

Researchers begin forming guidance on properly managing COVID-19 patient airways

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Since COVID-19 acutely affects the respiratory system, airway management is a significant concern among patients. However, because the virus is new and knowledge about it evolves, clear guidance on best practices remains hard to come by, especially on the topic of airway management. An international research group featuring experts from the United States, China, Ireland, the United Kingdom, Australia, New Zealand, Turkey, Germany, Canada, Ukraine, South Africa, and India—led by a faculty member at the Perelman School of Medicine of the University of Pennsylvania—has published an international expert consensus on three points of contention to better facilitate patient treatment amid the pandemic. The consensus was published in the *British Journal of Anaesthesia*.

"We hope that through our work to put this together, health systems will take note and the overall outcome of respiratory support and treatment in COVID-19 patients will improve," said

the lead author Huafeng Wei, MD, Ph.D., an associate professor of Anesthesiology at Penn Medicine. "We also hope this work will help guide health care workers toward working more safely."

The three areas Wei and his co-authors tackled were personal protection equipment (PPE), the use of high-flow nasal oxygen, and when [tracheal intubation](#) is best performed. While research remains to be done on all of these topics, there was enough evidence from experts across the medical field to form a tentative consensus, according to the paper's authors.

First, when it comes to PPE, the team clarified the classification of PPE levels into three categories. They then concluded that the highest level of equipment, Level III, should be donned amid procedures that have a high-likelihood of producing aerosols, the fine particles borne through the air on liquid droplets that transmit COVID-19. This level of equipment includes using an N95 or equivalent mask, both eye goggles and a face shield (or a powered air-purifying respirator [PAPR]), a water-resistant gown, and hooded coverall, among other items. Although studies comparing different levels of PPE that the team reviewed were somewhat inconsistent, Level III protection appeared to provide the lowest rates of transmission from patients to health care workers.

As supply chain issues continue in some parts of the world, the authors acknowledge this level of PPE is not always available. If not, they urged health care workers directly performing higher-risk procedures to use the highest levels of protection available to them.

"It's better to be safe than sorry, we believe, since there isn't much well-designed research on the topic yet," Wei said.

Wei and his colleagues also reconsidered high-flow nasal oxygen because initial guidelines actually discouraged its use. This was due to fears of the potential for aerosolization of the virus and infection of health care workers. However, there was no clear evidence that demonstrated using high-flow nasal oxygen increased the likelihood of COVID-19 transmission to health care workers. Since recent studies suggested its benefit to improve outcomes in COVID-19 patients, the authors recommended that clinicians follow their standard benefit/risk ratio assessment for the care of the patient, themselves. This recommendation, of course, came along with the provision that physicians use as high a level of PPE as possible.

Finally, the paper weighed in on the timing of tracheal intubation, attempting to parse whether "early" or "late" intubation was better for patients. Some of the studies that Wei reviewed showed benefits to early intubation, before the disease progressed too much and when it was less hazardous for health care workers. However, there really hasn't been a consensus, so Wei and his co-authors determined that individual patient conditions should be the main governing factor.

Moving forward, as more is discovered about COVID-19, the groups plans to update their guidance..

"We plan to monitor publications and progress on these controversial topics and update continuously," Wei explained.

More information: Huafeng Wei et al. Controversies in airway management of COVID-19 patients: updated information and international expert consensus recommendations, *British Journal of Anaesthesia* (2020). [DOI: 10.1016/j.bja.2020.10.029](https://doi.org/10.1016/j.bja.2020.10.029)

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