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14TH COURT OF APPEALS FOR THE STATE OF TEXAS

Case No. 2020 - 61396

In re Baby Nick

DECLARATION OF CALIXTO MACHADO, M.D., PhD, FAAN

I, Calixto Machado, M.D., declare as follows:

1. I make this Declaration of my own Personal Knowledge and If called to testify, I would testify to the following:

2. I have been approached by Attorney Kevin Acevedo, who I understand is acting as attorney for "Baby Nick" in an action pending in the 14th Court of Appeals for the State of Texas, to serve as a consultant regarding the issues of Brain Death and, specifically the case of Baby Nick and whether his condition is *irreversible*.

3. Attached to this Declaration is a true and correct copy of my Curriculum Vitae as Exhibit "A." It is incorporated herein, is made of my own personal knowledge. In 1976, I graduated from the University of Havana School of Medicine.

4. I completed my Residency Program at the Institute of Neurology from 1977-1980. I then went on to complete my First Degree of Board Certification in Neurology at the Institute of Neurology in 1980. I followed my First Degree of Board Certification in Neurology with my Second Degree of Board Certification in Neurology at the Institute of Neurology in 1987. I also graduated as a PhD in 1992

3. Currently, I am a Senior Professor and Researcher in Neurology and Clinical Neurophysiology at the Institute of Neurology and Neurosurgery in Havana Cuba.

4. I am the President of the Cuban Commission for the Determination and Certification of Death, and President of the Cuban Society of Clinical Neurophysiology. I lead this Commission which wrote the Cuban Law for or the Determination and Certification of Brain Death.

5. I am a Corresponding Fellow of the American Academy of Neurology since 1992. Hence, I am a worldwide recognized neurologist.

6. I have published over five hundred (500) scientific articles, and 7 books. I have received numerous awards in my field. I was honored by the American Academy of Neurology Lawrence McHenry Award in 2005, because of my research "*The first organ transplant from a brain-dead donor*".

7. Every two (2) years or so I host an "International Symposia on Brain Death and Disorders of Consciousness" which is attended by neurologists from throughout the world. I have organized seven versions of these symposia, which is considered one of the most important conferences on this topic. I have welcome hundreds of brain death experts from the US and from the rest of the world.

8. I must affirm that **I am a defender that brain death means death of the human being, and it is state with no hope of recovery.** Moreover, I am a Corresponding Fellow of the American

Academy of Neurology (AAN), and I consider that AAN Criteria for Brain Death Diagnosis represent one the most outstanding and reliable Guidelines in the world for confirming the diagnosis of brain death, although I have disagreements with these Guidelines about the use of ancillary tests in brain death confirmation.

9. I have extensively studied and authored numerous papers on Brain Death. I was a consulting neurologist, retained by the parents of Jahi McMath, Nialah Winkfield, in a case filed in the Superior Court of the State of California for the County of Alameda study and reviewed Jahi's case.

10. Jahi McMath was pronounced brain dead in December of 2013.

11. I suggested to apply several ancillary tests to Jahi McMath, and observed various diagnostic evaluations of Jahi, after months of stabilizing medical treatment, including MRI's, EEG's, Transcranial Doppler studies, heart rate variability assessment, and physical exams.

12. Jahi McMath's case is probably the most widely studied and reviewed case concerning the diagnosis of brain death and, especially, that diagnosis in children. After being treated like a normal patient, Jahi McMath lived for over four and one half (4.5) years. The scientific data obtained from Jahi's case is unparalleled. I studied the medical records, tests, diagnostic evaluations, brain death evaluations, and had an opportunity to participate in evaluating MRI's and EEG's and a Trans Cranial Doppler evaluation of Jahi. I have published extensively on Jahi's case and these data.

13. I reviewed the case of Jahi McMath who was diagnosed as being in brain death (BD). The patient showed clinical features of the BD state, such as absence of brain-stem reflexes, and no spontaneous driving to breathe (apnea), requiring permanent mechanical ventilation. Nonetheless, ancillary tests, performed 9 months after initial brain insult, MRI showed conservation of intracranial structures, EEG activity, and autonomic reactivity to

“Mother Talks” stimulus (assessed by heart rate variability methodology), which rejected the diagnosis of brain death.

14. Jahi McMath was clinically in a state of unarousable and unresponsiveness, without evidence of awareness of self or environment, but full absence of brainstem reflexes, and partial responsiveness rejected the possibility of being in coma. Jahi was not in a persistent vegetative state (PVS), because she was not in a wakefulness state, and showed partial responsiveness. Locked-in syndrome (LIS) patients are wakeful and aware, and although these cases are quadriplegic, they fully or partially preserve brainstem reflexes, vertical eye movements, and/or blinking, and respire by their own, rejecting the possibility of classifying her as a LIS patient. She was not a minimally conscious state (MCS) because she did not preserve arousal, and only partially preserved awareness. MCS patients fully or partially preserve brainstem reflexes, and usually breathe by their own. MCS has been always described as a transitional state between coma, PVS, but MCS has never been reported in a patient who has all clinical BD findings. This case doesn't contradict the concept of BD, but brings again to discussion the needs of using ancillary tests in BD. I concluded that Jahi McMath was not braindead, but represented a new state of disorder of consciousness, non-previously described, that I have termed: “responsive unawake syndrome” (RUS).

15. I acted as a consultant in the case of Anahita Meshkin in The Superior Court of the State of California for Contra Costa County. Ms. Meshkin, who had been a vegetative state for years, was diagnosed as brain dead by a physician at a reputable hospital.

16. Ms. Meshkin, through her attorney, the same attorney who represented Jahi McMath, asked for an independent brain death examination. An independent examination was conducted by two neurologists from the University of California, San Francisco. The independent medical examination, which I observed, determined that Anahita Meshkin was not legally brain dead. Ms. Meshkin was not removed from ventilator support. This prevented her from being killed.

17. I understand that Baby Nick suffered a hypoxic-anoxic injury (HAI), wherein a constant flow of oxygen, through respiration, was disrupted to the brain within the last several weeks.

18. A HAI damages brain cells.

19. A HAI often causes hypoxic ischemic encephalopathy. This can lead to brain swelling in the acute, post traumatic, stage. Blood flow is then disrupted by the swelling in the brain.

20. Baby Nick would be in the acute phase of this trauma and would likely pass a brain death evaluation and be diagnosed as brain dead.

21. Jahi McMath too had an HAI resulting in hypoxic ischemic encephalopathy. This led to a cerebral blood flow study, taken during this acute phase, showing no blood circulation. Likewise, electroencephalogram (EEG), a common test used to evaluate the electrical activity in the brain, was also undertaken during the acute phase of her encephalopathy which was interpreted by her physicians to show an absence of electrical activity in her brain.

22. Jahi's lawyer was able to prevent her from being taken off a ventilator. This prevented her demise.

23. While the legal matters were being handled, Jahi McMath was taken off nutrients and other medical care, which would have been given her, if she were determined to be alive, or her parents had consented to organ donation, was withheld. This seriously worsened her condition and began to cause deterioration of her physical body thereby increasing the chances of death.

24. Ultimately Jahi was transferred to a medical facility which treated her as if she were a living being thereby providing her nutrients and medical care and treatment consistent with a severely brain injured, and alive, person.

25. Contrary to declarations filed by members of the Children's Hospital Oakland facility stating that no medical intervention could permit Jahi McMath to live for days or weeks. Jahi lived for over four (4) years.

26. The Death Certificate, from the State of New Jersey, indicated a date of death as June 22, 2018. The primary cause of her death was bleeding from hypovolemic shock and liver failure. She was also noted to have suffered an anoxic brain injury. Brain death is not listed as a cause of death.

27. Patients that are brain dead and have total and *irreversible* cessation of all neurologic activity, especially ones without blood flow to the brain, and absent bioelectrical activity in the brainstem and cerebral hemispheres. The "respirator brain" was described in such braindead patients with absent cerebral blood flow, characterized by liquified brains. This NEVER happened in Jahi McMath.

28. Approximately nine months after Jahi was pronounced brain dead at Children's Hospital Oakland, I suggested to study Jahi McMath with ancillary tests. Although she was severely brain damaged, after 9 months of the initial brain insult, MRI showed conservation of intracranial structures, EEG activity, and autonomic reactivity to "Mother Talks" stimulus (assessed by heart rate variability methodology), which rejected the diagnosis of brain death.

29. I did not challenge the initial finding of brain death pursuant to the AAN Criteria. At the time that test was administered in 2013, I believe Jahi passed the test (meaning she met the clinical criteria for brain death).

30. I witnessed and reviewed video which showed Jahi responding to commands from her mother through discrete finger movements. This was evaluated by Dr. Alan Shewmon, a renown Neurologist, determining that statistically a brain-dead person could not respond in such a way thereby differentiating between "reflex response" (which is uncontrollable and random movement) and command response. My assessment of heart rate variability (HRV) when Jahi's Mother talked to her

demonstrated that she preserved autonomic reactivity. These findings explain Dr. Shewmon's remarks on Jahi McMath's videos.

31. Jahi McMath never regained the ability to walk, talk, eat (other than through a feeding tube) sit up or otherwise perform the activities of daily living. She remained profoundly brain damaged through the time of her death. Brain death discussions not about quality of life, it is about whether there is *any reversible* neurologic activity.

32. Jahi McMath was not braindead, but represented a new state of disorder of consciousness, non-previously described, that I have termed: "responsive unawake syndrome" (RUS).

33. Jahi was a 12-year-old child at the time of her injury. Children's brains are thought to be more neuroplastic than adult brains as they are continuing to develop. Neuroplasticity, also known as neural plasticity, or brain plasticity, is the ability of neural networks in the brain to change through growth and reorganization. These changes range from individual neurons making new connections, to systematic adjustments like cortical remapping.

34. Jahi's case reveals the inherent risks associated with making a determination of total and *irreversible* cessation of all neurologic activity during the acute phase of trauma and at a time where the patient is not receiving life sustaining care such as nutrition and other medical interventions which would be supplied to a patient considered to be living or one which having been declared brain dead is given life sustaining treatment pending harvesting of their organs for transplantation.

35. It is more probable than not that Baby Nick is in the acute phase of his brain trauma. Therefore, his brain death evaluation and diagnosis may indicate his status in the acute phase of trauma, as was the case with Jahi McMath, but may not reveal if his condition is *irreversible* given time and treatment.

36. Providing Baby Nick life sustaining treatment, rather than withholding it, would provide an opportunity to assess his brain function after the acute period of trauma to see if his current

diagnosis of brain death is *irreversible*. When that was done with Jahi McMath 9 months later after her initial brain death diagnosis, ancillary tests demonstrated that although she was severely brain injured, MRI showed conservation of intracranial structures, EEG activity, and autonomic reactivity to “Mother Talks” stimulus (assessed by heart rate variability methodology), which rejected the diagnosis of brain death.

37. I have agreed to review the medical records of Baby Nick to see if the brain death evaluation, cerebral blood flow studies and EEG’s, show any evidence of neurological activity.

38. I have agreed to consult concerning a neurological exam, to be conducted by a physician licensed in Texas, to determine if there is any evidence of neurologic function.

39. I have agreed to consult in future testing of Baby Nick including MRI’s EEG’s, Transcranial Doppler. I suggest that this be undertaken when Baby Nick’s body is returned to optimal health status for a severely brain injured child and after a period of stabilization

40. In order to be able to conduct such an exam, and have it be medically significant, the child would have to be returned to the optimal level of physical health through medically accepted treatment of the type that would be provided to a child who had suffered a serious brain injury but was not determined to be dead.

41. The failure to provide all life sustaining medical treatment, and the withholding of nutrition, will result in the certain death of the child through multiple organ failure and the cessation of cardiac function.

42. I have agreed to review all of Baby Nick’s medical records, diagnostic studies, his brain death evaluation and other materials relative to his injury, care and status. I will require the source files and native data from any EEG’s or MRI to appropriately review them.

43. I have requested medical records form his attorney.

44. It will take at least a week to review these materials once I receive them.

45. I can travel to the U.S., to act as an observer of tests and examinations as I did in Jahi's case and in the Meshkin case. I have a 5 years visa allowing me to travel to USA.

46. If there is to be a thorough, complete, and medically thorough evaluation of whether Baby Nick is brain dead, and his condition is irreversible, I recommend the life sustaining treatment referenced above be initiated immediately.

Signed this day, the __8th__ of October 2020, under penalty of perjury, pursuant to the laws of State of Texas, in Havana Cuba,



CALIXTO MACHADO MD, PhD, FAAN

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