

BI0016 / **BIOLOGICAL / Infectious Diseases (Human and Animal)**

Airborne Diseases

Definition

Airborne transmission of infectious agents refers to the transmission of disease caused by dissemination of very small droplets that remain infectious when suspended in air over long distance and time (WHO, 2020).

Reference

WHO, 2020. Transmission of SARS-CoV-2: implications for infection prevention precautions. World Health Organization (WHO). www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions Accessed 22 September 2020.

Annotations

Synonyms

Not identified.

Additional scientific description

In its guidelines on Infection prevention and control of epidemic-and pandemic-prone acute respiratory infections in health care (WHO, 2014), the World Health Organization defines airborne transmission as: "The spread of an infectious agent caused by the dissemination of droplet nuclei that remain infectious when suspended in air over long distances and time. Airborne transmission can be further categorized into obligate or preferential airborne transmission:

Obligate airborne transmission refers to pathogens that are transmitted only by deposition of droplet nuclei under natural conditions (e.g., pulmonary tuberculosis).

Preferential airborne transmission refers to pathogens that can initiate infection by multiple routes but are predominantly transmitted by droplet nuclei (e.g., measles and chickenpox)."

Acute respiratory diseases are acute upper or lower respiratory tract diseases, frequently infectious in aetiology, that can result in a spectrum of illnesses, ranging from asymptomatic or mild infection to severe or fatal disease. The severity depends on the causative pathogen, and on environmental and host factors (WHO, 2014).

Three main types of organism can cause infectious related airborne diseases: viruses, bacteria, and fungi. Disease-causing pathogens are organisms that spread from one infected person to another through coughing, talking, and sneezing (WHO, 2014). Pathogens that are transmitted through the airborne route include pulmonary tuberculosis, measles, chickenpox and influenza virus (WHO, 2014).

Metrics and numeric limits

Not applicable.

Key relevant UN convention / multilateral treaty

The International Health Regulations (2005), 3rd ed. (WHO, 2016).

Examples of drivers, outcomes and risk management

Infection prevention and control (IPC) is a scientific approach and set of practices designed to prevent harm caused by infection to patients and health workers. Use of appropriate IPC measures is essential for the protection of patients, healthcare workers, and the wider community. Correct implementation of the necessary IPC measures is an essential aspect of safe and successful management of airborne diseases (WHO, no date).

Vaccines are available for various airborne diseases, including measles and influenza, which reduce the risk of getting diseases by working with the body's natural defences to build protection. The Global Vaccine Action Plan 2011–2020, endorsed by the 194 Member States of the World Health Assembly in May 2012, is a framework to prevent millions of deaths by 2020 through more equitable access to existing vaccines for people in all communities (WHO, 2013). The Global Vaccine Action Plan was the product of the Decade of Vaccines Collaboration, an unprecedented effort that brought together development, health and immunisation experts and stakeholders (WHO, 2013).

References

WHO, no date. Infection Prevention and Control. World Health Organization (WHO). www.who.int/infection-prevention/en Accessed 19 September 2020.

WHO, 2013. Global Vaccine Action Plan 2011-2020. World Health Organization (WHO). www.who.int/immunization/global_vaccine_action_plan/GVAP_doc_2011_2020/en Accessed 20 September 2020.

WHO, 2014. Infection Prevention and Control of Epidemic-and Pandemic-prone Acute Respiratory Infections in Health Care. World Health Organization (WHO). https://apps.who.int/iris/bitstream/handle/10665/112656/9789241507134_eng.pdf;jsessionid=41AA684FB64571CE8D8A453C4F2B2096?sequence=1 Accessed 22 September 2020.

WHO, 2016. International Health Regulations (2005), 3rd ed. World Health Organization (WHO). <https://apps.who.int/iris/handle/10665/246107> Accessed 26 September 2020.

Coordinating agency or organisation

World Health Organization.