HACKETTSTOWN REGIONAL MEDICAL CENTER
Administrative Policy and Procedure

SECTION: ADMINISTRATION **Number: AD45**
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TITLE: Determination/Declaration of Brain Death

PURPOSE:

To define the criteria and procedure whereby brain death upon the basis of neurological criteria can be determined and is consistent with N.J.A.C. 13:35-6A.

DEFINITIONS:

Apnea: **T**he absence of respiration and a terminal PC02 greater than 60 mm HG or a terminal PC02 at least 20 mm HG over the initial normal baseline PCO2.

Brain Death: The irreversible cessation of all functions of the brain including the brainstem.

Examining Physician: A physician who performs a clinical brain death examination and meets the qualifying criteria set for at N.J.A.C. 13:35-6A. The term "examining physician" may refer to one or more physicians involved in the clinical brain death examination.

POLICY:

It is the policy of HRMC to preserve and enhance human life and to ensure optimal medical care consistent with current accepted medical standards. However, conventional cardiac and respiratory criteria for death are not applicable for patients who have irreversibly lost all brain function and are on mechanical support. Under these circumstances, death can be established even though mechanical support systems maintain cardiac and respiratory function. The procedures listed in this policy are for determining and declaring brain death in that setting.

This policy is based on "Declaration of Death upon the Basis of Neurological Criteria" adopted by the NJ Board of Medical Examiners August 3, 1992 and amended October 1994 and May 2007. N.J.A.C. 13:35-6A provides that a patient may be pronounced dead if an authorized physician determines, in accordance with the criteria set forth in the rule, that brain death has occurred. The rule sets forth in detail the clinical findings (outlined in the attached neurological criteria check list) that, if present, are indicative of brain death.

The examining physician who is to pronounce brain death (see table below for Physician qualifications) shall determine a reasonable basis to suspect brain death. Brain death may be declared where the etiology of the insult or injury is sufficient to cause brain death and, in the judgment of the examining physician, is irreversible. The cause of the coma must be established and sufficient to account for the loss of all brain function. Reversible conditions such as drug sedation, severe metabolic disturbance, severe hypothermia ($\leq$ 92°F in adults), neuromuscular blockade and shock, must be searched for and appropriately treated unless in the judgment of the examining physician any such imbalances do not

confound the clinical assessment of brain death. In cases of CNS depressants, if serum blood levels are not available, above the therapeutic range, unknown, or there is an overdose or toxic exposure or an unknown agent, a brain death evaluation may proceed without reliance on a clinical exam if, in the judgment of the examining physician, the injury or cause of coma is non-survivable. In such an event, an objective measure of intracranial circulation shall be used as a confirmatory test.

When a clinical examination of a patient shows the absence of all supraspinal and brain stem reflexes as established by the neurological check list on clinical examination, the examining physician shall confirm the diagnosis of brain death with an objective confirmatory test or a repeat clinical examination.

- A single clinical examination consistent with brain death can be sufficient in conjunction with a confirmatory test such as four-vessel cerebral angiography, radionuclide angiography, transcranial doppler ultrasound, CT or MR angiography demonstrating absent cerebral blood flow. The clinical exam is not complete without a formal apnea test. **The apnea test must be 8-10 minutes resulting in a terminal PC02 greater than 60mm or a terminal PC02 at least 20mm over the initial normal baseline PC02.**
- If a confirmatory test is not performed, two clinical exams must be performed at least 6 hours apart for an adult (see table below for timing requirement for pediatric patients).

Age of Patient	Physician Qualifications to declare death upon the basis of neurological criteria:	Minimum number of hours between clinical examinations:
< 2 months old	Specialist in neonatology, pediatric neurology or pediatric neurosurgery	48 hours
2 months < 12 months old	Specialist in pediatric critical care, pediatric neurology or pediatric neurosurgery	24 hours
> 12 months old	Neurologist, neurosurgeon, critical care specialist, trauma surgeon or any physician who has been granted privileges by the hospital to perform a brain death evaluation	6 hours

PROCEDURE:

1. Complete the "Declaration of Death upon the basis of Neurological Criteria Checklist."

2. Organ Donation

All impending brain dead patients are considered by the New Jersey Organ & Tissue Sharing Network (NJ Sharing Network) for organ donation. At first indication of imminent brain death and prior to the cessation of mechanical ventilation, the NJ Sharing Network shall be notified at **1-800-541-0075**. All appropriate medical care shall continue until the NJ Sharing Network has been notified and has had the opportunity to determine the medical suitability of a potential candidate for donation.

The family shall not be approached until medical suitability is determined by the NJ Sharing Network. NJ Sharing Network is the designator requestor for the hospital. A plan for offering the opportunity of making an anatomical gift is a collaborative approach (NJ Sharing Network and hospital staff who established rapport with the family).

3. Documentation

The Declaration of Death upon the Basis of Neurological Criteria checklist is to be completed, signed, and remain in the patient's medical record.

4. Exemption to accommodate personal religious beliefs

Death shall not be declared on the basis of neurological criteria if the examining physician has reason to believe, on the basis of information in the patient's available medical records, or information provided by a member of the patient's family or any other person knowledgeable about the patient's personal or religious beliefs, that such a declaration would violate the personal religious beliefs of the patient. In these cases, death shall be declared, and the time of death fixed, solely upon the basis of cardio-respiratory criteria.

5. Pronouncement of Death

If the examining physician has been able to make all requisite determinations consistent with N.J.A.C. 13:35-6A, then the examining physician may authorize the pronouncement of death. The actual pronouncement of death may thereafter be made by the examining physician or any licensed physician acting upon the authorization of the examining physician.

6. Consent

Pronouncement of death after these criteria for brain death have been satisfied does not require consent of the family or other responsible individual. However, the family or responsible individual must be fully informed by the physician(s) concerning the patient's condition and the findings that support the conclusion that the brain is dead. Documentation of these discussions is to be recorded in the medical record.

Declaration of Death Upon the Basis of Neurological Criteria Checklist

The following clinical findings are observed:	Exam 1 *(Required)*		Exam 2 *(If needed)*	
	Yes	No	Yes	No
Supraspinal motor responses are absent The patient is in a deep coma, without any spontaneous movements or response to painful stimuli administered over the areas of cranial nerve distrituion (i.e. suprorbital pressure) and without decorticate or deceretrate posturing. Spinal reflexes may be present.				
Brain stem reflexes are absent:				
Pupillary response to light is absent				
Deviation of eyes to irrigation of ipsilateralevel ear wwith 50mls of cold water (intact tympanic membrane) is absent				
Corneal reflexes are absent				
Oropharyngeal responses are absent				
Apnea is established as outlined:				
Baseline ABGs drawn (Arterial PC02is normalized to ≥ 40 mmHg)				
	PC02		PC02	
100% O2 is administered for 10 minutes prior to test				
Pulse Oximater connected/ventilator disconnected				
100% O2 delivered into the trachea via cannula in ET tube at 6L/min				
Patient left off ventilator 8-10 minutes if tolerated				
ABG drawn; ventilator reconnected				
Lack of spontaneous respiration				
Length of apnea test/PCO2 at end of test are documented	PC02		PC02	
If apnea test is not tolerated explain why: _____				

Then, decide if a repeat apnea test will be done or a confirmatory test will be done.

Repeat Apnea ☐ ***or*** Confirmatory Test ☐

Exam 1 Date _____ Time_____ _____
Print Physician's Name *Signature*

and

Confirmatory Test Performed _____ Result _____
Date _____ Time_____ _____
Print Physician's Name *Signature*

OR, IF CONFIRMATORY TESTING IS NOT AVAILABLE OR IS CLINICALLY PRECLUED:

Exam 2 Date _____ Time_____ _____
Print Physician's Name *Signature*

Pronouncement of Death by Neurological Criteria	Date Time _____ *Print Physician's Name* *Signature*

New Jersey Organ and Tissue Sharing Network has been notified (1-800-541-0075) by _____

Patient's Addressograph/Hospital ID