

COVID-19: community CPAP and NIV should be stopped unless medically necessary to support life

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Dear Editor,

Data from the severe acute respiratory syndrome coronavirus 1 (SARS-CoV-1) outbreak suggest high viral load at the time of transmission is associated with worse clinical outcomes.¹ Non-invasive ventilation (NIV), including CPAP, is currently listed by the WHO as a high-risk aerosol-generating procedure putting healthcare workers at risk and necessitates the use of personal protective equipment.^{2,3}

The current UK guidance does not account for high-dose viral transmission risk to family and carers in patients using community NIV and CPAP for treatment of chronic respiratory disease, especially obstructive sleep apnoea.

National Health Service guidance states for patients who remain at home during the coronavirus pandemic to continue with their usual method of ventilation.⁴ The British Thoracic Society guidance for obstructive sleep apnoea advocates patient choice to determine implementation of distancing measures while using CPAP or stopping CPAP for a short time. It goes on to encourage patients to persist with CPAP when experiencing symptoms of respiratory infection.⁵

Zou and colleagues reported comparable severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) viral load detection in nasal and throat swabs of symptomatic and asymptomatic patients, suggesting NIV-induced aerosolisation of nasopharyngeal

secretions from asymptomatic patients may pose similar risks for high-dose viral transmission in households.⁶ Aerosolised SARS-CoV-2 is reported to have a half-life of 1.1 hours in air and therefore a period of prolonged isolation may be required following NIV usage.⁷ Universal isolation for NIV and CPAP usage within households may not be practical and individualised consideration should be given to temporary cessation of community ventilation, taking into account the risks of withholding NIV in hypercapnia.⁸

While we agree that data are limited, we believe the risk of high-dose viral transmission of SARS-CoV-2, from community NIV and CPAP users to household members, to be highly plausible and with potentially severe consequence. In the interests of patients' families and their carers we call for a consensus opinion on clearer instructions for patients and their physicians—how to isolate while using NIV or CPAP at home, safety provisions for household members and risk–benefit analysis of temporary NIV or CPAP cessation.

A response by Baker and Sovani to the views expressed here has also been published in *Thorax*.⁹

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