



## Abstract

Brain death – Declaration of brain death made mandatory in Government Medical College Hospitals in Chennai – Procedure for declaration of brain death – orders issued.

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Health and Family Welfare (Z1) Department

(Thiruvallur Aandu - 2039  
Sarvajith, Masi Matham -20)

G.O. (Ms) No. 75

Dated : 03.03.2008  
Read :

G.O. (Ms) No. 6, Health and Family Welfare Department Dated 8.1.2008

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Order:-

In the Government Order read above, declaration of brain death has been made mandatory in Government Medical College Hospitals in Chennai. In para 5 of the above order, it was decided that the procedures to be followed for declaring brain death and the personnel authorised to certify the same would be issued separately.

2. Whereas the Transplantation of Human Organs Act of 1994 (THO Act) and the Transplantation of Human Organs Rules, 1995 (THO Rules) are the only pieces of legislation available wherein brain death certification procedures have been elaborately laid down, it is hereby decided that the procedures outlined therein will also be adopted as brain death certification procedure in Tamilnadu. This order will also elaborate on the above format to ensure its applicability to the state.

3. Form 8 of the THO Act and Rules as found in the Annexure-I to this order are prescribed as the brain death certification format to be utilised for any given situation requiring certification that a person is dead on account of permanent and irreversible cessation of all functions of the brain stem. The tests prescribed therein and the findings required shall remain the same.

4. According to Form 8 of the said Act and Rules, when such certification is required, there shall be two medical examinations conducted by a team of doctors after a minimum interval of six hours and the findings made based on the tests prescribed therein.

5. One aspect of the above form requires further clarification and this is provided in Annexure-II of this order.

6. According to Form 8 of the above Act and Rules, four Doctors are authorised to certify Brain death and this provision is clarified further.

(A) Doctor No.1 is the 'R.M.P. In charge of the hospital in which brain-stem death has occurred'. Accordingly, the Registered Medical Practitioner in charge of the hospital in which brain-stem death has occurred shall refer to either the Head of the Institution, RMO,

ARMO, Duty RMO or the RMP in charge of the Hospital. (No clearances are required from the Appropriate Authority in this category).

(B) Doctor No. 2 is the R.M.P. (Physicians, Surgeons or Intensivists) nominated from the panel of names approved by the Appropriate authority'. Accordingly, a panel of names shall be sent by the Dean/Medical Superintendent/Medical Director to the Appropriate Authority namely the Director of Medical and Rural Health Services and on approval shall then be utilised as the panel from which a R.M.P. shall be nominated for each brain death certification. Each hospital may determine its own procedure for this duty.

(C) Doctor No.3 is 'Neurologist/Neuro-Surgeon nominated from the panel of names approved by the Appropriate Authority'. Again, a panel of names shall be sent by the Dean/Medical Superintendent/Medical Director to the Appropriate Authority namely the Director of Medical and Rural Health Services and on approval shall then be utilised as the panel from which one specialist as in the category therein shall be nominated for each brain death certification. Each hospital may determine its own procedure for this duty.

(D) Doctor No.4 is the R.M.P. treating the aforesaid person. This does not require any clarification and shall be the R.M.P./ Doctor on duty treating the patient. (No clearances are required from the Appropriate Authority in this category).

Note: i) In the event of lack of authorised personnel in Category 3 above in the hospital concerned, a request may be made to any other member of the panel from another hospital.

ii) The 1<sup>st</sup> and 2<sup>nd</sup> Medical examination as defined in Form-8 of the THO rules shall be conducted by category 2 and 3 Doctors from the panel approved by the Appropriate Authority.

7. Although it has been made mandatory for the three Medical College hospitals in Chennai to follow this procedure, the same procedure shall be applicable to all hospitals inclusive of private hospitals which wish to certify Brain Death as and when required. Accordingly, the categories that require for the panel to be approved shall be done so on submission to the Appropriate Authority (Director of Medical and Rural Health Services).

8. The Director of Medical Education and the Director of Medical and Rural Health Services are directed to periodically organise awareness workshops on the provisions of the above order.

(By order of the Governor)

V.K.Subburaj,  
Secretary to Government

To

The Director of Medical Education, Chennai 600 010.

The Director of Medical & Rural Health Services, Chennai 600 006.

The Dean, Government General Hospital, Chennai 600 003.

The Dean, Government Stanley Hospital, Chenna-600 001.

The Dean, Government Kilpauk Medical College Hospital, Chennai – 600 010.

/forwarded by order/

Section Officer

**Annexure - I**  
**FORM 8**

[See rule 4(3)(a) and (b) of the THO Rules 1995]

We, the following members of the Board of medical experts after careful personal examination, hereby certify that Shri/Smt./Km. .... aged about ..... s/o, d/o, w/o, Shri. .... resident of ..... is dead on account of permanent and irreversible cessation of all functions of the brain-stem. The tests carried out by us and the findings therein are recorded in the brain-stem death Certificate annexed hereto.

Dated .....

Signature .....

- |                                                                                                       |                                                                                     |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1. R.M.P., Incharge of the Hospital in which brain-stem death has occurred.                           | 2. R.M.P., nominated from the panel of names approved by the Appropriate Authority. |
| 3. Neurologist/Neuro-Surgeon nominated from the panel of names approved by the Appropriate Authority. | 4. R.M.P., treating the aforesaid deceased person.                                  |

**BRAIN-STEM DEATH CERTIFICATE**

**Patient Details:**

- |                                                                                                                   |                     |
|-------------------------------------------------------------------------------------------------------------------|---------------------|
| 1. Name of the patient                                                                                            | Shri/Smt./Km. ....  |
| S.O./D.O/W.O.                                                                                                     | Shri. ....          |
|                                                                                                                   | .....               |
|                                                                                                                   | Sex ..... Age ..... |
| 2. Home address                                                                                                   | .....               |
|                                                                                                                   | .....               |
|                                                                                                                   | .....               |
| 3. Hospital Number                                                                                                | .....               |
| 4. Name and Address of next of kin or person responsible for the patient (if none exists, this must be specified) | .....               |
|                                                                                                                   | .....               |
|                                                                                                                   | .....               |

- .....  
 .....  
 5. Has the patient or next of kin agreed to any transplant? .....
- .....  
 .....
6. Is this a Police Case? Yes ..... No .....

**Pre-conditions**

1. Diagnosis: Did the patient suffer from any illness or accident that led to irreversible brain damage? Specify details .....
- .....  
 ...  
 .....
- Date and time of accident/onset of illness  
 .....  
 Date and onset of non-responsible coma  
 .....

2. Findings of board of Medical Experts:
- (i) The following reversible causes of coma have been excluded: -  
 Intoxication (Alcohol)  
 Depressant Drugs  
 Relaxants (Neuromuscular blocking agents)
- |                      | First Medical Examination |                 | Second Medical Examination |                 |
|----------------------|---------------------------|-----------------|----------------------------|-----------------|
|                      | 1 <sup>st</sup>           | 2 <sup>nd</sup> | 1 <sup>st</sup>            | 2 <sup>nd</sup> |
| Primary hypothermia  |                           |                 |                            |                 |
| Hypovolaemic shock   |                           |                 |                            |                 |
| Metabolic or         |                           |                 |                            |                 |
| endocrine disorders  |                           |                 |                            |                 |
| Tests for absence or |                           |                 |                            |                 |
| brain-stem functions |                           |                 |                            |                 |
- (ii) Coma
- (iii) Cessation of spontaneous breathing

- (iv) Pupillary size
- (v) Pupillary light reflexes
- (vi) Doll's head eye movements
- (vii) Corneal reflexes (Both sizes)
- (viii) Motor response in any cranial nerve distribution, any responses to stimulation of face, limb or trunk
- (ix) Gag reflex
- (x) Cough (Tracheal)
- (xi) Eye movements on coloric testing bilaterally
- (xii) Apnoea tests as specified
- (xiii) Were any respiratory movements seen ?

.....

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Date and time of first testing :

.....

Date and time of second testing :

.....

This is to certify that the patient has been carefully examined twice after an interval of about six hours and on the basis of findings recorded above.

Shri./Smt./Km. .... is declared brain-stem dead.

- 1. Medical Administrator Incharge of the hospital
- 2. Authorised Specialist.
- 3. Neurologist/Neuro-Surgeon
- 4. Medical Officer treating the patient.

- NB. I. The minimum time interval between the first testing and second testing will be six hours.
- II. No. 2 and No. 3 will be co-opted by the Administrator In charge of the hospital from the Panel of experts approved by the appropriate authority.

## ANNEXURE - II

### Guidelines for Apnoea Tests:

Patient should have a temperature of more than 35° centigrade euvolemic and with Systolic pressure  $\geq$  90 mm of Hg.

- i. The first Apnoea test should be performed only after 4 hours of Coma associated with absence of brain stem reflexes. In the case of Anoxic brain damage, this period should be extended to 12 hours.
- ii. The Physician involved in certifying Brain death shall be present during Ventilator removal to attest the presence of apnoea if found.
- iii. Ventilator manipulation is performed to raise the PaCo<sub>2</sub>  $\geq$  40 mmHg.
- iv. The patient should be hyper oxygenated with 100% oxygen for 15 minutes, while still on the ventilator, prior to the apnoea test.
- v. Either a blood gas or trending of ETCO<sub>2</sub> should be used to determine the adequacy of the baseline prior to the test. SPO<sub>2</sub> should be monitored during apnoea test.
- vi. Place the patient on 100% oxygen through a tracheal catheter with the tip towards the end of the tube with a continuous 6L/min O<sub>2</sub> flow.
- vii. The patient is taken off the ventilator in the presence of the physician certifying brain death. The patient is kept off the Ventilator for a variable period of time (usually 3 to 8 minutes) to allow the PaCo<sub>2</sub> to rise  $\geq$  55 mmHg or  $\geq$  15 mmHg over baseline. During this time the patient is observed for respiratory movements.
- viii. Test interpretations;
  - a. Positive test – implying apnea despite adequate stimulation
    - i. Patient remains apneic, without respiratory movements
    - ii. PaCo<sub>2</sub> is  $\geq$  55 mmHg or  $\geq$  15 mmHg from baseline
  - b. Negative test – Implying apnea is not present
    - i. Respiratory efforts noted at any time during the test
  - c. Indeterminate test
    - i. - PaCo<sub>2</sub> < 55 mm Hg or there is less than 15 mm Hg increase over baseline.
  - d. Indeterminate tests can either be repeated or another confirmatory test utilized.
- ix. Apnoea test should be aborted if the patient develops hypotension, or significant cardiac arrhythmias.
- x. These norms will vary for patients less than 12 years and patients with major chest trauma.