

LETTERS TO THE EDITOR



Brazilian Contributions on Standardized Education for Brain Death Determination

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Dear Editor,

We would like to congratulate Dr. Jaffa and colleagues [1] for their article addressing the importance of standardized training for the determination of brain death. This is a sensitive and important topic, but it can often be treated lightly by intensivists, neurologists, and emergency physicians. We fully share the view that this is a fundamental issue for the preservation of the credibility of health systems, patient safety, family protection, and the professional safety of those who conduct the diagnosis.

Although we understand that the diagnosis of brain death should not be conditioned to the process of organ donation and transplantation, the greatest educational experiences on this subject are linked to the donation and transplantation system. In this way, the successful Spanish model of organ donation has its actions supported by the training of the staff that provides care to neurocritical patients. The massive and continuous training directed at these health professionals includes the early identification and optimized treatment of patients with severe neurological and neurosurgical conditions, communication techniques with family members, and the determination of brain death itself and its referral. In addition, the Spanish model has a methodology based on auditing and reviewing all in-hospital deaths of neurological cause, including the discussion of cases with medical

staff and other health care professionals whenever a failure to identify brain death is identified. This has led to an increase in the identification of patients with brain death, clearly perceived by the organizations involved with organ donation from that country, that occupies the world leadership in actual donors over the last decades [2, 3].

In Brazil, in general, medical knowledge on this subject is similar and as low as presented by Jaffa et al. [4–6]. This was the reason why organ procurement organizations (OPOs) in some Brazilian states adopted the Spanish model as an example and began to prioritize training strategies in the diagnosis of brain death. The effectiveness of the initiative is reflected in the significant increase in organ notifications over the last decade, especially in the southern region. In this region, in the two states where more was invested in brain death education, referrals increased from 54.3 to 104.6 cases per million population (ppm) over the last decade. Although this good performance could be attributed to the better regional economic income, similar results were observed in states in the north (Rondônia: 27.5 ppm to 95.9 ppm) and the northeast (Ceará: 44.1 ppm to 75.3 ppm) that, although less economically favored, insisted on massive training aimed at health professionals [7, 8].

The authors emphasize variability in protocols (including prerequisites and techniques) and educational initiatives among US institutions that lead to inequity of the death declaration, which increases the probability of errors. In fact, there is no room for false positive results in determining death. Sharing the same concern, the Brazilian Federal Council of Medicine (CFM) published a resolution in 2017 that regulates not only the criteria and methodology for determining brain death but also

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standardizes the training of physicians to perform this diagnosis, which is mandatory for physicians who have participated in less than ten diagnoses of brain death [9]. This generated a strong movement from the Brazilian Association of Intensive Care Medicine, the Brazilian Academy of Neurology, and state OPOs to promote training courses according to the model recommended by the CFM—including simulation and communication skills. Since then, more than 5,000 physicians have been trained in person by the Brazilian Association of Intensive Care Medicine and OPOs in partnership with the National Transplant System and the Pan American Health Organization. During these courses, it was possible to corroborate the authors' assertion that the understanding of practice parameters and common pitfalls that are a part of brain death determination is poor, even among experienced physicians.

With 20.5 million inhabitants, Minas Gerais was the Brazilian state that received the largest number of training courses for the determination of brain death by the Brazilian Association of Intensive Care Medicine. Almost 900 physicians were trained in 40 courses taught throughout 2018. Brain death diagnoses increased from 26.1 ppm in 2017 to 38.0 ppm in 2019. Seven additional courses were taught in the postpandemic period. Brain death notifications reached 42.8 ppm in 2022 (65% increase compared with 2017) [7, 8]. This increase was likely motivated by the greater awareness promoted by the qualification of brain death knowledge among the local medical community.

The authors state that “it is paramount that medical education on brain death be included in the curriculum” [1]. We fully agree with their assertion: the diagnosis of brain death has been part of the curricular basis of Brazilian intensive care medicine residency programs for many years. It is considered an essential competence of intensivists and usually part of board examinations to obtain the intensivist title.

We also want to share our positive impression of the large-scale use of checklists, cited by the authors as instruments to guide the stages of diagnosis. In Brazil, as required by the resolution of the CFM, it is mandatory to fill out a brain death diagnosis form in checklist format, which comprises all stages of diagnosis: identification, prerequisites, clinical tests, apnea test, and complementary examination [9]. Although we have no data on this subject, the subjective impression is that it is a fundamental tool to ensure the safety of the process, as well as the communication between teams and with regulatory bodies.

In conclusion, we understand that the effective implementation of the actions suggested by Jaffa et al. [1], and the verification of their practical effect over the years

will contribute to the determination of brain death as no longer being a peripheral theme of modern medical training and practice.

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GAW and BAMPB conceived and contributed to the writing of the manuscript. JA, LAS, and CAF helped with the revision of the manuscript and some data input. All authors have read and approved the manuscript as submitted, are qualified for authorship, believe the submission represents honest work and take full responsibility for the reported findings.

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