

AcuteCare Health System

Specialty Hospital at Monmouth

Specialty Hospital at Kimball



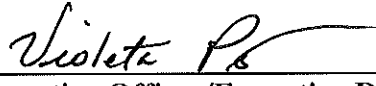
Department: CLINICAL SERVICES

Policy # D113C

Title: DETERMINATION OF DEATH BY NEUROLOGICAL CRITERIA

Approval Date: January 2010

Revision date:

Authorized:		2/1/10
	Director of Clinical Services	Date
		2/1/10
	Medical Director	Date
		2/1/10
	Chief Executive Officer/Executive Director	Date

ATTACHMENTS:

Checklist for Declaration of Death upon the Basis of Neurological Criteria

PURPOSE:

The purpose of this policy is to define the criteria and procedure whereby death upon the basis of neurological criteria can be determined and is consistent with NJAC 13:35-6A.

DEFINITIONS:

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

Brain Death means the irreversible cessation of all functions of the entire brain, including the brainstem.

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

Imminent Brain Death: is defined as a ventilator-dependent patient with a Glasgow Coma Scale of 5 or less or the loss of 2 or more cranial nerve reflexes.

POLICY:

II. Guidelines:

It is the policy of Specialty Hospital to preserve and enhance human life and to ensure optimal medical care to all patients in accordance with current accepted medical

standards. However, conventional cardiac and respiratory criteria for death are not applicable for patients who have irreversibly lost all brain (including brainstem) function and are receiving mechanical ventilation and/or cardiovascular support. Death is established by neurological criteria”, even though mechanical support systems maintain cardiac and respiratory function. The procedure listed in this policy for determining and declaring brain death shall be followed.

Declaration of death upon the basis of neurological criteria cannot violate the patient’s personal religious beliefs.

NJAC 13:35-6A provides that a patient may be pronounced dead if an authorized Examining 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 on attached checklist) that, if present, are indicative of brain death. Following the clinical examination, the examining physician must confirm the diagnosis of brain death with confirmatory testing. The rule further provides that when confirmatory testing is not available or is clinically precluded, the examining physician must repeat the clinical examination after an observation period as noted:

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 1999 and May 2007.

Age of Patient	Minimum Number of Hours Between Clinical Examinations
Less than 2 months	48 hours
Between 2 months and 12 months	24 hours
Over 12 months	6 hours

III. Organ Donation:

All impending brain dead patients are considered by the New Jersey Organ and Tissue Sharing Network (NJ Sharing Network) for organ donation. At first indication of imminent brain death and prior to cessation of mechanical ventilation and/or cardiovascular support, the NJ Sharing Network shall be notified at 1-800-541-0075. Imminent brain death is defined as a ventilator-dependent patient with a Glasgow Coma Scale of 5 or less or the loss of 2 or more cranial nerve reflexes. 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. The NJ Sharing Network is the designated requestor for the hospital. A plan for offering the opportunity of making an anatomical gift is a collaborative approach between the NJ Sharing Network and hospital staff who have established a rapport with the family.

If the person to be declared dead upon the basis of neurological criteria is or may be an organ donor, then the Examining Physician shall not have any responsibility for any contemplated recovery or transplant of that person’s organs, and shall not serve in the capacity of organ transplant surgeon, the attending physician of the organ recipient, or otherwise an individual subject to a potentially significant conflict of interest relating to procedures for organ procurement. Refer to Administrative Policy # O101A Organ and Tissue Donation as applicable.

IV. 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 person's personal 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.

V. Pronouncement of Death:

If the Examining Physician has been able to make all requisite determinations consistent with NJAC 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 plenary licensed physician action upon the authorization of the Examining Physician.

QUALIFICATIONS OF EXAMINING PHYSICIAN:

Examining Physician: shall be plenary licensed and must meet the qualifying criteria set forth in NJAC 13:35-6A. The requirements for an Examining Physician authorized to declare death on the basis of neurological criteria depend on the age of the patient, and are as follows:

- Age below 2 months: the Examining Physician shall be a specialist in neonatology, pediatric neurology, or pediatric neurosurgery
- Age between two months and 12 months: the Examining Physician shall be a specialist in pediatric critical care, pediatric neurology, or pediatric neurosurgery
- Age greater than 12 months: the Examining Physician shall be duly qualified by training and experience to declare brain death. Neurologists, neurosurgeons, critical care specialists and trauma surgeons shall be deemed to be duly qualified physicians. In addition, any physician who has been granted privileges by a hospital to declare brain death may serve as the Examining Physician pursuant this policy.

EQUIPMENT:

Water, Ice, 60 cc syringe, IV catheter without needle to perform caloric testing for vestibuloocular reflex.

PROCEDURE:

Declarations of brain death shall be made in accordance with accepted medical standards. A patient may be pronounced dead if a physician meeting the requirements set forth in N.J.A.C. 13:35-6A.3 determines, in accordance with the criteria outlined in N.J.A.C. 13:35-6A.3 and summarized on the attached checklist, that brain death has occurred.

1. The Examining Physician who is to pronounce brain death 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.
2. The Examining Physician who is to pronounce brain death shall exclude complicating medical conditions that may confound the clinical assessment of death, including:
 - a) Severe hypothermia, defined as core body temperature at or below 92 degrees Fahrenheit in adults, or outside clinically established age specific range in child

- b) The effects of neuromuscular blockade (s). In the event a neuromuscular blockage was used to treat the patient, the Examining Physician shall establish that the effects of the blockade are reversed prior to performing clinical examination for brain death
 - c) The effects of CNS depressants. If CNS depressants are present and serum blood level is therapeutic or below therapeutic range, a clinical examination may be initiated. If serum blood levels are not available, above the therapeutic range, or unknown, or there is an overdose or toxic exposure of an unknown agent, a brain death evaluation without reliance on clinical examination 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 confirmator
 - d) Severe metabolic imbalances, unless in the judgment of the Examining Physician any such imbalances do not confound the clinical assessment of brain death; and
 - e) Mean arterial pressure less than 60mmHg in an adult or outside the clinically established age specific range
3. The Examining Physician who is to pronounce brain death shall perform a clinical examination to evaluate the patient for the presence of brain death. The following clinical findings are indicative of brain death:
- a) Supraspinal motor response(s) to pain is absent
 - b) Brainstem reflexes are absent which may be established by ascertaining the following:
 - i. No pupillary response to light
 - ii. No deviation of the eyes to irrigation of each ear with 50 ml of cold water. The tympanic membrane shall be determined to be intact.
 - iii. No corneal reflex; and
 - iv. No response to stimulation of the posterior pharynx and/or no cough response to tracheobronchial suction
 - c) The presence of apnea, which shall be established in accordance with the following testing procedure:
 - i. Arterial PCO₂ is normalized to greater than or equal to 40 mmgh
 - ii. 100 percent O₂ is delivered via the ventilator for 10 minutes prior to start of test
 - iii. A baseline arterial blood gas is drawn
 - iv. A pulse oximeter is connected and the ventilator is disconnected
 - v. 100 percent O₂ is delivered into the trachea via cannula in the ET tube at 6 liters/minute
 - vi. If tolerated, the patient is left off the ventilator for 8 – 10 minutes and the patient is observed carefully for respiratory movements. Another blood gas is drawn at the end of 8 – 10 minutes and the ventilator is reconnected
 - vii. The length of the apnea test and the PCO₂ at the end of the test are documented in the medical record
- 4 If the patient does not tolerate the apnea test, as evidenced by significant drops in blood pressure and/or oxygen saturation, or the development of significant arrhythmias, the test shall be discontinued and either repeated or supplanted with a confirmatory test.

- 5 When, in the judgment of the Examining Physician, a clinical examination cannot be performed due to the nature of injuries, intoxication, patient instability, electrolyte imbalances or any other reason, a confirmatory test such as an intracranial blood flow, four vessel cerebral angiography, radionuclide angiography, transcranial Doppler ultrasound, CT angiogram, or MR angiogram shall be substituted for the clinical examination.
- 6 Confirm the diagnosis with a confirmatory test or by a repeat clinical examination, consistent with the following:
 - a) When a clinical examination of a patient shows the absence of all supraspinal and brain stem reflexes as established by the criteria in the attached Checklist, the Examining Physician shall confirm the diagnosis of brain death with an objective confirmatory test measuring intracranial circulation such as intracranial blood flow, four vessel cerebral angiography, radionuclide angiography, transcranial Doppler ultrasound, CT angiogram or MR angiogram.
 - b) In the event confirmatory testing is not available or is clinically precluded, the Examining Physician shall repeat the clinical examination after a period of observation, which period shall be not less than 48 hours for patients below the age of two months, not less than 24 hours for patients between the ages of two months to one year, and not less than six hours for patients greater than one year of age.
7. All hospital policies and procedures concerning matters relevant to any deceased patient i.e., permission for autopsy, Medical Examiner's jurisdiction, etc., apply equally to these patients after completion of this certification process and removal of all medical therapy or life support devices.

DOCUMENTATION:

The Declaration of Death by Neurological Criteria Checklist is to be completed by the Examining Physician and remain in the patient's medical record.

INFECTION CONTROL:

Maintain Standard Precautions

SAFETY:

N/A

REFERENCES:

- New Jersey State Board of Medical Examiners Statutes (NJAC 13:35-6A). Revised May 7, 2007
- The Joint Commission Accreditation Standards
- NJDOH Licensing Standards for Hospitals 8:43G-4.1 (11)
- The New Jersey Tissue Sharing Network

REVIEWED:

Every three years or as needed.

Checklist for Declaration of Death upon the Basis of Neurological Criteria

The Examining Physician who is to pronounce brain death 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, metabolic disturbance, hypothermia (less than 92 F in adults), neuromuscular blockade, and shock, must be searched for and appropriately treated. 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 of 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. In the event confirmatory testing is not available or is clinically precluded, the Examining Physician shall repeat the clinical examination after a period of observation.

Age of Patient	Minimum Number of Hours Between Clinical Examinations	Physician Qualifications Specialist in:
Less than 2 months	48 hours	Neonatology, pediatric neurology, pediatric neurosurgery
Between 2 months and 12 months	24 hours	Pediatric critical care, pediatric neurology, pediatric neurosurgery
Over 12 months	6 hours	Neurologist, neurosurgeon, critical care specialist, trauma surgeon; or any physician granted privileges to perform brain death evaluation.

The Following Clinical Findings Are Observed	Exam 1 Required	Exam 2 (If Needed)
Date:		
Time:		
Temperature:		
Supraspinal motor responses are absent: The patient is in deep coma, without any spontaneous movements or response to painful stimuli administered over the areas of cranial nerve distribution (i.e.: suprorbital pressure), and without decorticate or decerebrate posturing. Spinal reflexes may be present even when brainstem is dead.		
Brain Stem reflexes are absent:		
• Pupillary response to light is absent		
• Deviation of eyes to irrigation of ear with 50 mls of cold water is absent. Intact tympanic membrane		
• Corneal reflexes are absent		
• No gag response or oropharyngeal response to tracheal suctioning		
Apnea is established as outlined:		
• Baseline ABGs drawn (Arterial PCO2 is normalized to greater than 40 mmHg)		
• PCO2 at end of test documented		
• Spontaneous respirations absent		
Apnea Testing Procedure:		
• 100% O2 is administered for 10 minute prior to test		
• Pulse Oximeter connected; ventilator disconnected		
• 100% O2 delivered into trachea via cannula in ET tube at 6liters/minute		
• patient left off ventilator 8-10 minutes if tolerated		
• ABG drawn; ventilator reconnected		
• If the patient at any time becomes unstable, immediately have ABG drawn and reconnect patient to ventilator to avoid hypoxia		
IF APNEA TEST NOT TOLERATED, Explain Why and Either Attempt a Repeat Apnea Test or Perform a Confirmatory Test		
WHY:		
Repeat Apnea Test: <input type="checkbox"/> Yes Date: Time:	Confirmatory Test: <input type="checkbox"/> Yes Date: Time:	

	PRINT NAME	PHYSICIAN SIGNATURE
Exam 1 (REQUIRED)		
Exam 2 (IF NEEDED)		

PRONOUNCEMENT OF DEATH BY NEUROLOGICAL CRITERIA		
Physician Signature:	Date:	Time: