Airborne Infectious Disease Risk Assessment

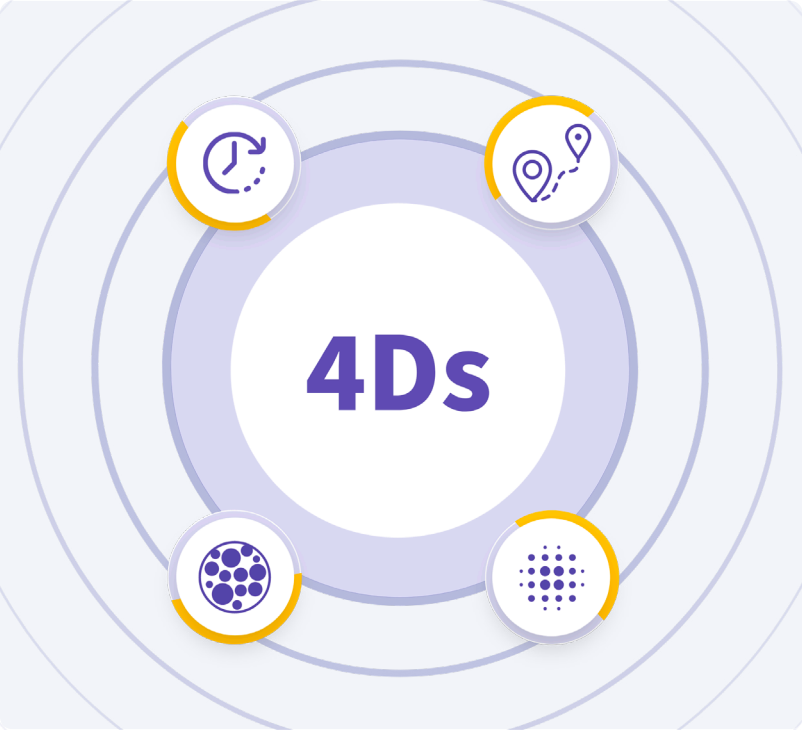
COMMIT TO CARE

To determine your organization's potential exposure to airborne infectious diseases, this assessment uses a control banding process adapted from research by Sietsema. The framework focuses on two primary variables — density (the likelihood of exposure based on the number of people sharing a space) and duration (the time spent indoors). We have also expanded this approach to consider spacing, ventilation/dilution, vaccination, and mask use. Answer the following questions to determine your organization's overall exposure risk.

Instructions

Answer each question by selecting A, B, or C based on the accuracy of the statements or what best describes the conditions at your organization.

The 4 Ds of Airborne Risk



Duration:

How long people spend indoors.

Density:

How many people share the space.

Distance:

How close people are to one another.

Dilution:

How much fresh/filtered air is available.

Questions

Q1. Most people in my organization are up to date on recommended vaccinations for airborne infectious diseases (e.g., flu, RSV, COVID-19).

- **a** Accurate
- **b** Partially accurate
- **c** Inaccurate

Q2. People who frequent my organization generally maintain the recommended distance (about 6 feet apart from one another).

- **a** Accurate
- **b** Partially accurate
- **c** Inaccurate

Q3. People in my organization frequently wear properly fitted masks or respirators in higher-risk situations (e.g., during outbreaks or when crowded indoors).

- **a** Accurate
- **b** Partially accurate
- **c** Inaccurate

Q4. The average time people spend in my organization's building space is:

- **a** 0–3 hours
- **b** 3–6 hours
- **c** More than 6 hours

Q5. This space uses ventilation or air-cleaning strategies (e.g., HVAC, HEPA filters, open windows).

- **a** Accurate
- **b** Partially accurate
- **c** Inaccurate

Q6. The number of people in this space is typically manageable, allowing for reduced crowding.

- **a** Yes
- **b** Somewhat
- **c** No

Results & Recommendations

- Score your responses (A = 1, B = 2, C = 3) and add the values up to obtain a total score.
- Compare your total score to the ranges below.
- Review the tailored recommendations for your setting.

LOW Risk of Exposure (6 to 9 points)

The risk of exposure to **airborne infectious diseases** in your organization appears to be low.

While low risk is preferable to high risk, there are still meaningful steps you can take to minimize the risk of transmission in your building.

When implementing protections, think about the **three stages where infection can occur:**

The Source:

The person who is infected and releases airborne particles through breathing, talking, coughing, sneezing, or singing.

The Pathway:

The route those airborne particles travel through the air.

The Receptor:

You or the individuals who may become sick after inhaling those particles.

Based on your results, your organization falls into **Control Band A**. This means:

1. **Prioritize source control.**
   Encourage vaccination, reinforce “stay home when sick” policies, and consider mask use in high-risk situations.

2. **Pathway controls are optional but beneficial.**
   Improvements to ventilation and air circulation can provide an extra layer of safety.

3. **Minimal receptor protections needed.**
   Personal protections (like mask use or additional spacing) are generally optional at this level.

Managing the Risk of the Source

- Encourage employees and visitors to stay home when sick.
- Promote vaccinations relevant to airborne diseases (e.g., flu, COVID-19).
- Use masks or respirators in crowded or higher-risk conditions.

Managing the Risk of the Pathway

- Maintain HVAC systems and replace filters regularly.
- Use portable HEPA filters or open windows to improve air exchange.
- Arrange spaces to support good airflow.

Managing the Risk of the Receptor

- Encourage individuals to use masks when they feel at higher risk.
- Provide flexible seating or spacing options for those who prefer extra distance.
- Remind staff of personal hygiene practices that support overall safety.

MODERATE Risk of Exposure (10 to 13 points)

The risk of exposure to **airborne infectious diseases** in your organization is moderate.

This means some protections are in place, but significant gaps remain. Adding additional layers of protection can significantly reduce your overall risk.

When designing protections, think about the **three stages where infection can occur:**

The Source:

The person who is infected and releases airborne particles through breathing, talking, coughing, sneezing, or singing.

The Pathway:

The route those airborne particles travel through the air.

The Receptor:

You or the individuals who may become sick after inhaling those particles.

Based on your results, your organization falls into **Control Band B**. This means:

1. **Prioritize source control**
   Vaccination, stay-home-when-sick policies, and mask/respirator use should be actively reinforced.

2. **Implement multiple pathway controls**
   Improvements to ventilation, filtration, and air movement are strongly recommended.

3. **Consider receptor protections**
   Use these when source and pathway measures alone are not enough.

Managing the Risk of the Source

- Require or strongly encourage the use of masks or respirators during outbreaks or when density is high.
- Reinforce policies that prevent sick individuals from entering the building.
- Support vaccination campaigns for seasonal and emerging diseases (flu, RSV, COVID-19).

Managing the Risk of the Pathway

- Upgrade HVAC filters and increase outdoor air exchange where possible.
- Add portable HEPA air cleaners to rooms with limited ventilation.
- Monitor air quality (e.g., CO_2 levels) as a proxy for ventilation performance.

Managing the Risk of the Receptor

- Encourage individuals to use masks in crowded or poorly ventilated spaces.
- Provide flexible work or class arrangements to reduce time in high-risk environments.
- Support at-risk populations (e.g., those with immunocompromising conditions) with additional accommodations.

HIGH Risk of Exposure (14 to 18 points)

The risk of exposure to **airborne infectious diseases** in your organization is high.

This means significant gaps exist, and strong, multi-layered protections are urgently needed to reduce transmission risk.

When implementing actions, remember the **three stages where infection can occur:**

The Source:

The person who is infected and releases airborne particles through breathing, talking, coughing, sneezing, or singing.

The Pathway:

The route those airborne particles travel through the air.

The Receptor:

You or the individuals who may become sick after inhaling those particles.

Based on your results, your organization falls into **Control Band C**. This means:

1. **Prioritize all source controls immediately.**
   Vaccination, staying home when sick, and mask/respirator use should be mandatory during outbreaks or in high-density settings.

2. **Implement multiple pathway controls.**
   Robust ventilation, filtration, and air-cleaning measures are essential, not optional.

3. **Add receptor protections as backup layers.**
   Ensure individuals have access to personal PPE and reduce exposure time wherever possible.

Managing the Risk of the Source

- Enforce strict sick-leave policies to prevent infected individuals from entering shared spaces.
- Require the use of masks or respirators (e.g., N95s) in shared or crowded areas.
- Strongly encourage and facilitate vaccinations for relevant diseases.

Managing the Risk of the Pathway

- Upgrade HVAC systems with high-efficiency filtration.
- Add portable HEPA units in all frequently occupied areas.
- Maximize fresh outdoor air supply and monitor air quality.
- Limit occupancy and stagger schedules to reduce crowding.

Managing the Risk of the Receptor

- Require PPE for individuals in high-risk roles (e.g., healthcare staff, frontline workers).
- Provide enhanced protections for vulnerable populations (e.g., immunocompromised individuals).
- Reduce the amount of time people spend indoors by shortening shifts, rotating teams, or moving activities outdoors when feasible.

Next Steps

For deeper guidance on reducing airborne infectious disease risk in your workplace, school, or community, download the full **Healthier Workplaces and Schools eBook V2.**

Disclaimer

This risk assessment was developed with airborne and viral infectious diseases in mind (such as COVID-19, flu, RSV, and measles). However, most of the recommendations and principles also apply to airborne bacterial infectious diseases.