

FREQUENTLY ASKED QUESTIONS

Using The Vest® Airway Clearance System During the COVID-19 Pandemic

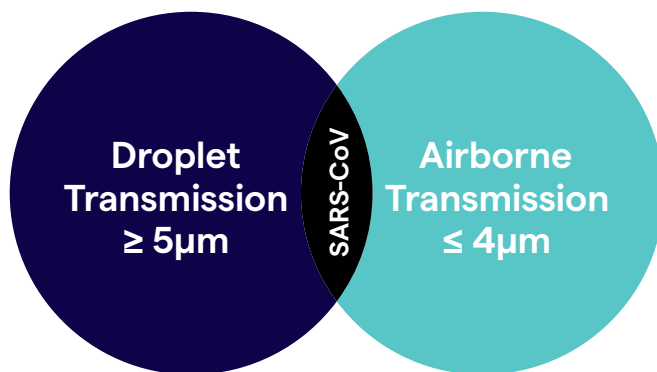
1. What are the respiratory complications related to COVID-19?

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



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3. Is High Frequency Chest Wall Oscillation (HFCWO) with The Vest® System an aerosol generating procedure (AGP)?

While The Vest® System therapy itself is not considered an AG procedure per [CDC Infection Control Guidelines](#) because it is a cough inducing therapy, it is important to take necessary steps of donning and doffing PPE consistent with the above guidelines.² These take into consideration factors such as the pathogen characteristics and recommended level of PPE needed.

4. What are the guidelines to delivering bronchial hygiene therapy like The Vest® System during COVID-19?

Current [CDC recommendations](#) state that if bronchial hygiene therapies are necessary for patient care, they should ideally be performed with appropriate level of PPE and environmental conditions (i.e. AIIRs). Specifically, it is recommended that healthcare workers take precautions during cough inducing therapies, like The Vest® System's HFCWO, by donning and doffing PPE in a manner that is consistent with Infection Prevention and Control practices. In addition, it is recommended to place a surgical mask over the patient's nose and mouth or, in the event of a PPE shortage, provide tissues for the patient to cough into (i.e practice good cough etiquette). For more information on COVID-19 specific Infection Prevention Guidelines, please visit the [CDC's COVID-19 website](#).⁴



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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 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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