

Article

Second brain death examination may negatively affect organ donation

D. Lustbader, MD, D. O'Hara, MS, E.F.M. Wijdicks, MD, PhD, L. MacLean, PhD, W. Tajik, A. Ying, MS, E. Berg and M. Goldstein, MD

[+](#) Author Affiliations

Address correspondence and reprint requests to Dr. Dana Lustbader, North Shore University Hospital, 300 Community Drive, Manhasset, NY 11030 Lustbader@nshs.edu

Abstract

Background: Little is known about the impact of the requirement for a second brain death examination on organ donation. In New York State, 2 examinations 6 hours apart have been recommended by a Department of Health panel.

Methods: We reviewed data for 1,229 adult and 82 pediatric patients pronounced brain dead in 100 New York hospitals serviced by the New York Organ Donor Network from June 1, 2007, to December 31, 2009. We reviewed the time interval between the 2 clinical brain death examinations and correlated this brain death declaration interval to day of the week, hospital size, and organ donation.

Results: None of the patients declared brain dead were found to regain brainstem function upon repeat examination. The mean brain death declaration interval between the 2 examinations was 19.2 hours. A 26% reduction in brain death examination frequency was seen on weekends when compared to weekdays ($p = 0.0018$). The mean brain death interval was 19.9 hours for 0–750 bed hospitals compared to 16.0 hours for hospitals with more than 750 beds ($p = 0.0015$). Consent for organ donation decreased from 57% to 45% as the brain death declaration interval increased. Conversely, refusal of organ donation increased from 23% to 36% as the brain death interval increased. A total of 166 patients (12%) sustained a cardiac arrest between the 2 examinations or after the second examination.

Conclusion: A single brain death examination to determine brain death for patients older than 1 year should suffice. In practice, observation time to a second neurologic examination was 3 times longer than the proposed guideline and associated with substantial intensive care unit costs and loss of viable organs.

Footnotes

ICU
intensive care unit

NYODN
New York Organ Donor Network

OPO
organ procurement organization