

# Update on determination of death: Experts call for international consensus

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The criteria used to diagnose both circulatory and brain death in a patient are subject to variability and as such can be controversial. Anaesthesiologists play an important role in procedures related to the determination of death, so should have specific knowledge about medical, ethical and legal criteria of brain death definition. Experts will call for international consensus in a presentation at Euroanaesthesia 2013, the annual congress of the European Society of Anaesthesiology (ESA).

"Before the [technological advances](#) of the last century, death was diagnosed by presence of coma, apnoea, and lack of a pulse. The failure of the cardiovascular or respiratory systems inevitably led to a person dying," says presenter Ricard Valero, Senior Consultant Anaesthesiologist at the Hospital Clínic de Barcelona, and Associate Professor of Anaesthesiology at University of Barcelona, Spain.

However, the establishment of the criteria determining neurological (brain) death during the 20th century represented a significant change regarding the traditional method to define death and still is a challenge from the ethical and scientific point of view. "For this diagnosis, it is essential to demonstrate irreversible coma, absence of response to stimuli and absence of brainstem reflexes (including the capacity to breathe), once the situations that could interfere with the diagnosis have been discarded," says Valero. "However, several studies have demonstrated that there is no [global consensus](#) on what are the detailed [diagnostic criteria](#) for this determination in clinical practice, such as the

number of physicians needed to agree on the diagnosis, how many and which reflexes need to be examined, length of observation periods, and use of additional tests to confirm death."

"Biological death is not an event, but a process," concludes Valero.

"Anaesthesiologists participate in the decision-making around this process, and we have to establish clear and unequivocal criteria for the diagnosis of death, knowing the emerging ethical implications."

Valero says that, while every doctor should be involved in the debate in general terms, that it is most relevant to anaesthesiologists, intensive care doctors, neurologists and neurosurgeons, since they are the specialties most commonly involved in determining death in the clinical setting.

In another part of the session Dr Alex Manara (Consultant in Anaesthesia and Intensive Care Medicine & Regional Clinical Lead in Organ Donation for the UK South West Region, Frenchay Hospital, Bristol, UK) will discuss the circulatory criteria to confirm death and argue that with 600,000 deaths in the UK each year and 56 million deaths worldwide, "we should know all there is to know about death." Yet unlike [brain death](#) there has been virtually no guidance until recently to standardise the circulatory-respiratory criteria.

He will say "there needs to be consensus around a practical and concrete definition of death that describes the state of human death based on measurable and observable biomedical standards". He will call for "a research agenda to address outstanding knowledge gaps in this complex field."

Dr Manara will discuss an operational definition of death being proposed by an expert forum organised by the Canadian Blood Services in collaboration with the World Health Organization. This states death occurs when there is permanent loss of capacity for consciousness and

loss of all brainstem functions. This may result from permanent cessation of circulation and/or catastrophic brain injury—in this context permanent means a loss of function that cannot resume spontaneously or be restored through intervention.

Problems arise because the point of absolute "irreversibility" of loss of the circulation is vague and will vary from person to person as well as depend on the medical equipment and interventions available. The point of "permanence" however is better defined and is how death is determined correctly in everyday medical practice. A very few cases have been reported of people having suffered a cardiac arrest before being declared dead but in whom the circulation was spontaneously restored several minutes later and some went on to recover. Dr Manara will argue that this possibility can be eliminated by the continuous observation of the patient for a minimum of 5 minutes to confirm absence of the circulation before declaring death. This should become the minimum standard for clinical declaration of death by circulatory criteria and will maintain professional and public confidence in the diagnosis of death, both after terminating CPR and in the context of organ donation after the circulatory determination of [death](#).

Dr Manara concludes "The work begun by WHO in this sensitive and complex area needs to continue and to be supported globally".

Provided by European Society of Anaesthesiology

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