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EDITORIAL

Communication in the ICU during the COVID-19 pandemic

Jorge Arturo Barreras-Espinoza, Francisco Alberto Leyva-Moraga, Eduardo Leyva-Moraga, Fernando Leyva-Moraga, Ahmed Soualhi, Abelardo Juanz-González, Martyn Urquijo, Mónica I. Burgos-Claudio, Jesús Antonio Ocejo-Gallegos, Jesús Martín Ibarra-Celaya, Will Sloper and Graciano Castillo-Ortega

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Effective communication in the ICU setting is a substantial element of teamwork and essential for the delivery of well tolerated patient care. During ICU interventions, the use of personal protective equipment (PPE) can impair the transfer of information between critical healthcare providers due to limitations in sending and receiving spoken language. This is especially true with the addition of N95 elastomeric and powered air-purifying respirators. Because the use of PPE is vital to prevent viral transmission, novel methods of communication have become necessary among the healthcare workforce. This includes nonverbal communication, such as sign language. This article aims to provide a feasible solution to the current issue by outlining an example of a sign language system, with specific relevance to interventions carried out in ICU.

Communication in the ICU is challenging considering the complexity and different domains involved. Lighting, ambient noise and scheduling changes result in provider and patient stress, which can increase the risk of miscommunication errors and lead to worse patient outcomes.[1] In addition, in the COVID-19 ICU setting, the use of PPE (although essential to ensure safety) may compromise the effective response of the team in emergency scenarios, as it represents an impairment of perceptual and cognitive functioning involving difficulties in visual and auditory perception, impaired speech comprehension and degraded situational awareness.[2–4] Therefore, ensuring the delivery of effective communication, particularly within the ICU team, cannot be overstated.

Previous reports have addressed limitations in the ability of medical personnel to communicate information to patients with serious illnesses during the COVID-19 pandemic.[5] However, little has been studied about the implications this has had on communication between medical personnel. In order to support effective communication while mitigating ineffective voice transmission, we propose a series of ten hand signals that symbolise relevant commands used in the ICU setting (Fig. 1, Supplementary Video 1, http://links.lww.com/EJA/A600). To our knowledge, there is no universal consensus on the meanings of each hand sign, thus making our sign language the most current and potentially adaptable tool to any ICU setting in supporting effective communication, especially during COVID-19 mitigation efforts.

Although our model is limited to a restricted number of manual sign orders and does not provide complete coverage of all interventions performed in the ICU, it is possible to adapt this system to the standardisation of the communication of other tasks that may be used in any ICU where verbal communication is difficult, such as indicating bed position changes of the patient, instruments or supplies requested during a procedure, reporting patient general information of vital signs status, cardiac arrest sequence of commands, administration of pre-indicated medications and so forth. To ensure proper understanding of the commands, it is important that the sender and receiver of the message validate their interactions by making clear body gestures and do not proceed during their intervention without clearly indicating the 'understood' sign.

From the Hospital General del Estado de Sonora, Surgery Department (JAB-E, AJ-G), Universidad de Sonora, Department of Medicine and Health Sciences, Hermosillo, México (FAL-M, EL-M, FL-M), GKT School of Medical Education, King's College London, London, UK (AS), The University of Arizona Banner Health, Department of Surgery, Tucson, Arizona, USA (MU), Universidad Autónoma de Guadalajara, Guadalajara, Jalisco, México (MIB-C), University of Miami/Jackson Memorial Hospital, Internal Medicine Department, Miami, Florida, USA (JAO-G), Hospital General del Estado de Querétaro, Thoracic Surgery Department, Querétaro, México (JMI-C), ICU Department, William Harvey Hospital, Ashford, Kent, UK (WS), Hospital General del Estado de Sonora, Thoracic Surgery Department, Hermosillo, México (GC-O)

Correspondence to Fernando Leyva-Moraga, MD, Universidad de Sonora, Av Luis Donaldo Colosio, Centro, 83000 Hermosillo, Son., México
E-mail: leyvamoragafernando@gmail.com

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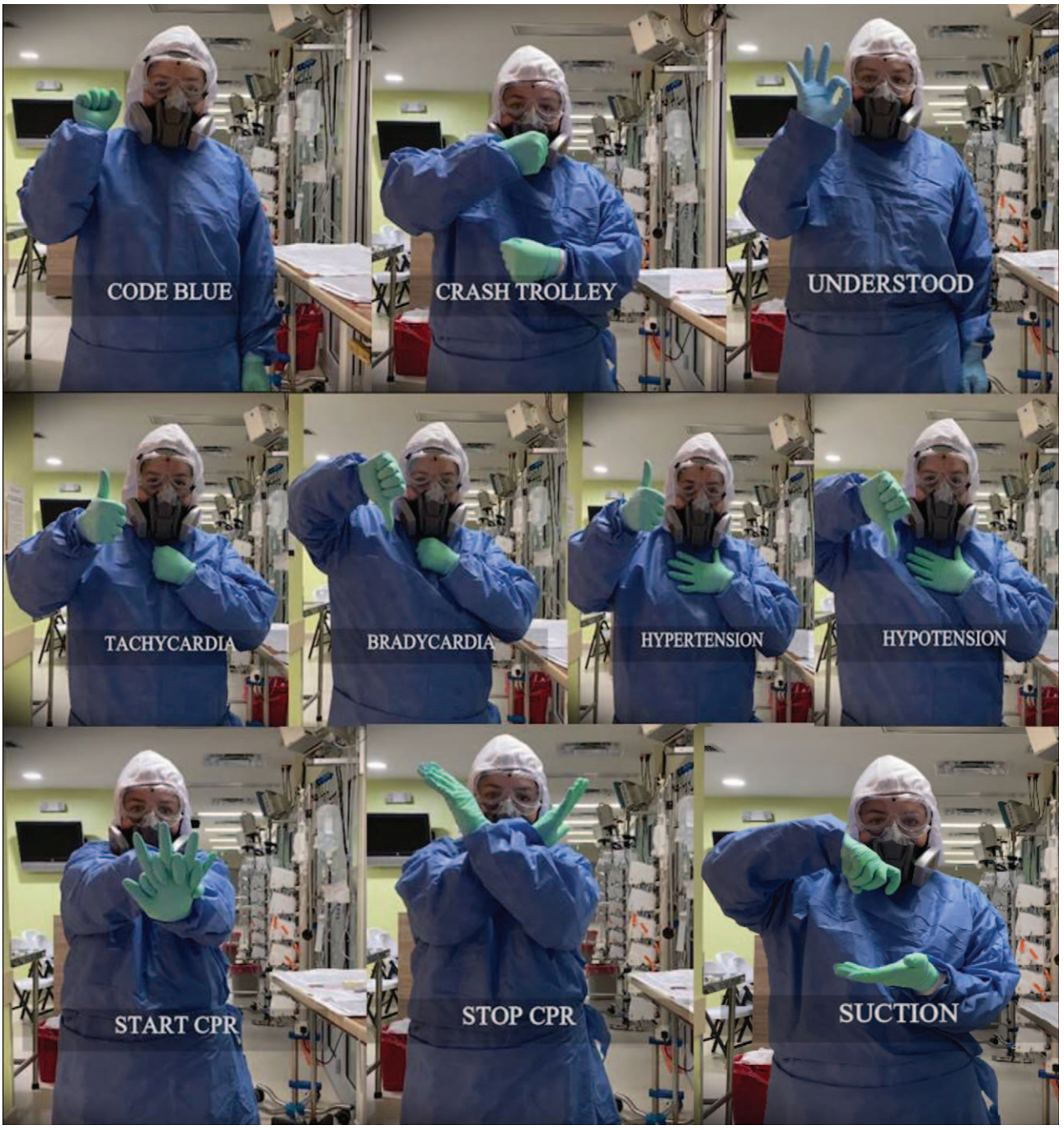
Fig. 1 Ten examples of sign language in ICU



Few reports in the literature have addressed strategies to enhance communication efficiency within the health provider teams. However, the use of hand signals in the operating theatre has been recommended to avoid degradation of voice transference under the use of PPE. Leyva-Moraga *et al.*[6] emphasised precautions to preserve the efficiency of communication by sharing a perspective on the adaptation of a language that consists of fourteen hand signals that include the most common tasks used in the majority of surgical procedures. In their experience in the operating theatre, hand signals complement verbal commands that are not clear enough on their own, creating a more intuitive response.

Whenever the necessity of verbal communication is met, especially when wearing full-face protection, it is ideal to

avoid the use of simple words and phrases, as they are unable to be understood 27% of the time at distances as close as 2 feet (60 cm) because distance and intelligibility are interrelated.[2,3] In an effort to avoid possible speech degradation, the person transmitting a message must be precise and provide context to stimulate word recognition, as well as overexpression of body gestures to deliver the intended communication.[3]

We look forward to wider innovations in equipment manufacturing that can provide novel designs as well as technologies that enhance speech transmission.[3] In the meantime, hand signals are a feasible solution to this problem. Future signals should relate and integrate the concept of what is to be conveyed with an intuitive and congruent signal with well defined body gestures, as well as the indications of the individuals involved in the communication. In addition, hand signals must be validated by universal consensus, to ensure that the practice can be safely replicated.

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