

FREQUENTLY ASKED QUESTIONS



Using the MetaNeb® System During the COVID-19 Pandemic

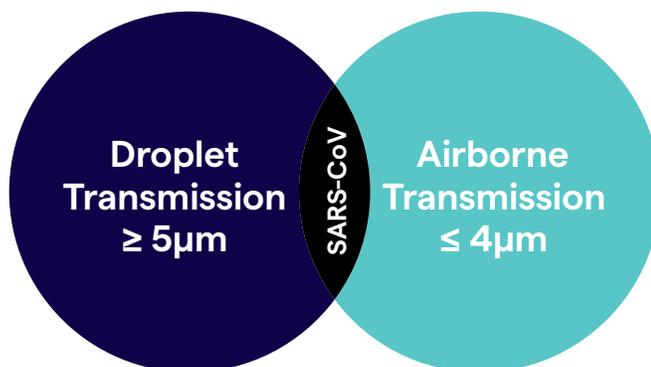
1. What are the respiratory complications related to COVID-19?

Pathology can be described as a respiratory disease that often progressed into pneumonia with bilateral ground-glass opacities. Elderly patients and those with underlying conditions like hypertension, cardiovascular disease or diabetes, are more likely to develop serious complications like pneumonia secondary to COVID-19 including septicemia due to cytokine activity and fluid build-up in the lower lobe. Hospitalized COVID-19 patients are often in need of respiratory support.¹

2. What is the difference between aerosol and droplet transmission?

Droplets are considered particles secreted from a patient's respiratory tract that are no smaller than 5µm in diameter and travel shorter distances (defined as ≤ 3 ft.) because they cannot stay suspended in air for long periods of time. However, SARS-CoV, while still classified as a droplet, is estimated to travel anywhere from 6 ft. to 10 ft. and can be impacted by environmental factors such as velocity and mechanism by which respiratory droplets are propelled from the source, the density of respiratory secretions, environmental factors such as temperature and humidity, and the ability of the pathogen to maintain infectivity over that distance² and therefore has the potential to become an aerosol or airborne.

This presents challenges to the assignment of isolation categories because of conflicting information and uncertainty about possible routes of transmission. Although SARS-CoV is transmitted primarily by contact and/or droplet routes, airborne transmission over a limited distance (e.g., within a room), has been suggested, though not proven.³



3. How does the MetaNeb® System fit into the treatment plan of those with pulmonary complications secondary to COVID-19?

Early publications and reports on the clinical manifestations of COVID-19 suggest that up to 30% of patients with severe disease have significant pulmonary mucus production.⁴ Additionally, lung disease in many of these patients progresses to acute respiratory distress syndrome (ARDS). OLE therapy delivered by the MetaNeb System helps expand the lungs and mobilize secretions using Continuous Positive Expiratory Pressure (CPEP), and Continuous High Frequency Oscillation (CHFO). The therapy may therefore be helpful in treating these complications of COVID-19.



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4. Is the MetaNeb System therapy contraindicated in patients with COVID-19?

No – the MetaNeb System may be used in appropriate patients with an indication for airway clearance and/or lung expansion therapy. When delivering therapy, caregivers should follow the CDC guidelines for treating patient when there is a risk of airborne transmission.²

5. What are the recommendations for doing an aerosol generating procedure (AGP) or caring for infected patients or persons under investigation (PUI)?

Per CDC guidance to Infection Control, health care providers take airborne precautions when performing any aerosol-generating procedures in known or suspected COVID-19 patients.⁵ When performing aerosol generating procedures:

- Wear appropriate personal protective equipment (PPE) including, but not limited to an N95 fit tested respirator, gown, gloves, and face shield/eye protection
- Limit number of caregivers in the room
- Use negative airflow rooms
- Follow cleaning and disinfection procedures promptly in guidance with hospital's protocols
- Refer to facility specific Infection Control guidelines for full recommendations

6. What are the challenges using the MetaNeb System related to aerosolization of infectious particles?

The MetaNeb System therapy along with other bronchial hygiene therapies, is an AGP. As such, certain precautions must be taken (airborne precautions) when treating these patients.

These therapies carry similar risk of airborne transmission. Health care providers must therefore take the same precautions.⁵

7. How is the MetaNeb System therapy best used given these recommendations?

The MetaNeb System therapy be used in appropriate patients with an indication for airway clearance and/or lung expansion therapy. As with all therapies, the appropriateness of the therapy in individual patients is determined by the treating physician and the health care team.

Care should be taken when doing any AGP (including the MetaNeb System therapy) in patients with COVID-19. The guidelines related to airborne precautions, provided by the CDC should be followed when delivering the therapy.⁵



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¹ Lei, J., Li, J., Li, X., & Qi, X. (2020). CT Imaging of the 2019 Novel Coronavirus (2019-nCoV) Pneumonia. Radiological Society of North America. doi: <https://doi.org/10.1148/radiol.20200236>

² Siegel JD, Rhinehart E, Jackson M, Chiarello L, and the Healthcare Infection Control Practices Advisory Committee, 2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings <https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html>

³ Ferguson, N. M. et. al. (2020). Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand. Retrieved from <https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-College-COVID19-NPI-modelling-16-03-2020.pdf>

⁴ Huang et al. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)

⁵ Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings. (2020, March 2). Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html>

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