the world and affect virtually everyone. Because these diseases travel in the air,

they're hard to control. They spread easily in close quarters, such as schools and nursing homes. Large outbreaks tend to occur under crowded conditions and in places where hygiene and sanitation systems are poor. Incidence is lower in countries where vaccines are widely available and affordable.

### Sources:

Airborne disease is transmitted as both small, dry particles, and as larger liquid droplets. Transmission Pathways are as follows:

#### Sources of Airborne Disease:

- Droplets and aerosols produced by infected people
- Dust from disturbance of soil
- More common for fungal diseases
- Intentional releases of pathogens
- Bioterrorism agents

#### Categories of disease spread via air:

- Droplet transmitted diseases
- Liquid droplets that travel through the air
- Bacterial and viral diseases
- Person-to-person spread, usually during close contact
- Droplets do not travel very far
- Aerosol transmitted diseases
- Small particles that travel through the air

- Aerosols can be carried on air currents over greater distances than droplets
- Allow spread over larger areas
- Spread by air handling systems
- airplanes

#### Droplet diseases:

- Bacterial
- Bordetella pertussis
- Mycobacterium tuberculosis
- Viral
- Influenza
- Measles
- Herpes zoster (chickenpox)
- Aerosol Diseases
- Tuberculosis
- Spread through built environments on air currents
- High rise apartments
- Hospitals

#### Airborne bioterrorism agents:

- Bacillus anthracis
- Yersinia pestis
- Coxiella burnetii
- Francisella tularensis
- Smallpox virus

#### Airborne diseases from soil:

- Coccidioides immitis
- Histoplasma capsulatum
- Fungi are often endemic difficult to control

**Airborne diseases from dust:**

- Hantavirus
- Carried in rodent faces
- Dry droppings create dust in human dwellings
- Infection from dust being disturbed
- Q fever
- Coxiella burnetii
- Dust from dried body fluids and excreta of infected animals
- At risk people in contact with livestock

**Prion Diseases:**

Transmissible spongiform encephalopathies: fatal neurodegenerative disorders caused by prions, remains clinically silent for months or years, ends in profound disability or death. Diseases include – Kuru, Creutzfeldt-Jacob (CJD) disease, and variant CJD, bovine spongiform encephalopathy (BSE)

**Symptoms:**

Airborne diseases usually result in one or more of the following symptoms:

- inflammation of your nose, throat, sinuses, or lungs
- coughing
- sneezing
- congestion

- runny nose
- sore throat
- swollen glands
- headache
- body aches
- loss of appetite
- fever
- fatigue

**Treatment**

- For most airborne diseases need plenty of rest and fluids. Further treatment depends on specific illness.
- Some airborne diseases, such as chickenpox, have no targeted treatment. However, medications and other supportive care can help relieve symptoms.
- Some, such as the flu, can be treated with antiviral drugs.
- Treatment for infants with whooping cough can include antibiotics, and hospitalization is often needed.
- There are drugs to treat and cure TB, although some strains of TB are drug resistant. Failure to complete the course of medicine can lead to drug resistance and return of symptoms.

- **Vaccination:** Vaccines can reduce chances of getting some airborne diseases. Vaccines also lower the risk for others in the community. Airborne diseases that have vaccines include: chickenpox, diphtheria, influenza( vaccine updated every year to include strains most likely to spread in the coming season),measles(usually combined with vaccine for mumps and rubella, and is known as the MMR vaccine), mumps (MMR vaccine),TB (not generally recommended in the United States), whooping cough.
- If caught early enough, diphtheria can be successfully treated with antitoxins and antibiotics.

#### **Control of Airborne Disease:**

Some ways to prevent airborne diseases include washing hands, using appropriate hand disinfection, getting regular immunizations against diseases believed to be locally present, wearing a respirator and limiting time spent in the presence of any patient likely to be a source of infection. Breaking the chain of transmission. Prevention of release of pathogens by infected individuals. Regular usage of Masks. Quarantine of infected people.

Preventive measures like UV Air purification devices that FDA and EPA-certified laboratory test data has verified as effective in inactivating a broad array of airborne infectious diseases.

#### **CONCLUSION:**

- Most airborne diseases run their course within a few weeks. Others, like whooping cough, can last for months.
- Serious complications and longer recovery time are more likely due to weakened immune system. In some cases, airborne diseases can be fatal.
- Airborne transmission of disease depends on several physical variables endemic to the infectious particle. Environmental factors influence the efficacy of airborne disease transmission; the most evident environmental conditions are temperature and relative humidity. The sum of all the factors that influence temperature and humidity, either meteorological (outdoor) or human (indoor), as well as other circumstances influencing the spread of the droplets containing the infectious particles, as winds, or human behavior, sum up the

factors influencing the transmission of airborne diseases.

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