



A telepresence robot in the room of a COVID-19 patient can provide virtual family presence

Adrien Lociciro · Antoine Guillon, MD, PhD · Laetitia Bodet-Contentin, MD, PhD 

Received: 23 April 2021 / Revised: 7 May 2021 / Accepted: 19 May 2021 / Published online: 8 June 2021
© Canadian Anesthesiologists' Society 2021

Keywords COVID-19 · critical illness · family health · advanced technology

The COVID-19 pandemic has caused a variety of situations that have resulted in limited hospital visits of family members. Psychological distress has clearly increased for patients, family members, and intensive care unit (ICU) staff because of visiting restrictions.^{1–4} Family members of isolated COVID-19 patients in the ICU experience moral injury with prevalence of anxiety and depression of 83% and 73%, respectively.² Thus, intensivists are faced with an impossible equation: (i) they should promote interactions between the relatives and the critically ill patients to prevent post-traumatic stress disorder; however, (ii) they need to ensure patient, staff, and visitor safety—and thus respect the restrictions of hospital visits.¹

Here, we show a remote-controlled robot that helps to support communication between patients and their relatives. The robot is fully equipped with communication technology and is controlled by the family who becomes present from a distant location and can virtually explore the room (Figure). Conscious patients can communicate with the avatar of the family with a certain degree of independence and privacy (Figure). The family can be virtually present at the bedside and receive daily information during nursing care or participate in family conferences with ICU clinicians. Family members of unconscious patients can be introduced to the ICU environment and have a better understanding of the situation.

By providing a virtual presence of patients' families, psychological distress may be reduced in critically ill patients (able to see their loved-one despite the life-threatening situation) and family members (feeling less guilty for not being more present, being able to observe their loved one, and being reassured about their comfort). A telepresence robot in isolation rooms may limit the psychological burden of limited visits.

A. Lociciro
Intensive Care Unit, Tours University Hospital, University of
Tours, Tours, France

A. Guillon, MD, PhD
Intensive Care Unit, Tours University Hospital, University of
Tours, Tours, France

Research Center for Respiratory Diseases, University of Tours,
Tours, France

L. Bodet-Contentin, MD, PhD (✉)
Intensive Care Unit, Tours University Hospital, University of
Tours, Tours, France
e-mail: laetitia.bodet@univ-tours.fr

methodS in Patient-centered outcomes and health ResEarch
(SPHERE), University of Tours, Tours, France



Figure A telepresence robot (UBBO telepresence robot, AXYN, France) is controlled by the family from a remote location and provides a virtual presence of the family within the isolation room of the COVID-19 patient. A) The robot is a wheeled device, controlled from a remote location that can move in the room or adjust its head rotation to optimize face-to-face meetings. It includes a tablet with 4G connectivity, video camera, screen, speakers, and microphones. A dedicated website is used to secure the connection and to avoid using

personal login or phone numbers; no information is stored. It can be shared between patient rooms after an approved process of disinfection. B) The telepresence robot enhances communication between the relatives and the patient. The patient reported that the regular presence of unmasked familiar faces brought immediate relief.

Acknowledgement We thank the patients, families, and caregivers.

Author contribution The patient provided written permission to publish this report.

Disclosures None.

Funding statement The telepresence robot equipment was funded by “Fond de dotation du CHU de Tours”.

Editorial responsibility This submission was handled by Dr. Sangeeta Mehta, Associate Editor, *Canadian Journal of Anesthesia/ Journal canadien d’anesthésie*.

References

1. Azoulay É, Curtis JR, Kentish-Barnes N. Ten reasons for focusing on the care we provide for family members of critically ill patients with COVID-19. *Intensive Care Med* 2021; 47: 230-3.
2. Cattelan J, Castellano S, Merdji H, et al. Psychological effects of remote-only communication among reference persons of ICU patients during COVID-19 pandemic. *J Intensive Care* 2021; . <https://doi.org/10.1186/s40560-020-00520-w>.
3. Sasangohar F, Dhala A, Zheng F, Ahmadi N, Kash B, Masud F. Use of telecritical care for family visitation to ICU during the COVID-19 pandemic: an interview study and sentiment analysis. *BMJ Qual Saf* 2020; . <https://doi.org/10.1136/bmjqs-2020-011604>.
4. Suresh D, Flatley K, McDonough M, et al. Providing compassionate care: the role of medical students and videoconference technology in the COVID-19 pandemic. *J Patient Exp* 2020; 7: 1002-6.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.