

LETTERS TO THE EDITOR

## Sleep health service in China during the coronavirus disease outbreak

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In the past 3 months, the 2019 coronavirus disease (COVID-19), first reported in Wuhan, China, in December 2019, has spread throughout the world and has become a pandemic.<sup>1</sup> COVID-19 is mainly transmitted through respiratory droplets, close unprotected contact, and intense aerosols-generating procedures.<sup>2</sup> Sleep study and noninvasive positive airway pressure (NIPAP) therapy can increase the risk of exposure and transmission of new coronaviruses to medical staff and patients. The patient population and disease burden of sleep-disordered breathing (SDB), insomnia, and other sleeping disorders are quite high in China.<sup>3</sup> Assembly of SDB of the Chinese Thoracic Society commissioned a task force of sleep medicine specialists and pulmonologists to develop a consensus on sleep study and NIPAP treatment during the COVID-19 epidemic in China.<sup>4</sup> The following recommendations are based on expert consensus, and their implementation may be helpful for infection prevention and control during sleep health service delivery in China.

According to the consensus, the indications for sleep studies and NIPAP for patients with SDB should be strictly defined based on the local epidemic situation. For the high epidemic area, such as Wuhan and the nearby cities in Hubei province, sleep studies and NIPAP were suspended except in cases of emergency. For critically ill patients with SDB, the diagnosis and treatment protocol should be determined after careful COVID-19 screening and thorough consideration of the potential benefits and risks.

For areas with only sporadic cases or small clusters, sleep studies and NIPAP should be continued; however, portable home sleep studies and auto-adjusting positive airway pressure at home are recommended for adult patients with obstructive sleep apnea. The application of disposable nasal pressure transducers for sleep studies and disposable or personal masks and ventilator tubing for NIPAP is strongly suggested. Sleep studies and NIPAP are suspended for patients with the following conditions in the past 2 weeks: travel or residential history in a high epidemic area (Wuhan and the adjacent cities); contact history with COVID-19-infected patients; contact history with febrile patients or those with respiratory tract symptoms from the high epidemic or cluster outbreak area; reported fever or

respiratory tract symptoms; and newly emerging ground glass opacities on chest computed tomography scans. For recovery patients without robust evidence of negative results of nucleic acid testing, sleep studies and NIPAP should also be postponed.

For a low epidemic area, in-laboratory sleep studies and NIPAP could be initiated after confidently ruling out the possibility of COVID-19 for patients with significant cardiopulmonary comorbidities or other sleep hypoventilation syndromes. For patients with suspected and confirmed COVID-19, it is contradicted to perform the sleep study and titration in a sleep laboratory. A remote-control multimodal ventilator is suggested for manual titration to avoid bedside exposure opportunities for the technicians. Appropriate use of personal protection equipment, including medical mask, caps, gloves, and long-sleeved gowns or fit-tested particulate respirators, is suggested for sleep technicians when performing the NIPAP procedure. Use of a medical mask if working within 1 m of the patient and practice of hand hygiene are mandatory. Whenever possible, use adequately ventilated single rooms when performing NIPAP procedures. All sensors and equipment should be carefully cleaned and disinfected with non-corrosive chlorine containing disinfectant or 75% ethanol between each patient use. Strict separation of the functional divisions, such as office area, procedure area, and infected area, is also important for infection prevention and control in the sleep laboratory.

The popularization of internet services and smartphones has enabled sleep medicine practitioners to provide online sleep health services during the COVID-19 outbreak in China. Some online sleep health services have been implemented, including online cognitive behavioral therapy for insomnia and online follow-up or visit for patients with SDB.

In general, the outbreak of COVID-19 has raised great challenges for sleep medicine delivery. Evidenced-based guidelines or good practice consensus is quite limited. The best infection prevention and control practices and the optimization of diagnosis and treatment protocol for sleep disorders during this outbreak should be developed based on the epidemic situation, culture, the availability of medical resources, and health care system of the local area.

## CITATION

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## DISCLOSURE STATEMENT

All authors have seen and approved the manuscript. Work for this study was performed at Department of Respiratory Medicine, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College. The authors report no conflicts of interest.