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Attorneys for Defendants:
KAISER PERMANENTE MEDICAL CENTER
ROSEVILLE (a non-legal entity) and DR. MICHAEL MYETTE

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF CALIFORNIA

JONEE FONSECA,

Plaintiff,

v.

KAISER PERMANENTE MEDICAL CENTER ROSEVILLE, DR. MICHAEL MYETTE M.D., and DOES 1 THROUGH 10, INCLUSIVE,

Defendants.

Case No: 2:16-CV-00889-KJM-EFB

DECLARATION OF JASON J. CURLIANO IN SUPPORT OF KAISER ROSEVILLE AND DR. MICHAEL MYETTE'S OPPOSITION TO REQUEST FOR TEMPORARY RESTRAINING ORDER AND FURTHER INJUNCTIVE RELIEF

Date: May 2, 2016
Time: 1:30 p.m.
Courtroom: 3
Hon. Kimberly J. Mueller

Complaint Filed: April 28, 2016

I, Jason J. Curliano, hereby declare:

1. I am an attorney at law licensed to practice in the courts of the State of California, including the United States District Court for the Eastern District of California, and am a partner with Buty & Curliano LLP, attorneys of record for defendants KAISER PERMANENTE MEDICAL CENTER ROSEVILLE (a non-legal entity) and DR. MICHAEL MYETTE

("Defendants"). All the facts stated herein are within my personal knowledge and if called as a witness, I could competently testify thereto.

2. Attached hereto as Exhibit A is a true and correct copy of Plaintiff's Verified Ex-Parte Petition for Temporary Restraining Order/Injunction; Request for Order of Indendent (*sic.*) Neurological Exam; Request for Order to Maintin (*sic.*) Level of Medical Care.

3. Attached hereto as Exhibit B is a true and correct copy of Judge Pineschi's Order on Ex Parte Application for Temporary Restraining Order.

4. Attached hereto as Exhibit C is a true and correct copy of the Reporter's Transcript of Petition Hearing dated April 15, 2016 regarding Plaintiff's state court petition.

5. Attached hereto as Exhibit D is a true and correct copy of Judge Jones' Order on Ex Parte Application for Temporary Restraining Order dated April 15, 2016.

6. Attached hereto as Exhibit E is a true and correct copy of the Reporter's Transcript of Petition Hearing dated April 22, 2016.

7. Attached hereto as Exhibit F is a true and correct copy of Judge Jones' April 22, 2016 Order.

8. Attached hereto as Exhibit G is a true and correct copy of the Reporter's Transcript of Petition Hearing dated April 27, 2016,

9. Attached hereto as Exhibit H is a true and correct copy the Declaration of Dr. Paul Byrne offer by Plaintiff at the April 27, 2016 hearing.

10. Attached hereto as Exhibit I is a true and correct copy of the Declaration of Angela Clemente offered by Plaintiff at the April 27, 2016 hearing.

11. Attached hereto as Exhibit J is a true and correct copy of Judge Jones' April 27, 2016 order.

12. Attached hereto as Exhibit K is a true and correct copy of the Reporter's Transcript of Petition Hearing dated April 29, 2016.

BUTY & CURLIANO LLP
ATTORNEYS AT LAW
516 16TH STREET
OAKLAND CA 94612
510.267.3000

13. Attached hereto as Exhibit L is a true and correct copy of Nakagawa, TA. *Guidelines for the Determination of Brain Death in Infants and Children: An Update of the 1987 Task Force Recommendations –Executive Summary*, Annals of Neurology, 2012, Vol. 71.

14. Attached hereto as Exhibit M is a true and correct copy of J.L. Bernat, *The Whole-Brain Concept of Death Remains Optimum Public Policy*, 34(1) J.L. Med. & Ethics 35-43 (2006).

15. Attached hereto and Exhibit N is a true and correct copy of D. Gardner, *et al.*, *International Perspective on the Diagnosis of Death*, 108 British J. Anesthesia i14-i28 (2012).

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 1, 2016, in Oakland, California.

JASON J. CURLIANO

BUTY & CURLIANO LLP
ATTORNEYS AT LAW
516 16TH STREET
OAKLAND CA 94612
510.267.3000

PROOF OF SERVICE

I am employed in the County of Alameda, State of California. I am over the age of eighteen years and not a party to the within entitled cause; my business address is 516 16th Street, Oakland, CA 94612.

On May 1, 2016, I caused to be served the following document:

DECLARATION OF JASON J. CURLIANO IN SUPPORT OF KAISER ROSEVILLE AND DR. MICHAEL MYETTE'S OPPOSITION TO REQUEST FOR TEMPORARY RESTRAINING ORDER AND FURTHER INJUNCTIVE RELIEF

on the interested parties in said cause, by: placing a true copy thereof enclosed in a sealed envelope addressed as follows and I caused delivery to be made by the mode of service indicated below:

Kevin T. Snider, State Bar No. 170988
Michael J. Peffer, State Bar. No. 192265
Matthew B. McReynolds, State Bar No. 234797
PACIFIC JUSTICE INSTITUTE
P.O. Box 276600
Sacramento, CA 95827
Tel. (916) 857-6900
Fax (916) 857-6902
Email: ksnider@pji.org

_X_ I caused a true and correct copy of the aforementioned document(s) to be transmitted electronically to all parties designated on the United States Eastern District Court CM/ECF website.

___ (By Mail) on all parties in said action in accordance with Code of Civil Procedure Section 1013, by placing a true and correct copy thereof enclosed in a sealed envelope in a designated area for outgoing mail, addressed as set forth above, at Buty & Curliano, which mail placed in that designated area is given the correct amount of postage and is deposited that same day, in the ordinary course of business, in a United States mailbox in the County of Alameda.

____ (By Email): On May 1, 2016 I caused a copy of the document(s) described on the attached document list, together with a copy of this declaration, to be emailed listed on the attached service list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on May 1, 2016, at Oakland, California.

Susan Truax

BUTY & CURLIANO LLP
ATTORNEYS AT LAW
516 16TH ST.
OAKLAND CA 94612
510.267.3000

EXHIBIT A

Jonee Fonseca
Mother of Israel Stinson
Address

Telephone withheld for privacy but
provided to Court and Respondent

IN THE SUPERIOR COURT OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

UNLIMITED CIVIL JURISDICTION

Israel Stinson, a minor, by Jonee Fonseca his mother.

Petitioner,

v.

UC Davis Children's Hospital; Kaiser Permanente Roseville Medical Center – Women and Children's Center.

Respondent.

Case No. SCV0037673

VERIFIED EX-PARTE PETITION FOR TEMPORARY RESTRAINING ORDER/INJUNCTION; REQUEST FOR ORDER OF INDENDENT NEUROLOGICAL EXAM; REQUEST FOR ORDER TO MAINTIN LEVEL OF MEDICAL CARE

I Jonee Fonseca am the mother of Israel Stinson who, on April 1, 2016 went to Mercy Hospital with symptoms of an asthma attack. The Emergency room examined him, placed him on a breathing machine, and he underwent x-rays. Shortly thereafter he began shivering, his lips turned purple, eyes rolled back and lost csoncswiu0osness,. He had an intubation performe don him. Doctor told me they had to transcer Israel to UC Davis because they did not have a pediatric unit. HE was then taken to UC Davis via ambulance and admitted to the pediatric intensive care

unit. The next day, the tube was removed from Israel. The respiratory therapist said that Israel was stable and that they could possibly discharge him the following day, Sunday April 3. They put him on albuterol for one hour, and then wanted to take him off albuterol for an hour. About 30 minutes in, I noticed that he began to wheeze and have issues breathing. The nurse came back in and put him on the albuterol machine. Within a few minutes the monitor started beeping. The nurse came in and repositioned the mask on Israel, then left the room.

Within minutes, he started to shiver and went limp in her arms. I pressed the nurses' button, and screamed for help, but no one came to the room. A different nurse came in, and I asked to see a doctor. The doctor, Dr. Meteev came to the room and said she did not want to intubate Israel to see if he could breathe on his own without the tube.

Israel was not breathing on his own. I had to leave the room to compose myself. When I came back five minutes later, the doctors were performing CPR. The doctors dismissed me from the room again while they performed CPR for the next forty (40) minutes.

Dr. Meteev told me that Israel was going to make it and that he would be put on an ECMO to support his heath and lungs. Dr. Meteev also told me that Israel might have a blockage in his right lung because he was not able to receive any oxygen. A pulmonologist checked Israel's right lung, and he did not have any blockage.

Dr. Meteev then indicated that there was a possibility Israel will have brain damage. HE was sedated twice due to this blood pressure being high, and was placed on an ECMO machine and ventilator machine.

On Sunday April 3, 2016, A brain test was conducted on Israel to determine possibility of brain damage while he was hooked up to the ECMO machine. The test involved poking his eye with a Q-tip, banging on his knee, flashing a light in his eye, flushing water down his ear, and

putting a stick down his throat to check his gag reflexes. On April 4, 2016, the same tests were performed when he was taken of the ECMO machine. On April 6, 2016 he was taken off the ECMO machine because his hearth and lungs were functioning on their own. However, the next day, a radioactive test was performed to determine blood flow to the brain.

I begged for an MRI and CT scan to be done on Israel before the third and final doctor performed the test. This was done on April 10, 2016. These results still have not been given to me, and I've been told that the results are only "preliminary."

On April 11, 2016, Israel was transferred via ambulance to Kaiser Hospital in Rosveille. That night, another reflex test was done, in addition to an apnea test. Then, on April 14, 2016, an additional reflex test was done.

I am a Christian and believe in the healing power of God. I do not want him pulled off life support. Kaiser has said that they have the right to remove Israel from life support ~~on~~ this afternoon (4-19-16).

I am hereby asking that Kaiser Permanente Roseville Medical Center be prevented from removing my son, Israel Stinson, from his ventilator.

If Kaiser removes Israel from a respirator and he stops breathing then they will have ended his life as well as their responsibility to provide his future care for the harm their negligence caused. For this reason we hereby request that an independent examination be performed, including the use of an EEG and a cerebral blood flow study. I also request that Kaiser Permanente Roseville Medical Center be ordered to continue to provide such care and treatment to Israel that is necessary to maintain his physical health and promote any opportunity for healing and recovery of his brain and body. Failure to issue the Restraining Order will result in irreversible and irreparable harm so a basis in both law and fact exists for this court's intervention.

LEGAL ARGUMENT

California Health and Safety Code Section 7180 (a) (The Uniform Determination of Death Act) provides for a legal determination of brain death as follows; "(a) An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2), irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards."

Health and Safety Code Section 7181 provides for an "independent" verification of any such determination stating; "When an individual is pronounced dead by determining that the individual has sustained an irreversible cessation of all functions of the entire brain, including the brain stem, there shall be ***independent confirmation*** by another physician."

As established by the Court in Dority v Superior Court (1983) 145 Cal.App.3d 273, 278, this Court has jurisdiction over the issue of whether a person is "brain dead" or not pursuant to Health and Safety Code Sections 7180 & 7181. Acknowledging the moral and religious implications of such a diagnosis and conclusion, the *Dority* court determined that it would be "unwise" to deny courts the authority to make such a determination when circumstances warranted.

Here only doctors from Anaheim Regional Medical Center have examined Terri. As stated above, I do not trust them to be independent given how they are responsible for her current condition and they have a conflict of interest in determining her condition; if she is disconnected and dead, they no longer have to pay for any of her care, if she is severely brain damaged, but not brain dead, they may be legally liable to provide her ongoing care and treatment at Anaheim Regional or elsewhere.

Only one other case of this type is on record in California namely the case of Jahi McMath which was heard in Alameda County in December of 2013. That case, one of first impression, where Nailah Winkfield challenged Children's Hospital Oakland's determination of brain death after they negligently treated her daughter, Jahi, led to an Order, issued by Hon E. Grillo, holding that an independent determination is one which is performed by a physician with no affiliation with the hospital facility (in that case Children's Hospital Oakland) which was believed to have committed the malpractice which led to the debilitating brain injuries Jahi suffered. A true and correct copy of Judge Grillo's Order is attached to this Petition. In the *McMath* case, the Trial Court rejected the Hospital's position that the Court had no jurisdiction over the determination of whether not Jahi McMath was "brain dead" or not.

In *McMath*, Judge Grillo stated that the Section 7180's language regarding "accepted medical standards" permitted an inquiry into whether the second physician (also affiliated with Children's Hospital Oakland) was "independent" as that term was defined under Section 7181. Judge Grillo determined that the petitioner's due process rights would be protected by a focused proceeding providing limited discovery and the right to the presentation of evidence. The Court determined that, under circumstances which are strikingly similar to those which present themselves here, the conflict presented was such that the court found that the Petitioner was entitled to have an independent physician, unaffiliated with Children's Hospital Oakland, preform neurological testing, an EEG and a cerebral blood flow study. Indeed, the Court Ordered Children's Hospital Oakland to permit the Court's own court appointed expert to be given temporary privileges and access to the Hospital's facilities, diagnostic equipment, and technicians necessary to perform an "independent" exam.

As in *Dority* and *McMath*, the unique circumstances of this case invoke the Court's jurisdiction and due process considerations require that this Court grant Petitioner's Petition for a Temporary Restraining Order and order that Anaheim Regional Medical Center permit Petitioner to obtain an independent medical examination at Anaheim Regional Medical Center with the assistance of The Medical Center's diagnostic equipment and technicians necessary to carry out the standard neurologic brain death examination with a repeat EEG and a Cerebral Blood Flow Study.

In order to provide the requisite physical conditions for a reliable set of tests to be performed, Israel Avila should continue to be treated so as to provide his optimum physical health and in such a manner so as to not interfere with the neurological testing (such as the use of sedatives or paralytics).

WHEREFORE, petitioner prays:

1) That a Temporary Restraining Order precluding Respondents from removing Israel Stinson from respiratory support, or removing or withholding medical treatment be issued;

2) That an Order be issued that Respondents are to continue to provide Israel Stinson treatment to maintain his optimum physical health and in such a manner so as to not interfere with the neurological testing (such as the use of sedatives or paralytics in such a manner and/or at such time that they may interfere with the accuracy of the results).

3) That an Order be issued that Petitioner is entitled to an independent neurological examination, with the assistance of Kaiser Permanente Roseville Medical Center's diagnostic equipment and technicians necessary to carry out the standard neurologic brain death examination with a repeat EEG and a Cerebral Blood Flow Study.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on April 14, 2016, at Roseville, California.

Jonee Fonseca

Jonee Fonseca

Jonee Fonseca
Mother of Israel Stinson
Address

Telephone withheld for privacy but
provided to Court and Respondent

IN THE SUPERIOR COURT OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

UNLIMITED CIVIL JURISDICTION

SCV0037673

Israel Stinson, a minor, by Jonee Fonseca his mother.

Petitioner,

v.

UC Davis Children's Hospital; Kaiser Permanente Roseville Medical Center – Women and Children's Center.

Respondent.

Case No.
[PROPOSED] ORDER OR TEMPORARY RESTRAINING ORDER/INJUNCTION: REQUEST FOR ORDER OF INDENDENT NEUROLOGICAL EXAM; REQUEST OF ORDER TO MAINTIN LEVEL OF MEDICAL CARE

The Verified Petition of Jonee Fonseca for a temporary restraining order came before the Court upon ex-parte application at _____ in Department ____ of the Placer County Superior Court, the Hon. _____ presiding.

After considering the Petition the Court finds that:

1) There is a basis in law and in fact for the issuance of a temporary restraining order;

2) Failure to grant the petition will potentially result in irreparable harm to the patient Israel Stinson and this Order is necessary until such time that the Petitioner can obtain

her son's medical records and obtain an independent medical examination and the court, if needed, can hold further evidentiary hearing.

THEREFORE IT IS ORDERED THAT:

The temporary restraining order is hereby granted precluding the respondent from removing Israel Stinson from the ventilator or ending any of the current treatment and support provided by Respondent and that Respondent shall continue to treat Israel Stinson in such a manner so as to optimize his physical health and provide optimum conditions for further independent neurological examination.

This Temporary Restraining Oder Orders the following:

1) Respondents are restrained from removing Israel Stinson from respiratory support, or removing or withholding medical treatment be issued;

2) Respondents are to continue to provide Israel Stinson treatment to maintain her optimum physical health and in such a manner so as to not interfere with the neurological testing (such as the use of sedatives or paralytics in such a manner and/or at such time that they may interfere with the accuracy of the results).

3) That Petitioner is entitled to an independent neurological examination, with the assistance of Kaiser Permanente Roseville Medical Center's diagnostic equipment and technicians necessary to carry out the standard neurologic brain death examination with a repeat EEG and a Cerebral Blood Flow Study.

4) That Petitioner immediately serve a copy of its Petition and this Order upon the Chief Medical Officer and/or Legal Department.

5) That the matter is set for further hearing at ____ o'clock a.m./p.m. on the ____ day of _____, 2016 in Dept. _____ of the Placer County Superior Court for a Status Conference and, if necessary, setting conference where the schedule for discovery and further hearing upon the matter, if any, will be set.

Dated: April ___, 2016

_____

Hon.
Judge of the Superior Court

EXHIBIT B

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF PLACER

ISRAEL STINSON by and through JONEE FONSECA, his other
Petitioner;
v.
UC DAVIS CHILDREN'S HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER-WOMEN AND CHILDREN'S CENTER,
Defendants

Case No.: S-CV-0037673

ORDER ON EX PARTE APPLICATION FOR TEMPORARY RESTRAINING ORDER

NEXT HEARING:
April 15, 2016
9:00 a.m.
Department 43

Petitioner and applicant Jonee Fonseca has applied for a temporary restraining order directed to Kaiser Permanent Roseville Medical Center—Women and Children's Center concerning medical care and intervention provided to her son Israel Stinson. The court convened a hearing on the application at which Ms. Fonseca and her counsel, Alexandra Snyder, Esq., appeared. Various representatives from Kaiser including Katherine Saral, Esq., and Madeline Buty, Esq., appeared by phone.

The court orders as follows:

(1) The application for temporary restraining order is set for hearing

April 15, 2016, 9:00 a.m., in Department 43 of this court, the Hon. Michael W. Jones, presiding. Department 43 is located at the Hon. Howard G. Gibson Courthouse, 10820 Justice Center Drive, Roseville, in the Santucci Justice Center.

(2) Pending further order of the court, respondent Kaiser is ordered to continue to provide cardio-pulmonary support to Israel Stinson as is currently being provided.

(3) Pending further order of the court, respondent Kaiser is ordered to continue to provide medications currently administered to Israel; however, physicians or attending staff may adjust medications to the extent possible to maintain Israel's stability, given his present condition.

IT IS SO ORDERED.

DATED: April 14, 2016

Alan V. Pineschi
Judge of the Superior Court

EXHIBIT C

SUPERIOR COURT OF CALIFORNIA

COUNTY OF PLACER

DEPARTMENT NO. 43 HON. MICHAEL W. JONES, JUDGE

ISRAEL STINSON,
Plaintiff,
vs. Case No. S-CV-0037673
U.C. DAVIS CHILDREN'S HOSPITAL,
Defendant,

---o0o---

REPORTER'S TRANSCRIPT

Friday, April 15, 2016

PETITION HEARING

---o0o---

APPEARANCES:

FOR THE PLAINTIFF:
LIFE LEGAL DEFENSE FOUNDATION
BY: ALEXANDRA M. SNYDER, Attorney at Law
P.O. Box 2015
Napa, CA 94558

FOR THE DEFENDANT:
BUTY & CURLIANO LLP
BY: DREXWELL JONES, Attorney At Law
516 16th St
Oakland, CA 94612

Court Reporter: Jennifer F. Milne, CSR NO. 10894

SUPERIOR COURT OF CALIFORNIA

COUNTY OF PLACER

DEPARTMENT NO. 43 HON. MICHAEL W. JONES, JUDGE

ISRAEL STINSON,

Plaintiff,

vs. Case No. S-CV-0037673

U.C. DAVIS CHILDREN'S HOSPITAL,

Defendant,

---o0o---

REPORTER'S TRANSCRIPT

Friday, April 15, 2016

PETITION HEARING

---o0o---

APPEARANCES:

FOR THE PLAINTIFF:
LIFE LEGAL DEFENSE FOUNDATION
BY: ALEXANDRA M. SNYDER, Attorney at Law
P.O. Box 2015
Napa, CA 94558

FOR THE DEFENDANT:
BUTY & CURLIANO LLP
BY: DREXWELL JONES, Attorney At Law
516 16th St
Oakland, CA 94612

Court Reporter: Jennifer F. Milne, CSR NO. 10894

INDEX OF WITNESSES

PLAINTIFF'S:	DIRECT	CROSS	REDIRECT
MYETTE, Michael	13	--	--

DEFENSE:

(NONE CALLED)

INDEX OF EXHIBITS

PLAITIFF'S	I.D.	RECEIVED
(NONE MARKED)		

ROSEVILLE, CALIFORNIA

APRIL 15, 2016

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The matter of ISRAEL STINSON, Plaintiff, versus U.C. DAVIS CHILDREN'S HOSPITAL, Defendant, Case No. S-CV-0037673, came regularly this day before the HONORABLE MICHAEL W. JONES, Judge of the Superior Court of the State of California, in and for the County of Placer, Department Number 43 thereof.

The Plaintiff was represented by ALEXANDRA SNYDER, Attorney at Law.

The Defendant was represented by DREXWELL JONES, Attorney at Law.

The following proceedings were had, to wit:

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THE COURT: Let's call the matter of Israel Stinson. And the caption I have is versus U.C. Davis Children's Hospital, et al. "Et al" being Kaiser Permanente Roseville Medical Center, Women's Children Center.

MR. JONES: Good morning, Your Honor. Drexwell Jones for Kaiser Foundation Hospital. I have with me Dr. --

DR. MYETTE: Michael Myette, M-y-e-t-t-e, and I'm the attending physician of record.

THE COURT: Thank you.

MS. SNYDER: Alexandra Snyder for Jonee Fonseca. And this is Jonee Fonseca, Israel Stinson's mother.

THE COURT: Good morning, folks. Make yourself comfortable.

MS. SNYDER: Thank you.

THE COURT: All right. Apparently you folks have received an ex parte -- order on an ex parte application for a temporary restraining order, and the matter was sent here this morning for further proceedings on this matter.

And neither one of you have requested or brought with you a court reporter?

MR. JONES: No.

MS. SNYDER: No.

THE COURT: The Court is going to have Madam Reporter here report the proceedings for the Court's purposes.

All right, folks. Before we start, I'm just going to make one disclosure, and that's myself, like many employees of government entities and agencies, I'm a member of Kaiser and receive my medical services from there; as well when I was in private practice and the senior partner of my firm, that was the health care provider provided to my employees. It has no effect in

my opinion on anything. That's why I'm continuing with this matter, but I make that disclosure to each side for you to address it accordingly if you wish to. All right.

Let's see. Judge Pineschi then signed this order yesterday. And by that, I'm referring to the order on the ex parte application for the temporary restraining order, having set the matter here this morning.

Let me start with a couple of questions I have in reviewing the limited information that I have. And one of the first questions that I have is whether there is another parent; what is the status of that parent? Let's start with those couple of questions first.

MS. SNYDER: Yes, Your Honor. There is another parent. The father is Nathaniel Stinson. He is -- he is actually outside calling another -- an outside physician, but he is here in the building.

THE COURT: Okay. By him being here, then, he is aware and has received notice of these proceedings for today?

MS. SNYDER: Yes. Yes, he has.

THE COURT: Do you know -- is he --

MS. SNYDER: He is here. There is some concern, too, that their son not be left unattended. So he's, I think, working out who's going to be in the hospital with -- with Israel at this time while his parents are

here in court.

If you would like him to come in, we can -- I think we can have him come in.

THE COURT: That's exactly where I'm going.

MS. SNYDER: Yes. So let's do that.

THE COURT: Hold on. Let's do it one at a time.

If he is present, I want him to be here in the courtroom as well because I -- I need to have a few questions for him as well. So, please. We'll adjourn for a moment to get him.

MS. SNYDER: Thank you.

(Brief recess.)

THE COURT: All right. Ms. Fonseca has rejoined us.

And you are Mr. Nathaniel Stinson, sir?

MR. STINSON: Yes.

THE COURT: Good morning, sir.

MR. STINSON: Good morning.

THE COURT: Okay. Now, we have both parents present.

You are, indeed, the father of Israel Stinson?

MR. STINSON: I am.

THE COURT: Okay. Thank you.

All right. So we are on, at this time, on the application for the temporary restraining order, the

hearing being set today.

So, Ms. Snyder, where are we with this proceeding?

MS. SNYDER: So, as you mentioned, we -- we have a temporary restraining order that was in place through this hearing this morning. And at this time, we are requesting that that order, plus nutrition, be extended for two weeks so that Israel's parents can find an outside doctor to do another evaluation and possibly transfer him to another facility. So we worked very hard last night to find another doctor who said he would review Israel's records. He is not in the state, and he is actually currently on a trip in St. Louis. But he said he would review the records and then refer the case to a California doctor who could examine Israel in person.

Essentially we're asking for what the California Health and Safety Code provides in Section 7181 in the form of an independent confirmation by another physician.

THE COURT: And the basis for -- before I hear a response from Mr. Jones on behalf of Kaiser, the basis for the request to include at this time nutrition and also the basis for the extension for two weeks, if you could address both of those.

MS. SNYDER: Yes. So the nutrition was

recommended by the doctor that we consulted with. He wanted to make sure that -- that as much treatment as possible was provided, including basic nutrition so that essentially the child wasn't starved over the next period of time.

And the two-week time frame --

THE COURT: Let's stick with the nutrition for a moment.

MS. SNYDER: I'm sorry.

THE COURT: First of all, the doctor, is this a neurosurgeon? A pediatric?

MS. SNYDER: He is a pediatric neurologist.

THE COURT: But not from this state?

MS. SNYDER: No. But he does consult with physicians from the state and would be able to refer a -- refer the parents to a California physician.

THE COURT: Okay. And with respect to nutrition, that's, as you can imagine, very broad.

MS. SNYDER: Yes. And I am not -- unfortunately, I am not a physician so --

THE COURT: But you spoke to one.

MS. SNYDER: I did. I did. And he -- I mean, he said "nutrition" but did not go into specifics. I am sure we can have him provide specifics. He did -- he did provide us with a medical directive. I can provide you a

copy, if you'd like. But he would like to go with Israel's chart.

THE COURT: Have you shown that to Mr. Jones?

MS. SNYDER: I have not.

(The Court and Madam Clerk confer sotto voce.)

THE COURT: Okay. Anything further on the nutrition aspect?

MS. SNYDER: No. But, again, we -- I'm sure we can get specifics from -- from the doctor who provided us with the medical directive.

THE COURT: Well, assume if I were to give some period of time of extension for the temporary restraining order. Wouldn't one of the questions that would be asked by Kaiser be some sort of directive in terms of what does nutrition mean?

MS. SNYDER: Yes, and we did -- we did discuss -- spent quite a bit of time discussing this yesterday afternoon in terms of the specifics, and I did -- again, I contacted Dr. Byrne about that. So, yes, absolutely. There would be questions, and we can provide those answers. We just need a longer consult with the doctor.

THE COURT: Okay. Let's go to that, then. Let's turn to the two weeks.

MS. SNYDER: Okay. So the two-week period of

time, I believe, would be sufficient to allow our out-of-state doctor to review Israel's records, provide a referral to a California physician, allow time for that physician to come to Roseville to examine Israel, and then also allow time for -- to make arrangements for another facility.

We started that process yesterday evening but it's -- it's difficult. So we have found a potential location for him that's out of state. His parents would prefer not to go out of state. They have another child. They have a lot of family here. And right now they really need that support from their family.

So we are hoping to find a facility, a suitable facility in California, but that may take a little bit of time. Those beds are not always immediately available.

THE COURT: I understand. All right. Thank you.

Mr. Jones, maybe I should have started with -- if there's even any objection. I assumed by virtue of the fact that you appeared yesterday on the restraining order and voiced concerns that you have some position at least to the request now to continue the temporary restraining order and to include a nutrition aspect and also for the extension for a two-week period of time.

So if you could address those two issues and any

others you wish to at this time.

MR. JONES: Yes, Your Honor. First, I just want to kind of point out that this case is not a persistent vegetative case -- persistent vegetative state case where there's a question about the functioning of the body.

Yesterday, Israel was declared to be dead pursuant to California law.

And, you know, no -- you know, through no fault of the petitioner, there are facts missing from the petition. And I think it might be beneficial for the Court to hear from a doctor the clinical course and the current status of Israel. Because it seems like, looking at the document counsel presented for the medical directive, it seems to kind of be missing the point that the -- under the law, the examinations to determine brain dead have been done.

Kaiser was the independent facility that Israel was transferred to to make that determination. U.C. Davis, where he was at previously, did the first examination for brain death and found the test to be consistent with brain dead.

The parents objected to U.C. Davis performing that test and had him transferred to Kaiser. Then when Israel gets to Kaiser, Kaiser agrees to perform -- basically, he was brought to Kaiser for this specific

purpose of determining brain death.

Another test is done, as an independent facility. And it confirms, in fact, that Israel is dead.

Another test, a third test, was performed yesterday, evaluation, a neurologic evaluation and apnea test, found that he is brain dead. He was declared dead yesterday.

There's been no challenge to the accuracy or credibility of the testing that's been done. There is nothing that suggests that there should be a -- what amounts to a fifth examination into whether or not Israel is dead because he, in fact, is.

So I kind of just want to go back -- and maybe if we had a rundown of sort of the clinical course from the doctor, it might frame things a little bit different than they are in the petition. And, again, I'm not saying that anyone is trying to be inaccurate in the petition, but it was -- you know, the information therein was provided by a lay account. And there's some information that might be beneficial to the Court if the Court wouldn't mind hearing from a doctor.

THE COURT: All right. I'll hear from Dr. Myette too at this point to at least provide the Court with more information in terms of the status of where we are with the various petitions.

So, Dr. Myette, I'm going to ask that you please stand, sir, and be sworn.

(Whereupon the witness was sworn.)

THE WITNESS: I do.

THE CLERK: Please state your full name for the record.

THE WITNESS: Michael Steven Myette.

THE CLERK: Please be seated.

THE COURT: All right. You can just remain there for this purpose, sir.

Go ahead

DIRECT EXAMINATION

BY MR. JONES:

Q. Doctor, first off, what is your title?

A. I am a pediatric intensivist, and I'm board-certified in pediatrics and in pediatric critical care medicine. And I'm the medical director for the pediatric ICU at Kaiser Permanente in Roseville.

Q. And how long have you practiced medicine?

A. I have -- I have worked at Kaiser for -- it will be 11 years this July. Prior to that, I did my critical care in fellowship at U.C. San Francisco. And prior to that, I did a pediatric residency at U.C. Davis.

MR. JONES: Your Honor, I'd like to qualify this witness as an expert witness as well as a treating

physician.

MS. SNYDER: Excuse me. I'm sorry, Your Honor. But I was under the -- we were under the understanding that we would not be calling witnesses, specifically medical witnesses, because of the short time frame, that there would be no time for us to call a witness.

In fact, Kaiser asked us if we would call a medical witness, and we said we would not. And the understanding was that they would not either because their witness is ten minutes from here and ours is 2,000 miles from here. So -- and we had 15 hours to prepare for this hearing this morning.

THE COURT: I understand.

MS. SNYDER: Okay.

THE COURT: What I'm doing at this point in time is Kaiser wants to present some further information for the Court on these issues. And in terms of me receiving that information, since we have the doctor here, I might as well receive it in a proper fashion under oath.

MS. SNYDER: Okay.

THE COURT: Would you agree with that, that if he is going to say something, it might as well be --

MS. SNYDER: I do agree with that, yes.

THE COURT: Okay. Thank you. Go ahead, sir.

BY MR. JONES:

Q. And have you been involved with the care of Israel Stinson?
A. Yes. I received him in transfer from U.C. Davis Medical Center on April 12th and cared for him through yesterday. I -- I documented his time of death yesterday at 12:00 noon.
Q. Have you had an opportunity to review the medical records from U.C. Davis?
A. Yeah. I -- I extensively reviewed the medical records at U.C. Davis, the course of his care there, which I can summarize, if you want me to.
THE COURT: That's okay.
BY MR. JONES:
Q. Can you summarize the care.
A. Okay. Israel presented with a condition called status asthmaticus to an outside hospital in the Mercy system.
The emergency physicians treating him were concerned at the severity of his asthma. He was initially treated with medicines to take care of that. Ultimately, it was determined that he required assistance with a ventilator.
THE COURT: How old is Israel?
THE WITNESS: Israel is a 30-month-old boy. He is 2 1/2 years old.

THE COURT: Okay.

THE WITNESS: So he had an intratracheal tube placed in his trachea and was put on a ventilator. This intervention placed the child beyond the scope of care of the facility in the Mercy system. So they contacted U.C. Davis Medical Center who agreed to accept the patient in transfer.

BY MR. JONES:

Q. And what date was that, Doctor?

A. April 1st.

Q. And the transfer was April 2nd?

A. The transfer was April 1st.

Q. Okay.

A. The patient was cared for overnight in the pediatric ICU at U.C. Davis Medical Center.

On the 2nd of April, the physicians determined that he had improved and the intratracheal tube, breathing tube, was removed.

He was continued to be treated for his asthma at that point with Albuterol and other medications.

A few hours after excavation, he began to develop a very acute respiratory distress. The doctors attempted to treat that with rescue medications, but he developed a condition called a bronchospasm where his airway squeezes down so tight that air can't pass through

it.

The U.C. Davis doctors did multiple rescue attempts including replacing the intratracheal -- the breathing tube.

Even with the intratracheal breathing tube in place, they could not adequately force air into the portion of his lung where oxygen is exchanged.

During this episode, Israel's heart stopped. He was resuscitated with cardiopulmonary resuscitation, chest compressions, and continued attempts to force air into his lungs through the intratracheal tube.

Q. For how long?

A. 40 minutes this went on.

I spoke directly with one of the physicians of record who told me that they had a terrible time trying to get air in his lungs.

As hard as they pushed, they could not seem to bypass this -- the spastic airway and get air into the portion of his lung where it would be life sustaining.

After 40 minutes of cardiopulmonary resuscitation, he was cannulated for a machine called ECMO. It's spelled E-C-M-O. It is a machine. It stands for Extracorporeal Membrane Oxygenation.

ECMO is a machine that is analogous to a heart-lung bypass machine when somebody is getting heart

surgery. But unlike that machine, it is used in an intensive care unit to act in lieu of a heart and lungs when the heart and lungs aren't functional but the physicians believe that the condition is reversible.

He remained on the ECMO circuit for four days at U.C. Davis Medical Center.

The asthma and the subsequent cardiac arrest were, in fact, reversible. And his heart functioned -- started to function on its own after -- after a time as did the -- the bronchospasm in his lungs improved also over time with medication.

He was decannulated, which is to say taken off of the ECMO circuit on April 6th.

On April 7th, he had a procedure, a nuclear medicine procedure at U.C. Davis, called radionuclide. It's spelled r-a-d-i-o-n-u-c-l-i-d-e, I believe.

Radionuclide scan, which is a scan which measures uptake of oxygen and nutrients, glucose and such, into the brain. That is often used as an ancillary test. It is not a test that you can use to determine brain death in and of itself. It doesn't substitute for a brain death exam. But in cases where a complete brain death exam is not -- is not able to be done, it can be an ancillary piece of information. That's why I bring it up because it's supporting information.

The radionuclide scan was read by a radiologist and confirmed as showing no -- no uptake of oxygen or nutrients by Israel's brain.

On the 8th of April, one of the U.C. Davis Medical Center pediatric intensivists, somebody who is trained in the same manner and board-certified in the same manner that I am, performed an initial neuro exam attempting to see if there is any evidence of brain function.

That exam, including an apnea test, suggested that there was -- that there was no -- no brain activity. It was consistent with brain dead -- brain death.

Q. What's an apnea test?

A. An apnea test is a test whereby you take a patient off of a ventilator. You get them physiologically into a -- into a normal state as possible, normal oxygen in their blood, normal CO2 in their blood.

And you cease blowing air into their lungs. You place them on ambient, 100 percent oxygen, so that they are still able to deliver oxygen to their body during this test.

But the human body doesn't -- doesn't use oxygen or lack of oxygen to drive our desire to breathe. Our desire to breathe is driven by carbon dioxide in the

blood.

So this test is a test whereby we -- without letting a patient become dangerously deoxygenated, we allow the carbon dioxide to increase to a point where the portion of their brain that regulates carbon dioxide and tells the body to take a breath will respond. We actually go way beyond that.

The specifics of that test are available in the paper, and I can -- I can go into more detail if you want.

But the apnea test went on for -- I don't remember exactly how long she documented, but I think it was somewhere in the neighborhood of six to eight minutes, which is fairly typical for an apnea test.

The recommendations, as put forth by the American Academy of Pediatrics, the Society of Child Neurology, and the Society of Critical Care Medicine, who have issued a joint statement on how to go about these things states that you need to have normal CO2 at the beginning of the test. And you need to have a jump of at least 20 millimeters of mercury during the course of the test for the test to be valid.

The test was done -- was documented blood gasses before and after the apnea, the period of nonbreathing, were done and confirmed that there was an adequate reason

in Israel's CO2 that should have triggered his body to take a breath if that portion of his brain that -- that regulates when to take a breath was -- was functional.

On the 8th, the clinical neuro exams were conducted.

It is customary and it is recommended somebody -- somebody that is Israel's age you have to wait a minimum of 12 hours in between two separate exams of this nature.

The first exam establishes that there is no function. The second exam is supposed to confirm that whatever caused the first exam results to be what they are is -- was not, in fact, reversible.

In terms of Israel, he has not received any medications for pain or sedation since April 2nd.

He has not received any -- anything that would depress brain function since April 2nd.

Q. Was there a second test conducted at U.C. Davis?

A. There was not a second test done at U.C. Davis. The family -- well, the family requested some scans be done.

They asked for -- on the 9th or 10th -- I don't remember which day. But on the 9th or 10th, they requested a CT scan of the head be done and an MRI of the

brain be done.

U.C. Davis complied with this request and actually did both scans. The CT scan of the brain, which they sent to us also with his medical records, was read as showing diffused brain swelling, effacement of the basal cisterns, and herniation of the brain stem out the foramen magnum.

The foramen magnum is the hole at the base of the skull where the spinal cord comes out. And if the brain swells enough, then a portion of the brain, just by the pressure from all that swelling, can be forced down through that hole.

While that is not part of a brain death exam, per se, that is an unsurvivable event.

Q. Irreversible?

A. Irreversible.

Q. Then what happened?

A. The MRI also confirmed severe global injury to the brain and also confirmed the transforaminal, across the foramen herniation of brain tissue of the brain stem.

Q. Did the parents object to a second test at U.C. Davis?

A. The U.C. Davis doctors document that there was objection to doing a confirmatory brain death test.

The family requested that Israel be transferred

to U.C. Davis -- excuse me -- to Children's Hospital and Research Center in Oakland -- or now, I guess, the UCSF Benioff Children's Hospital in Oakland is the current name.

The physicians at U.C. -- or at UCSF Benioff Oakland Children's Hospital refused the transfer. They declined to take the patient in transfer.

Then -- I don't know -- the circumstances aren't 100 percent clear to me, but I came into the -- into the fold when I received a call from our outside services and asking me if I would be willing to take -- to take Israel in transfer.

Realizing that this was a difficult and tragic set of circumstances and understanding that probably the family had mistrust of the physicians at U.C. Davis because that's where the initial event, the initial cardiopulmonary arrest occurred, was likely to make it very difficult for them to accept whatever U.C. Davis was going to tell them, I agreed to transfer the patient to my intensive care unit and to evaluate him on my own.

Q. For brain death?

A. For brain death, correct.

Understand that I -- I evaluate a patient not looking for brain death, per se, but looking for absence of brain death. It is a vital part of information for me

to be able to figure out what the nature of care I need to deliver to this boy.

Had I done my initial exam on him and discovered that there was some activity in his brain, we wouldn't be here. I'd be -- we'd be -- we would not have declared him dead, and we would be attempting to facilitate whatever recovery he would have been capable of.

Q. When was he transferred to Kaiser?

A. He was transferred to Kaiser on April 12th. He arrived in the early afternoon.

Q. When was -- when was the first test conducted?

A. The first test done at Kaiser -- I did that test, but it wasn't done until about 11:00 o'clock p.m. that night.

The delay was that, as I had mentioned earlier, a patient has to be in a normal physiologic state for a brain death exam to be valid.

And Israel is unstable. The portions of his brain that autoregulate all the things that we take for granted, his brain is not doing that.

So illustration: When he came to me, his body temperature was 33 degrees centigrade. Normal body temperature is 37 degrees centigrade. He doesn't regulate his body temperature. If he gets cold, he doesn't shiver. If he gets cold, his body won't alter

its metabolic rate to increase heat production.

And so he is not -- if left alone, he will drift to ambient temperature, room temperature.

So when he got there, he had dropped from 36 to 37 degrees at U.C. Davis. The transfer, being in the ambulance and being in a -- in that environment was enough to drop his temperature four degrees centigrade.

So I had to spend several hours gently warming his body back up, which we instituted shortly after arrival. This is not something you want to do quickly because you can overshoot. And somebody who has a brain injury who gets a fever is likely to have a worsening of that brain injury. So we have to be very careful not to cause a fever.

So at that point, I began gentle warming. Another problem that had occurred when he arrived was that -- our pituitary gland in our brain regulates our water and salt balance in our body. To simplify, sodium and free water.

A hormone called vasopressin secreted by the pituitary gland keeps all of us in -- in normalcy for water and sodium. Well, his brain doesn't -- isn't doing that now. His pituitary gland is not functioning. So he was placed on an infusion of -- of manufactured -- of pharmaceutical vasopressin, which we have. And that is a

hormone that the body has this variable sensitivity to. And so you have to monitor him very closely.

When he had his brain death exam at U.C. Davis, his sodium was in the normal range. But by virtue of time, when he got to me, his sodium level was elevated, also elevated to a point at which I couldn't have done a valid brain death exam. So I had to -- I had to manage that level of sodium by altering the level of vasopressin I was infusing into his body to get his sodium into a physiologic range.

Q. Doctor, let me just ask this: Is the function of those organs not occurring because the brain is just not sending any signals of how organs have to operate?

A. That's correct. The kidneys regulate sodium and water based on signals they receive from the brain.

So while -- while Israel's kidneys in and of themselves are fine, they are not receiving the signals to do their job.

So that was the problem. He has wild fluctuations in his level of free water in his body, which can drive his sodium dangerously low or if we take away -- if we don't supplement that hormone, then he will pee out -- for lack of a better word, will urinate all the free water in his body and will go into cardiovascular collapse and die, and we will see that --

we would see that based on his sodium drifting up into levels that are not physiologic.

Q. So what test did you perform on the 12th?

A. So after getting his body warmed up to physiologic temperature, between 36 and 37 degrees centigrade, and after readjusting his vasopressin infusion to make sure that his sodium was between 130 and 145, I achieved that physiologic state at about 11:00 o'clock p.m., and then I performed a comprehensive neurologic exam looking for evidence of brain function.

I can go into the specifics of that test, if you want.

Q. What were the results of the test?

A. The results of my tests were consistent with no brain function. There was no evidence of his brain receiving any signals from his body, nor was there any evidence that his brain was regulating any organs in his body.

Q. And you performed an apnea test as well?

A. Correct. My apnea test lasted for seven and a half minutes with Israel on 100 percent oxygen. And his carbon dioxide in his blood at the beginning of the test was in the normal range, between 35 and 45. And at the end of the test, his carbon dioxide was 85. So there was a significant increase in that -- a level of increase

that would, in anybody with any function of their brain stem, cause them to draw a breath. And we -- we had a monitor on his intratracheal tube looking for any CO2, any exhale or there were -- there were sensors on his body sensing any inhale of breath.

Q. Did you also repeat that test yesterday?

A. Yes. So I did not do -- I want to be clear, I didn't do the confirmatory brain death exam. The recommendations by National is for two separate physicians to do the two different exams so that you have a fresh set of eyes.

And one of my colleagues, Dr. Masselink, spelled M-a-s-s-e-l-i-n-k, who is a board-certified pediatric neurologist performed the confirmatory neurologic test yesterday at 11:00 o'clock in the morning. That was a full 36 hours after the first test.

In the room accompanying and witnessing that test with him was Israel's great aunt and one of his grandmothers. And also Dr. Shelly Garone, who is one of -- one of my bosses -- one of the -- they're called at Kaiser -- they're called APIC. It stands for Associate Physician In Chief. And she -- she was also present for that.

Q. What were the results of the tests?

A. The results of that test, as documented by

Dr. Masselink, were that there was no -- no evidence of any brain function, that the exam was consistent with brain death.

Q. And was there a declaration of death made?

A. Yeah. Well, let me add one more thing.

A second apnea test was done as is -- as is in the recommendations put forth by the National Societies, as I previously mentioned.

So I did a second apnea test. The rules of brain death say that the same physician can do both apnea tests because it's appropriate that either a pediatric critical care doctor or a pediatric anesthesiologist, somebody with advanced airway skills, perform the apnea test. That's the one part of the exam that is beyond the scope of a pediatric neurologist.

So after Dr. Masselink completed his exam, the final piece was a confirmatory apnea test, and I did a confirmatory apnea test. This time I actually let it go for a full nine minutes, waiting to see if Israel would [Witness makes a descriptive sound] -- would draw a breath.

And after nine minutes, and CO2 that went above 90, he did not draw a breath.

At that point, I terminated the apnea test, and it met requirements for a valid test.

Q. And at that point --
A. At that point, I documented -- I wrote a death note and documented Israel's time of death at 12:00 noon, yesterday.
Q. How difficult is it to maintain, essentially, the body -- now that there's been a declaration of death, what efforts are required in order to keep Israel in the condition that he currently is, which I understand is not very stable?
A. Yeah. That's -- that's a good question. I mentioned earlier that the brain sends the signals that regulate our salt and free water.

And try as we might, doctors are not as good as a working brain at doing this. We're certainly doing our best.

But I can tell you that between Israel's arrival on the 12th and when I signed off to my colleague, another pediatric intensivist last night at 8:00 o'clock p.m., that I did not leave the hospital. I was always either in -- in the ICU, in the room with Israel, or over in my office, which is in the same building right around the corner. I took a couple of two- or three-hour naps in the sleep room, which is within 30 feet of the intensive care unit.

The reason being that throughout the night, from

the time he arrived until the time I signed him off, I was microadjusting his vasopressin infusion, making sure that his sodium did not drift too high or too low. I was adjusting another infusion that I hadn't mentioned yet, a medicine called norepinephrine or noradrenaline. It is a synthetic cousin to our own adrenaline that our body secretes.

Israel's body doesn't secrete that anymore. As a result, his blood pressure without this medicine will drift low to the point where he will not perfuse his coronary arteries, and his heart will stop. He is absolutely 100 percent dependent on this infusion of norepinephrine to keep that heart beating.

So if you give too much of that medicine, again, people have varying sensitivities to it. It's not a simple dose, and you get a blood pressure. You have to see what dose will produce a blood pressure.

He has an invasive arterial line in his femoral artery that gives us a moment-to-moment reading of his blood pressure. And using that catheter and transducing that pressure onto a monitor continuously, I adjust the norepinephrine.

He has -- I can't tell you exactly how many times, but I can tell you it's more than 20 that I've adjusted that medicine. Okay. I am trying to keep his

main arterial pressure, which is somewhere between the systolic and diastolic. I can get more specific than that if you need but that's probably adequate. I want to keep that main at least 60 and not above 100.

Below 60, and I don't adequately perfuse his kidneys or his heart.

Above 100, and the pressure in the arteries is high enough that I run the risk of him having a bleeding -- a bleeding episode or a hemorrhage.

So that moment-to-moment, minute-to-minute, and hour-to-hour management of his blood pressure, and that moment-to-moment, hour-to-hour management of his salt and free water levels in his body are something that requires a physician be present virtually all the time.

Q. Are Israel's organs essentially beginning to atrophy? Are they failing?

A. The -- this is what we normally see happen. There are exceptions to this. I think there's a -- Mom and Dad mentioned a case where somebody who had seen total cease of brain function has continued for a long time to have a beating heart. I don't know the specifics of that case.

But I can tell you in my experience -- I have precedent for trying to keep the heart beating after somebody has been declared dead. The specific situation

where we do this is when a family wishes organ donation. Because if the heart keeps beating and keeps delivering oxygen and glucose to the organs that are still functional, then those organs can be transplanted into somebody who needs them.

And so in situations where families wish organ donation, often when somebody has been declared brain dead, we, intensivists, as a bridge to get these organs to transplant, will work very hard to keep a patient alive or -- that's not -- scratch that. Not to keep -- to keep a patient's organs functioning and keep a patient's heart beating. And it does get more challenging the longer we do it.

Now, we're on top of this right now with Israel. We're working very hard, but we're on top of this. But the notion that he is stable and sitting in a corner and everything is running on autopilot is -- is a notation that is not grounded in reality. He is aggressively, acutely managed moment to moment.

THE COURT: And is nutrition an aspect of that?

THE WITNESS: So nutrition is a little bit problematic. So I can tell you -- we are providing him with a constant infusion of glucose to make sure that his blood sugar remains in normal range.

His intestines -- and intestines in situations

where there's a prolonged resuscitation often suffer a pretty significant injury.

And before we put nutrition into the gut, into the intestines, we need to know that those intestines have healed. If you put a bunch of sugar and protein and fat into a gut that is severely injured, that sets up a situation where pathological bacteria can grow in that nonfunctioning gut. And you can have catastrophic complications.

So we are not feeding him into his intestine right now because his intestines have not yet indicated to us that they are capable of handling and absorbing nutrition and putting -- putting nutrition into the intestines at this point is -- would be a very risky thing to do.

Now -- I guess I'll leave it at that.

So the short answer is beyond IV glucose infusions and IV infusions of salts and electrolytes, that's the only nutrition he is getting right now.

THE COURT: Okay. Mr. Jones, anything further?

BY MR. JONES:

Q. What -- what is the likelihood that you would be able to maintain Israel's body in this state for a two-week period of time?

A. It will be difficult. I guess that's the best I

can say. I don't -- I don't know, you know. I don't know what he is going to do. I can tell you that last night that Israel's sodium dropped to a level that in somebody with a functioning brain would have caused seizures. And the doctor who was taking care of him last night had to stop the vasopressin infusion altogether because his sensitivity to it suddenly went up.

And the sodium is coming back up now because the body is starting to get rid of that free water that was holding on, was diluting the sodium in his body.

So we are -- we are monitoring him very closely. But as I said earlier, no physician is as good as a functioning brain at regulating the physiology of a human body. And anyone who thinks they are is naive or arrogant. But, you know, we'll try. We're going to keep trying, but I can tell you that those kinds of fluctuations are going to happen. And it may be that one of them happens and his body just shuts down.

Often what I see in kids who go on to transplant is that at some point their body stops responding to the adrenaline that we infuse and their blood pressure starts to drop. And that also can be problematic. That has not happened yet with Israel, but it could happen today. It could happen tomorrow, and we could pour more and more into him and try our best to keep that blood pressure up.

In my experience, sooner or later, our efforts to mimic the brain starts to fall short.

THE COURT: I understand. Anything further, Mr. Jones?

MR. JONES: Just with that background -- I just want to point out to the Court that -- so we're here to determine whether or not the temporary order should be continued.

And my comment is that under Health and Safety Code Section 7180 and 7181, Israel has been found to be dead.

THE COURT: And, therefore, the parent should not have the opportunity to have an independent evaluation?

MR. JONES: They had. We are the independent --

THE COURT: They're not entitled to have their own independent evaluation at this point in time, somebody outside of Kaiser?

MR. JONES: I think if they -- if you look at the Dority case --

THE COURT: Just answer my question. Are the parents entitled to have an independent evaluation outside of Kaiser at this point in time?

MR. JONES: No. No. Because there's no --

THE COURT: Your position is no?

MR. JONES: Yes.

THE COURT: Go ahead, sir.

MR. JONES: No, because there's nothing that suggests there need -- there needs to be. There's no complicating factors. There's no -- you know, we're not the facility where, you know, there was care rendered that might be questionable. There is nothing that raises the issue. In fact, if you look at the Dority case which was cited in the paper --

THE COURT: I understand. Dority says that there has to be a sufficient showing of a reasonable probability that a mistake has been made in the diagnosis of brain death or that it was not made in accordance with accepted medical standards. That's the standard in Dority. I'm familiar with it.

I'm also very familiar -- I'll let you both know -- with traumatic brain injury cases, were my specialty, my niche, when I was in private practice. So I'm familiar with that at least from a lay perspective.

MR. JONES: Sure. So there was the -- the test at U.C. Davis, the first one. There was a confirmation at Kaiser and then another confirmation. So there's been three tests, two by the independent facility.

Where in the law is there a suggestion that there should be yet another one? What's the offer of

proof that any of the tests have been conducted improperly or there's some suggestion that the results would be different if we did this one or if we did this 100 times? There is none.

THE COURT: All right. I understand. All right. Thank you.

I'm going to allow the parents that opportunity to see whether or not they can present that evidence. Okay. I'm going to extend -- and, Ms. Snyder, this is without prejudice to you for any further examination should we get to a point of evidentiary hearing and proceeding with respect to bringing back Dr. Myette for examination by her. If it gets to that point. Okay.

But right now, I am going to extend the temporary restraining order and give Mr. Stinson and Ms. Fonseca the opportunity to -- I'm not going to extend it for two weeks, though. I'm not going to do that. I'm going to have us back here next Friday, April 22nd, at 9:00 o'clock in this department.

In the meantime, the order issued yesterday by Judge Pineschi remains in full force and effect until that time with the inclusion that any present nutritional aspect that is being provided will continue in the manner that it has been.

Yes, sir.

MR. JONES: Sorry, Judge.

I just want to raise the do not resuscitate issue. Quite frankly, it is -- it's almost inhumane to the staff to have to treat a deceased body and provide CPR and resuscitate -- if the organs start to fail.

THE COURT: Ms. Snyder.

MS. SNYDER: I believe, Your Honor, the order that is now going to be extended mentions "reasonable efforts."

So the parents certainly understand that their son is -- has suffered a severe injury. They -- they are aware of that, and they -- they know that things could change. We also know that things haven't. He has been -- what the doctors have told the parents is that he has been stable with clearly the assistance of physicians at Kaiser. We are also aware of that and are very grateful of that.

THE COURT: If I can interject. Keep that thought for a moment.

Of all the process I went through this morning, parents, I hope you understand that I've allowed Dr. Myette for the benefit of not only the Court hearing it, but for you hearing it directly from him, as extensive as he has outlined all this information as well. I hope you understand that.

MR. STINSON: Yes, we do. Thank you so much, Your Honor.

THE COURT: Okay. Go ahead. I didn't mean to interrupt.

MS. SNYDER: That's okay. That really was all that the -- the order mentions "reasonable measures."

THE COURT: Well, the order indicates that Kaiser is ordered to continue to provide cardiopulmonary support as is currently being provided and that to provide medications currently administered to him. And they can adjust the medications to the extent possible to maintain his stability, given his present condition. That's what the order states and that's going to continue --

MS. SNYDER: Okay.

THE COURT: -- in effect at this time, along with the now what I've included, so that it's clear, the nutritional aspect of it.

So I'm going to continue with that order. All right. We'll see you folks next Friday, April 22, at 9:00 o'clock in this department. The order will continue to that date and we'll see where we stand at that point in time.

MS. SNYDER: Thank you, Your Honor.

MR. JONES: Sorry. I failed to address one

other important aspect.

So to the degree that an outside physician is going to come to Kaiser and perform an evaluation, they need to be licensed in California. They need to be a -- you know, a physician in the -- you know, trained in a proper field to make a diagnosis of death.

THE COURT: Right. I would -- I would hope that you folks would meet and confer over any such issues and that Kaiser, of course, would make its facilities, testing, measures available to such a person as well.

MR. JONES: We just need about 24 hours to get privileges and do all the work that we need to do on our end.

THE COURT: Well, we are under a one-week time period right now. I know your concerns there. 24 hours -- if they find somebody Thursday at noon isn't going to cut it, right? So, yet, they would be within the time parameters of the order. I would just hope that you folks would work with each other on that.

MR. JONES: We'll do our best.

MS. SNYDER: Thank you. Thank you. We appreciate that very much.

MR. STINSON: Thank you very much, Your Honor.

THE COURT: Does anyone want a written order on this or is this fine?

MS. SNYDER: I think it would be helpful if that's not too much trouble.

THE COURT: I'll provide a written order and additional aspect of it. Thank you, folks.

MS. SNYDER: Thank you.

(The matter was concluded.)

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

---o0o---

ISRAEL STINSON,
Plaintiff,
vs. Case No. S-CV-0037673
U.C. DAVIS CHILDREN'S HOSPITAL,
Defendant,

I, JENNIFER F. MILNE, Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing pages 1 through 42, inclusive, comprises a true and correct transcript of the proceedings had in the above-entitled matter held on April 15, 2016.

I also certify that portions of the transcript are governed by the provisions of CCP237(a)(2) and that all personal juror identifying information has been redacted.

IN WITNESS WHEREOF, I have subscribed this certificate at Roseville, California, this 19th day of April, 2016.

_____

JENNIFER F. MILNE, CSR

License No. 10894

EXHIBIT D

SUPERIOR COURT OF CALIFORNIA,
COUNTY OF PLACER
10820 Justice Center Drive
P.O. Box 619072
Roseville, CA 95661-9072
Phone: 916-408-6000

[redacted]

Fax

To:	Drexwell Monroe Jones BUTY & CURLIANO 516 16TH Street Oakland, CA 94612 Facsimile: (510) 267-0117	From:	Jennifer Tisdale (916.408.6370)
		Date:	April 15, 2016
		Pages	3 including cover

☑ Urgent ☑ For Review ☐ Please Reply ☑ Copy will not be mailed

SUBJECT: S-CV-0037673 Stinson vs. UC Davis Children Hospital

4-15-16 ORDER ON EX PART APPLICATION FOR TEMPORARY RESTRAINING ORDER

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

ISRAEL STINSON by and through JONEE FONSECA, his mother

Petitioner;

v.

UC DAVIS CHILDREN'S HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER-WOMEN AND CHILDREN'S CENTER,

Defendants

Case No.: S-CV-0037673

ORDER ON EX PARTE APPLICATION FOR TEMPORARY RESTRAINING ORDER

NEXT HEARING:
April 22, 2016
9:00 a.m.
Department 43

Petitioner and applicant Jonee Fonseca has applied for a temporary restraining order directed to Kaiser Permanent Roseville Medical Center—Women and Children's Center concerning medical care and intervention provided to her son Israel Stinson. An initial TRO was granted April 14, 2016, and further proceedings were set for April 15, 2016, 9:00 a.m., in Department 43, the Hon. Michael W. Jones, presiding.

The April 15 hearing was conducted as scheduled. Ms. Fonseca and Nathaniel Stinson, minor's father, appeared with Alexandra Snyder, Esq. Drexwell M. Jones, Esq., appeared for Kaiser along with Dr. Michael Myette.

After consideration of the information and argument presented, the court orders as follows:

(1) The temporary restraining order issued previously is extended to April 22, 2016, 9:00 a.m., or further order of this court, with additional orders as follows:

(a) Respondent Kaiser is ordered to continue to provide cardio-pulmonary support to Israel Stinson as is currently being provided.

(b) Respondent Kaiser is ordered to continue to provide medications currently administered to Israel; however, physicians or attending staff may adjust medications to the extent possible to maintain Israel's stability, given his present condition.

(c) Respondent Kaiser is ordered to continue provision of nutrition to Israel in the manner currently provided to the extent possible to maintain Israel's stability, given his present condition.

(2) The application for temporary restraining order is set for further hearing April 22, 2016, 9:00 a.m., in Department 43 of this court,

IT IS SO ORDERED.

DATED: April 15, 2016

Hon. Michael W. Jones
Judge of the Superior Court

EXHIBIT E

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF PLACER

---o0o---

ISRAEL STINSON by and through JONEE FONSECA, his mother,

Petitioner,

vs. Case No. S-CV-0037673

UC DAVIS CHILDREN'S HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER - WOMEN AND CHILDREN'S CENTER,

Defendants.
_____/

Petition Hearing

Friday, April 22, 2016

Reported by: Ruth E. Diederich Hunter, RPR, CSR
CSR No. 4952

APPEARANCES OF COUNSEL:

Attorney for Petitioner:

LIFE LEGAL DEFENSE FOUNDATION
By: ALEXANDRA M. SNYDER
PO Box 2015
Napa, California 94558
(707) 224-6675

Attorneys for Defendants:

BUTY & CURLIANO, LLP
By: JASON J. CURLIANO
and
DREXWELL M. JONES
516 16th Street
Oakland, California 94612
(510) 267-3000

ALSO PRESENT:

COUNTY OF PLACER, OFFICE OF COUNTY COUNSEL
By: ROGER COFFMAN, Senior Deputy County Counsel
175 Fulweiler Avenue
Auburn, California 95603
(530) 886-4630

Jonee Fonseca
Nathaniel Stinson

---o0o---

ROSEVILLE, CALIFORNIA

April 22, 2016

--oOo--

The matter of Israel Stinson, by and through Jonee Fonseca, his mother, Petitioner, versus UC DAVIS Children's Hospital; Kaiser Permanente Roseville Medical Center - Women and Children's Center, Defendants, Case number S-CV-0037673, came regularly this day before the Honorable MICHAEL JONES, Judge of the Superior Court of the State of California, in and for the County of Placer, Department Number 43 thereof.

The Petitioner was represented by ALEXANDRA M. SNYDER, attorney at law, acting as Counsel.

The Defendants were represented by JASON J. CURLIANO and DREXWELL M. JONES, Attorneys at Law, acting as their Counsel.

The following proceedings were had, to wit:

--oOo--

THE COURT: All right. Let's call the matter of Israel Stinson vs. UC Davis Children's Hospital, et al., effectively Kaiser is the party who is present here for these proceedings.

We have the parents who are present for Israel -- good morning to you folks -- who is represented by Ms. Snyder. We also have on behalf of

the Kaiser facilities Mr. Jones here once again.

Good morning.

MR. JONES: Good morning, your Honor.

THE COURT: And you have somebody else with you at counsel table.

MR. CURLIANO: Good morning, your Honor. Jason Curliano on behalf of the Kaiser Foundation Hospitals.

THE COURT: Good morning, Mr. Curliano.

Good morning again to each of you here.

We are on this morning, as you all know, for discussion of the restraining order that was issued previously and then extended by this Court to today's date and time for additional information to see where we stand with respect to dissolution of that restraining order or where we go from here.

So who wishes to speak first and give me an update?

MR. CURLIANO: Your Honor, Jason Curliano.

Counsel and I had a chance to speak before the hearing this morning. I think, through some mutual cooperation, discussions we have had this morning -- and I'll let Ms. Snyder provide the Court with the specifics -- the child in this very unfortunate case is going to be transferred to Spokane.

MS. SNYDER: Yes.

MR. CURLIANO: I have spoken with our treating doctor who testified last time, Dr. Myette. He's going to work in cooperation with not only the transport agency once we get the specifics, but the receiving physician in Spokane. They are going to make sure the child is stable, appropriately transported. It's hoped that that will take place today, possibly tomorrow.

And, again, Ms. Snyder can give more of the specifics. But we had discussed setting a return date for next Wednesday, and the hope is, barring any complications or hiccups, that the matter should be taken care of, and that Kaiser will have provided what the family needs to get the child transported in the next day or two.

THE COURT: Thank you, sir.

Ms. Snyder?

MS. SNYDER: Yes. That's -- that's correct. So we have reached an agreement. Right now we're just waiting to get the cell phone number from the receiving doctor, the head of the PICU unit up at Sacred Heart Hospital in Spokane, and that physician's name is Peter Graves.

There is a life flight that's on standby prepared to transport Israel today. So barring another

emergency, another emergency flight that they have to make, we're hoping to be able to arrange that for today.

THE COURT: Correct me if I am mistaken, then. What I'm hearing is the parties believe they've worked out something that's in the best interest of each of the parties and to the parents.

Just parenthetically, most lawyers will tell you that it's always best for the parties to try to work out something; okay?

MS. FONSECO: Okay.

THE COURT: To use the crass word of settlement, that isn't appropriate here, but, in essence, that's what I'm referring to. It's often best for the parties to work these things out because then things are in your own hands. You control ultimately what happens, and you don't place that control into the hands of someone else. Even if it is something that you may not entirely agree with, at least the control of it is in your hands; okay? So I hope you understand that.

MS. FONSECO: Okay.

MR. STINSON: I do.

THE COURT: And I know full well that Kaiser understands and appreciates that.

So if I'm hearing correctly, you want to continue the restraining order that is in place now

until Wednesday?

MS. SNYDER: Yes, your Honor.

MR. CURLIANO: Yes, your Honor.

THE COURT: And that would be at 9 o'clock in this department, and that would be April 27th, 2016, under all the terms and conditions that were previously indicated in the restraining order of last week, of the April 15th restraining order.

MS. SNYDER: Yes. The only thing that I would say, that if -- if the physicians agree that Israel needs something just to prepare him for transport, that that is something that they would -- that they would discuss and then would not -- whatever they agree on would not be in any way limited by the order that is in place right now.

MR. CURLIANO: I don't foresee any problem with continuation of care and appropriately stabilizing the child. I spoke with Dr. Myette, and he's just waiting for a phone call or number to make the call to the physician in Spokane.

MS. SNYDER: Okay.

THE COURT: All right. Tentatively that appears to be acceptable to the Court. And I say tentatively, because let me broach another issue that, frankly, I have been thinking of, and obviously wanted to discuss

here this morning, and in large part is based upon the opposition that I received last evening from Kaiser as to the continuation of this restraining order, and that is, the Court made arrangements to have county counsel here -- and I see that Mr. Coffman is present on behalf of the county public guardian -- as to whether or not this Court should appoint the Director of the Department of the Public Guardian as a temporary guardian of the person of the minor child.

I want to hear from each of you on that.

MS. SNYDER: Your Honor, we would ask that that not be the case; that -- that the parents would -- would retain their -- their role at this time. We do have a declaration by the parents with regard to the -- the missed appointments that states -- and I'll get that to you, but that states that many of those appointments were rescheduled. There was one medication that was not refilled. It was one steroid medication, and that was because Israel became violently ill when he took that -- that medication. And if you like, you can hear from Israel's mother regarding that. But his parents have signed a declaration to that effect.

THE COURT: That's okay. I'll accept your representations right now.

I am just looking more to -- obviously, you've

touched upon the issue -- when I see what was contained in here on its face, not accepting it as true, but something that is brought before me, not from a true evidentiary perspective, but giving me knowledge of something that needs to be inquired upon as a judge when I see that because it -- it raises, obviously, red flags in my mind and an issue. Are we in a situation akin to Dority at that point? You know. And, of course, I'm referring to the Dority, D-o-r-i-t-y, case, madam reporter. And so that's where I stand.

Yes, sir, Mr. Jones.

MR. JONES: Your Honor, I don't think -- I don't think we're there yet. I mean, in Dority, it had already -- the guardianship had already been put in place --

THE COURT: Right.

MR. JONES: -- and this type of proceeding occurred.

THE COURT: Yes.

MR. JONES: So I think we're a little premature. At this point in time, Israel's parents have full decision-making authority. And to the degree that that's going to be challenged, I think that would be a decision of the public guardian in the state. I don't know if it would be appropriate for Kaiser to chime in

other than reporting what has happened. I don't know that we would take a position at this point that the parents -- adverse to the parents regarding the consent issue.

THE COURT: So if both parties are in agreement right now to continue with the restraining order as indicated here to the date and the time that I've indicated, then at this time I would not be appointing the public guardian.

Mr. Coffman, good morning, sir.

MR. COFFMAN: Good morning.

THE COURT: But what I'm going to do, though, is -- is keep him in touch with these proceedings and ask that you be here on the 27th as well, and ask that you provide your information and -- contact information to counsel for both sides so in the event that something does come up that needs to be brought to the attention of the Court, including appointment, that it will be put immediately back on calendar.

MS. SNYDER: Yes, your Honor.

MR. CURLIANO: Yes, your Honor.

THE COURT: Do you have something for me?

All right. So does it sound like that's where we want to go with this at this time, Ms. Snyder?

MS. SNYDER: Yes, your Honor. Thank you.

THE COURT: Mr. Jones?

MR. JONES: Yes, your Honor.

THE COURT: Now, the issue becomes, then, where I have a restraining order that's in effect until April 27th at 9 o'clock, and you arrange for this transfer to take place, and let's just, for the sake of discussion, say that transfer takes place at 9 o'clock tonight or anytime in between now and then, I still have a restraining order that's in place. And what's the legal effect of that upon Kaiser even if you do release him and -- to continue with the care that I've directed within the restraining order? I need someone to touch upon what you have discussed with respect to that.

MR. CURLIANO: Your Honor, what Kaiser would propose, subject to the Court thinking that this is appropriate, is that the restraining order be modified to state that it dissolves when -- and it could be when the transport -- when the patient is picked up by the transport company and has left the Kaiser facility.

We could also -- another option would be we could immediately report back, advise the Court, and show up the following day so that the TRO could be dissolved in court by your Honor.

THE COURT: That will be difficult to do if that happens tonight given that we are at the weekend. Of

course, included within all of this is how that transfer process is to take place. Is Kaiser obligated to continue to maintain and release the minor child with the mechanical devices that have been employed at this time? Have you talked about all of those sorts of issues and things?

MR. JONES: I've spoke with Dr. Myette, and the assumption -- and I hate using that word, but we were running fairly quickly this morning -- is that the vent and the rest of the equipment that's necessary, including the personnel to take the child, stabilize him, offer the same assistive devices, medications, that that would be done by the transport company.

I think from our perspective, and if the Court would like, if we need to take a little more time to get the phone number of the transport company and put our physician, Kaiser physician, Dr. Myette, in contact with them, I might be able to report back to the Court specifically how this is going to be accomplished.

THE COURT: Here's what I would like, then.

Ms. Snyder, do you have any comments on what Mr. Curliano has just indicated?

MS. SNYDER: No, not at this time.

THE COURT: Here's what I would like, Folks. I think this makes sense. I think you folks need a little

more time this morning to iron out some of these things and to give more informative information that can be couched within an order; okay? With these details. Because I -- I want to make sure that both parties are covered here, that the parents understand who is responsible for the employment of medical and mechanical devices, and to what extent Kaiser is, to what extent Kaiser is absolved or dissolved of any further requirements under the restraining order upon transfer of that. These things still need to be worked out, including the names, as you say, and exactly who would be appropriate for transferring. Because I also don't want to give an order out there that allows Kaiser to transfer in vague terms which would essentially allow anyone to come in and -- and obtain the minor child.

MS. SNYDER: Uh-huh.

THE COURT: So I do want these specifics to be more -- better formalized so that we can prepare an appropriate order here.

MR. JONES: Your Honor -- your Honor, just in my mind, I would think that once the patient is discharged from the hospital would sort of be a point where a restraining order would become just inapplicable or, you know, moot.

THE COURT: Okay. That makes sense. You folks

talk about that, though; okay? And then we'll draft a more formal order, then, after hearing.

How much do you -- how much time do you think you're going to need this morning to do these -- accomplish this?

MR. CURLIANO: Dr. Myette is available as soon as we have the information available.

MS. SNYDER: Yeah. I am just checking to see.

THE COURT: Here's what I am thinking. Let me provide this information to you as well. I have a jury trial -- I have a jury that's coming back at 10:30. I could adjourn that proceeding an hour after that at 11:30 if that's enough time, if you believe --

MS. SNYDER: That should be.

THE COURT: -- in order for you to make these telephone calls, communications, however it is we deal with these things now with all of these cell phones and smart phones and everything. But whatever you need to do and accomplish so that you can get this information for each of your respective clients and get the detailed information presented so that the Court can prepare an appropriate order after hearing.

Does that make sense, or are you going to need more time?

MS. SNYDER: I think that should be sufficient.

So it looks like I've got a call, and I'm hoping that call has information that will allow the doctors to -- to immediately connect with one another.

THE COURT: I want somebody to couch out and to write out in longhand right now the terms that -- the specific terms and details that you agree upon, and each side sign the bottom of it. Longhand is okay. But that way I know and I will accept that each of you have agreed upon those terms, and then I will prepare a more formal order based upon that information I receive.

Fair enough, Ms. Snyder?

MS. SNYDER: Yes, your Honor. Thank you.

THE COURT: Mr. Jones? Mr. Curliano?

MR. JONES: Yes, your Honor.

MR. CURLIANO: Yes, your Honor.

THE COURT: Okay. Let's do that. And let's reconvene at 11:30, then; okay.

MR. CURLIANO: Thank you, your Honor.

MR. JONES: Thank you.

THE COURT: Thank you, Folks.

Mr. Coffman, I -- I'll leave that up to you, having a private discussion with them, and if they think you don't need to be back, that's fine with me; okay? Otherwise we'll see you on the 27th.

MR. COFFMAN: Thank you, your Honor.

THE COURT: Thank you, sir.

MR. STINSON: Thank you, your Honor.

THE COURT: Thank you.

(Another matter heard.)

THE COURT: All right. Calling the matter of the minor child Israel Stinson. Good morning, Folks. If you want to make your way up.

Thank you for your patience this morning as I went over a little bit. Ms. Snyder is present. I note that Ms. Fonseca and Mr. Stinson are not present, though. You're authorized to present the matters here without them being present?

MS. SNYDER: Yes, I am, but they are on their way in.

THE COURT: Okay. On their way, meaning what? Just a few minutes, perhaps?

MS. SNYDER: Yeah. They were right outside the door.

THE COURT: Oh, okay.

MS. SNYDER: We can get started, your Honor.

THE COURT: All right. Mr. Curliano and Mr. Jones here. As I am speaking, I see now that Mr. Stinson and Ms. Fonseca are making their way in now.

Good morning, folks. Come on up. Come on up. Good morning again.

MS. FONSECO: Good morning.

THE COURT: Make yourself comfortable, folks. Thank you.

One thing you folks may have thought of that came to mind. I was reflecting on this as I was -- trust me, I was paying 100 percent attention to the jury trial but reflecting also on this, something that came to mind. You may have already thought of it, and it may just be an issue that we'll decide upon dissolution of the restraining order. And that's the continuing, if any, jurisdiction of the Court or the dismissal of the action as it is that is pending now --

MS. SNYDER: Uh-huh.

THE COURT: -- with the Court. Okay? All right.

Where do we --

MR. JONES: So we attempted to get as much information as possible regarding the logistics of transferring Israel. We have put together sort of a list of conditions and terms that the parties both agree to related to the proper transport and care, and I can go through the terms on the record now, or I can just present them to you on paper form.

THE COURT: Why don't we -- since we have a record, if -- if it isn't extremely lengthy, let's just

go ahead and put it on the record now as well.

MR. JONES: Okay. Shall I read it as it is exactly or --

THE COURT: Sure.

MR. JONES: -- discuss it?

THE COURT: Read it as it is, and we'll also take a copy, and I am going to mark that. What do we have? Two pages?

MR. JONES: Yeah, two pages.

THE COURT: Okay.

MR. JONES: All right.

THE COURT: Right. And both parties' representatives have signed it?

MS. SNYDER: I have not signed it yet.

MR. JONES: She hasn't signed it. Should we do that first?

THE COURT: Sure. That way I know that it's agreed upon.

And what I will do is this will be marked as Court's Exhibit 1. We'll file it, then, rather than mark it as an exhibit. That way -- yes, that way we will retain it.

MR. CURLIANO: Your Honor, can counsel sign as authorized representatives for both of their respective clients?

THE COURT: Yes, sir. That's my understanding, yes.

And, again, this is what you folks are proposing to me. Ultimately my order is going to be according to my judgment, but considering what you folks have thought of here.

All right. Mr. Jones, if you don't mind.

MR. JONES: I will try to go slow.

The parties hereby stipulate and agree as follows:

One, the terms of the restraining order issued on April 15th, 2016, will remain in effect until April 27th, 2016, subject to the conditions below.

Two, the parents of Israel Stinson, Israel, are transferring him to Sacred Heart Medical Center located at 101 West 8th Avenue in Spokane, Washington, hereinafter Sacred Heart; to facilitate this transfer, AirCARE1 has been retained to transport Israel to Sacred Heart. That was three.

Four, AirCARE1 has agreed to transport Israel with at least one nurse and a respiratory therapist to monitor and assist Israel.

Five, Sacred Heart has agreed to admit Israel.

Six, Kaiser Permanente will cooperate and facilitate in the transfer and will take the necessary

steps in the ordinary course to prepare Israel for transport, and transfer care and support to AirCARE1.

Israel's attending physician at Kaiser Roseville will communicate with AirCARE1 to assure they have the proper staff and equipment to transfer Israel. That was six.

Seven, Israel's attending physician at Kaiser Permanente will communicate with the admitting physician at Sacred Heart to facilitate continuous care and to assure Sacred Heart is prepared to received Israel.

And eight, the restraining order will dissolve upon Israel's discharge from Kaiser Permanente Hospital in Roseville. Discharge means the physical exit from the hospital. Kaiser Permanente's legal responsibility for Israel's care and treatment will cease at that time, period.

Are there any other issues that the Court would like addressed?

THE COURT: Okay. And then the parties will return, in any event, on Wednesday, April 27th, at 9 o'clock.

MR. JONES: Correct.

MS. SNYDER: Yes. Umm, I would just like to ask if for some reason the -- the transfer is delayed between now and Wednesday, we would still like the

opportunity -- hopefully that will not -- we'll not have to -- to do this, but to have Dr. Michel Accad examine Israel if he, in fact, is still at Kaiser. He said he could be there as early as Monday, but was not able to -- to be here this past week, so -- and, again, I am not anticipating having to call him. This is just -- just in case.

MR. CURLIANO: Your Honor, hopefully this doesn't become an issue. We received information with the name of Dr. Accad yesterday evening. He's a cardiologist. He has no pediatric specialty. There are issues that we might have about whether or not he's a qualified person to do an examination of the child. So if it becomes an issue, we would -- and I discussed this with counsel. In the off chance it does, we may need to come back up to seek some guidance on the appropriateness for this physician to do the examination.

THE COURT: Well, here's my concern with what I'm hearing right now. What if this transfer can be facilitated, you know, tomorrow? You know, I -- I'm -- maybe I am misunderstanding, but I want to make sure there isn't going to be any unnecessary delay to try to hang --

MS. SNYDER: Absolutely.

THE COURT: -- over until Monday when the best interest of Israel right now is for him to be transferred.

MS. SNYDER: The plan is to transfer him today, so there is a flight on standby for that purpose.

MR. CURLIANO: And I've confirmed with our treating doctor, Dr. Myette. He is in conversation with the transport company and the appointed person, and he advised me that he can facilitate the transport today.

THE COURT: Okay. I'm expecting that that's what will take place, then, barring some unforeseen circumstance on the medical provider's part.

MS. SNYDER: Yes.

THE COURT: Okay. Anything further on behalf of the parents?

MS. SNYDER: Not at this time, your Honor.

MS. FONSECO: No.

THE COURT: All right. Anything further from Kaiser?

MR. JONES: No, your Honor.

THE COURT: Okay. Here's what I will do. I'll draft an order, and if you folks want to be back here at 1:30, I'll have the formal order hopefully drafted up by that time. We will be in session in jury trial, so feel free to just come on in. You are not interrupting;

okay? And we will see -- at least give you an update as to how much longer it might be, but -- so that you'll have the order. I think it's important for you to have that in hand.

And then the last thing is on -- if this transpires the way that you folks are expecting, anticipating, also then we will be, on the 27th, making the determination that this Court would have no further jurisdiction, as well as dismissal of the action.

Is that the intent, Ms. Snyder?

MS. SNYDER: Yes, it is.

THE COURT: And on behalf of Kaiser, gentlemen?

MR. JONES: Yes, it is, your Honor.

THE COURT: Okay. All right, then. Thank you, Folks.

If anything does come up when you get here at 1:30, I'll let you know and we'll see about if we need to include it or if it's already there, presenting it to you, and seeing whether or not you're in agreement. And if not, maybe it's just something I'll do against your agreement. But we'll put anything on the record at that point; okay?

MR. JONES: Thank you, your Honor.

MS. SNYDER: Thank you so much, your Honor.

MR. CURLIANO: Thank you, your Honor.

MS. FONSECO: Thank you, your Honor.

THE COURT: Thank you, folks.

(Matter concluded.)

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

ISREAL STINSON by and through JONEE FONSECA, his mother, Petitioner,	)	Case No. S-CV-0037673
versus	)	
UC DAVIS CHILDREN'S HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER - WOMEN AND CHILDREN'S CENTER, Defendants.	)	REPORTER'S TRANSCRIPT

STATE OF CALIFORNIA)
) ss
COUNTY OF PLACER)

I, RUTH E. DIEDERICH HUNTER, Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing Pages 1 through 25, inclusive, comprises a true and correct transcript of the proceedings had in the above-entitled matter held on April 22, 2016.

I also certify that portions of the transcript are governed by the provisions of CCP237(a)(2) and that all personal juror identifying information has been redacted.

IN WITNESS WHEREOF, I have subscribed this certificate at Auburn, California, on May 1, 2016.

_____
RUTH E. DIEDERICH HUNTER, CSR
License No. 4952

EXHIBIT F

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF PLACER

ISRAEL STINSON by and through JONEE FONSECA, his mother
Petitioner;
v.
UC DAVIS CHILDREN'S HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER-WOMEN AND CHILDREN'S CENTER,
Respondent

Case No.: S-CV-0037673

ORDER AFTER HEARING

NEXT HEARING:

April 27, 2016
9:00 a.m.
Department 43

Petitioner and applicant Jonee Fonseca has applied for a temporary restraining order directed to Kaiser Permanente Roseville Medical Center—Women and Children's Center concerning medical care and intervention provided to her son Israel Stinson. TRO proceedings were heard April 14 and 15, 2016, and further proceedings were set for April 22, 2016, 9:00 a.m., in Department 43, the Hon. Michael W. Jones, presiding.

At the April 22 hearing, Ms. Fonseca and Nathaniel Stinson, minor's father, appeared with Alexandra Snyder, Esq. Jason J. Curliano, Esq., and Drexwell M. Jones, Esq., appeared for Kaiser Foundation Hospitals. At the

court's request Roger Coffman, Esq., Senior Deputy County Counsel for Placer County was also present, representing the Placer County Public Guardian.

Petitioner and respondent have reached a stipulation concerning the present circumstances and the TRO. The parties' written stipulation, executed by counsel, has been filed.

Adopting the agreement of the parties, the court orders as follows:

(1) Jonee Fonseca and Nathaniel Stinson shall transfer Israel Stinson to Sacred Heart Medical Center, 101 West 8th Avenue, Spokane, Washington, which has agreed to admit Israel;

(2) Transportation of Israel to Sacred Heart shall be by Air Care 1;

(3) Kaiser will cooperate with and facilitate Israel's transfer and will take necessary steps, in the ordinary course, to prepare Israel for transport, and will transfer care and support of Israel to Air Care 1;

(4) Israel's attending physician at Kaiser Roseville will communicate with Air Care 1 to assure they have proper staffing and equipment to transfer Israel;

(5) Israel's attending physician at Kaiser Roseville will communicate with the admitting physician at Sacred Heart to facilitate continuous care and to assure Sacred Heart is prepared to receive Israel;

(6) The restraining order currently in place, which requires that

(a) Kaiser shall continue to provide cardio-pulmonary support to Israel Stinson as is currently being provided;

(b) Kaiser shall provide medications currently administered to Israel; however, physicians or attending staff may adjust medications to the extent possible to maintain Israel's stability, given his present condition;

(c) Kaiser shall continue to provide nutrition to Israel in the manner currently provided to the extent possible to maintain Israel's

stability, given his present condition;

shall continue in effect until and shall automatically dissolve upon the earlier of:

(a) Israel's discharge from Kaiser Permanente Hospital in Roseville; for this purpose, *discharge* means Israel's physical exit from the hospital; or

(b) Wednesday, April 27, 2016, 9:00 a.m.

Kaiser's legal responsibility for Israel's care and treatment will cease when the restraining order dissolves.

(7) This matter is set for further proceedings April 27, 2016, 9:00 a.m., in Department 43. If the restraining order has dissolved pursuant to paragraph (6), *supra*, the court intends to dismiss this action. The parties have stipulated that the court will thereafter have no jurisdiction over minor, petitioner or respondents under this proceeding.

IT IS SO ORDERED.

DATED: April 22, 2016

Hon. Michael W. Jones
Judge of the Superior Court

EXHIBIT G

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF PLACER

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DEPARTMENT NO. 43
HON. MICHAEL W. JONES, JUDGE

ISRAEL STINSON,

Petitioner,

versus

UC DAVIS CHILDREN'S HOSPITAL, ET AL,

Defendant.

Case No.S-CV-0037673

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REPORTER'S TRANSCRIPT

WEDNESDAY, APRIL 27, 2016

PETITION HEARING

--oOo-

APPEARANCES:

FOR THE PETITIONER:
LIFE LEGAL DEFENSE FOUNDATION 18
BY: ALEXANDRA SNYDER, ESQ.
P.O. Box 2015
Napa, California 94558

FOR THE DEFENDANT: BUTY & CURLIANO LLP
BY: JASON CURLIANO, ESQ.
DREXWELL JONES, ESQ.
555 12th Street, Suite 1280
Oakland, California 94607

Reported By: MELISSA S. SULLIVAN, CSR13843

ROSEVILLE, CALIFORNIA

WEDNESDAY, APRIL 27, 2016

--oOo--

The matter of ISRAEL STINSON, Petitioner, versus UC DAVIS CHILDREN'S HOSPITAL, ET AL, Defendant, case number S-CV-0037673, came regularly this day before the Honorable MICHAEL W. JONES, Judge of the Superior Court of the State of California, in and for the County of Placer, Department Number 43 thereof. The

Petitioners were represented by Alexandra Snyder, acting as their Counsel. The Defendant was represented by Jason Curliano and Drexwell Jones, acting as their Counsel.

The following proceedings were had, to wit:

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THE COURT: Let's -- calling the matter of Israel Stinson. This is case S-CV-0037673. Ms. Snyder is present on behalf of Ms. Fonseca. I see that Mr. Stinson is also present, and I'm saying limiting to Ms. Fonseca in that matter because that's initially who the petition was filed on behalf of or through, I should say. Mr. Jones is present on behalf of Kaiser along with Mr. Curliano. Good morning to each of you. Make yourself comfortable, folks.

I also note that Mr. Coffman is present from county counsel on behalf of the public guardian. Good morning, sir.

Thank you for being here.

MR. JONES: Your Honor, we also have two representatives from Kaiser here, just so it's noted for the record.

THE COURT: Okay. And their names?

MR. ROBINSON: Richard Robinson.

THE COURT: Richard. I'm sorry. The last name?

MR. ROBINSON: Robinson.

THE COURT: R-O-B-I-N-S-O-N?

MR. ROBINSON: Yes, Your Honor.

THE COURT: Thank you.

MS. MORENO: And Laura Moreno, M-O-R-E-N-O.

THE COURT: All right. Both representatives with Kaiser.

Thank you. And good morning to each of you as well.

MS. SNYDER: Good morning, Your Honor.

THE COURT: All right. We are on today for the status of the extended TRO, if you will, and I received a status report yesterday that is signed by -- on behalf of each of the parties.

Appears to be -- is that your signature, Mr. Jones?

MR. JONES: Yes, it is, Your Honor.

THE COURT: Okay. And, Ms. Snyder, I can read that one.

All right. Each of you submitted this joint status report.

Where are we, folks?

MS. SNYDER: So as you are aware, we believed that on Friday that we had a facility hospital in Spokane that would accept the patient Israel.

Unfortunately, at the last minute, they had second thoughts and they backed out. We had at that time a life flight available. We still have that life flight on standby and paid for. Dr. Myette has spoken with the life flight director, so he is aware that they are ready to transport Israel.

At this time I do have an affidavit from a forensic intelligence analyst and also a pathologist who has experience with these kinds of cases. She became involved a week ago. I have a declaration that she submitted saying that she is currently putting together a -- what is called a home care team to transfer him to a home setting, but that is basically set up like an ICU with monitoring in a home.

I also have an e-mail from the CEO of the International Brain Research Foundation, Dr. Philip Defina, stipulating that he can provide a neurologist to do the diagnostics and the intervention; and we have a pediatrician on standby as well in that eventuality.

I also note that Ms. Fonseca informed me this morning that Healthbridge, which is a long-term acute care facility that -- honestly, I did not know that those facilities existed for children until yesterday afternoon. So at that point we began making calls, and I believe Dr. Myette is speaking with or has spoken with somebody from that center. So we are working very hard.

We -- honestly, it's -- I'm making calls as much as I can to try to find a facility and now working on these long-term

acute care facilities that care for patients in -- exactly like Israel -- in that situation that are on -- that are ventilator-dependent on long-term support. So that is what we are looking for right now, and that is why we've requested additional time, and I wanted nothing more than to come here by myself today and say that Israel had been transferred, and unfortunately that decision was out of my hands.

I will also say that Angela Clemente, the forensic pathologist who I have the declaration from, she is undergoing currently treatment for liver cancer. So she became involved a

week ago. The following day she had chemo therapy, so that put a significant dent in her ability to make progress on this case until -- until Friday and then -- or until Monday. So that is essentially where we are, but we are -- we are confident that we can find especially a long-term acute care facility.

We have asked the hospital. Some of the facilities have requested that Israel have a breathing tube rather than a ventilator. The ventilator can cause some problems over time. There's bacteria that can accumulate in the mouthpiece and things, and a breathing tube is a much more secure way to assure

that -- ensure that he gets the oxygen that he needs and also a gastrostomy, a feeding tube, for, you know, when he is able to receive nutrition that way. So right now he's only received dextrose, essentially sugars, since April 2nd, so he has not really received any nutrition since that time.

I also want to report that for a long time Israel did not make any movements whatsoever, and on Sunday he began making movements that -- in response to his parents speaking to him, touching him. I have a video of that. I don't know if the Court is interested in seeing that, but -- so that's a huge

change in his condition because that did not occur before, and notably that occurred after he received some thyroid -- a small amount of thyroid, but some thyroid medication.

And I also have an affidavit from Dr. Paul Byrne who is at least a neonatologist. I honestly believed he was a pediatric neurologist. But he has looked at Israel's records and believes that the additional thyroid helps with the brain function. Here's the affidavits. I have the affidavits and the e-mails from -15 MR. CURLIANO: I have it.

MS. SNYDER: We would really like to continue working with the hospital. We are grateful for what the hospital has done.

18 On Monday evening, the -- Dr. Myette noted that Israel was

19 becoming anemic and ordered a blood transfusion. We are very

20 grateful for that procedure that was done to, you know, to help

21 his condition; and, again, we want nothing more than to have Israel transferred out of the Kaiser facility to another facility.

I would also like to note, Your Honor, that we are working with this team in New Jersey for a reason, and that is because

New Jersey is the only state in the nation that has a statute that will allow -- well, first of all, they don't allow a declaration of brain death in cases where the family's deeply

held beliefs -- where the family has deeply held beliefs that a patient is not dead until their cardiopulmonary functions cease.

So -- and I realize we are in California; but had Israel been in New Jersey at this time, there would be no declaration of brain death; and we could get him transferred to a number of facilities across the nation, including a specialized facility in Pennsylvania that had agreed to take him; but then we found out that Pennsylvania has a statute that prohibits taking patients who have a declaration of brain death from another state.

So -- but in New Jersey the parents can petition the court

to have the declaration of brain death revoked; and that would also open the door for long-term treatment at a facility like, for example, Saint Christopher's in Pennsylvania that specializes in cases like this; and I spoke to a doctor there, Dr. Frank Nesby, and he said they have many patients that are in Israel's condition. They don't do a brain death exam there. They just care for those patients according to the wishes of the family. That's how that facility handles these patients.

Again, there's -- different states handle this in different ways. Different hospitals handle this in different ways. We are grateful, again, for the efforts that Kaiser has

made; and we really do request a little bit more time to -- to

facilitate this transfer and, if necessary, to facilitate a

transfer to a home-monitoring facility in New Jersey; and I can provide the Court with a declaration to that effect.

I'm sorry. Can I -- I would just like to also mention one more thing. So I've looked through Israel's medical records, as has Dr. Byrne, and I want it to be noted also that on April 4th UC Davis did their first brain exam. And in that exam it was recorded that Israel was not in a coma; and under the American Association of Neurology guidelines, which are the accepted medical standards under the

statute in California, the patient must be in a coma to do a brain death exam.

So that's of grave concern to us because, subsequent to that, there was another brain test done; and that brain test involved an apnea test. The apnea test, as Dr. Myette testified to -- the patient is removed from the ventilator, and the carbon dioxide in their blood is increased to a certain level in order to provoke a respiratory response. The apnea test can cause brain -- actually cause brain damage.

So if there was a brain exam done without this patient being in a coma, subsequently followed by an apnea test, we

don't know whether the apnea test itself could have contributed in some way to Israel's declining condition. We do know that there was movement. Prior to that time, the doctors had said your son will have brain damage, but they did not mention brain death at that point. So -- and that was early on.

I have the copy of the medical records, that page, that shows that the patient -- it says, "Patient in coma: No." THE COURT: I trust what you are telling me.

MS. SNYDER: Okay.

THE COURT: But the question becomes this: If I -- and tentatively in my mind I have done this analysis -- if I

disregard what happened at UC Davis in terms of their determination, didn't this court receive information that Kaiser has conducted two independent determinations, one by Dr. Myette and one by -- I forget the subsequent doctor's name. Forgive me. But the testimony from Dr. Myette was that that's what happened.

MS. SNYDER: Right. But although we would not consider those independent brain exams because those were done at Kaiser, obviously so, and we did ask for time to have an independent evaluation. I had a -18

THE COURT: I understand. But 7181 says a determination confirmation by another physician.

MS. SNYDER: Uh-huh. Right. And I did have a cardiologist lined up from -- he's affiliated with UC San Francisco, and I don't know why the -- he backed out, but I have heard from other neurologists that there is a lot of pressure in cases like this. They are concerned that there's going to be a lot of media exposure. We have intentionally really kept that to a minimum in order to facilitate working with the hospital.

Again, the goal is just to get Israel out and into another facility; and we are working very, very hard to make that happen. This is -- I mean, again, I spent the last two days

only making these phone calls, you know, in addition to the -- a few other people that we have; and as we get more people, those people make calls; and I am confident that we will find a facility so -- and I thank you.

THE COURT: Thank you. I appreciate the pressure that outside physicians can speak of, but there is no greater pressure than on the people who are here in this court and the people who are tending to Israel right now and no greater pressure on anyone other than Ms. Fonseca and Mr. Stinson at the height of that pressure.

MS. SNYDER: I agree.

THE COURT: So I appreciate what they may have said in their comments, but the pressure is here.

MS. SNYDER: I do agree with you, Your Honor.

THE COURT: And I'm well aware of the various statutes across the country, in particular in New Jersey. Trust me, I have done a lot of research on this on my own into these various issues.

I have not heard, though, any date, any timelines. I don't know if you folks have discussed that, if I get to that point, of what you are seeking or what these folks are telling

you; and let me start with this: You mentioned a couple of declarations or affidavits. Have those been provided to you folks? I'm speaking to Mr. Curliano.

MR. CURLIANO: I just received them this morning. The declaration of Dr. Byrne was just handed to me. I haven't had a chance to review it, but I did review the other declaration which made touch on one issue but not perhaps the bigger procedural issue about what is required of the statute.

I can also add -- and whatever questions Your Honor has, I'm more than happy to answer -- since about Saturday afternoon,

Ms. Snyder and I have been in constant communication via e-mail, phone calls. I think we all left here on Friday hoping that this would all be resolved, and I understand for a number of reasons it was not.

And I think we can agree that if we were -- at least I can on behalf of Kaiser -- if we were here right now with a specific representation -- and I even had mentioned to Ms. Snyder, if you can bring a letterhead from a facility or an institution saying that they have agreed to accept Israel, even if there are some conditions associated with it -- and there may be the placement of a trach and the feeding tube -- that would be a different issue for us.

But what we are presented with today under California law is no declaration, testimony, or even identifiable expert or physician who can come in here and testify that there's a mistake or that appropriate medical standards were not followed; and I can certainly go through the chronology -- it sounds like Your Honor has it from Davis -- through the testing that was done at Kaiser; and I think even if you exclude, although I don't think there would be grounds for doing that, the test that was done in Davis, certainly the appropriate testing was done to follow the guidelines of the Kaiser; and I don't really think that's in dispute.

The only declaration we now have is the declaration of Dr. Byrne. When I did speak with counsel this morning -- and I pointed out -- I think she correctly said that he is not a neurologist. I think she -- counsel was asked that question, when Mr. Jones was here, is Dr. Byrne a neurologist. She said, yes, he is not. That is significant, I believe, in terms of whether his declaration, which I haven't read, bears any weight. He's also not licensed in the state of California.

And I believe certainly any physician that calls into question whether or not there's been a mistake or whether

appropriate procedures have been followed by California physicians is commenting on the standard of care in the state of California.

So I have worked -- I don't think Ms. Snyder would disagree with this -- we have worked trying to find a location -- trying to answer questions about a location. Dr. Myette has even spoken with physicians. I gave him permission to do that; and counsel said that was fine, calling from out of state; and apparently none of those physicians have been able to get their institution to agree to take Israel.

So the problem we are confronted with on this Monday is we have -- I think Your Honor noted this and already also comments

on the competing interest -- we have staff members and physicians who are taking care of Israel who has been declared legally dead, and the problem is I don't hear any end or definite proposal for what can be done to transfer him somewhere, and I don't fault counsel for that at all. I'm sure it's a very difficult task she has, but I've got to weigh that against what my staff and my physicians are confronted with.

And on top of it, it sounds like if a facility is located somewhere and is identified, there may be a request that Kaiser physicians do medical

procedures on the child which may be a problem in and of itself.

THE COURT: Right.

MR. CURLIANO: I could certainly go into greater detail, Your Honor, but I think that kind of covers the key points that I had.

And finally I go back to Dr. Myette. I wasn't here for his testimony. I read his testimony. I think he provided a very detailed recitation of the medical procedures, the steps that were taken, and what the standard of care requires in terms of the guidelines.

MS. SNYDER: Your Honor, we do have, again, this declaration regarding the provision of home care, so that is something that is currently being arranged. It is true that, in order for that to happen, Israel would require a tracheostomy and gastrostomy; however, I do have a declaration to that effect, and certainly if we can set -- we are not asking for an indefinite period of time.

If we could set a period of time to really pursue, again, these long-term acute care facilities that are uniquely equipped to care for, for specifically children in Israel's condition, we would like that. We had

requested a two-week period of time in order to do that.

MR. CURLIANO: Final comment, Your Honor, if you don't mind.

THE COURT: Just one second. Thank you. Keep that thought.

MR. CURLIANO: I will.

THE COURT: The implied, if not couched, expressed, request is to have this court somehow order Kaiser to, in essence, provide treatment to a patient whom, under California law, they have made a determination of brain death.

MS. SNYDER: I do understand that, and if that -

THE COURT: How would I do that? How would I accomplish that jurisdictionally and legally?

MS. SNYDER: Well, we are asking that Kaiser would do it.

I mean, they did do a blood transfusion on him. We are very grateful for that. That was also a procedure that was done on a patient they believe is --

THE COURT: I understand.

MS. SNYDER: Right.

THE COURT: I have taken note of that as well, and I'm not certain that that rises to any level of a waiver or anything on their part, but I do have that written here in my notes in big bold letters when you had mentioned that that had happened.

MS. SNYDER: And I'm not saying that those procedures are

11 -- would be necessary for every facility. We certainly have

12 worked to find fa -- and we'll continue to find -- and, again,

13 we have a new -- a new type of facility, again, that I was not

14 aware of until yesterday afternoon that may take him without 15 being -- without the tracheostomy. They may do those procedures 16 there.

17 And the life flight is willing and equipped to take him on

18 a ventilator if need be. So while we would -- that would

19 certainly facilitate a transfer. If he doesn't have those

20 procedures and if Kaiser cannot or will not do those procedures, 21 that doesn't preclude a transfer. So just to be clear about that.

THE COURT: Thank you. Mr. Curliano, I'm sorry I interrupted you but -- what you were going to say, and also in there if you would address the issue -- not issue, but the information that was presented earlier in our discussions here about the movement of Israel in response to the parents touching and whether that's of any effect here.

MR. CURLIANO: Two things, Your Honor. First, with respect to the blood transfusion, that's a noninvasive procedure. I think arguably that would be consistent with the Court's order. It would be no different than providing medications. A PEG tube and a trach are obviously far

different; and that does raise, as the Court might understand, fairly significant ethical issues given the finding of death of Israel.

With respect to the movement of the child, I have been in constant contact with Dr. Myette, probably four or five times a day since Friday. I have been told that the child's condition has not changed from the baseline status that resulted in his signing the certificate of death.

I was informed apparently there may have been something posted on Facebook or something of a video of the child. I haven't watched it. I certainly could reconfirm with Dr. Myette

of what he has told me and what he has testified in court. It's my understanding -- I'm not a physician -- that this occasionally might happen, but it has absolutely nothing to do with an indication of brain function whatsoever. And I haven't seen the video.

The last point I wanted to make, which I think is an

important one, if we put aside -- and I have said this three or four times, but I think I need to again -- that counsel and I have worked together -- I understand their position and what they are trying to do, but there's a legal process that the legislature has put in place in the state of California, and what we have right now is a petition signed by an in pro per individual. It appears to have been with the assistance of counsel, if you read through it, which is not the issue.

We have no declaration from a physician or expert. We have nothing specific to a particular entry in a medical record or evaluation that was done that was a mistake or didn't follow

appropriate guidelines; and I don't think that exists, putting aside the comment of what was done at UC Davis; and without that foundational showing, although there has been cooperation, I think some good faith in trying to transfer the child, I think we are in a position now where we don't have finality; and arguably we don't have the procedural requirements being met that have the evaluation that needs to be done under Dority; and this is approximately two weeks after the child was declared dead.

MS. SNYDER: And just to go back to Dority, in that case, the hospital -- it was a younger child, but the hospital waited

30 days between brain exams. I understand that they don't have to do that; but the cases that I have looked at, even in other states, there is a period of time that's allowed, even in the Jahi McMath case. There's a period of time that's allowed for the parents to -- either to make other arrangements to go through the legal process and just to come to terms with the situation that they find themselves in. And in this case --

THE COURT: And Dority recognizes that. Dority says that as well. It says that, you know, it doesn't mean that the parents are foreclosed or forbidden from seeking their own independent review. That's clear within Dority but go ahead.

MS. SNYDER: And, again, we understand that -- we are not looking for this to go on indefinitely. We have asked for -- for a two-week period of time in order to facilitate the transfer. Again, it is my greatest hope that that would happen before that.

We have the flight on standby. We have -- we have all the pieces, and we have now the possibility of him being transferred into home care. Now, for that, he would need those procedures; but, again, we are working -- the parents are contacting and are being -- have calls in -- coming in this morning from long-term

acute care facilities in California and elsewhere; and that is an avenue that we have not yet pursued and an avenue that is, again, that is uniquely created for a patient in Israel's condition.

THE COURT: Anything further, folks?

MR. CURLIANO: Just a final thought, Your Honor. Two weeks after the temporary -- and that may be the keyword -temporary restraining order is signed -- and I do understand the plight that the family and this attorney is in. Possibilities just don't get us to where we need to be for an injunction like this given what the Court has heard and given how the law is

written in the state of California.

THE COURT: And so what is it that Kaiser is requesting at this time?

MR. CURLIANO: Kaiser would ask at this time that based upon the lack of evidence or even the specific offer of proof relating to an expert or physician who would provide testimony that will meet the legal standard to create a triable issue, that the temporary restraining order be dissolved, and that there be no further court jurisdiction over the issue of whether or not the certificate of death is appropriately supported by the necessary testimony of the guidelines as testified to by Dr. Myette.

THE COURT: And in terms of whether Kaiser needs to obtain consent for purposes of the cessation of any mechanical devices, where does Kaiser stand with respect to that?

MR. CURLIANO: I -- there -- my belief, based upon my understanding of the law, would be, given the finding of death by the doctor, that there is no consent required. The mechanical devices, the medications that have been provided were pursuant to the court order which would be dissolved, and therefore, the status quo would be as it was on April 14th,

2016, when Dr. Myette declared, unfortunately, that the child was brain dead.

The certificate of death has been filled out by Dr. Myette. It was done so on the 14th. It's my understanding that it is with the department -- I believe it's the department of vital statistics -- there may be a subgroup within there -- and the only part that has not been completed is the disposition of the remains by the parents.

MS. SNYDER: Your Honor, I would also like to at this time note that California law does require a -- an accommodation --

religious accommodation in these cases; and we would ask, then, for the extension of time based on that accommodation.

Again, it is the parents' deeply held beliefs that their son is -- that life does not end until the cessation of cardiopulmonary functions, and in some cases that religious accommodation includes that time to arrange a transfer to a facility that will recognize the parents' beliefs.

THE COURT: What does that translate to? What does that mean? Foundationally, what particular religion, what particular beliefs, the extent of what duration of time are we discussing, under what basis, all of those

questions and more that the Court has in its mind to address that.

MS. SNYDER: So the parents are Christians and -- of the Christian faith; and, again, there are -- and there are many people of the Christian faith, many people of the Catholic faith -- they also have Catholic background that does not recognize the cessation of life until -- until the heart stops beating.

As far as a period of time, again, we have asked for two weeks. We hope not to need that period of time. We would be grateful for any additional time at this point. We have -- we have calls in. We are hoping that those calls will result in a

facility that will receive Israel. We are -- we have people working literally around the clock to help make this happen at this point since the transfer did not happen last week.

I have a neurologist in New Jersey who can -- who can help with Israel's case there. I would imagine that he could come out here and, under the supervision of Dr. Myette or another physician or neurologist at Kaiser, could do a -- an exam of Israel and possibly as soon as this week.

THE COURT: That creates a real side issue in terms of the ethics and this court's intervention with ethics and medicine with Dr. Myette.

MS. SNYDER: Okay.

THE COURT: I'm not prepared to put him in that position.

MS. SNYDER: Okay. I do understand that's been done in other cases.

THE COURT: You had mentioned some declarations that you wanted to file with the court. I do want to see those, please.

MS. SNYDER: Okay. And just to clarify, one is an e-mail stipulating that the CEO or the neuropsychologist who runs the International Brain Research Foundation has a neurologist that he works with who will treat Israel.

THE COURT: Mr. Curliano, you look like a person who has to say something.

MR. CURLIANO: I do. Just two briefs points, Your Honor.

Because the Court does have Dr. Byrne's declaration -- which I have not had an opportunity to review, but I'm familiar with Dr. Byrne's testimony in trial courts. I have reviewed it -- I can make an offer of proof -- and I don't think counsel will disagree with this -- that if Dr. Byrne was qualified to testify -- we don't think he is in this case -- his testimony is quote/unquote brain death is not real death.

Dr. Byrne's opinion is right or wrong but is contrary to California law, if the California law is incorrect, because it defines brain death in a way that, in his opinion, is not actual

death; and that is really the sum total of opinions that I have seen; and he testifies fairly consistently in cases.

The second point is, I think, when counsel was talking about reasonable accommodations, she was talking about Health and Safety Code Section 1254.4, which the Court is familiar with. And I think there's two points that I need to make, and one of them is a representation that I can make as an attorney for Kaiser.

Kaiser has made an assumption during this past few weeks that there definitely is a religious component to this. We know

that because we know the organization that Ms. Snyder works for, and I don't mean that in a pejorative way, but we know that that is a component of what is being done here. There also have been discussions with family members.

So the things that Kaiser has done separate and apart from whatever was required by court order have been part of the reasonable accommodation that Kaiser has been providing based upon what it understood as primarily a religious and perhaps a philosophical disagreement about the determination of death.

The statute is also very clear on two points, and many of

these statutes may not be that clear, but it talks about a brief period of time for an accommodation. I think certainly under these circumstances two weeks -

THE COURT: A reasonably brief period.

MR. CURLIANO: Reasonably brief. And it also does say under subsection (e) that there shall be no private right of action to sue pursuant to this section. I know there isn't a lawsuit directly related to this section, but it makes me question how mandatory this section is as it relates to the issue we are dealing with today; but I guess the bigger issue

is, I think, we have a two-week period of time where Kaiser has provided accommodations through me, through my office, through our physicians, through our nurses.

THE COURT: And really, what it comes down to, 1254.4 is it's the subsection (d) that addresses reasonable and defines reasonable from Kaiser's perspective; and that is care and time, to paraphrase -- and correct me if I'm stating the statute incorrectly -- that is being taken away from other perspective patients or those of need of urgent care. I think those are the words to that effect. I can look it up exactly, but that's what

I recall the definition of reasonable is under this statute as well; and I have heard from Dr. Myette on those issues so...

MS. SNYDER: I mean, we were not notified that this period of time was associated with religious accommodation, and that's one thing, and I think the organization that I work for is not a religious organization per se. I think that's completely irrelevant to the facts at hand. And the brief accommodation is for all purposes; and, again, the reasonable accommodation, as you noted, is specifically for this religious accommodation.

THE COURT: And what amount of time is that?

MS. SNYDER: Again, in other cases, they -- there has been a period of approximately one month. In the Dority case, it was one month. In the Jahi McMath case, I believe it was approximately that. There was -- I believe at the point where we are now there was a two-week extension granted.

THE COURT: There were other extenuating circumstances in both the Dority and the McMath case. I think we can all agree upon that.

In terms of, again, going back to the statute itself again, subsection (b) talks about reasonably being an amount of time for the patient's next of kin to be gathered to come to the bedside, essentially paraphrasing. That's my

understanding of what that subsection addresses with respect to reasonable from the patient's point of view. Am I incorrect?

MS. SNYDER: I do believe, though, in the Jahi McMath case that the religious accommodation did entail allowing time for that transfer to occur; and, again, that was not an indefinite period of time. There was -- but there was another two-week period -- and I'm not sure what the extenuating circumstances would be in that case that are not present in this case or that there wouldn't be a separate set of circumstances in this case that would warrant that additional period of time. THE

COURT: All right. Thank you. Anything further from either of you gentlemen?

MR. CURLIANO: Nothing further, Your Honor.

THE COURT: Ms. Snyder, anything further?

MS. SNYDER: Nothing further.

THE COURT: Let me take just a moment to read these documents that have just been received. I have the declaration of Angela -- is it Clement or Clemente?

MS. SNYDER: Clemente.

THE COURT: Thank you. All right. I have read and reviewed the documents that were submitted on behalf of Ms. Fonseca.

Understanding that we are now almost two weeks into the

initial petition, the temporary restraining order, the subsequent restraining order, and then the one after that which leads us here today, I know during that time from the representations of each of you that efforts have been made and are continuing to be made to transfer Israel.

While it may not be acceptable or understandable for reasons I can appreciate to Ms. Fonseca or Mr. Stinson, Kaiser cannot be in a position to where they continue on for whatever lengthy periods of time to attempt to find facilities; and I say that given what the legislature has done here.

It isn't an issue with this court of what the medical providers or the medical profession sees or decides or

determines or their various positions as medical professionals as to what truly is or is not brain death or the vitality of an individual.

The legislature in California has passed a law, and that's what I need to look at and make a determination as to whether or not that law has been complied with; and that's the essence of that petition that originally started this was for this court to make that determination.

The Court allowed time for the parents to obtain medical evidence to be presented to this court that the determinations by Kaiser -- and if you wish to include UC Davis into that --

but to the determinations by Kaiser of the two independent physicians of a determination of brain death, pursuant to the statute, whether or not those were done in a medically accepted and approved manner. After almost two weeks now, I have not received that. That is not forthcoming to this court.

What I'm going to do is this: Pursuant to section 1254.4, I am going to continue this TRO to this Friday, the 29th, at 9 a.m. in this department for purposes of Kaiser now, expressly, with no misunderstanding, providing the next of kin or the family with that reasonably brief period of accommodation pursuant to 1254.4.

I will include within this extension of the TRO for a couple of days, and we can make appropriate modifications to the one that I did last time that, should the family and Kaiser agree that there is an acceptable facility to be transferred to during that time, that those efforts would be done and accommodated.

And I base this in large part time-wise as well as the information the Court received today, and that is the affidavit from Ms. Clemente. Even though it's dated April 27th, she discusses going back and receiving this on April 20th, so there has been, in her own opinion, a minimum of seven to ten days

that will have been just about the time, under her own declaration, when we come back on Friday at 9 a.m.

So to the extent the declaration -- I'm sorry -- the TRO that was filed on April 22nd needs to be modified, on page 2, we will strike "Sacred Heart Medical Center and the reference therein," and if I say "transfer to an acceptable facility -- an acceptable medical facility which has agreed to admit Israel."

Number 2, striking "transportation to Sacred Heart" to - 5 it would read instead "to an acceptable medical facility," and I would include "by AirCARE1 and/or other acceptable transportation service acceptable to both Kaiser and Ms. Fonseca

and Mr. Stinson."

Number 3 would continue, adding after AirCARE1, at the end of the paragraph that I had just mentioned about or other acceptable transportation, whatever the language was I had said there. Again, in paragraph number 4, after AirCARE1 would include that additional transportation language.

Paragraph 5 would be "with the admitting physician" -- that's striking "Sacred Heart" -- and that approved medical provider would be included there in both places, 19 and 20 lines, where that is indicated.

I believe the rest of it would be a continuing line except

we would strike on page 3 -- this is continuing on to paragraph 6 that starts on the proceeding page -- item number B at line 7 would read "Friday, April 29th, 2016, 9 a.m." and, of course, paragraph 7, "setting the further proceedings" -- as I have indicated here -- "for this Friday." Anything further, Ms. Snyder?

MS. SNYDER: I did have a question. I just wanted to

confirm that an acceptable medical facility would encompass or include the arrangements that Angela Clemente has set forth in her declaration.

THE COURT: I want to hear from Kaiser on that.

MR. CURLIANO: Your Honor, having just reviewed the declaration, I can see in principle, if it is something that can be confirmed by my medical providers, it would be appear to be something that would be appropriate. I can't make that representation as an attorney, though, but I have -- in fact, I did that out in the hall. I e-mailed it to the providers, and I'll find out as soon as we get

out, or I can check right now if the Court would like.

THE COURT: Why don't you go ahead so we can make this certain for everyone, or as certain as we can anyway.

Mr. Coffman?

MR. COFFMAN: Given the way things seem to be going, Your Honor, could I be excused from these proceedings?

THE COURT: Yes, sir. Thank you for being here, sir.

MR. COFFMAN: No problem, Your Honor.

MR. CURLIANO: Your Honor, I had a brief conversation with Dr. Myette about the issue of potentially what we will refer to as a subacute facility, and I'm going off the declaration we looked at.

Putting aside whether or not they will accept Israel, in principle, Kaiser has no problem, Dr. Myette in particular. We would do the same things that we would do to prepare the child for transport to any other facility; and since the agreement that we had reached last week that says that Kaiser is no longer legally responsible for care and treatment, we would leave the treatment to the facility the child is being transferred to.

The only concern is -- my understanding and Dr. Myette had mentioned this -- is that a subacute facility, even if it is in a residence, may require a PEG and a trach before the -- Israel is transferred. If that's the issue, then that is not something

that Kaiser can accommodate. If it is not, then we would go back to what we principally agreed to do which is stabilize and make sure the child is prepared for transport.

THE COURT: Ms. Snyder, with the understanding -- I think I have made it clear, but I'm not going to order or direct that Kaiser -- I'm not going to put those doctors under California law into that ethical dilemma, that they --

MS. SNYDER: And I realize this is -- I don't know if there's anything -- if this is a liability issue, if there's anything that we can address with respect to potential liability or --

MR. CURLIANO: If it was -- and that's -

MS. SNYDER: Is that a question of liability for -- to do those procedures?

MR. CURLIANO: It's a much bigger issue, Your Honor, and at the top of the list is ethical considerations.

THE COURT: Right. I understand.

MR. CURLIANO: That's pretty substantial.

MS. SNYDER: I just thought that, if it were, we could address that.

THE COURT: Okay. So I'm going to have my temporary restraining order continued under the language that I proposed earlier then. Mr. Curliano?

MR. CURLIANO: I know my hand moved up. It's the Italian

in me. One brief point, because I do need to make it for the record, I'm not sure if the Court has just considered the documents that were provided by petitioner today are formally admitted into evidence; but in particular, with respect to the declaration of Dr. Byrne to the extent it becomes part of the record, I don't believe that there's an appropriate foundation for Dr. Byrne to provide that opinion.

I certainly don't think in this context at this stage of the proceedings that a declaration has any evidentiary value; and I don't believe that he is qualified, for reasons that I think we have enumerated

previously on the record, to provide an opinion in this case.

And finally, I think, without reading it, if you go to paragraph 14, that is really his opinion -- and I think I articulated it earlier as my offer of proof -- brain death is not true death, and I don't believe you can have an expert opine that California law is wrong and his opinion therefore becomes

relevant. I just wanted to say that for the record.

THE COURT: Thank you. I have read and reviewed them.

Let me just state this. Let me say a couple of things here.

Bear with me for a moment before we close out here. I want to read -- paraphrasing from Dority:

"In the case before us, we have a petition . . . after the doctors have made their brain death determination. A portion of the hearing was devoted to medical testimony which resulted in the court's declaring the infant brain dead. We find no authority mandating that a court must make a determination brain death has occurred.

Section 7180 requires only that the determination be made in accordance with accepted medical standards. As a safety valve, Health and Safety Code Section 7181 calls for an independent confirmation of brain death by a second physician. This is, and should be, a medical problem and we find it completely unnecessary to require a judicial, quote, rubber stamp, end quote" -- the word of the appellate decision in Dority -- "on this medical determination. This does not mean parents or guardians are foreclosed from seeking another medical opinion.

In this case, both the treating and consulting physicians agreed brain death had occurred. No medical evidence was introduced to prove otherwise. The medical profession need not go into court every time it declares brain death where the diagnostic test results are irrefutable," quoting that paragraph in Dority at 278.

So that's what I have focused upon here, and I must follow the law. That's what I'm required to do. I take an oath to do that. Citizens expect and demand that of me, and that's what I have to do is follow that law.

The information before me right now has shown that there's

a determination of death that has been made in accordance with accepted medical standards under 7181, that safety valve that the Dority court refers to, and there has been independent confirmation by another physician. Similar to Dority, treating physicians, if you include UC Davis into that and the subsequent 13 physicians, it's almost similar in terms of what happened in 14 Dority.

It's important to also note something from the papers of Kaiser at page 7 in their opposition to the temporary restraining order that was filed on April 21st. Paragraph 9, "This is not a situation involving a person in a persistent

vegetative state where the person is in a wakeful unconscious state with a diminished level of brain activity. Rather, Israel's brain has permanently and completely stopped functioning."

Whether there's a disagreement or agreement between the physicians as to whether that's the case or what have you, under the law, I have to make that -- find whether or not that determination has been made in accordance with medical standards.

All right. Therefore, under -- considering those sections and finding that those determinations have been made and there's

nothing further before me to refute it, under 1254.4, though, I'm going to, as I have indicated here, find the next couple of days to be that reasonable period of time that's identified under 1254.4. I will see you folks again this Friday at nine o'clock.

MS. SNYDER: Thank you, Your Honor.

MR. CURLIANO: Thank you, Your Honor.

MR. JONES: Thank you.

MR. STINSON: Thank you so much, man. God bless. (Whereupon, the matter is concluded.)

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

--oOo--

ISRAEL STINSON, Petitioner,	
versus	Case No.S-CV-0037673
UC DAVIS CHILDREN'S HOSPITAL, ET AL, Defendant.	REPORTER'S TRANSCRIPT

STATE OF CALIFORNIA)) ss
COUNTY OF PLACER)

I, MELISSA S. SULLIVAN, Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing pages 1 through 34, inclusive, comprises a true and correct transcript of the proceedings had in the above-entitled matter held on WEDNESDAY, APRIL 27, 2016.

I also certify that portions of the transcript are governed by the provisions of CCP237(a)(2) and

that all personal 19 juror identifying information has been redacted.

20 IN WITNESS WHEREOF, I have subscribed this certificate at 21 Roseville, California, this 28th day of April, 2016.

22

23

24 MELISSA S. SULLIVAN, CSR

25 License No. 13843

EXHIBIT H

Declarant, Paul A. Byrne, M.D., states as follows:

1. I have personal knowledge of all the facts contained herein and if called to testify as a witness I would and could competently testify thereto.

2. I am a physician licensed in Missouri, Nebraska and Ohio. I am Board Certified in Pediatrics and Neonatal-Perinatal Medicine. I have published articles on "brain death" and related topics in the medical literature, law literature and the lay press for more than thirty years. I have been qualified as an expert in matters related to central nervous system dysfunction in Michigan, Ohio, New Jersey, New York, Montana, Nebraska, Missouri, South Carolina, and the United States District Court for the Eastern District of Virginia.

3. I have reviewed the medical records of Israel Stinson, a 2-year-old boy, a patient in Kaiser Permanente, Roseville Hospital. I have visited Israel Stinson several times. On April 22 when I visited him, he was in the arms of his mother. A ventilator was in place.

4. Israel suffers from the effects of hypoxia and hypothyroidism as well as other conditions that require continuing medical treatment.

5. Israel receives treatment for diabetes insipidus by medication administered intravenously. The patient's family and I agree this treatment should continue.

6. Israel had asthma attack at home on April 1, 2016. He was taken to Mercy General Hospital ER. He was intubated and then transferred to UC Davis Children's Hospital. ET tube was removed. Shortly thereafter, he had difficulty with breathing and suffered a cardiorespiratory arrest. He was intubated, placed on a ventilator treated with ECMO. After this, a declaration of "brain death" was made.

7. Israel has been receiving ventilator support to assist the functioning of his lungs via endotracheal tube since April 1. Tracheostomy has not been done.

8. On April 4, Cranial Doppler showed "Near total absence of blood flow into the bilateral cerebral hemispheres."

PATIENT EVALUATION FOR DETERMINATION OF BRAIN DEATH
FIRST EXAMINATION AND APNEA TEST

Patient's Name: Israel Stinson

First Exam. Date: 4/4/16 Time: 0932 Temp: 36.4 B/P: 100/65 (78)

A. Preliminary Determination

1. Patient in coma: no
   - A. Cause of coma: n/a
   - B. Method by which coma diagnosed: n/a

It is recorded above on April 4 that Israel Stinson is not in coma.

Then, on April 8, the following is recorded, again as "First Examination and Apnea test." So, which is the first?

PATIENT EVALUATION FOR DETERMINATION OF BRAIN DEATH
FIRST EXAMINATION AND APNEA TEST

Patient's Name: Israel Stinson

First Exam. Date: 4/8/16 Time: 935 Temp: 36.9 B/P: 106/69 (78)

A. Preliminary Determination

1. Patient in coma: no

And again, not in coma.

8(a) An apnea test has been done on Israel 3 times. The first test was April 8. He was made acidotic (pH 7.13) and hypercapneic (pCO2 76). It must be noted that the Doppler still recorded blood flow on April 4, which was prior to the first apnea test.

The second apnea test was on April 12. Again he was made severely acidotic (pH 5.15) and severe hypercapneic (p CO2 76).

Apnea test 3 was done April 14. His pCO2 increased to 82 and pH decreased to 7.15. This was not bad enough, so no ventilator life support was continued for another 3 minutes. By then the pH was down to 7.10 and the pCO2 increased to extremely high level of 95.

These tests have caused Israel to have severely elevated levels of carbon dioxide and caused severe acidosis. These tests could not have helped Israel. Further, the third time was after Israel's parents requested that testing not be done.

9. Israel's only nutrition since April 1 has been Dextrose, the equivalent of 7-Up. He has been starved of protein, fat and vitamins.

9. Israel's parents requested thyroid blood studies April 17. They were done on April 18. Results showed that Israel has hypothyroidism. His parents requested that thyroid be given every 6 hours. Thyroid was started on April 18, but only once a day.

10. Prior to April 17/18 Israel was not tested or treated for his hypothyroidism, which has probably been present since his cardiorespiratory arrest. Thyroid hormone is necessary for ordinary normal health and healing of the brain. Lack of thyroid hormone may account for his continued coma. The following information on the importance of hypothyroidism in cases of brain damage is from published studies:

A) Shulga A, Blaesse A, Kysenius K, Huttunen HJ, Tanhuanpää K, Saarma M, Rivera C. Thyroxin regulates BDNF expression to promote survival of injured neurons. Mol Cell Neurosci. 2009 Dec;42(4):408-18. doi: 10.1016/j.mcn.2009.09.002. Epub 2009 Sep 16.

Abstract: A growing amount of evidence indicates that neuronal trauma can induce a recapitulation of developmental-like mechanisms for neuronal survival and regeneration. Concurrently, ontogenic dependency of central neurons for brain-derived neurotrophic factor (BDNF) is lost during maturation but is re-acquired after injury. Here we show in organotypic hippocampal slices that thyroxin, the thyroid hormone essential for normal CNS development, induces up-regulation of BDNF upon injury. **This change in the effect of thyroxin is crucial to promote survival and regeneration of damaged central neurons.** In addition, the effect of thyroxin on the expression of the K-Cl cotransporter (KCC2), a marker of neuronal maturation, is changed from down to up-regulation. Notably, previous results in humans have shown that during the first few days after traumatic brain injury or spinal cord injury, thyroid hormone levels are often diminished. **Our data suggest that maintaining normal levels of thyroxin during the early post-traumatic phase of CNS injury could have a therapeutically positive effect.**

Available at: http://www.hindawi.com/journals/jtr/2013/312104/

B) Mourouzis I, Politi E, Pantos C. Thyroid hormone and tissue repair: new tricks for an old hormone? J Thyroid Res. 2013;2013:312104. doi: 10.1155/2013/312104. Epub 2013 Feb 25.

Abstract: Although the role of thyroid hormone during embryonic development has long been recognized, its role later in adult life remains largely unknown. However, **several lines of evidence show that thyroid hormone is crucial to the response to stress and to poststress recovery and repair. Along this line, TH administration in almost every tissue resulted in tissue repair after various injuries including ischemia, chemical insults, induction of inflammation, or exposure to radiation. This novel action may be of therapeutic relevance, and thyroid hormone may constitute a paradigm for pharmacologic-induced tissue repair/regeneration.**

C) Shulga A, Rivera C. Interplay between thyroxin, BDNF and GABA in injured neurons. Neuroscience. 2013 Jun 3;239:241-52. doi: 10.1016/j.neuroscience.2012.12.007. Epub 2012 Dec 13.

Abstract: Accumulating experimental evidence suggests that groups of neurons in the CNS might react to pathological insults by activating developmental-like programs for survival, regeneration and re-establishment of lost connections. For instance, in cell and animal models it was shown that after trauma mature central neurons become dependent on brain-derived neurotrophic factor (BDNF) trophic support for survival. This event is preceded by a shift of postsynaptic GABAA receptor-mediated responses from hyperpolarization to developmental-like depolarization. These profound functional changes in GABAA receptor-mediated transmission and the requirement of injured neurons for BDNF trophic support are interdependent. Thyroid hormones (THs) play a crucial role in the development of the nervous system, having significant effects on dendritic branching, synaptogenesis and axonal growth to name a few. **In the adult nervous system TH thyroxin has been shown to have a neuroprotective effect and to promote regeneration in experimental trauma models.** Interestingly, after trauma there is a qualitative change in the regulatory effect of thyroxin on BDNF expression as well as on GABAergic transmission. **In this review we provide an overview of the post-traumatic changes in these signaling systems and discuss the potential significance of their interactions for the development of novel therapeutic strategies.**

The results of test of thyroid function of Israel Stinson are:

4/17/16 TSH: 0.07 (normal 0.7-5)

4/17/16: T4: 0.4 (Normal .8-1.7)

Israel's brain (hypothalamus) is not producing sufficient TSH, thyroid stimulating hormone, which has a half-life of only a few minutes.

If image scans are not sensitive enough to detect circulation in his brain, his brain may be only functionally silent but still functionally recoverable if proper treatment is given.

T4 is low and brain edema has turned into brain myxedema. If T4 is given, brain circulation can increase and resume normal levels, thereby restoring normal neurological and hypothalamic function.

11. Israel is dependent upon ventilator to keep him alive. Tracheostomy is indicated to facilitate his treatment and care. A tracheostomy needs to be done. If the endotracheal tube is removed, very likely Israel's airway will not remain open for breathing. If Israel is disconnected from the ventilator, he likely would be unable to breathe on his own because of the duration of time he has been on the ventilator.

12. With proper medical treatment as proposed by his parents, Israel is likely to continue to live, and may find limited to full recovery of brain function, and may possibly regain consciousness.

13. Israel has a beating heart without support by a pacemaker or medications. Israel has circulation and respiration and many interdependent functioning organs including liver, kidneys and pancreas. In spite of low thyroid Israel's body manifests healing. Israel Stinson is a living person who passes urine and would digest food and have bowel movements if he were fed through a nasogastric or PEG tube. These are functions that do not occur in a cadaver after true death.

14. Patients in a condition similar to Israel Stinson's clinical state may indeed achieve total or partial neurological recovery even after having fulfilled criteria of "brain death" legally accepted in the State of California, or established anywhere in the world, provided that they receive treatments based on recent scientific findings (although not yet commonly incorporated into medical practice).

15. The criteria for "brain death" are multiple and there is no consensus as to which set of criteria to use (Neurology 2008). The criteria supposedly demonstrate alleged brain damage from which the patient cannot recover. However, there are many patients who have recovered after a declaration of "brain death." (See below.) Israel is not deceased; Israel is not a cadaver. Israel has a beating heart with a strong pulse, blood pressure and circulation. Israel makes urine and would digest food and have bowel movements if he is fed. These are indications that Israel is alive.

16. Israel needs a warming device, but he is not a cold corpse. His body temperature has not equilibrated with the environmental temperature as would have occurred if Israel were a corpse.

17. The latest scientific reports indicate that patients deemed to be "brain dead" are actually neurologically recoverable. I recognize that such treatments are not commonly done. Further it is recognized that the public and the Court must be wondering why doctors don't all agree that "brain death" is true death. Israel, like many others, continues to live in spite of little or no attention to detail necessary for treating a person on a ventilator. Israel, like all of us needs thyroid hormone. Many persons are on thyroid hormone because they would die without it.

18. The diagnosis of "brain death" is currently based on the occurrence of severe brain swelling unresponsive to current therapeutic methods. The brain swelling in Israel Stinson began with the cardiorespiratory arrest that occurred more than 3 weeks ago. Progressive expansion of brain swelling raises the pressure inside the skull thereby compressing the blood vessels that supply nutrients and oxygen to the brain tissue itself. Upon reaching maximum levels, the pressure inside the skull may eventually stop the cerebral blood flow causing brain damage. However, Israel Stinson may achieve even complete or nearly complete neurological recovery if he is given proper treatment soon. Every day that passes, Israel is deprived of adequate nutrition and thyroid hormone required for healing.

19. The questions presented here refer to (1) the unreliability of methods that have been used to identify death and (2) the fact that no therapeutic methods that would enable brain recovery have been used so far. In fact, the implementation of nutrition and adequate therapeutic methods are being obstructed in the hope that Israel's heart stops beating, thereby precluding his recovery through the implementation of new therapeutic methodologies.

20. Israel Stinson's brain is probably supplied by a partially reduced level of blood flow, insufficient to allow full functioning of his brain, such as control of respiratory muscles and production of a hormone controlled by the brain itself. This is called thyroid stimulating hormone, TSH, which then stimulates the thyroid gland to produce its own hormones. With insufficient amount TSH Israel has hypothyroidism. The consequent deficiency of thyroid hormones sustains cerebral edema and prevents proper functioning of the brain that control respiratory muscles.

21. On the other hand, partially reduced blood flow to his brain, despite being sufficient to maintain vitality of the brain, is too low to be detected through imaging tests currently used for that purpose. Employing these methods currently used for the declaration of "brain death" confounds NO EVIDENCE of circulation to his brain with actual ABSENCE of circulation to his brain. Both reduced availability of thyroid hormones and partial reduction of brain blood flow also inhibit brain electrical activity, thereby preventing the detection of brain waves on the EEG. The methods currently used for the declaration of "brain death" confound flat brain waves with the lack of vitality of the cerebral cortex. It is noted that EEG has not been done on Israel Stinson.

22. In 1975, Joseph, a patient of mine, was on a ventilator for 6 weeks. He wouldn't move or breathe. An EEG was flat without brainwaves, which was interpreted by neurologists as "consistent with cerebral death." It was suggested to stop treatment. I continued to treat him. Eventually, Joseph was weaned from the ventilator, went to school and is now married and has 3 children.

23. In 2013, Jahi McMath was in hospital in Oakland, CA. When I visited her in the hospital in Oakland, Jahi was in a condition similar to Israel. A death certificate was issued on Jahi on December 12, 2013. Jahi was transferred to New Jersey where tracheostomy and gastrostomy were done and thyroid medication was given. Multiple neurologists recently evaluated Jahi and found that she no longer fulfills

any criteria for "brain death. Since Jahi has been in New Jersey, she has had her 14th and 15th birthdays. The doctors in Oakland declared Jahi dead and issued a death certificate. Jahi's mother said no to taking Jahi's organs and no to turning off her ventilator. Israel's parents are saying no to taking Israel's organs and to taking away his life support. Just like Jahi's mother!

24. The fact that Israel's brain still controls or at least partially controls his blood pressure and temperature and produces some thyroid stimulating hormone indicates that his brain is functioning and not irreversibly damaged. Rather, Israel is in a condition best described in layman's terms as similar to partial hibernation – a status to which an insufficient production of thyroid hormones also contributes.

25. The administration of thyroid hormone constitutes a fundamental therapeutic method that can reduce brain edema, relieving the pressure of cerebral edema on blood vessels and restoring normal levels of brain blood flow. By reestablishing the normal range of brain blood flow, recovery of his brain can be expected. In other words, he would regain consciousness and breathe on his own (without the aid of mechanical ventilation). That, however, cannot be accomplished by using only a ventilator and not giving adequate nutrition. Israel indeed requires active treatment capable of inducing neurological recovery. Correction of other metabolic disorders may enhance his chances of recovery.

26. Even a person in optimal clinical condition would be at risk of death after weeks of hypothyroidism and only sugar (similar to only 7-up). Israel Stinson needs a Court order requiring Kaiser Permanente to actively promote the implementation of all measures necessary for Israel's survival and neurological recovery, including tracheostomy, gastrostomy, thyroid hormone, and proper nutrition to prevent death.

27. Israel Stinson needs the following procedures done:

a. Tracheostomy and gastrostomy

b. Serum T3, T4, TSH and TRH (thyroid releasing hormone).

c. Levothyroxine 25 mcg nasoenterically, nasogastrically or IV every 6 hours the first day; dose needs to be adjusted thereafter in accord with TSH, T3 and T4.

d. Samples for lab tests for growth hormone (maybe serum samples can be frozen for future non-STAT tests).

e. Serum insulin-like growth factor I (IGF-I) to evaluate growth hormone deficiency.

f. Parathormone (PTH) and 25(OH)D3 to evaluate vitamin D deficiency and replacement.

g. Continue to follow electrolytes (sodium, chloride, potassium, magnesium, total and ionized calcium), creatinine and BUN.

h. Continued monitoring of blood gases.

i. Serum albumin and protein levels.

j. CBC including WBC with differential and platelet count.

k. Urinalysis (including quantitative urine culture and 24-hour urine protein).

l. Continue accurate Intake and Output.

m. Diet with 40 g of protein per day (nasoenterically or nasogastrically). Fat intravenous until feedings are into stomach.

n. IV fluids (volume and composition to be changed according to daily serum levels of electrolytes (sodium, chloride, potassium, magnesium, total and ionized calcium) and fluid balance.

o. Water, nasoenterically or nasogastrically, if necessary to treat hypernatremia – volume and frequency according to serum sodium.

p. Fludrocortisone Acetate (Florinef®) Tablets USP, 0.1 mg - one tablet (nasoenterically or nasogastrically) per day;

q. Prednisone 10 mg (nasoenterically or nasogastrically) twice per day;

r. Continue Vasopressin IM, or Desmopressin acetate nasal spray (DDAVP – synthetic vasopressin analogue) one or two times per day according to urinary output;

s. Human growth hormone (somatropin) [0.006 mg/kg/day (12 kg = 0.07 mg per day)] subcutaneously;

t. Arginine Alpha Ketoglutarate (AAKG) powder 10 g diluted in water (nasoenterically or nasogastrically) four times per day;

u. Pyridoxal-phosphate ("coenzymated B6", PLP) - sublingual administration four times per day;

v. Taurine 2 g diluted in water (nasoenterically or nasogastrically) four times per day;

w. Cholecalciferol 30.000 IU three times per day (nasoenterically or nasogastrically) for 3 days. Then 7,000 IU three times per day (nasoenterically or nasogastrically) from day 4.

x. Riboflavin 20 mg four times per day (nasoenterically or nasogastrically)

y. Folic acid 5 mg two times per day (nasoenterically or nasogastrically).

z. Vitamin B12 1,000 mcg once per day (nasoenterically or nasogastrically).

aa. Concentrate / mercury-free omega-3 (DHA / EPA) 3 cc four times per day (nasoenterically or nasogastrically).

bb. Chest physiotherapy

cc. Blood gases; adjust ventilator accordingly.

dd. Keep oxygen saturation 92-98%

ee. Air mattress that cycles and rotates air.

ff. Pressor agents to keep BP at 70-80/50-60.

27. In a situation such as this where continued provision of life-sustaining measures such as ventilator, medications, water and nutrition are at issue, it is my professional judgment that the decision regarding their appropriateness rests with the family, not the medical profession.

References to some of those who have recovered after a declaration of "brain death":

Hospital staff began discussing the prospect of harvesting her organs for donation when she squeezed her mother's hand. **Kopf was mistakenly declared dead in hospital but squeezed her mother's hand in 'breathtaking miracle.'**
https://www.dropbox.com/s/dtti4hkkx89ikyg/Uber%20Shooting%20Victim%20Abigail%20Kopf%20Going%20From%20Victim%20to%20Survivor%20_%20NBC%20Nightly%20News.mp4?dl=0

Zack Dunlap from Oklahoma. Doctors said he was dead, and a transplant team was ready to take his organs — until a young man came back to life
http://www.msnbc.msn.com/id/23768436/;http://www.lifesitenews.com/ldn/2008/mar/08032709.html, March 2008

Rae Kupferschmidt: http://www.lifesitenews.com/ldn/2008/feb/08021508.html, February 2008.

Frenchman began breathing on own as docs prepared to harvest his organs
www.msnbc.msn.com/id/25081786

Australian woman survives "brain death" http://www.lifesitenews.com/news/brain-dead-woman-recovers-after-husband-refuses-to-withdraw-life-support UTM source=LifeSiteNews.com+Daily+Newsletter&utm_campaign=231fd2c2c9-LifeSiteNews_com_US_Headlines05_12_2011&utm_medium=email

Val Thomas from West Virginia
WOMAN WAKES AFTER HEART STOPPED, RIGOR MORTIS SET IN
http://www.foxnews.com/story/0,2933,357463,00.html

http://www.lifesitenews.com/ldn/2008/may/08052709.html, May 2008.

An unconscious man almost dissected alive:
http://www.lifesitenews.com/ldn/2008/jun/08061308.html, June 2008

Gloria Cruz: http://www.lifesitenews.com/news/brain-dead-woman-recovers-after-husband-refuses-to-withdraw-life-support/, May 2011

Madeleine Gauron: http://www.lifesitenews.com/news/brain-dead-quebec-woman-wakes-up-after-family-refuses-organ-donation, July 2011

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Joffe, A. Brain Death is Not Death: A Critique of the Concept, Criterion, and Tests of Brain Death. Reviews in the Neurosciences, 20, 187-198 (2009), and Rix, 1990; McCullagh, 1993; Evans, 1994; Jones, 1995; Watanabe, 1997; Cranford, 1998; Potts et al., 2000; Taylor, 1997; Reuter, 2001; Lock, 2002; Byrne and Weaver, 2004; Zamperetti et al., 2004; de Mattei, 2006; Joffe, 2007; Truog, 2007; Karakatsanis, 2008; Verheijde et al., 2009. Even the President's Council on Bioethics (2008), in its white paper, has rejected "brain death" as true death.

VERIFICATION

I declare under penalty of perjury under the law of the State of California that the foregoing is true and correct.

Executed on 4-26-2016

Signature: Paul A. Byrne MD

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PAPER

In what circumstances will a neonatologist decide a patient is not a resuscitation candidate?

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ABSTRACT

Objective The purpose of this study was to determine the opinions of practising neonatologists regarding the ethical permissibility of unilateral Do Not Attempt Resuscitation (DNAR) decisions in the neonatal intensive care unit.

Study design An anonymous survey regarding the permissibility of unilateral DNAR orders for three clinical vignettes was sent to members of the American Academy of Pediatrics Section of Perinatal Medicine.

Results There were 490 out of a possible 3000 respondents (16%). A majority (76%) responded that a unilateral DNAR decision would be permissible in cases for which survival was felt to be impossible. A minority (25%) responded 'yes' when asked if a unilateral DNAR order would be permissible based solely on neurological prognosis.

Conclusions A majority of neonatologists believed unilateral DNAR decisions are ethically permissible if survival is felt to be impossible, but not permissible based solely on poor neurological prognosis. This has significant implications for clinical care.

INTRODUCTION

A unilateral Do Not Attempt Resuscitation (DNAR) order refers to a decision by a physician/medical team that is made without permission or assent from the patient or the patient's surrogate decision-maker. Possible justifications might include the belief that an attempted resuscitation would offer no benefit to the patient, or that any possible benefit would be outweighed by the burdens to the patient.[1] Proponents of unilateral DNAR decisions assert that they avoid unnecessary and painful interventions at the end of life. Various medical associations, including the American Medical Association (AMA), have published codes of ethics that allow physicians not to provide interventions that they do not feel would be beneficial, but determination of which interventions might be beneficial is often nebulous.[2 3] Opponents of unilateral DNAR orders argue that they usurp the patients' or surrogate decision-makers' ethical and legal authority to make decisions.[4]

While there is acknowledgement that the parents' right to make decisions for their child is generally to be respected, the physician's responsibilities sometimes include protecting the patient from treatment considered harmful or inhumane.[5] We believe that neonatologists have particular familiarity with the concept of unilateral DNAR decisions, given that they are, at times, consulted regarding care and possible resuscitation for an infant below the threshold of viability, and might at times decide to forgo attempts at resuscitation without explicitly seeking parental agreement, in cases wherein survival is felt to be impossible.[6] We hypothesised that a substantial portion of neonatologists would therefore acknowledge that they find unilateral DNAR decisions ethically acceptable in at least some circumstances.

STUDY DESIGN

An anonymous survey was sent to members of the American Academy of Pediatrics Section of Perinatal Medicine (now the Section on Neonatal-Perinatal Medicine) using surveymonkey.com. The consent was implied by completion of the survey. The survey consisted of three clinical vignettes followed by questions regarding the permissibility of a unilateral DNAR order for the specific case. Demographic information (years in practice; intensive care unit (ICU) level; unit capacity; the presence of trainees and the presence of a neonatal or paediatric palliative care service) was also collected in an attempt to determine the effect of these characteristics on neonatologists' willingness to place a unilateral DNAR order. The survey was sent on 4 September 2014 to the 3000 members of the American Academy of Pediatrics Section of Perinatal Medicine who had an email address listed with the section listserve and remained open for 2 weeks.

Hypothetical vignettes were designed to determine neonatologists' opinions regarding the ethical permissibility of unilateral DNAR orders in three settings: (1) a patient unlikely to survive a resuscitation, (2) a patient who may survive a resuscitation but would be neurologically devastated and (3) a patient for whom there is no curative treatment available (box 1). The first vignette concerned Frank, a preterm infant born at 22+5 weeks gestation who, despite intensive efforts, is dying. The neonatologist in this vignette believes the patient will not survive a resuscitation attempt. There has not yet been a discussion with the family in this vignette. The respondents are asked whether placing a unilateral DNAR order is acceptable when survival is felt to be unlikely, and when survival is felt to be impossible, and are then asked if they would place such an order. Methods of conflict mediation in the event of disagreement between the family and the physician regarding a DNAR order were also queried in this vignette.

The second vignette concerned Jennifer, a term female with severe lissencephaly who is having respiratory decompensation. The purpose of this

vignette was to query the opinion of neonatologists regarding cases in which survival might be possible after a resuscitation, but with poor neurological outcome. Three questions followed this vignette and centred around the permissibility of unilateral DNAR orders in cases where there is poor neurological prognosis.

The third vignette described Frannie, a term female who had a pulmonary artery shunt placed shortly after birth, which is now failing. Frannie also bears a diagnosis that is associated with a poor neurological prognosis. This vignette was designed to query neonatologists' opinions regarding unilateral DNAR orders in cases for which there are no curative treatments available.

The primary outcome measure was whether or not the queried neonatologist felt the unilateral DNAR order was ethically permissible for the given vignette. χ^2 tests of association were used to determine whether responses differed by the demographic characteristics. Analyses were conducted using SAS V9.3 (Cary, North Carolina, USA). Statistical significance was established at 0.05.

Box 1 Hypothetical vignettes

Vignette 1: Frank is a preterm infant born at 22+5 weeks' gestation, who is currently 9 days old. He suffered a spontaneous bowel perforation today and a Penrose drain is in place. His heart rate is drifting to the low 100's. He has a mixed respiratory and metabolic acidosis with a pH of 6.98–7.04 despite high oscillator settings and bicarbonate boluses. His blood pressure is barely acceptable on maximal vasopressor support. He has had no urine output all day. The attending neonatologist believes the infant is dying and attempts at resuscitation would be unsuccessful.

Vignette 2: Jennifer is presumably a term female born to a young mother with no antenatal care. The neonatology team is called to evaluate Jennifer given poor tone. The infant is transferred to the neonatal intensive care unit (NICU) where a more thorough exam reveals mild wrist contractures, moderate hypotonia, a prominent forehead and a small jaw. She experiences apnoea which progresses to respiratory failure by the second day of life. An MRI is performed given her neurological findings and it is consistent with severe lissencephaly. The neonatology fellow asks the attending if she should have a unilateral Do Not Attempt Resuscitation (DNAR) order placed, given her poor neurological outcome and her decompensation.

Vignette 3: Frannie is a 75-day-old female with complex cardiac disease that necessitated a pulmonary artery shunt given profound pulmonary stenosis and a ductus arteriosus that was not large enough to allow adequate pulmonary blood flow with shunting. This procedure was performed on day of life 5. The treatment team is concerned that Frannie is beginning to outgrow her shunt and is requiring more ventilatory support via her tracheostomy. She has a known syndrome that is associated with profound developmental delay, cardiac disease and seizures. Frannie suffers from all three. An MRI revealed brain atrophy. Her heart disease is amendable to surgical correction, though the cardiothoracic (CT) surgeon at her home institution refuses to operate given the poor neurological prognosis. A second and third opinion yielded similar results. Frannie is showing more signs of shunt failure and is found to have frequent desaturations and episodes of bradycardia. A unilateral DNAR order is placed in the chart by the attending neonatologist.

Table 1

Years in practice	NICU level
Less than 5 years—100 (21.5%)	Level I—6 (1.3%)
Between 5 and 10 years—74 (16%)	Level II—25 (5.4%)
Between 10 and 15 years—42 (9%)	Level III—206 (44.3%)
Between 15 and 20 years—51 (11%)	Level IV—230 (49.2%)
Greater than 20 years—193 (41.7%)	

NICU, neonatal intensive care unit.

RESULTS

There were 490 responses out of a possible 3000 respondents (16%). Selected demographic data concerning the respondents are provided in table 1. For questions such as 'What is the level of the unit in which you currently practise?', some respondents selected more than one response. For the primary outcome, bar graphs are shown regarding the perceived permissibility of a unilateral DNAR decision for each vignette in figures 1–3.

For the first vignette, when asked if a unilateral DNAR order would be appropriate when survival is felt to be unlikely, 61% of respondents answered yes (Question 1.1). An even greater majority answered in the affirmative (77%) when the question is changed to indicate an infant for whom survival was felt to be impossible (Question 2.1). While a clear majority of respondents answered that a unilateral DNAR order would be permissible if survival was felt to be impossible or unlikely, only 51% of respondents answered that they would actually place such an order themselves in this first vignette (Question 3.1). In cases of physician–parent conflict regarding what is perceived as best for the patient, the vast majority of respondents cited ethics committee consultation as a method of conflict resolution. The next most cited resource was consultation with the medical director or section chief, followed by case discussion with a representative of the risk management department. Very few respondents answered that they would pursue temporary custody from the courts in cases of physician–parent disagreement.

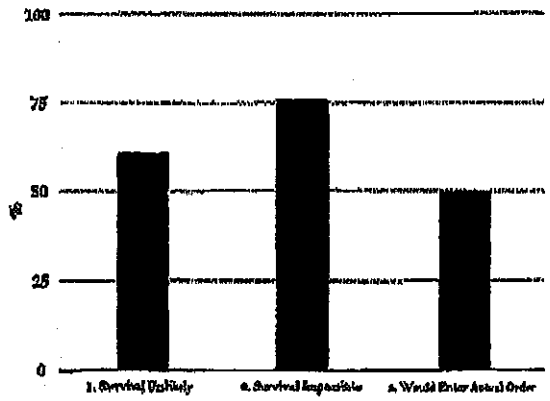

Figure 1 Percentage who answered 'yes' to vignette 1 questions
1. Is a unilateral Do Not Attempt Resuscitation (DNAR) permissible when survival is unlikely?
2. Is a unilateral DNAR permissible when survival is impossible?
3. Would you actually enter the order in this case?

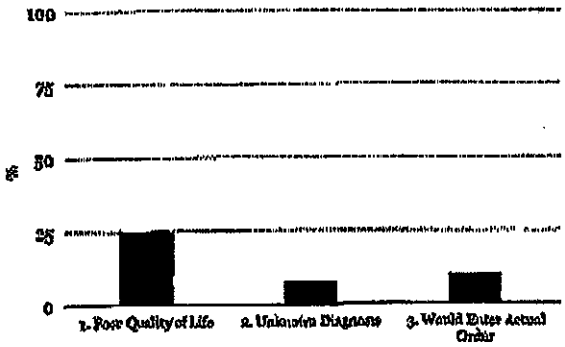

Figure 2 Percentage who answered 'yes' to vignette 2 questions
1. Is a unilateral Do Not Attempt Resuscitation (DNAR) permissible in cases associated with a poor quality of life?
2. Is a unilateral DNAR permissible in cases where the diagnosis is unknown?
3. Would you enter a unilateral DNAR in this case?

For the second vignette, meant to query opinions regarding a unilateral DNAR order in cases of poor neurological prognosis, 119 (25%) of the neonatologists responded that it was ethically permissible to place a unilateral DNAR order based on a poor neurological prognosis and long-term prospects for poor quality of life (Question 1.2). Forty-nine (10%) answered in the affirmative when asked if they would actually place a unilateral DNAR order themselves based on the information presented in vignette 2 (Question 3.2). Forty-one (8.5%) responded that it was ethically permissible to place a unilateral DNAR order when a diagnosis is unknown (Question 2.2).

Vignette 3 concerned a critically ill infant with a poor neurological prognosis who will succumb to congenital heart disease unless surgically corrected. Neonatologists were asked if a unilateral DNAR order would be appropriate if no curative treatment were available. Two hundred and sixty-six (57%) respondents felt a unilateral DNAR order would be appropriate in such a case (Question 1.3), and 171 (37%) responded that they actually would enact such an order (Question 3.3). Of note, 378 (81%) felt the CT surgery team was justified in not performing a potentially life-saving therapy based on the patient's poor neurological prognosis (Question 2.3).

When analysing the effect of years in practice on opinions regarding permissibility of a unilateral DNAR order, neonatologists with more than 15 years' experience were less likely to

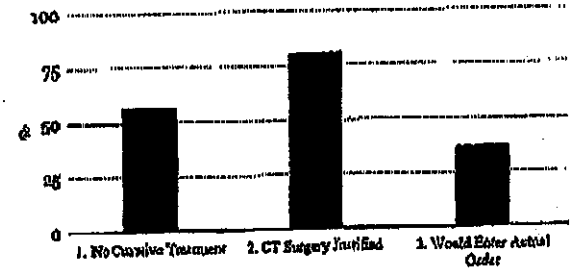

Figure 3 Percentage who answered 'yes' to vignette 3 questions
1. Is a unilateral Do Not Attempt Resuscitation (DNAR) permissible when no other curative therapy exists?
2. Is the cardiothoracic (CT) surgical team justified in not operating based on a poor quality of life?
3. Would you enter a unilateral DNAR in this case?

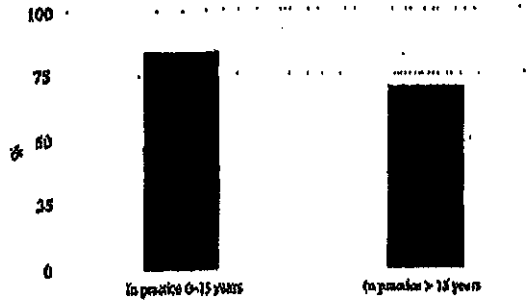

Figure 4 Percentage who answered 'yes' by years in practice when asked if a unilateral Do Not Attempt Resuscitation (DNAR) was permissible in cases where survival is impossible. p<0.001.

respond 'yes' (p<0.0001) when survival was felt to be impossible, as shown in figure 4, though even in that group a clear majority responded in the affirmative.

Two hundred and eighty-seven (62%) of the respondents answered yes when asked if they had a paediatric or neonatal palliative care service. Approximately 50% (223) of those polled answered that their institution had a written policy requiring parental permission to withhold cardiopulmonary resuscitation (CPR) with 126 (27%) answering that they did not know if such a policy existed in their institution. Seventy-four per cent of polled neonatologists answered that they work with medical trainees in some capacity. There were no statistically significant differences in the opinions regarding the permissibility of a unilateral DNAR order when analysed by the presence of a palliative care service, the presence of a written policy regarding DNAR orders or the presence of medical trainees.

DISCUSSION

In an earlier publication, we explored ethical arguments in favour of, and opposed to, unilateral DNAR orders in paediatrics.[1] For this study, we sought to determine the opinions and approaches of a large number of neonatologists with regard to the use of unilateral DNAR orders. It is our understanding and experience that neonatologists commonly invoke what is a de facto unilateral DNAR order in the delivery room setting, in that they commonly do not offer parents the option of attempted resuscitation at less than 22 weeks' gestation, based on the perceived impossibility of success. Such an approach would be consistent with recommendations of the American Academy of Pediatrics,[7] the Canadian Pediatric Society[8] and the Nuffield Council in the UK.[9] Thus, we postulated that a significant percentage of neonatologists would find a unilateral DNAR order to be ethically acceptable for at least some neonatal intensive care unit (NICU) patients, including those for whom survival is felt to be extremely unlikely or impossible. The findings of this survey supported that hypothesis; a majority of the neonatologists surveyed (61%) agreed that a unilateral DNAR order is ethically acceptable when survival is extremely unlikely, and an even greater majority (77%) agreed when survival was felt to be impossible.

While ethical analyses can be found in the literature regarding unilateral DNAR orders, this is, to our knowledge, the first survey to address the opinions of a large number of neonatologists on this question.[1] In 2012, Morparia *et al* surveyed Paediatric Intensive Care Unit (PICU) physicians and found that the majority of respondents were not in favour of unilateral DNAR decisions in settings with extremely poor prognosis,

though they did not explicitly stipulate in their vignettes that survival was felt to be impossible. The exception in their study was a case for which the child had been declared brain dead; for that case, a majority of PICU physicians did feel unilateral DNAR was acceptable.[10] Nevertheless, the general disagreement with unilateral DNAR orders noted in the study of PICU physicians stands in contrast to the responses of neonatologists described in this paper.

A potential explanation for this discrepancy may derive from the neonatologists' experiences with extremely preterm newborns delivered below the limit of viability. In our experience, unilateral DNAR decisions are often made in such a setting. While the management of patients in the delivery room (DR) might not be completely analogous to either the PICU or the NICU, that increased familiarity of the neonatologists with unilateral DNAR in the delivery room might nevertheless influence their approach to a patient in the NICU. Put another way, unless a neonatologist routinely offers resuscitation to parents for every extremely preterm newborn, regardless of gestational age or chance of viability, he/she has necessarily had experience with unilateral DNAR decisions. It may then be that extending the same reasoning to the NICU setting, and in particular the case wherein survival is felt to be impossible, is a less difficult step for the neonatologist than for the PICU physician. It must be acknowledged, however, that despite a perception of ethical equivalence, withholding incubation and assisted ventilation in the DR may nevertheless feel very different to staff, and more importantly to parents, compared with the NICU. A perception of acceptability of unilateral DNAR in the DR does not necessarily yield the same sense in the NICU. Thus, it is a significant finding that most responding neonatologists found it acceptable in the NICU under certain circumstances.

Another potential explanation of a possible difference in approaches in the NICU and PICU could relate to the difference in the psychological impact of managing newborns exclusively, compared with also managing older children. This is certainly a complex subject, and clearly beyond the scope of this essay, but may nevertheless play an important role in physicians' thinking.[11] Finally, it is worth noting that in some of Morparia's vignettes the patients were old enough to have formed, and possibly expressed, opinions regarding resuscitation. This highlights another important difference in resuscitation decisions in these two very different settings.

Though the ethical analysis of unilateral DNAR was explored in greater detail in our earlier essay, at least a brief summary of some relevant arguments seems warranted. One argument in favour of the use of unilateral DNAR orders, for cases wherein survival is believed impossible, relates to the potential burdens to the patient of a procedure that appears to offer no significant benefit. This would include the risk of pain during the attempted resuscitation, and possibly during a period of protracted dying. This seems a violation of the child's right to mercy. That is, the right not to be made to undergo potentially painful interventions that offer no significant benefit to the patient. The needs of the parents, such as the need to believe all efforts were made to save their child, are also a valid concern, however, and it seems reasonable that they should often be weighed in the decision regarding DNAR status. Still, we would counsel consideration of the Kantian imperative not to make the child serve solely as a means to someone else's ends, even his parents.[12] Also, there is concern about the potential deception of parents when physicians attempt something that offers no chance of success.

In situations wherein survival is felt to be impossible, some have suggested a feigned attempt at resuscitation, sometimes referred to as a 'slow code' or 'Hollywood code,' with no real goal of restoring vital signs.[13] While we believe the motives of those who have advocated this approach are sometimes laudable (eg, reducing the parents' suffering by sparing them the decision regarding DNAR status), we agree with those who suggest this is an unnecessary deception. Rather than feign an attempt to restore vital signs or stability, we have advocated for a unilateral DNAR decision coupled with compassionate explanation in certain extreme cases.[14 15] We believe that unilateral DNAR is a complex ethical question, with thoughtful and dedicated physicians coming down on both sides, and strong arguments to be made on both sides, and refer the reader to our earlier publication on this subject for a more detailed and nuanced discussion.[1] A summary of our arguments can be found in box 2.

It is understandable that the number of those who considered unilateral DNAR permissible increased substantially when the chance of success went from 'unlikely' to 'impossible.' The imperfections of our prognostic abilities rightly loom large in this matter,[16] and it seems wise that we should require a high degree of confidence in any perceived prognosis before we permit it to limit the options offered to parents. It is not surprising that increased confidence in the prognosis would yield a greater number of physicians willing to decide or act based upon that prognosis.

While a clear majority of responding neonatologists found a unilateral decision ethically permissible when survival was not felt to be possible, only half would actually choose to enact DNAR without parental approval. There are, for nearly all of us, things that we consider ethically permissible, but that we ourselves would not choose to do. With many ethical questions, there are commonly two separate thresholds: first, is it ethically permissible, and second (a higher threshold), would *you* do it. Put another way, there is often a lower threshold for what is permissible than for

Box 2 Key considerations regarding unilateral Do-Not-Attempt-Resuscitation (DNAR) orders

Physicians do not, and should not, have an ethical obligation to provide treatment that offers no benefit to the patient. Rather, the obligation is to compassionately discuss the situation, reasonable options and what will be done.

Asking parents to approve a DNAR order when death in the near future is inevitable may place an unnecessary and potentially significant burden on them.

Performing cardiopulmonary resuscitation that offers virtually no chance of restoring vital signs may benefit the family in some circumstances, such as providing a desired ritual or giving them the feeling that 'everything was tried.' It is controversial whether this justifies the potential harms to the patient, such as pain and indignity.

A unilateral DNAR order by the physician based on predicted disability risks inappropriately placing the values of the physician regarding quality of life over those of the patient or parents. Thus, unilateral decisions regarding DNAR status should generally be limited to cases of unavoidable imminent death, and perhaps the most extreme cases of poor quality of life, after confirmation of the prognosis and advisability of DNAR with colleagues.

The law regarding unilateral DNAR orders varies among states, and physicians should be familiar with the law where they practise.

Source: Adapted from Blinded.

what is advisable. This is also true for many medical decisions. A given option may be something one might find permissible for any physician to do, but not necessarily the therapeutic path he/she would choose to take. And so it might be with a unilateral DNAR order; for some of the respondents, it may have reached the lower threshold of permissibility, though they themselves would not do it, nor recommend it to a colleague.

The discrepancy between what some neonatologists consider acceptable, and what they would actually do, should also be considered in light of the professional climate in American medicine. It has been reported that physicians in the USA commonly initiate and continue treatment until it is virtually certain that the patient will die, taking a 'waiting for near certainty' approach to end of life.[17] Comfort or familiarity with this approach, coupled with fear of medical uncertainty, and perhaps also fear of accusations of medical neglect and/or litigation, might further explain a physician's reluctance to enter a unilateral DNAR order into the medical record, even when he or she perceives that to do so would be acceptable. For some, it might amount to the conclusion that, "It would be ethically permissible to do it, but personally I would not take the risk."

The majority of respondents did not consider a unilateral DNAR decision based solely on poor neurological prognosis to be permissible, which was consistent with ethical arguments previously presented.[1] Determining that an infant's neurological prognosis and predicted quality of life are too poor to warrant CPR, without seeking parental agreement, requires giving precedence not only to the physician's medical judgement, but also to the physician's value judgements. It must be acknowledged that physicians' prognostications about the level of disability are sometimes wrong, and that quality of life assessments are subjective.[12 18] Thus, we share the intuition expressed by most neonatologists in this study, that a DNAR order without parental agreement, based solely on predicted neurological disability, would be inappropriate in nearly all cases. However, there may be extreme examples of neurological disability, not covered by these vignettes, for which a unilateral DNAR order would be considered acceptable to many neonatologists and others. Current debate regarding resuscitation for patients with Trisomy 13 or 18 may, at least in part, be tied to this question.

Vignette 3 concerned a child who, due to a grim neurological prognosis from an incurable underlying disorder, had been judged ineligible for potentially life-saving cardiothoracic (CT) surgery. The intent with this case was to query the opinion of neonatologists regarding unilateral DNAR orders when other important treatment is being been withheld. A majority of neonatologists (57%) believe a unilateral DNAR order would be permissible, though far fewer (37%) would enact such an order in this case. Interestingly, far more respondents felt the CT surgeon was justified in making a unilateral refusal regarding surgery, compared with those who felt it permissible for the neonatologist to make such a unilateral decision regarding resuscitation in this case (81% vs 57%).

The disconnect between what the respondents felt was permissible for the CT surgeon and neonatologist may be explained in part by the fact that the surgery is far more involved, requiring more time, effort and utilisation of resources, as well as being more invasive. Another possible factor is the more immediate result of the decision. While both refusals could eventually result in death, a death related to a refusal to operate may often be less immediate than the death that results from a refusal to perform CPR. There may also be very different perceptions regarding death associated with the surgery compared with attempted CPR, the former more likely to have negative implications and/or consequences for the physician. Lastly, it may be, in the minds of some, that there is something fundamentally different, and more obligatory, about CPR compared with other treatments. This perceived difference could make CPR, for many, a notable exception to the widely held notion within the medical profession that a physician is not obligated to offer or attempt a treatment that cannot work. The ethical justification for that perceived exception, however, is not immediately obvious. This disconnect should be studied further, but acceptance of refusal by the neonatologist or the surgeon may ultimately both be rooted, at least in part, in the belief that the physician retains the moral authority to make some decisions about the purposes to which his or her skills can be put.[20]

More experienced physicians were less likely than their less experienced peers to make a unilateral decision regarding resuscitation when survival was felt to be impossible, though a majority of them still considered it acceptable. This difference might be explained in part by having greater experience with, and appreciation for, the reality documented by Meadow *et al*, that physicians and others in the NICU are not particularly good at predicting which patients will die.[18] Also, while this survey did not ask when the respondents began practising, some of the respondents in the >15 years in practice category may have been in medical school, residency or fellowship during times of landmark ethical cases in paediatrics. Perhaps being educated in the environment of the Baby Doe regulations, and the ethical upheaval that ensued, leads to a greater reluctance to make resuscitation decisions unilaterally.

This survey study has several limitations. The response rate of 16% is low, and thus these data may not accurately represent the views of most American neonatologists. There may have been a selection bias, in that those favouring one viewpoint or another might be more likely to respond to a survey such as this. It is also possible that neonatologists who are members of the American Academy of Pediatrics (AAP) perinatal section are not truly representative of the profession. While every attempt was made to make the vignettes as realistic as possible, they are very brief snapshots of what are often far more complicated situations, and thus run the risk of oversimplification. For clinical scenarios wherein the decision was already made for a unilateral DNAR order, respondents may have been subject to a status quo bias in decision making, thus going along with information/decision already presented.[21] For many, a judgement regarding unilateral DNAR might be influenced by factors that were not discussed, such as parental preferences, religion and family situation.

CONCLUSION

Most neonatologists surveyed believed unilateral DNAR decisions made by physicians are ethically permissible when survival is felt by the physician to be unlikely, and an even greater majority believed it permissible when survival was felt to be impossible. However, most did not perceive unilateral DNAR orders as being permissible when based solely on poor prognosis regarding disability. This suggests that unilateral DNAR decisions, traditionally and currently sometimes made in the DR, are also sometimes being made in the NICU. Ethical justification for such decisions may be based on concern for unnecessary burden to the child, but often hinge on the degree of certainty regarding prognosis. The reluctance to unilaterally withhold potentially life-saving resuscitation, based solely on neurological prognosis, may be justified by an appreciation of the inherent subjectivity of value judgements regarding disability and quality of life. Whether the setting is poor prognosis for survival or poor neurological

prognosis, a significant number of neonatologists come down on each side of the question of unilateral DNAR.

Contributors PDM: conceptualised and designed the study, drafted the initial manuscript and approved the final manuscript as submitted. DE: carried out the data analysis and approved the final manuscript as submitted. MRM: reviewed and revised the manuscript, and approved the final manuscript as submitted.

Competing interests None declared.

Ethics approval Institutional review board approval was granted by Yale University.

Provenance and peer review Not commissioned; externally peer reviewed.

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JME

In what circumstances will a neonatologist decide a patient is not a resuscitation candidate?

Peter Daniel Murray, Denise Esserman and Mark Randolph Mercurio

J Med Ethics published online March 17, 2016

EXHIBIT I

DECLARATION OF ANGELA CLEMENTE

I, Angela Clemente, declare and state the following:

1. I am currently leading the coordination of the transfer of care for Israel Elijah Stinson's transfer from Roseville Kaiser Woman and Children's Center to a home setting that will be medically equipped for his specialized needs located in New Jersey.

2. I am a Forensic Intelligence Analyst/Congressional Consultant and Paralegal with twenty years experience in Pathology, Clinical Laboratory and Emergency Medicine. I have worked extensively on cases with severe brain injuries.

3. Since 2008 I have been the leading coordinator in the United States for this type of delicate and specialized transfer of care specifically handling the state to state transfers of adults and children with varying degrees of medical fragility to include a vast majority of our patient-clients who have been given the criteria of "brain death."

4. I became aware of and urgently requested to help with this case on Wednesday April 20, 2016 at around 12:30am and the following day I enlisted my team of highly skilled medical and legal experts.

5. We immediately put in place a Medical Life Flight on standby that is able to accommodate the intensive medical needs of Israel. The medical life flight can accommodate 1-2 family members, the patient and up to three medical professionals for his care. The flight includes ground transportation both from the releasing facility to the Medical Life Flight and then by ground ambulance to the receiving home for long term care.

6. Our team is also helping the family and their attorney in coordinating and implementing a long-term care plan that will help them in transitioning to New Jersey for their permanent residency. This comprehensive plan will include

providing Israel and his immediate family with consulting services that will help them to receive expedited medical benefits, certified and licensed medical staff that will be needed for this child's immediate care upon arrival, coordinating help with providing his in-home medical equipment, housing and transportation needs for the family and any additional social service type of programs needed for this family.

7. It is most imperative for this child's well being that the family not have any barriers for their child's current medical needs to transition into a smooth and coordinated release from Roseville Kaiser Woman's and Children's center.

8. The current time provided to me in coordinating this complex type of transfer (which I have handled throughout the United States for years) is severely compromised because of the extremely limited time barrier. This type of coordinated effort would require at minimum 7 to 10 business days and an effort on the releasing hospital's part for the medically appropriate procedures needed for transfer of care for this patient.

9. We are willing to assist this family with the full scope of our services and continue the coordinated effort but given our experience with our previous cases that have the "brain death" determination it is imperative that the family be provided appropriate time for our team to coordinate this as we would in all other cases of similarly complex nature.

I declare under penalty of perjury that the foregoing information is true and correct. Executed this 27th day of April, 2016 under penalty of perjury pursuant to the laws of the State of California.

Angela Clemente

Angela Clemente

EXHIBIT J

SUPERIOR COURT OF THE STATE OF CALIFORNIA
IN AND FOR THE COUNTY OF PLACER

ISRAEL STINSON by and through JONEE FONSECA, his mother
Petitioner;
v.
UC DAVIS CHILDREN'S HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER-WOMEN AND CHILDREN'S CENTER,
Respondent

Case No.: S-CV-0037673

ORDER AFTER HEARING

NEXT HEARING:

April 29, 2016
9:00 a.m.
Department 43

Petitioner and applicant Jonee Fonseca has applied for a temporary restraining order directed to Kaiser Permanent Roseville Medical Center—Women and Children's Center concerning medical care and intervention provided to her son Israel Stinson. TRO proceedings were previously heard April 14, 15 and 22, 2016.

A continued hearing was held April 27, 2016, in Department 43, the Hon. Michael W. Jones, presiding. Ms. Fonseca and Nathaniel Stinson, minor's father, appeared with Alexandra Snyder, Esq. Jason J. Curliano, Esq., and Drexwell M. Jones, Esq., appeared for Kaiser Foundation

Hospitals. At the court's request Roger Coffman, Esq., Senior Deputy County Counsel for Placer County was also present, representing the Placer County Public Guardian. Richard Robinson and Laura Moreno, representatives of Kaiser, were also present.

Having considered the argument of and information provided through counsel, including declarations and other writings offered by Ms. Fonseca and Mr. Stinson, the court makes the orders which follow. These orders are made to implement the Health and Safety Code section 1254.4 reasonably brief period of accommodation for Israel's family.

It is ordered that:

(1) Jonee Fonseca and Nathaniel Stinson shall be afforded an additional brief opportunity to transfer Israel Stinson to a medical facility agreeable to the parties, which facility has agreed to admit Israel;

(2) Transportation of Israel to the facility referred to in preceding paragraph (1) shall be by Air Care 1 or another transportation service agreeable to the parties;

(3) Kaiser will cooperate with and facilitate Israel's transfer and will take necessary steps, in the ordinary course, to prepare Israel for transport, and will transfer care and support of Israel to Air Care 1 or another transportation service agreeable to the parties;

(4) Israel's attending physician at Kaiser Roseville will communicate with Air Care 1 or another transportation service agreeable to the parties to assure they have proper staffing and equipment to transfer Israel;

(5) Israel's attending physician at Kaiser Roseville will communicate with the admitting physician at the facility referred to above in paragraph (1) to facilitate continuous care and to assure the admitting facility is prepared to receive Israel;

(6) The restraining order currently in place, which requires that

(a) Kaiser shall continue to provide cardio-pulmonary support

to Israel Stinson as is currently being provided;

(b) Kaiser shall provide medications currently administered to Israel; however, physicians or attending staff may adjust medications to the extent possible to maintain Israel's stability, given his present condition;

(c) Kaiser shall continue to provide nutrition to Israel in the manner currently provided to the extent possible to maintain Israel's stability, given his present condition;

shall continue in effect until and shall automatically dissolve upon the earlier of:

(a) Israel's discharge from Kaiser Permanente Hospital in Roseville; for this purpose, *discharge* means Israel's physical exit from the hospital; or

(b) Friday, April 29, 2016, 9:00 a.m.

Kaiser's legal responsibility for Israel's care and treatment will cease when the restraining order dissolves.

(7) This matter is set for further proceedings April 29, 2016, 9:00 a.m., in Department 43.

If the restraining order has dissolved pursuant to paragraph (6), *supra*, the court intends to dismiss this action. The parties have stipulated that the court will thereafter have no jurisdiction over minor, petitioner or respondents under this proceeding.

The court finds that this order provides the reasonably brief period of time under Health and Safety Code section 1254.4.

IT IS SO ORDERED.

DATED: April 27, 2016

Hon. Michael W. Jones
Judge of the Superior Court

EXHIBIT K

SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

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DEPARTMENT NO. 43
HON. MICHAEL W. JONES, JUDGE

ISRAEL STINSON by and through)
JONEE FONSECA, his mother,)
)
Petitioner,)
) versus
) Case No.
) S-CV-0037673
UC DAVIS CHILDREN'S MEDICAL)
HOSPITAL; KAISER PERMANENTE)
ROSEVILLE MEDICAL CENTER-WOMEN)
AND CHILDREN'S CENTER,)
)
Respondent.)

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REPORTER'S TRANSCRIPT

FRIDAY, APRIL 29, 2016

PETITION HEARING

---oOo---18

APPEARANCES:

FOR THE PETITIONER: LIFE LEGAL DEFENSE FOUNDATION
BY: ALEXANDRA M. SNYDER, ESQ.
P.O. Box 2015
Napa, California 94558

FOR THE RESPONDENT:
BUTY & CURLIANO LLP
BY: JASON J. CURLIANO, ESQ.
and
MADELINE L. BUTY, ESQ.
516 16th Street
Oakland, California 94512

REPORTED BY: MARY R. GALLAGHER, CSR #10749
ROSEVILLE, CALIFORNIA

FRIDAY, APRIL 29, 2016, 9:10 A.M.

DEPARTMENT 43, HONORABLE MICHAEL W. JONES, Presiding

---oOo---

The matter of ISRAEL STINSON by and through JONEE FONSECA, his mother, Petitioner, versus UC DAVIS CHILDREN'S MEDICAL HOSPITAL; KAISER PERMANENTE ROSEVILLE 8 MEDICAL CENTER-WOMEN AND CHILDREN'S CENTER, Respondent,

case number S-CV-0037673, came regularly this day before

the Honorable MICHAEL W. JONES, Judge of the Superior Court of the State of California, in and for the County of Placer, Department Number 43 thereof.

The Petitioner was represented by ALEXANDRA M. SNYDER, Life Legal Defense Foundation, acting as her Counsel.

The Respondent was represented by JASON J. CURLIANO and MADELINE L. BUTY, Buty & Curliano LLP, acting as its Counsel.

The following proceedings were had, to wit:

---oOo---

THE COURT: All right. Good morning, folks. Mr. Curliano is present on behalf Kaiser. And Mr. Jones isn't present, but we have someone else.

MS. BUTY: Good morning, your Honor. Madeline

Buty.

THE COURT: And last name spelled?

MS. BUTY: B-u-t-y.

THE COURT: Thank you, Ms. Buty. And good morning to each of you.

MS. BUTY: Good morning.

MR. CURLIANO: Good morning, your Honor.

THE COURT: All right, folks. We are here under the restraining order that was to dissolve today. I understand you folks have gone to another court seeking some intervention with another court. So where do we stand with respect to this Court and these proceedings now, Ms. Snyder?

MS. SNYDER: Well, it was our understanding that the order would dissolve today. And we -- we have a hospital that is currently assessing Israel's situation. And we'll have the conclusion of that assessment we're hoping tomorrow or Sunday. They are working through the

weekend to make that assessment. As you know we've worked very hard and continue to work very hard to have Israel transferred to another facility.

Ultimately, his parents would like him in-home care. I know that sounds unbelievable given his situation, but it is very common for patients that are in Israel's condition to be transferred to home care, so that they're not in ICU. They are -- have a feeding tube, a breathing tube and then they are monitored by a nurse who supervises and then by a medical team who does intervention as necessary.

THE COURT: Are you representing whether any ofthose individuals are persons who were transferred from a state where a determination of brain death was made and

after the determination of brain death that there was an order from the court that ordered a gastrointestinal tube and air intubation?

MS. SNYDER: No. Fortunately, there are not that many cases --

THE COURT: I understand.

MS. SNYDER: -- like this. So the most -- the one that's most analogous would be the case of Jahi McMath and that's really a case of first impression in this state, I believe -- but not in this court, of course. And in that case Jahi had to be transferred to another hospital in order to have those procedures, but she is now at home in-home care and the type of care that I described.

THE COURT: Understand.

MS. SNYDER: But you're correct, the hospital did not perform those procedures.

THE COURT: Nor did Judge Grillo order that.

MS. SNYDER: That is accurate. And I do understand that and I understand your position, your Honor, I do. And we've been really pleading with the hospital to do this. But the hospital that we are working with right now is -- like I said, they're assessing Israel's case.

They would do those procedures in that hospital and then put him on a step-down plan to home care if they do receive him. They do have to do -- it is not a decision that they can make lightly and, certainly, it's not a decision that one person can make.

So they're meeting with their ethics committee today and tomorrow as I mentioned and then with a group of physicians that would be responsible for Israel's care at that point.

THE COURT: All right.

MS. SNYDER: I don't know -- I mean if there's

anything at all that we can do to facilitate -- we told the other hospital the parents are willing to waive the liability in that case. And that they're willing to do anything and -- and I will say I did go to see the parents last night. And they -- I -- when I go in I see Israel 11 and I usually say, "Hi, Israel," you know.

And last night I went to his bedside. I did not touch him, but I said, "Hi, Israel," and he turned his head and moved toward me. Now, I understand the doctors will describe that as a brain stem -- not a brain stem, a spinal cord reflex.

First of all, I don't know how they're distinguishing between the spinal cord and the brain stem.

The California law says there has to complete cessation of 20 function in all parts of brain, including the brain stem.

And if the spinal cord is able to generate a reflex and response to stimulus, then, maybe, we don't know enough about the spinal cord to make these determinations.

And I do understand that that is not your role, your Honor, but there are indications that this boy is made profoundly disabled, but not dead. And that is, obviously, such a significant distinction.

And if there is any indication that he is disabled versus dead, I just think we need to error on the side of even a disability, as profound as it may be --

THE COURT: I understand, and I don't mean to cut you off --

MS. SNYDER: That's okay.

THE COURT: -- Let me finish. I want you to, in that context, I want you to address what determination,

because I know this Court has -- even before the Court became involved, there was the opportunity for a period of time. And since this Court has been involved for there to be an evaluation by a physician of their own choosing -12

MS. SNYDER: Yes.

THE COURT: -- of Petitioner. And my understanding is that has not taken place.

MS. SNYDER: No. We, actually, had two physicians. We had a neurologist, who was not able to come up. And then we had a cardiologist. And I realize that the 18 hospital would like us to have a neurologist. And we 19 would, certainly, like to have a neurologist. But at that point we had a neurologist who had indicated -- and I don't have the e-mail with me, but I do

have the e-mail to that effect, that he would come out, 23 that was this Tuesday, to perform an examination. He texted me on -- I believe it was either Sunday night or Monday and said he was not able to make it. I don't know why, he did not provide a reason why. So it's not for lack of trying or even commitment. And once we got that commitment, we focused our efforts elsewhere.

THE COURT: Right. Understanding.

MS. SNYDER: And we're, certainly, more than willing to revisit the possibility of having a neurologist or another physician exam Israel again.

THE COURT: I understand. And, please, don't misunderstand me. I'm simply trying to confirm what I believe the state of events is, that there's been this period of time that I have indicated -- and I'm just confirming that during that period of time and up to right

now as we sit here and speak, there is and has not been any arrangements for any independent determination on behalf of the Petitioner?

MS. SNYDER: That is -- there's been an arrangement on our end, but not an arrangement that was fulfilled --

THE COURT: Right.

MS. SNYDER: -- and that, actually, brought somebody into the hospital, that is correct, outside of 18 Dr. Byrne who is an out-of-state neonatologist and who's declaration we submitted last week.

THE COURT: Thank you.

MS. SNYDER: Thank you.

THE COURT: And next is the determination would be termination of this Court already made at the last proceedings in terms of compliance with 7180. I've not

seen anything further presented to demonstrate that the determinations made by the two independent physicians at Kaiser.

And I understand each of your positions as to UC Davis. And I hope you understand this Court's focusing on the two independent physicians at Kaiser. I've not seen anything, a declaration or anything that demonstrates that those were done anything in anything other than a medically accepted matter.

MS. SNYDER: Yes. And I don't know if you're familiar, but in the State of Nevada there was another unfortunate case involving a 20-year old college student who was also declared brain dead. And in that case the Supreme Court of Nevada in a ruling of seven to zero found 11 issue with the accepted medical standards themselves.

That those standards that are, essentially, the

guidelines put forth by the American Academy of Neurology are possibly not sufficient to determine brain death with absolute certainty. And even the American Academy of Neurology has issued its own -- they had questions. They 17 revised the standards in the -- the guidelines in 2010. There are still questions with regard to the apnea test, the safety of the apnea test that the American Academy of Neurology, itself, raises. So -- and I do understand your position --

THE COURT: Yes.

MS. SNYDER: -- I know it's what the law says. I do.

THE COURT: And remember, I'm familiar with many aspects of this case. In my prior --

MS. SNYDER: And I appreciate that, your Honor.

THE COURT: -- as a litigator in this particular

area in traumatic brain injury cases. Again, with respect to the law in this case and what has happened here, that's what I need to focus on. And I've not seen anything attacking the Kaiser determination. Thus, the Court provided the -- what the Court interpreted to be a reasonable period of time under 1254.4 to extend to today.

MS. SNYDER: Uh-huh.

THE COURT: And I'm not hearing anything else with respect to that aspect now.

MS. SNYDER: Uh-huh. As I said I -- we do have -- we on do have this confirmation from the hospital. Our main focus right now and -- I mean we don't have a team of litigators. And I don't even have a paralegal. And that's not the business of this Court, I understand that. But our efforts really have been focused on getting

Israel released to another facility as much as I would like to look into the law and looking into all of the 18 issues that I mentioned, and even that you mentioned, 19 whether every step was truly followed.

You know, I mean we do have questions. And I'm trying to, you know, again, work with physicians as I have time, but to look at the transmitral doppler that was done 23 by UC Davis that showed, "a near absence of blood flow to the brain, but not a complete absence of blood flow to the brain."

And the other thing that I want to mention, your Honor, is that we don't know exactly what happened at UC Davis. And that is something that I will not take up, but the parents may take up in another matter. And -

THE COURT: Which to could be clear -- which I think

it's clear, which is why I am discounting, if you will, if that's the proper terminology of the UC Davis determination --

MS. SNYDER: Absolutely.

THE COURT: -- and solely for my purposes relying on the two independent examinations at Kaiser.

MS. SNYDER: Right, but they're -- and I understand this doesn't have anything to do with Kaiser. And we're not in any way saying that it does, just to be clear. But there are questions as to what happened. And -- and -13 when you look at recovery in those situations, you know, I mean there is a difference between what happens when a patient is dead and what happens when a patient is alive and living in some way.

So -- and so those questions remain to be answered.

And, certainly, I'm not going to answer those questions, but that could be for another matter. And there's -- I would say even evidence inherent in this little boy that -- and I don't want to talk about him in terms of evidence, but you know --

THE COURT: In terms of these proceedings in this case --

MS. SNYDER: Uh-huh.

THE COURT: -- again, confirming, I understandthere's been an order that was signed by Judge Nunley that puts into place, in essence -- I don't want to call it an extension of these proceedings, but a new proceeding that has a temporary restraining order in place?

MS. SNYDER: Yes.

THE COURT: All right. With an interesting twist and caveat in his order that wasn't contained in my order, be it as it may. Anything further, Ms. Snyder?

MS. SNYDER: No, your Honor. And I do want to thank you. I know this has been extremely difficult. It's difficult for everybody. We appreciate even the hospital's position, we're -- thank God, that these are very rare cases, but we appreciate your -- just your attention to this matter and to this family. So thank you very much.

THE COURT: Notwithstanding the rarity of these issues. And as you say, "fortunately," they are rare. Nevertheless, the rarity of those, have consequence. And I understand, Ms. Fonseca, and, Mr. Stinson, rare as it may be, makes no difference in your minds. It's very real. And I understand and I appreciate that.

MS. SNYDER: And I don't know if Ms. Fonseca or Mr. Stinson have anything to add at this point.

THE FATHER: I just want to say thank you. Thank you, your Honor, for what you did so far. Thank you so much.

THE COURT: Mr. Curliano, or, Ms. Buty?

MR. CURLIANO: Just briefly, your Honor. And I can certainly respond if the Court is inclined to have Kaiser -- with respect to the statements made by Ms. Snyder, advocacy aside, your Honor, we've both within the bounds of the law which permits us to do. Focusing back on this case, what we have here we have an undisputed 5 record, with testimony by Dr. Myette, that is the only evidence that was provided to the Court. Petitioners have been given an ample opportunity, I believe, to locate and have someone testify. And I think at face value, that's a difficult thing for them do. I can also represent that since the TRO has been granted, Kaiser has been ready, willing and able to accept a formal request to have privileges granted to the appropriate physician to examine and look at Israel. And I think

counsel has confirmed that by what she said. That has never occurred. We've never been asked to do that. So it's not a case where Kaiser may have disagreed with the type of physician or the type of examination.

The request simply hasn't been made. So I go back to what Dr. Myette had to say. I can represent to the Court, as I have before, I speak with Dr. Myette on a daily basis many times, nothing has changed in terms of an improvement. And Israel's condition, separate and apart from what may have been noticed by a layperson, perhaps, or may have been on a video.

And unless the Court has any questions specific to this -- and the Court is aware of the order. I was going to bring that to the Court's attention, but it sounds like, your Honor, has a copy of it from the Eastern

District. I would like to thank the Court for the time dealing with what are very tough issues, obviously.

THE COURT: Thank you. Anything further on behalf of the Petitioner?

THE MOTHER: No.

MS. SNYDER: No, your Honor. Thank you.

THE COURT: All right. For the reasons that are stated throughout the entire record of these events and this particular case, it is a -- I can't even put words, you can say, "sad, tragic," you can put any adjustive you wish to with respect to the type of case, but words can never describe it.

And I think you folks realize that the law requires, as I'm obliged when I took an oath to follow the law. And the law of the State of California under 7180 and 7181, as I've indicated based upon the record before this Court, has been met and complied with including that

safety valve, if you will, of 7180 in particular, 1254.4 19 was recognized by this Court at the last proceeding.

And the Court determined the reasonableness or standard and period of time to which there has been no further comment or evidence presented to dispute what the Court has determined. And as of this time the temporary restraining order will dissolve as indicated within that order itself. And the petition is hereby dismissed with recognition that there is the order for the Federal Court that is in place. Okay. Thank you folks.

MR. CURLIANO: Thank you, your Honor.

THE MOTHER: Thank you, your Honor.

THE FATHER: Thank you, your Honor.

MS. SNYDER: Thank you, your Honor.

(The proceedings concluded at 9:34 a.m.)

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF PLACER

--oOo--

ISRAEL STINSON, by and through JONEE FONSECA, his mother, Petitioner, versus UC DAVIS CHILDREN'S MEDICAL HOSPITAL; KAISER PERMANENTE ROSEVILLE MEDICAL CENTER-WOMEN AND CHILDREN'S CENTER, Defendants.	) Case No. S-CV-0037673) REPORTER'S) TRANSCRIPT

STATE OF CALIFORNIA)
) ss COUNTY
OF PLACER)

I, MARY GALLAGHER, Certified Shorthand Reporter of

the State of California, do hereby certify that the foregoing pages 1 through 16, inclusive, comprises a true and correct transcript of the proceedings had in the above-entitled matter held on April 29, 2016.

I also certify that portions of the transcript are governed by the provisions of CCP 237(a)(2) and that all personal juror identifying information has been redacted.

IN WITNESS WHEREOF, I have subscribed this certificate at Roseville, California, this 29th day of 25 April, 2016.

_____

MARY R. GALLAGHER, CSR #10749

EXHIBIT L

Guidelines for the Determination of Brain Death in Infants and Children: An Update of the 1987 Task Force Recommendations—Executive Summary

Thomas A. Nakagawa, MD, FAAP, FCCM,[1,2] Stephen Ashwal, MD,[3,4] Mudit Mathur, MD, FAAP,[1,2] Mohan Mysore, MD, FAAP, FCCM,[1,2] and the Committee for Determination of Brain Death in Infants Children[1]

Objective: To review and revise the 1987 pediatric brain death guidelines.
Methods: Relevant literature was reviewed. Recommendations were developed using the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) system.
Conclusions and Recommendations: (1) Determination of brain death in term newborns, infants, and children is a clinical diagnosis based on the absence of neurologic function with a known irreversible cause of coma. Because of insufficient data in the literature, recommendations for preterm infants <37 weeks gestational age are not included in these guidelines. (2) Hypotension, hypothermia, and metabolic disturbances should be treated and corrected, and medications that can interfere with the neurologic examination and apnea testing should be discontinued allowing for adequate clearance before proceeding with these evaluations. (3) Two examinations including apnea testing with each examination separated by an observation period are required. Examinations should be performed by different attending physicians. Apnea testing may be performed by the same physician. An observation period of 24 hours for term newborns (37 weeks gestational age) to 30 days of age and 12 hours for infants and children (>30 days to 18 years) is recommended. The first examination determines the child has met the accepted neurologic examination criteria for brain death. The second examination confirms brain death based on an unchanged and irreversible condition. Assessment of neurologic function after cardiopulmonary resuscitation or other severe acute brain injuries should be deferred for 24 hours or longer if there are concerns or inconsistencies in the examination. (4) Apnea testing to support the diagnosis of brain death must be performed safely and requires documentation of an arterial $PaCO_2$ 20mmHg above the baseline and ≥60mmHg with no respiratory effort during the testing period. If the apnea test cannot be safely completed, an ancillary study should be performed. (5) Ancillary studies (electroencephalogram and radionuclide cerebral blood flow) are not required to establish brain death and are not a substitute for the neurologic examination. Ancillary studies may be used to assist the clinician in making the diagnosis of brain death (a) when components of the examination or apnea testing cannot be completed safely due to the underlying medical condition of the patient; (b) if there is uncertainty about the results of the neurologic examination; (c) if a medication effect may be present; or (d) to reduce the interexamination observation period. When ancillary studies are used, a second clinical examination and apnea test should be performed, and components that can be completed must remain consistent with brain death. In this instance, the observation interval may be shortened, and the second neurologic examination and apnea test (or all components that are able to be completed safely) can be performed at any time thereafter. (6) Death is declared when these above criteria are fulfilled.

ANN NEUROL 2012;71:573–585

The Pediatric Section of the Society of Critical Care Medicine and the Section on Critical Care of the American Academy of Pediatrics, in conjunction with the Child Neurology Society, formed a multidisciplinary committee of medical and surgical subspecialists under the auspices of the American College of Critical Care Medicine to review and

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See the Appendix on page 584.

From the [1]Pediatric Section of the Society of Critical Care Medicine, Mount Prospect, IL; [2]Section on Critical Care Medicine of the American Academy of Pediatrics, Elk Grove Village, IL; [3]Section on Neurology of the American Academy of Pediatrics, Elk Grove Village, IL; [4]Child Neurology Society, St. Paul, MN.

revise the 1987 guidelines. Its purpose was to review the neonatal and pediatric literature from 1987, including any prior relevant literature, and update recommendations regarding appropriate examination criteria and use of ancillary testing to diagnose brain death in neonates, infants, and children. The committee was also charged with developing a checklist to provide guidance and standardization to determine and document brain death. Uniformity in the determination of brain death should allow physicians to pronounce brain death in pediatric patients in a more precise and orderly manner and ensure that all components of the examination are performed and appropriately documented. The committee believes these revised diagnostic guidelines (Table 1) and a standardized checklist form (Table 2) will assist physicians in determining and documenting brain death in children. This should ensure broader acceptance and utilization of such uniform criteria.

This update affirms the definition of death as stated in the 1987 pediatric guidelines established by multiple organizations as follows: "An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brainstem, is dead. A determination of death must be made in accordance with accepted medical standards."[1]

The committee recognizes that medical judgment of involved pediatric specialists will direct the appropriate course for the medical evaluation and diagnosis of brain death. The committee also recognizes that no national brain death law exists. State statutes and policy may restrict determination of brain death in certain circumstances. Physicians should become familiar with laws and policies in their respective institution. The committee also recognizes that variability exists for the age designation of pediatric trauma patients. In some states, the age of the pediatric trauma patient is defined as <14 years of age. Trauma and intensive care practitioners are encouraged to follow state/local regulations governing the specified age of pediatric trauma patients.

The following is an executive summary of the recommendations produced from this committee. The full report is available in Critical Care Medicine and Pediatrics.[2,3] The committee believes these guidelines to be an important step in protecting the health and safety of all infants and children. These revised clinical guidelines and accompanying checklist are intended to provide an updated framework to promote standardization of the neurologic exam and use of ancillary studies based on the evidence available to the committee at the time of publication.

Recommendations

Term Newborns (37 Weeks Gestational Age) to Children 18 Years of Age

DEFINITION OF BRAIN DEATH AND COMPONENTS OF THE CLINICAL EXAMINATION. Brain death is a clinical diagnosis based on the absence of neurologic function with a known diagnosis that has resulted in irreversible coma. Coma and apnea must coexist to diagnose brain death. A complete neurologic examination that includes the elements outlined in Table 3 is mandatory to determine brain death; all components must be appropriately documented. An algorithm to diagnose brain death in infants and children is provided in the Figure.

PREREQUISITES FOR INITIATING A CLINICAL BRAIN DEATH EVALUATION. Determination of brain death by neurologic examination should be performed in the setting of normal age-appropriate physiologic parameters. Factors potentially influencing the neurologic examination that must be corrected prior to examination and apnea testing include:

- Shock or persistent hypotension. Systolic blood pressure or mean arterial pressure should be in an acceptable range (systolic blood pressure not less than 2 standard deviations below age appropriate norm) based on age. Placement of an indwelling arterial catheter is recommended to ensure that blood pressure remains within a normal range during the process of diagnosing brain death and to accurately measure $PaCO_2$ levels during apnea testing.
- Hypothermia. Hypothermia is known to depress central nervous system function[4–6] and may lead to a false diagnosis of brain death. Hypothermia may alter metabolism and clearance of medications that can interfere with brain death testing. Efforts to adequately rewarm before performing any neurologic examination and maintain temperature during the observation period are essential. A core body temperature of >35°C (95°F) should be achieved and maintained during examination and testing to determine death.
- Severe metabolic disturbances. Severe metabolic disturbances can cause reversible coma and interfere with the clinical evaluation to determine brain death. Reversible conditions such as severe electrolyte imbalances, hyper- or hypoglycemia, severe pH disturbances, severe hepatic or renal dysfunction, or inborn errors of metabolism may cause coma in a neonate, infant, or child.[5,6] These conditions should be identified and treated before evaluation for brain death, especially in situations where the clinical history does not provide a reasonable explanation for the neurologic status of the child.

TABLE 1: Summary Recommendations for the Diagnosis of Brain Death in Neonates, Infants, and Children

Recommendation	Evidence Score	Recommendation Score
1. Determination of brain death in neonates, infants, and children relies on a clinical diagnosis that is based on the absence of neurologic function with a known irreversible cause of coma. Coma and apnea must coexist to diagnose brain death. This diagnosis should be made by physicians who have evaluated the history and completed the neurologic examinations.	High	Strong
2. Prerequisites for initiating a brain death evaluation:		
A. Hypotension, hypothermia, and metabolic disturbances that could affect the neurological examination must be corrected prior to examination for brain death.	High	Strong
B. Sedatives, analgesics, neuromuscular blockers, and anticonvulsant agents should be discontinued for a reasonable time period based on elimination half-life of the pharmacologic agent to ensure they do not affect the neurologic examination. Knowledge of the total amount of each agent (mg/kg) administered since hospital admission may provide useful information concerning the risk of continued medication effects. Blood or plasma levels to confirm that high or supratherapeutic levels of anticonvulsants with sedative effects are not present should be obtained (if available) and repeated as needed or until the levels are in the low to mid therapeutic range.	Moderate	Strong
C. The diagnosis of brain death based on neurologic examination alone should not be made if supratherapeutic or high therapeutic levels of sedative agents are present. When levels are in the low or mid therapeutic range, medication effects sufficient to affect the results of the neurologic examination are unlikely. If uncertainty remains, an ancillary study should be performed.	Moderate	Strong
D. Assessment of neurologic function may be unreliable immediately following cardiopulmonary resuscitation or other severe acute brain injuries, and evaluation for brain death should be deferred for 24 to 48 hours or longer if there are concerns or inconsistencies in the examination.	Moderate	Strong
3. Number of examinations, examiners, and observation periods:		
A. Two examinations including apnea testing with each examination separated by an observation period are required.	Moderate	Strong
B. The examinations should be performed by different attending physicians involved in the care of the child. The apnea test may be performed by the same physician, preferably the attending physician who is managing ventilator care of the child.	Low	Strong
C. Recommended observation periods:	Moderate	Strong
a. 24 hours for neonates (37 weeks gestation to term infants 30 days of age).		
b. 12 hours for infants and children (>30 days to 18 years).		
D. The first examination determines the child has met neurologic examination criteria for brain death. The second examination, performed by a different attending physician, confirms that the child has fulfilled criteria for brain death.	Moderate	Strong
E. Assessment of neurologic function may be unreliable immediately following cardiopulmonary resuscitation or other severe acute brain injuries, and evaluation for brain death should be deferred for 24 to 48 hours or longer if there are concerns or inconsistencies in the examination.	Moderate	Strong

TABLE 1 (Continued)

Recommendation	Evidence Score	Recommendation Score
4. Apnea testing:		
A. Apnea testing must be performed safely and requires documentation of an arterial $PaCO_2$ 20mmHg above the baseline $PaCO_2$ and ≥60mmHg with no respiratory effort during the testing period to support the diagnosis of brain death. Some infants and children with chronic respiratory disease or insufficiency may only be responsive to supranormal $PaCO_2$ levels. In this instance, the $PaCO_2$ level should increase to ≥20mmHg above the baseline $PaCO_2$ level.	Moderate	Strong
B. If the apnea test cannot be performed due to a medical contraindication or cannot be completed because of hemodynamic instability, desaturation to <85%, or an inability to reach a $PaCO_2$ of ≥60mmHg, an ancillary study should be performed.	Moderate	Strong
5. Ancillary studies:		
A. Ancillary studies (EEG and radionuclide CBF) are not required to establish brain death unless the clinical examination or apnea test cannot be completed.	Moderate	Strong
B. Ancillary studies are not a substitute for the neurologic examination.	Moderate	Strong
C. For all age groups, ancillary studies can be used to assist the clinician in making the diagnosis of brain death to reduce the observation period or (i) when components of the examination or apnea testing cannot be completed safely due to the underlying medical condition of the patient; (ii) if there is uncertainty about the results of the neurologic examination; or (iii) if a medication effect may interfere with evaluation of the patient. If the ancillary study supports the diagnosis, the second examination and apnea testing can then be performed. When an ancillary study is used to reduce the observation period, all aspects of the examination and apnea testing should be completed and documented.	Moderate	Strong
D. When an ancillary study is used because there are inherent examination limitations (ie, *i* to iii in 5C above), then components of the examination done initially should be completed and documented.	High	Strong
E. If the ancillary study is equivocal or if there is concern about the validity of the ancillary study, the patient cannot be pronounced dead. The patient should continue to be observed until brain death can be declared on clinical examination criteria and apnea testing, or a follow-up ancillary study can be performed to assist with the determination of brain death. A waiting period of 24 hours is recommended before further clinical reevaluation or repeat ancillary study is performed. Supportive patient care should continue during this time period.	Moderate	Strong
6. Declaration of death:		
A. Death is declared after confirmation and completion of the second clinical examination and apnea test.	High	Strong
B. When ancillary studies are used, documentation of components from the second clinical examination that can be completed must remain consistent with brain death. All aspects of the clinical examination, including the apnea test, or ancillary studies must be appropriately documented.	High	Strong
C. The clinical examination should be carried out by experienced clinicians who are familiar with infants and children, and have specific training in neurocritical care.	High	Strong

GRADE (Grading of Recommendations Assessment, Development, and Evaluation), a recently developed standardized methodological consensus-based approach, was used to evaluate the evidence and make recommendations for this guideline.
The Evidence Score is based on the strength of the evidence available at the time of publication.
The Recommendation Score is the strength of the recommendations based on available evidence at the time of publication. Please see full publication for scoring guidelines listed in Table 1.
CBF = cerebral blood flow; EEG = electroencephalography.

TABLE 2: Checklist for Documentation of Brain Death

Brain Death Examination for Infants and Children[a]

Age of Patient	Timing of First Examination	Interexamination Interval
Term newborn 37 weeks gestational age and up to 30 days old	☐ First examination may be performed 24 hours after birth OR following cardiopulmonary resuscitation or other severe brain injury	☐ At least 24 hours
		☐ Interval shortened because ancillary study (Section 4) is consistent with brain death
31 days to 18 years old	☐ First examination may be performed 24 hours following cardiopulmonary resuscitation or other severe brain injury	☐ At least 12 hours OR
		☐ Interval shortened because ancillary study (Section 4) is consistent with brain death

Section 1. Prerequisites for Brain Death Examination and Apnea Test

A. Irreversible and Identifiable Cause of Coma (please check)

☐ Traumatic brain injury

☐ Anoxic brain injury

☐ Known metabolic disorder

☐ Other (specify) _____

B. Correction of Contributing Factors That Can Interfere with the Neurologic Examination

	Examination 1		Examination 2	
a. Core body temperature is >95°F (35°C)	☐ Yes	☐ No	☐ Yes	☐ No
b. Systolic blood pressure or MAP in acceptable range (Systolic BP not less than 2 standard deviations below age-appropriate norm) based on age	☐ Yes	☐ No	☐ Yes	☐ No
c. Sedative/analgesic drug effect excluded as a contributing factor	☐ Yes	☐ No	☐ Yes	☐ No
d. Metabolic intoxication excluded as a contributing factor	☐ Yes	☐ No	☐ Yes	☐ No
e. Neuromuscular blockade excluded as a contributing factor	☐ Yes	☐ No	☐ Yes	☐ No

☐ If ALL prerequisites are marked YES, then proceed to section 2, OR

☐ _____ confounding variable was present. Ancillary study was therefore performed to document brain death (Section 4).

Section 2. Physical Examination (please check); Note: Spinal Cord Reflexes Are Acceptable

	Examination 1, Date/Time: _____		Examination 2, Date/Time: _____	
a. Flaccid tone, patient unresponsive to deep painful stimuli	☐ Yes	☐ No	☐ Yes	☐ No
b. Pupils are midposition or fully dilated and light reflexes are absent	☐ Yes	☐ No	☐ Yes	☐ No

TABLE 2 (Continued)

Section 2. Physical Examination (please check); Note: Spinal Cord Reflexes Are Acceptable

	Examination 1, Date/Time: _____		Examination 2, Date/Time: _____	
c. Corneal, cough, gag reflexes are absent	☐ Yes	☐ No	☐ Yes	☐ No
d. Sucking and rooting reflexes are absent (in neonates and infants)	☐ Yes	☐ No	☐ Yes	☐ No
e. Oculovestibular reflexes are absent	☐ Yes	☐ No	☐ Yes	☐ No
f. Spontaneous respiratory effort while on mechanical ventilation is absent	☐ Yes	☐ No	☐ Yes	☐ No

☐ The _____ (specify) element of the examination could not be performed because _____.

Ancillary study (EEG or radionuclide CBF) was therefore performed to document brain death (Section 4).

Section 3. Apnea Test

	Examination 1, Date/ Time _____	Examination 2, Date/ Time _____
No spontaneous respiratory efforts were observed despite final $PaCO_2$ ≥60mmHg and a ≥20mmHg increase above baseline (Examination 1). No spontaneous respiratory efforts were observed despite final $PaCO_2$ ≥60mmHg and a ≥20mmHg increase above baseline (Examination 2).	Pretest $PaCO_2$: _____ Apnea duration: _____ min Post-test $PaCO_2$: _____	Pretest $PaCO_2$: _____ Apnea duration: _____ min Post-test $PaCO_2$: _____

Apnea test is contraindicated or could not be performed to completion because _____.
Ancillary study (EEG or radionuclide CBF) was therefore performed to document brain death (Section 4).

Section 4. Ancillary Testing

Ancillary testing is required (1) when any components of the examination or apnea testing cannot be completed; (2) if there is uncertainty about the results of the neurologic examination; or (3) if a medication effect may be present. Ancillary testing can be performed to reduce the interexamination period; however, a second neurologic examination is required. Components of the neurologic examination that can be performed safely should be completed in close proximity to the ancillary test.

Date/time: _____

☐ EEG report documents electrocerebral silence OR ☐ Yes ☐ No

☐ CBF study report documents no cerebral perfusion ☐ Yes ☐ No

Section 5. Signatures

Examiner 1

I certify that my examination is consistent with cessation of function of the brain and brainstem. Confirmatory examination to follow.

Printed name _____

Signature _____

Specialty _____

Pager #/license # _____

Date mm/dd/yyyy _____

Time _____

TABLE 2 (Continued)

Section 5. Signatures

Examiner 2

I certify that my examination ☐ and/or ancillary test report ☐ confirms unchanged and irreversible cessation of function of the brain and brainstem. The patient is declared brain dead at this time.

Date/time of death _____

Printed name _____

Signature _____

Specialty _____

Pager #/license # _____

Date mm/dd/yyyy _____

Time _____

[a]Two physicians must perform independent examinations separated by specified intervals.
BP = blood pressure; CBF = cerebral blood flow; EEG = electroencephalography; MAP = mean arterial pressure.

- Drug intoxications including barbiturates, opioids, sedatives, intravenous and inhalational anesthetics, antiepileptic agents, and alcohols can cause severe central nervous system depression and may alter the clinical examination to the point where they can mimic brain death.[3,4] Testing for these drugs should be performed if there is concern regarding recent ingestion or administration. When available, specific serum levels of medications with sedative properties or side effects should be obtained and documented to be in a low to mid therapeutic range before neurologic examination for brain death testing. Adequate clearance (based on the age of the child, presence of organ dysfunction, total amount of medication administered, elimination half-life of the drug, and any active metabolites) should be allowed prior to the neurologic examination. In some instances, this may require waiting several half-lives and rechecking serum levels of the medication before conducting the brain death examination. If neuromuscular-blocking agents have been used, they should be stopped, and adequate clearance of these agents should be confirmed by use of a nerve stimulator with documentation of neuromuscular junction activity and twitch response. Unusual causes of coma such as neurotoxins and chemical exposure (ie, organophosphates and carbamates) should be considered in rare cases where an etiology for coma has not been established.

Assessment of neurologic function may be unreliable immediately following resuscitation after cardiopulmonary arrest[7–10] or other acute brain injuries, and serial neurologic examinations are necessary to establish or refute the diagnosis of brain death. It is reasonable to defer the neurologic examination to determine brain death for ≥24 hours if dictated by the clinical judgment of the treating physician in such circumstances. If there are concerns about the validity of the examination (eg, flaccid tone or absent movements in a patient with high spinal cord injury or severe neuromuscular disease), if specific examination components cannot be performed due to medical contraindications (eg, apnea testing in patients with significant lung injury, hemodynamic instability, or high spinal cord injury), or if examination findings are inconsistent, continued observation and postponing further neurologic examinations until these issues are resolved are warranted to avoid improperly diagnosing brain death. An ancillary study can be pursued to assist with the diagnosis of brain death in situations where certain examination components cannot be completed.

Neuroimaging with either computed tomography (CT) or magnetic resonance imaging (MRI) should demonstrate evidence of an acute central nervous system injury consistent with the profound loss of brain function. It is recognized that early after acute brain injury, imaging findings may not demonstrate significant injury. In such situations, repeat studies are helpful in documenting that an acute severe brain injury has occurred. CT and MRI are not considered ancillary studies and should not be relied upon to make the determination of brain death.

NUMBER OF EXAMINATIONS, EXAMINERS, AND OBSERVATION PERIODS.

Number of Examinations and Examiners. The committee supports the 1987 guidelines recommending performance of 2 examinations separated by an observation period. The committee recommends that different attending physicians involved in the care of the child perform these examinations.

TABLE 3: Neurologic Examination Components to Assess for Brain Death in Neonates, Infants, and Children,[a] Including Apnea Testing

Reversible conditions or conditions that can interfere with the neurologic examination must be excluded prior to brain death testing. See text for discussion.

1. Coma. The patient must exhibit complete loss of consciousness, vocalization, and volitional activity.

   Patients must lack all evidence of responsiveness. Eye opening or eye movement to noxious stimuli is absent.

   Noxious stimuli should not produce a motor response other than spinally mediated reflexes. The clinical differentiation of spinal responses from retained motor responses associated with brain activity requires expertise.

2. Loss of all brainstem reflexes including:

   Midposition or fully dilated pupils that do not respond to light.

   Absence of pupillary response to a bright light is documented in both eyes. Usually the pupils are fixed in a midsize or dilated position (4–9mm). When uncertainty exists, a magnifying glass should be used.

   Absence of movement of bulbar musculature including facial and oropharyngeal muscles.

   Deep pressure on the condyles at the level of the temporomandibular joints and deep pressure at the supraorbital ridge should produce no grimacing or facial muscle movement.

   Absent gag, cough, sucking, and rooting reflex.

   The pharyngeal or gag reflex is tested after stimulation of the posterior pharynx with a tongue blade or suction device. The tracheal reflex is most reliably tested by examining the cough response to tracheal suctioning. The catheter should be inserted into the trachea and advanced to the level of the carina followed by 1 or 2 suctioning passes.

   Absent corneal reflexes.

   Absent corneal reflex is demonstrated by touching the cornea with a piece of tissue paper, a cotton swab, or squirts of water. No eyelid movement should be seen. Care should be taken not to damage the cornea during testing.

   Absent oculovestibular reflexes.

   The oculovestibular reflex is tested by irrigating each ear with ice water (caloric testing) after the patency of the external auditory canal is confirmed. The head is elevated to 30°. Each external auditory canal is irrigated (1 ear at a time) with approximately 10 to 50ml of ice water. Movement of the eyes should be absent during 1 minute of observation. Both sides are tested, with an interval of several minutes.

3. Apnea. The patient must have the complete absence of documented respiratory effort (if feasible) by formal apnea testing demonstrating a $PaCO_2$ $\geq$60mmHg and $\geq$20mmHg increase above baseline.

   Normalization of the pH and $PaCO_2$, measured by arterial blood gas analysis, maintenance of core temperature >35°C, normalization of blood pressure appropriate for the age of the child, and correcting for factors that could affect respiratory effort are a prerequisite to testing.

   The patient should be preoxygenated using 100% oxygen for 5–10 minutes prior to initiating this test.

   Intermittent mandatory mechanical ventilation should be discontinued once the patient is well oxygenated and a normal $PaCO_2$ has been achieved.

   The patient's heart rate, blood pressure, and oxygen saturation should be continuously monitored while observing for spontaneous respiratory effort throughout the entire procedure.

   Follow-up blood gases should be obtained to monitor the rise in $PaCO_2$ while the patient remains disconnected from mechanical ventilation.

   If no respiratory effort is observed from the initiation of the apnea test to the time the measured $PaCO_2$ is $\geq$60mmHg and $\geq$20mmHg above the baseline level, the apnea test is consistent with brain death.

   The patient should be placed back on mechanical ventilator support, and medical management should continue until the second neurologic examination and apnea test confirming brain death are completed.

   If oxygen saturations fall below 85%, hemodynamic instability limits completion of apnea testing, or a $PaCO_2$ level of $\geq$60mmHg cannot be achieved, the infant or child should be placed back on ventilator support with

TABLE 3 (Continued)

appropriate treatment to restore normal oxygen saturations, arterial CO_2 pressure, and hemodynamic parameters. Another attempt to test for apnea may be performed at a later time, or an ancillary study may be pursued to assist with determination of brain death.
Evidence of any respiratory effort is inconsistent with brain death, and the apnea test should be terminated.
4. Flaccid tone and absence of spontaneous or induced movements, excluding spinal cord events such as reflex withdrawal or spinal myoclonus.
The patient's extremities should be examined to evaluate tone by passive range of motion, assuming that there are no limitations to performing such an examination (eg, previous trauma, etc), and the patient should be observed for any spontaneous or induced movements.
If abnormal movements are present, clinical assessment to determine whether these are spinal cord reflexes should be done.

[a]Criteria adapted from 2010 American Academy of Neurology criteria for brain death determination in adults.[11]

Children being evaluated for brain death may be cared for and evaluated by multiple medical and surgical specialists. The committee recommends that the best interests of the child and family are served if at least 2 different attending physicians participate in diagnosing brain death to ensure that (1) the diagnosis is based on currently established criteria, (2) there are no conflicts of interest in establishing the diagnosis, and (3) there is consensus by at least 2 physicians involved in the care of the child that brain death criteria are met. The committee also believes that because the apnea test is an objective test, it may be performed by the same physician, preferably the attending physician who is managing ventilator care of the child.

Duration of Observation Periods. The committee recommends the observation period between examinations to be 24 hours for neonates (37 weeks gestational age; up to 30 days) and 12 hours for infants and children (>30 days to 18 years). The first examination determines that the child has met neurologic examination criteria for brain death. The second examination confirms brain death based on an unchanged and irreversible condition. Reduction of the observation period and use of ancillary studies are discussed in separate sections of these guidelines.

APNEA TESTING. Apnea testing should be performed with each neurologic examination to determine brain death in all patients unless a medical contraindication exists. Contraindications may include conditions that invalidate the apnea test (such as high cervical spine injury) or raise safety concerns for the patient (high oxygen requirement or ventilator settings). If apnea testing cannot be completed safely, an ancillary study should be performed to assist with the determination of brain death.

Apnea testing in term newborns, infants, and children is conducted similarly as in adults. Normalization of the pH and $PaCO_2$, measured by arterial blood gas analysis, maintenance of core temperature at >35°C, normalization of blood pressure appropriate for the age of the child, and correcting for factors that could affect respiratory effort are prerequisites to testing. The patient must be preoxygenated using 100% oxygen for 5 to 10 minutes prior to initiating this test. The physician(s) performing apnea testing should continuously monitor the patient's heart rate, blood pressure, and oxygen saturation while observing for spontaneous respiratory effort throughout the entire procedure. $PaCO_2$, measured by blood gas analysis, should be allowed to rise to ≥20mmHg above the baseline $PaCO_2$ level and ≥60mmHg. If no respiratory effort is observed from the initiation of the apnea test to the time the measured $PaCO_2$ is ≥60mmHg and ≥20mmHg above the baseline level, the apnea test is consistent with brain death. The patient should be placed back on mechanical ventilator support, and medical management should continue until the second neurologic examination and apnea test confirming brain death are completed. If oxygen saturations fall below 85%, hemodynamic instability limits completion of apnea testing, or a $PaCO_2$ level of ≥60mmHg cannot be achieved, the infant or child should be placed back on ventilator support with appropriate treatment to restore normal oxygen saturations, CO_2 pressure to normocarbia, and hemodynamic parameters. In this instance, another attempt to test for apnea may be performed at a later time, or an ancillary study may be pursued to assist with determination of brain death. Evidence of any respiratory effort is inconsistent with brain death, indicating that the apnea test should be terminated and the patient placed back on ventilatory support.

ANCILLARY STUDIES. The committee recommends that ancillary studies are not required to establish brain death and should not be viewed as a substitute for the neurologic examination. Ancillary studies may be used to assist the clinician in making the diagnosis of brain death (1) when components of the examination or apnea testing cannot be completed safely due to the underlying medical condition of the patient; (2) if there is

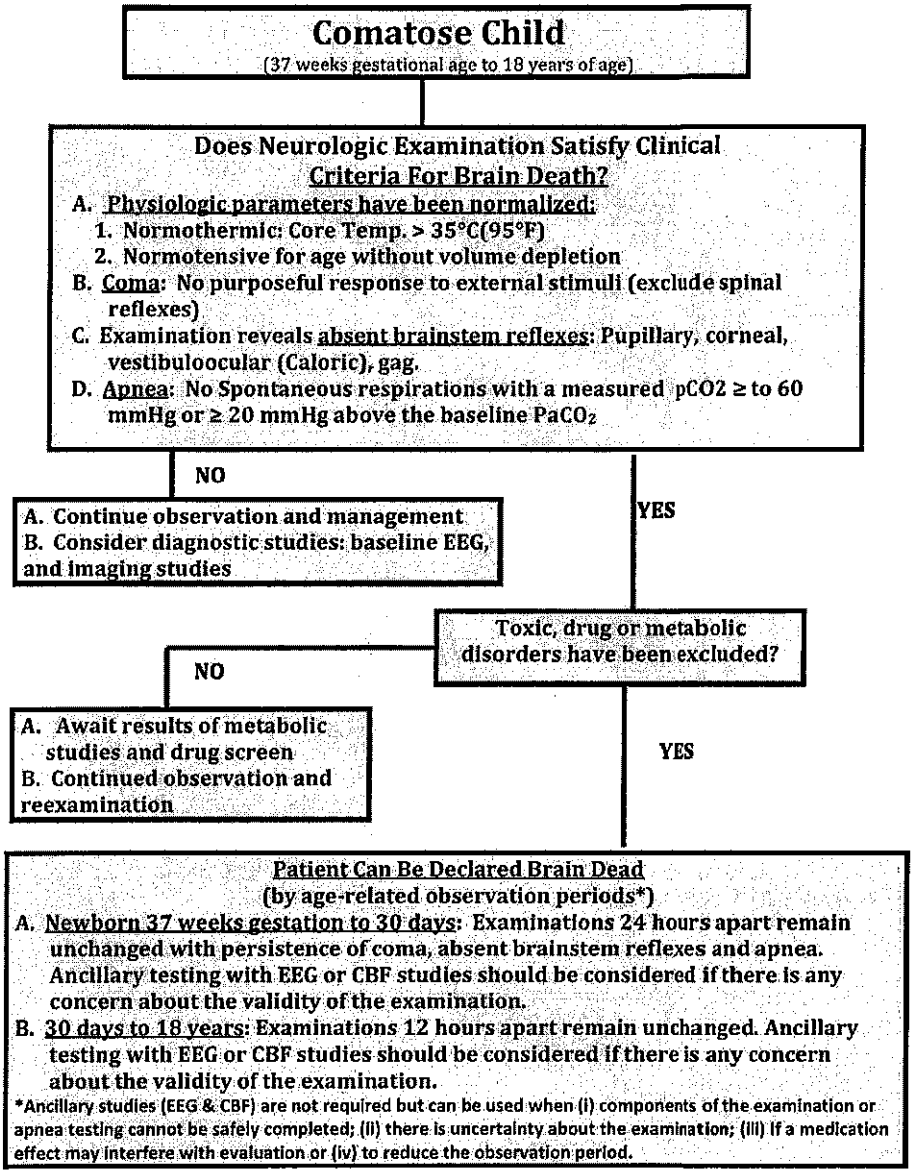

FIGURE: Algorithm to diagnose brain death in infants and children. CBF = cerebral blood flow; EEG = electroencephalography.

uncertainty about the results of the neurologic examination; (3) if a medication effect may be present; or (4) to reduce the interexamination observation period. The term *ancillary study* is preferred to *confirmatory study* because these tests assist the clinician in making the clinical diagnosis of brain death. Ancillary studies may also be helpful for social reasons, allowing family members to better comprehend the diagnosis of brain death.

Four-vessel cerebral angiography is the gold standard for determining absence of cerebral blood flow (CBF). This test can be difficult to perform in infants and small children, may not be readily available at all institutions, and requires moving the patient to the angiography suite. Electroencephalographic documentation of electrocerebral silence and use of radionuclide CBF determinations to document the absence of CBF remain the most widely used methods to support the clinical diagnosis of brain death in infants and children. Both of these ancillary studies remain accepted tests to assist with determination of brain death in infants and children. Radionuclide CBF testing must be performed in accordance with guidelines established by the Society of Nuclear Medicine and the American College of Radiology.[12,13] Electroencephalographic (EEG) testing must be performed in accordance

with standards established by the American Electroencephalographic Society.[14] Interpretation of ancillary studies requires the expertise of appropriately trained and qualified individuals who understand the limitations of these studies to avoid any potential misinterpretation.

Similar to the neurologic examination, hemodynamic and temperature parameters should be normalized prior to obtaining EEG or CBF studies. Pharmacologic agents that could affect the results of testing should be discontinued and levels determined as clinically indicated. Low to mid therapeutic levels of barbiturates should not preclude the use of EEG testing.[15] Evidence suggests that radionuclide CBF study can be utilized in patients with high-dose barbiturate therapy to demonstrate absence of CBF.[16,17] Other ancillary studies such as transcranial Doppler study and newer tests such as CT angiography, CT perfusion using arterial spin labeling, nasopharyngeal somatosensory evoked potential studies, MRI-magnetic resonance angiography, and perfusion MRI have not been studied sufficiently nor validated in infants and children and cannot be recommended as ancillary studies to assist with the determination of brain death in children at this time.

Repeating Ancillary Studies. If the EEG study shows electrical activity or the CBF study shows evidence of flow or cellular uptake, the patient cannot be pronounced dead at that time. The patient should continue to be observed and medically treated until brain death can be declared solely on clinical examination criteria and apnea testing based on recommended observation periods, a follow-up ancillary study can be performed to assist and is consistent with the determination of brain death, or withdrawal of life-sustaining medical therapies is made irrespective of the patient meeting criteria for brain death. A waiting period of 24 hours is recommended before further ancillary testing using radionuclide CBF study is performed to allow adequate clearance of Tc-99m.[12,13] Although no evidence exists for a recommended waiting period between EEG studies, a waiting period of 24 hours is reasonable and recommended before repeating this ancillary study.

Shortening the Observation Period. If an ancillary study, used in conjunction with the first neurologic examination, supports the diagnosis of brain death, the interexamination observation interval can be shortened, and the second neurologic examination and apnea test (or all components that can be completed safely) can be performed and documented at any time thereafter for children of all ages.

Special Considerations for Term Newborns (37 Weeks Gestation) to 30 Days of Age

The ability to diagnose brain death in newborns is still viewed with some doubt, primarily due to the small number of brain-dead neonates reported in the literature[18–20] and uncertainty regarding whether there are intrinsic biological differences in neonatal brain metabolism, blood flow, and response to injury. The Task Force supports that brain death can be diagnosed in term newborns (37 weeks gestation) and older infants, provided the physician is aware of the limitations of the clinical examination and ancillary studies in this age group. It is important to carefully and repeatedly examine term newborns, with particular attention to examination of brainstem reflexes and apnea testing. As with older children, assessment of neurologic function in the term newborn may be unreliable immediately following an acute catastrophic neurologic injury or cardiopulmonary arrest. A period of $\geq$24 hours is recommended before evaluating the term newborn for brain death. Because of insufficient data in the literature, recommendations for preterm infants <37 weeks gestational age were not included in these guidelines.

APNEA TESTING. A thorough neurologic examination must be performed in conjunction with the apnea test to make the determination of death in any patient. Data suggest that the $PaCO_2$ threshold of 60mmHg is also valid in the newborn.[21] Apnea testing in the term newborn may be complicated by the following: (1) treatment with 100% oxygen may inhibit the potential recovery of respiratory effort,[22,23] and (2) profound bradycardia may precede hypercarbia and limit this test in neonates. If the apnea test cannot be completed, the examination and apnea test can be attempted at a later time, or an ancillary study may be performed to assist with determination of death. There are no reported cases of any neonate who developed respiratory effort after meeting brain death criteria.

OBSERVATION PERIODS IN TERM NEWBORNS. The committee recommends that the observation period between examinations be 24 hours for term newborns (37 weeks gestational age) to 30 days of age based on data extracted from available literature and clinical experience.

ANCILLARY STUDIES. Available data suggest that ancillary studies in newborns are less sensitive than in older children. Awareness of these limitations would suggest that longer periods of observation and repeated neurologic examinations are needed before making the diagnosis of brain death and also that as in older infants and children, the diagnosis should be made clinically and based on repeated examinations rather than relying exclusively on ancillary studies.

Declaration of Death (for All Age Groups)

Death is declared after the second neurologic examination and apnea test confirm an unchanged and irreversible condition. An algorithm (see Fig) provides recommendations for the process of diagnosing brain death in children. When ancillary studies are used, documentation of components from the second clinical examination that can be completed, including a second apnea test, must remain consistent with brain death. All aspects of the clinical examination, including the apnea test, or ancillary studies must be appropriately documented. A checklist outlining essential examination and testing components is provided in Table 2. This checklist also provides standardized documentation to determine brain death.

Additional Considerations (for All Age Groups)

The implications of diagnosing brain death are of great consequence. Therefore, experienced clinicians who are familiar with neonates, infants, and children and have specific training in neurocritical care should carry out examinations to determine brain death. These physicians must be competent to perform the clinical examination and interpret results from ancillary studies. Qualified clinicians include pediatric intensivists and neonatologists, pediatric neurologists and neurosurgeons, pediatric trauma surgeons, and pediatric anesthesiologists with critical care training. Adult specialists should have appropriate neurologic and critical care training to diagnose brain death when caring for the pediatric patient from birth to 18 years of age. Residents and fellows should be encouraged to learn how to properly perform brain death testing by observing and participating in the clinical examination and testing process performed by experienced attending physicians. It is recommended that both neurologic examinations be performed and documented by an attending physician who is qualified and competent to perform the brain death examination.

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Potential Conflicts of Interest

Nothing to report.

Appendix

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Endorsements and Approvals

This document has been reviewed and endorsed by the following societies:

- American Academy of Pediatrics (subsections: Section on Critical Care, Section on Neurology)
- American Association of Critical Care Nurses
- Child Neurology Society
- National Association of Pediatric Nurse Practitioners
- Society of Critical Care Medicine
- Society for Pediatric Anesthesia
- Society of Pediatric Neuroradiology
- World Federation of Pediatric Intensive and Critical Care Societies

The American Academy of Neurology affirms the value of this article.

The following subsections of the American Academy of Pediatrics have had the opportunity to review and comment on this document:

- Committee on Bioethics
- Committee on Child Abuse and Neglect
- Committee on Federal Government Affairs
- Committee on Fetus and Newborn
- Committee on Hospital Care
- Committee on Medical Liability and Risk Management
- Committee on Pediatric Emergency Medicine
- Committee on Practice and Ambulatory Medicine
- Committee on State Government Affairs
- Council on Children with Disabilities
- Section on Anesthesiology and Pain Medicine
- Section on Bioethics
- Section on Child Abuse and Neglect
- Section on Emergency Medicine
- Section on Hospital Medicine
- Section on Perinatal Pediatrics
- Section on Neurological Surgery
- Section on Pediatric Surgery

The Pediatric Section of the American Association of Neurosurgeons and the Congress of Neurologic Surgeons have been provided the opportunity to review this document.

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EXHIBIT M

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Symposium Article
Defining the Beginning and the End of Human Life: Implications for Ethics, Policy, and Law
Guest Edited by Robert M. Sade

THE WHOLE-BRAIN CONCEPT OF DEATH REMAINS OPTIMUM PUBLIC POLICY

James L. Bernat [a1]

The definition of death is one of the oldest and most enduring problems in biophilosophy and bioethics. Serious controversies over formally defining death began with the invention of the positive-pressure mechanical ventilator in the 1950s. For the first time, physicians could maintain ventilation and, hence, circulation on patients who had sustained what had been previously lethal brain damage. Prior to the development of mechanical ventilators, brain injuries severe enough to induce apnea quickly progressed to cardiac arrest from hypoxemia. Before the 1950s, the loss of spontaneous breathing and heartbeat ("vital functions") were perfect predictors of death because the functioning of the brain and of all other organs ceased rapidly and nearly simultaneously thereafter, producing a unitary death phenomenon. In the pretechnological era, physicians and philosophers did not have to consider whether a human being who had lost certain "vital functions" but had retained others was alive, because such cases were technically impossible.

With the advent of mechanical support of ventilation, (permitting maintenance of circulation) the previous unitary determination of death became ambiguous. Now patients were encountered in whom some vital organ functions (brain) had ceased totally and irreversibly, while other vital organ functions (such as ventilation and circulation) could be maintained, albeit mechanically. Their life status was ambiguous and debatable because they had features of both dead and living patients. They resembled dead patients in that they could not move or breathe, were utterly unresponsive to any stimuli, and had lost brain stem reflex activity. But they also resembled living patients in that they had maintained heartbeat, circulation and intact visceral organ functioning. Were these unfortunate patients in fact alive or dead?

In a series of scientific articles addressing this unprecedented state, several authors made the bold claim that patients who had totally and irreversibly lost brain functions were dead, despite their continued heartbeat and circulation. [1] In the 1960s, they popularized the concept they called "brain death" to acknowledge this idea. [2] The intuitive attractiveness of the concept of "brain death" led to its rapid acceptance by the medical and scientific community, and to legislators expeditiously drafting public laws permitting physicians to determine death on the basis of loss of brain functioning. [3] Interestingly, largely by virtue of its intuitive appeal, ***36** the academy, medical practitioners, governments, and the public accepted the validity of brain death prior to the development of a rigorous biophilosophical proof that brain dead patients were truly dead. Medical historians have emphasized utilitarian factors in this rapid acceptance, because a determination of brain death permitted the desired societal goals of cessation of medical treatment and organ procurement. [4]

The practice of determining human death using brain death tests has become worldwide over the past several decades. The practice is enshrined in law in all 50 states in the United States and in approximately 80 other countries, including nearly all of the developed world and much of the undeveloped world. [5] A 1995 conference on the definition of death sponsored by the Institute of Medicine concluded that, despite certain theoretical and practical shortcomings, the practice of diagnosing brain

death was so successful and so well accepted by the medical profession and the public that no major public policy changes seemed desirable. [6]

Yet despite this consensus, from its beginning, a persistent group of critics have attacked the concept and practice of brain death as being conceptually invalid or a violation of religious beliefs. [7] Recently, through the intellectual leadership of Alan Shewmon, additional critics have concluded that the concept of brain death is incoherent, anachronistic, unnecessary, a legal fiction, and should be abandoned. [8] In this essay I show that, despite admitted shortcomings, the classical formulation of whole-brain death remains both conceptually coherent and forms a solid foundation for public policy surrounding human death determination and organ transplantation.

An Analysis of Death

Defining death is a formidable task. [9] In their rigorous, thoughtful, and highly influential book *Defining Death*, [10] the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research chose as their conceptual foundation the analysis of death that I published with my Dartmouth colleagues Charles Culver and Bernard Gert. [11] Our analysis was conducted in three sequential phases: (1) the philosophical task of determining the definition of death by making explicit the consensual concept of death that has been confounded by technology; (2) the philosophical and medical task of determining the best criterion of death, a measurable condition that shows that the definition has been fulfilled by being both necessary and sufficient for death; and (3) the medical-scientific task of determining the tests of death for physicians to employ at the patient's bedside to demonstrate that the criterion of death has been fulfilled with no false positive and minimal false negative determinations. Most subsequent scholars have accepted this method of analysis, if not our conclusions, with two recent exceptions. [12]

Following a series of published critiques and rebuttals of our position over the past two decades, I concluded that much of the disagreement over our account of death resulted from the lack of acceptance by dissenting scholars of the "paradigm of death." By "paradigm of death" I refer specifically to a set of conditions and assumptions that frame the discussion of the topic of death by identifying the nature of the topic, the class of phenomena to which it belongs, how it should be discussed, and its conceptual boundaries. [13] Accepting a paradigm of death permits scholars to rationally analyze and discuss death without falling victim to the fallacy of category noncongruence and consequently talking past each other. But the paradigm remains useful even if scholars do not agree on all its elements, because it can help clarify the root of their disagreement.

My paradigm of death comprises seven sequential elements. First, the word "death" is a common, nontechnical word that we all use correctly to refer to the cessation of a human being's life. The philosophical task of defining death seeks not to redefine it by contriving a new meaning, but rather to divine and make explicit the implicit meaning of death that we all accept but that has been made ambiguous by technological advances. Some scholars have gone astray by not attempting to capture our consensual concept of death and instead redefining death for ideological purposes or by overanalyzing death to a metaphysical level of abstraction-- thereby rendering it devoid of its ordinary meaning. [14]

Second, death is fundamentally a biological phenomenon. We all agree that life is a biological entity; thus also should be its cessation. Accepting that death is a biological phenomenon neither denigrates the richness ***37** and beauty of various cultural and religious practices surrounding death and dying, nor denies societies their proper authority to govern practices and establish laws regulating the determination and time of death. But death is an immutable and objective biological fact and not fundamentally a social contrivance. [15] For the definition and criterion of death, the paradigm thus exclusively considers the ontology of death and ignores its normative aspects.

Third, we restrict our analysis to the death of higher vertebrate species for which death is univocal. That is, we mean the same phenomenon of "death" when we say our cousin died as we do when we say our dog died. Although individual cells

within organisms and single celled organisms also die, our analysis of defining human death is simplified by restricting our purview to the death of related higher vertebrate species. Determining the death of cells, organs, protozoa, or bacteria are valid biophilosophical tasks but are not the task at hand here.

Fourth, the term "death" can be applied directly and categorically only to organisms. All living organisms meet die and only living organisms can die. Our use of language may seem to confuse this point, for example, when we say "a person died." But by this usage we are referring directly to the death of the living organism that embodied the person, not to a living organism ceasing to be a person. Personhood is a psychosocial construct that can be lost but cannot die, except metaphorically. Similarly, other uses of the term "death" such as "the death of a culture" clearly are metaphorical and fall outside the paradigm. [16]

Fifth, a higher vertebrate organism can reside in only one of two states, alive or dead: no organism can be in both states or in neither. Based on the theory of fuzzy sets, the concept that the world does not easily divide itself into sets and their complements, Amir Halevy and Baruch Brody proposed that an organism may reside in a transitional state between alive and dead that shares features of both states. [17] This claim appears plausible when considering cases of gradual, protracted dying, in which it may be difficult and even appear arbitrary to identify the precise moment of death. But this claim ignores the important distinction between our ability to identify an organism's biological state and the nature of that state. Simply because we currently lack the technical ability to always accurately identify an organism's state does not necessitate postulating an in-between state. Using the terminology of fuzzy set theory as a guide, the paradigm requires us to view alive and dead as mutually exclusive (non-overlapping) and jointly exhaustive (no other) sets.

Sixth, and inevitably following from the preceding premise, death must be an event and not a process. If there are only two exclusive underlying states of an organism, the transition from one state to the other, at least in theory, must be sudden and instantaneous, because of the absence of an intervening state. Disagreement on this point, highlighted since the original debate over 30 years ago in *Science* by Robert Morison and Leon Kass, [18] centers on the difference between our ability to accurately measure the presence of a biological state and the nature of that biological state. To an observer, it may appear that death is an ineluctable process within which it is arbitrary to stipulate the moment of death, but such an observation simply underscores our current technical limitations. For technical reasons, the event of death may be determinable with confidence only in retrospect. As my colleagues and I first observed in 1981, death is best conceptualized not as a process but as the event separating the biological processes of dying and bodily disintegration. [19]

Seventh and finally, death is irreversible. By its nature, if the event of death were reversible it would not be death but rather part of the process of dying that was interrupted and reversed. Advances in technology permit physicians to interrupt the dying process in some cases and postpone the event of death. So-called "near-death experiences," reported by some critically ill patients who subsequently recovered, do not indicate returning from the dead but are rather recalled experiences that result from alterations in brain physiology during incipient dying that was reversed in a timely manner. [20]

The Definition of Death

Given the set of assumptions and conditions comprising the paradigm of death, we can now explore the definition, criterion, and tests of death. Defining death is the conceptual task of making explicit our understanding of it. It poses an essential question: what does it mean for an organism to die, particularly in our contemporary circumstance in which technology can compensate for the failure of certain vital organs?

We all agree that by "death" we do not require the cessation of functioning of every cell in the body, because some integument cells that require little oxygen or blood flow continue to function temporarily after death is customarily declared. We also do not simply mean the cessation of heartbeat and respiration, though this circumstance will lead to death if untreated. Although some religious believers assert that the soul departs the body at the moment of death, this is not an adequate definition of death because it is not what religious believers fundamentally mean by "death."

Beginning early in the brain-death debate, Robert Veatch advocated a position that became known as the "higher-brain formulation of death."[21] He claimed *38 that death should be defined formally as "the irreversible loss of that which is considered to be essentially significant to the nature of man." He expressly rejected the idea that death should be related to an organism's "loss of the capacity to integrate bodily function" asserting that "man is, after all, something more than a sophisticated computer."[22] His project attempted not to reject brain death, but to refine the intuitive thinking underlying the brain death concept by emphasizing that it was the cerebral cortex that counted in a brain death concept and not the more primitive integrating brain structures.

Irrespective of the attractiveness of this idea, (it has spawned a loyal following[23]) the higher-brain formulation contains a fatal flaw as a candidate for a definition of death: it is not what we mean when we say "death." Its logical criterion of death would be the irreversible loss of consciousness and cognition, such as that which occurs in patients in an irreversible persistent vegetative state (PVS). Thus a higher-brain formulation of death would count PVS patients as dead. However, despite their profound and tragic disability, all societies, cultures, and laws consider PVS patients as alive. Thus, despite its potential merits, the higher-brain formulation fails the first condition of the paradigm: to make explicit our underlying consensual concept of death and not to contrive a new definition of death.

In 1981, my colleagues and I strove to capture the essence of the concept of human death that formed the intuitive foundation of the brain-based criterion of death. We defined death as "the cessation of functioning of the organism as a whole."[24] This definition utilized a biological concept proposed by Jacques Loeb in 1916.[25] Loeb explained that organisms are not simply composites of cells, tissues, and organs, but possess overarching functions that regulate and integrate all systems to maintain the unity and interrelatedness of the organism to promote its optimal functioning and health. The organism as a whole comprises that set of functions that are greater than the mere sum of the organism's parts.

More recently, biophilosophers have advanced the concept of "emergent functions" to explain this type of phenomenon with greater conceptual clarity.[26] An emergent function is a property of a whole that is not possessed by any of its component parts, and that cannot be reduced to one or more of its component parts. The physiological correlate of the organism as a whole is the set of emergent functions of the organism. The irretrievable loss of the organism's emergent functions produces loss of the critical functioning of the organism as a whole and therefore is the death of the organism.

In early writings on brain death, a few scholars proposed similar ideas. Most noteworthy was Julius Korein who asserted that the brain was the "critical system" of the organism whose loss indicated the organism's death.[27] Using thermodynamics theory, Korein argued that once the critical system was irretrievably lost (death), an irreversible and unstoppable process ensued of increasing entropy that constituted the process of bodily disintegration. The concept of the demise of the organism's critical system relies on concepts analogous to the cessation of functions of the organism as a whole.

Examples of critical functions of the organism as a whole include: (1) consciousness, which is necessary for the organism to respond to requirements for hydration and nutrition; (2) control of circulation, respiration, and temperature control, which are necessary for all cellular metabolism; and (3) integrating and control systems involving chemoreceptors, baroreceptors, and neuroendocrine feedback loops to maintain homeostasis. Death is the irreversible and permanent loss of the critical functions of the organism as a whole.

The Criterion of Death

The next task is to identify the criterion of death, the general measurable condition that satisfies the definition of death by being both necessary and sufficient for death. There are several plausible candidates for a criterion of death. Among brain death advocates, three separate criteria have been proposed: (1) the wholebrain formulation, the criterion recommended by the

Harvard Committee and the President's Commission, and accepted throughout the United States and in most parts of the world; (2) the higher-brain formulation, popular in the academy but accepted in no jurisdictions anywhere; and (3) the brain stem formulation accepted in the United Kingdom.[28]

The whole-brain criterion requires cessation of all brain clinical functions including those of the cerebral hemispheres, diencephalon (thalamus and hypothalamus), and brain stem. Whole-brain theorists require widespread cessation of neuronal functions because each part of the brain serves the critical functions of the organism as a whole. The brain stem initiates and controls breathing, regulates circulation, and serves as the generator of conscious awareness through the ascending reticular activating system. The diencephalon provides the center for bodily homeostasis, regulating and coordinating numerous neuroendocrine control systems such as those regulating body temperature, salt and water regulation, feeding behavior, and memory. The cerebral hemispheres have an indispensable role in awareness that provides the conditions for all ***39** conscious behavior that serves the health and survival of the organism.

Clinical functions are those that are measurable at the bedside. The distinction between the brain's clinical functions and brain activities, recordable electrically or though other laboratory means, was made by the President's Commission in *Defining Death* though, for the sake of brevity, it did not appear in the Uniform Determination of Death Act proposed by the Commission.[29] All clinical brain functions measurable at the bedside must be lost and the absence must be shown to be irreversible. But the whole-brain criterion does not require the loss of all neuronal activities. Some neurons may survive and contribute to recordable brain activities (by an electroencephalogram, for example) but not to clinical functions.[30] The precise number, location, and configuration of the minimum number of critical neuron arrays remain unknown.

Despite the fact that the whole-brain criterion does not require the cessation of functioning of every brain neuron, it does rely on a pathophysiological process known as brain herniation to assure widespread destruction of the neuron systems responsible for the brain's clinical functions.[31] When the brain is injured diffusely by trauma, hypoxicischemic damage during cardiorespiratory arrest or asphyxia, meningoencephalitis, or enlarging intracranial mass lesions such as neoplasms,[32] brain edema causes intracranial pressure to rise to levels exceeding mean arterial blood pressure. At this point, intracranial circulation ceases and nearly all brain neurons that were not destroyed by the initial brain injury are secondarily destroyed by lack of intracranial circulation. Thus the whole-brain formulation provides a fail-safe mechanism to eliminate false-positive brain death determinations and assure the loss of the critical functions of the organism as a whole. Showing the absence of all intracranial circulation is sufficient to prove widespread destruction of all critical neuronal systems. Similarly, it satisfies Korein's requirement for the loss of the irreplaceable critical system of the organism.

The higher-brain formulation fails to provide an adequate criterion of death because its conditions are insufficient for the loss of the critical functions of the organism as a whole. Its criterion is the irreversible loss of consciousness and cognition. The most common clinical manifestation of this condition is the PVS, caused by diffuse damage to the cerebral hemispheres, thalami, or disconnections between those structures.[33] In most cases of PVS, brain stem neurons and their functions remain intact, so PVS patients, although unaware, have retained wakefulness and sleep-wake cycles (through the function of the intact ascending reticular activating system), have continued control of respiration and circulation by the intact medulla, and retain other brain stem mediated regulatory functions.[34] The higher-brain formulation, thus, serves as neither an adequate definition nor criterion of death.

The criterion of the brain stem formulation is the loss of consciousness and the capacity for breathing.[35] Diffuse damage to the brain stem that is sufficient to destroy the ascending reticular activating system and the medullary breathing center satisfies this criterion. But the brain stem formulation does not require commensurate damage to the diencephalon or cerebral hemispheres. It therefore leaves open the possibility of misdiagnosis of death because of a pathological process that appears to destroy brain stem activities but that permits some form of residual conscious awareness that cannot be easily detected. It thus lacks the fail-safe feature of whole-brain death to test for and guarantee the irreversible loss of these critical systems.

As a criterion of death, the circulation formulation fails for precisely the opposite reason of the higherbrain and brain stem formulations. Whereas the higher-brain and brain stem criteria both fail because they are necessary but not sufficient for death, the circulation criterion fails because it is sufficient but not necessary for death. The loss of all systemic circulation produces the destruction of all bodily organs and tissues so it is clearly a sufficient condition for death. But it is unnecessary to require the cessation of functions of organs that do not serve the critical functions of the organism as a whole. [36]

The Tests of Death

Brain death tests must be used to determine death only in the unusual case in which a patient's ventilation is being supported. If positive-pressure ventilation is neither employed nor entertained, the traditional tests of death--prolonged absence of breathing and heartbeat--can be used successfully. These traditional tests are absolutely predictive that the brain will be rapidly destroyed by lack of blood flow and oxygen, at which time death will have occurred. Traditional examinations for death, in addition to testing for heartbeat and breathing, always included tests for responsiveness and pupillary reflexes that directly measure brain function.

***40** The bedside tests satisfying the whole-brain criterion of death have been designed with a sufficiently high degree of concordance to permit the drafting of widely accepted clinical practice guidelines on the determination of brain death. [37] The tests require demonstrating the loss of all clinical brain functions, irreversibility, and a known structural process sufficient to produce the clinical findings. Laboratory tests showing the absence of intracranial blood flow or the absence of electrical activity in the hemispheres and brain stem can be used to confirm the clinical diagnosis to expedite the determination. [38]

Irreversibility is an indispensable requirement for brain death. There is general belief that irreversibility can be adequately demonstrated by conducting serial neurological examinations, excluding potentially reversible factors, and demonstrating a structural cause that is sufficient to account for the clinical signs. But, while highly plausible, these conditions have never been proved to assure irreversibility. Two recent factors prompted me to reassess my previous position that irreversibility could be proved solely by clinical factors and to suggest that a laboratory test showing cessation of all intracranial blood flow should become mandatory in brain death determination.

There are several published studies documenting the alarming frequency of physician variations and errors in performing brain death tests, [39] despite clear guidelines for performing and recording the tests. Patients with "chronic brain death" have been reported who were diagnosed as brain dead but whose circulation and visceral organ functioning were successfully physiologically maintained for months or longer. [40] Eelco Wijdicks and I questioned whether all of the reported patients were correctly diagnosed, and if some braindamaged but not brain dead patients were included because of inadequate examinations and resultant incorrect brain death determinations. [41] Reacting to both these findings, I proposed that the mere assertion of irreversibility may no longer be sufficient to diagnose brain death and that a test showing cessation of all intracranial blood flow, such as transcranial Doppler ultrasonography, radionuclide angiography, or computed tomographic angiography, should become mandatory, at least if there is any question about the diagnosis or if the examiner is inexperienced. [42]

Public Policy on Death

Brain death is widely regarded as the prime example of a formerly contentious bioethical and biophilosophical issue that has been resolved to the point of widespread public consensus. [43] Evidence for this consensus is the enactment of effective and well-accepted brain death laws and policies throughout the world. [44] In the United States, the Uniform Determination of Death Act, recommended by the President's Commission and the National Conference of Commissioners on Uniform State Laws, [45]

has been enacted in most states, and others have enacted statutes with similar language. Contemporaneously, the Law Reform Commission of Canada produced a similar statute.[46]

But an observer unaware of this consensus and public acceptance, who relied solely on reading the output of scholarly articles and university conferences on brain death, would reach a far different conclusion. The publication of anti-brain death articles has never been greater than during the past decade. Yet, despite those arguments, the 1995 Institute of Medicine conference on brain death recommended no changes in public laws in the United States,[47] no jurisdiction has abandoned its brain death statute, and there is evidence that many additional countries have embraced the practice of determining brain death during the past decade of scholarly dissention.[48] What accounts for the mismatch between public acceptance and scholarly agitation?

Higher-brain proponents continue to accept brain death but argue that the criterion of death should be changed to the higher-brain formulation. Brain stem death proponents also accept the conceptual validity of brain death but hold that the criterion of death should be the brain stem formulation. Religious authorities continue a debate that has raged for 40 years about whether brain death is compatible with the doctrines of the world's principal religious traditions.[49] Protestantism, including fundamentalism, has accepted brain death.[50] The debate in Roman Catholicism was largely settled by Pope John Paul's 2000 pronouncement embracing brain death as consistent with Catholic teachings.[51] In Judaism, brain death is accepted by Reform and Conservative authorities, but an Orthodox rabbinic debate continues between those who declare brain death compatible with Jewish law and those who do not.[52] Brain death determination is also practiced in several Islamic societies,[53] Hindi societies,[54] and in Confucian-Shinto Japan.[55]

The principal active opponents within the academy are those who reject the concept of brain death outright and promote the concept that a human being is not dead until the systemic circulation ceases and all organs are destroyed. The circulation proponents see no special role for brain functions in a determination of death. Alan Shewmon, the intellectual leader of the circulationists, has written eloquently on the conceptual problems inherent within the whole-brain (or any brain criterion) formulation.[56] He cites evidence that the brain performs no qualitatively different forms of integration than the spinal cord and argues that therefore it should enjoy no special status above other ***41** organs in death determination. He claims further that his cases of "chronic brain death" show that the concept of brain death is inherently counterintuitive, for how could a dead body gestate infants or grow?[57]

Another critic, Robert Taylor, has called the brain death concept a "legal fiction" that is accepted by society in a manner analogous to the concept of legal blindness. Taylor explains that legal blindness is a concept invented by society to permit people who are functionally blind from severe visual impairment to receive the same social benefits as those enjoyed by people who are totally blind. We all know that most people who are declared legally blind are not truly blind. But we employ a legal fiction and use the term "blindness" in a biologically incorrect way for its socially beneficial purpose. Taylor argues that, by analogy, we know that people we declare "brain dead" are not truly dead, but we consider them dead for the socially beneficial goal of organ procurement.[58]

As a longstanding proponent of whole-brain death, I acknowledge that the whole-brain formulation, although coherent, is imperfect, and that my attempts to defend it have not adequately addressed all valid criticisms. But my inadequacies must be viewed within the larger context of the relationship of biology to public policy. Our attempts to conceptualize, understand, and define the complex and subtle natural concepts of life and death remain far from perfect. Perhaps we will never be able to achieve uniform definitions of life and death that everyone accepts and that no one criticizes for conceptual or practical shortcomings.

In the real world of public policy on biological issues, we must frequently make compromises or approximations to achieve acceptable practices and laws. For these compromises to be tolerable, generally they should be minor and not affect outcomes. For example, in the current practice of organ donation after cardiac death (formerly known as non-heart-beating organ donation), I and others raised the question of whether the organ donor patients were truly dead after only five minutes of asystole. The five-

minute rule was accepted by the Institute of Medicine as the point at which death could be declared and the organs procured.[59] Ours was a biologically valid criticism because, at least in theory, some such patients could be resuscitated after five minutes of asystole and still retain measurable brain function. If that was true, they were not yet dead at that point so their death declaration was premature.

But thereafter I changed my position to support programs of organ donation after cardiac death. I decided that it was justified to accept a compromise on this biological point when I realized that donor patients, if not already dead at five minutes of asystole, were incipiently and irreversibly dying because they could not auto-resuscitate and no one would attempt their resuscitation. Because their loss of circulatory and respiratory functions was permanent if not yet irreversible, there would be no difference whatsoever in their outcomes if their death were declared after five minutes of asystole or after 60 minutes of asystole. I concluded that, from a public policy perspective, accepting the permanent loss of circulatory and respiratory functions rather than requiring their irreversible loss was justified. The good accruing to the organ recipient, the donor patient, and the donor family resulting from organ donation justified overlooking the biological shortcoming because, although the difference in the death criteria was real, it was inconsequential.

Of course Alan Shewmon is correct that not all bodily system integration and functions of the organism as a whole are conducted by the brain (though most are) and that the spinal cord and other structures serve relevant roles. And Robert Taylor is correct that many people view brain death as a legal fiction and regard such patients "as good as dead" but not biologically dead. But despite its shortcomings, the whole-brain formulation remains coherent on the grounds of the critical functions of the organism as a whole and on the additional grounds of Korein's critical system theory. The whole-brain death formulation comprises a concept and public policy that make intuitive and practical sense and have been well accepted by the public throughout many societies. Therefore, while I am willing to acknowledge that whole-brain death formulation remains imperfect, I continue to support it because on the public policy level its shortcomings are relatively inconsequential.

Those scholars attacking the established wholebrain death formulation have a duty to show that their proposed alternative formulations not only more accurately represent biological reality, but also can be translated into successful public policy that is intuitively acceptable and maintains public confidence in physicians' accuracy in death determination and in the integrity of the organ procurement enterprise. Although I acknowledge certain weakness of the wholebrain death formulation, I hold that it most accurately maps our consensual implicit concept of death in a technological age and, as a consequence, it has been accepted by societies throughout the world.

Footnotes

a1 **James L. Bernat, M.D.,** *is Professor of Medicine (Neurology) at Dartmouth Medical School and Director of the Clinical Ethics Program at Dartmouth-Hitchcock Medical Center. His most recent books are* Ethical Issues in Neurology, *2nd ed. (Butterworth-Heinemann, 2002) and* Palliative Care in Neurology (*Oxford, 2004*).

1 The early history of "brain death" is discussed in M. S. Pernick, "Brain Death in a Cultural Context: The Reconstruction of Death 1967-1981," in S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999): 13-33; and M. N. Diringer and E. F. M. Wijdicks, "Brain Death in Historical Perspective," in E. F. M. Wijdicks, ed., *Brain Death* (Philadelphia: Lippincott Williams & Wilkins, 2001): 5-27. Early reports from France described *coma dépassé* (a state beyond coma). See P. Mollaret and M. Goulon, "Le Coma Dépassé (Mémoire Préliminaire)" *Revue Neurologique* 101 (1959): 3-15. The Harvard Medical School report was the earliest widely publicized article to claim that such patients were dead. See "A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death," *JAMA* 205 (1968): 337-340.

2 "Brain death" is the colloquial term for human death determination using tests of absent brain functions. But it is an unfortunate term because it is inherently misleading. It falsely implies that there are two types of death: brain death and ordinary death, instead of unitary death tested using two sets of tests. It also wrongly suggests that only the brain is dead in such patients. Robert Veatch stated that because of these shortcomings he uses the term only in quotation marks (personal communication November 4, 1995).

3 In 1970, Kansas became the first state to enact a death statute incorporating the new concept of brain death, a mere two years after the Harvard Medical School report. See I. M. Kennedy, "The Kansas Statute on Death--An Appraisal," *New England Journal of Medicine* 285 (1971): 946-950, at 946.

4 See G. S. Belkin, "Brain Death and the Historical Understanding of Bioethics," *Bulletin of the History of Medical Allied Sciences* 58 (2003): 325-361; E. F. M. Wijdicks, "The Neurologist and Harvard Criteria for Brain Death," *Neurology* 61 (2003): 970-976; M. Giacomini, "A Change of Heart and a Change of Mind? Technology and the Redefinition of Death in 1968," *Social Science & Medicine* 44 (1997): 1465-1482; and M. S. Pernick, *supra* note 1.

5 In nearly all states, brain death is incorporated into the statute of death. In a few jurisdictions, brain death is permitted in administrative regulations. See H. R. Beresford, "Brain Death," *Neurologic Clinics* 17 (1999): 295-306. For international practices of brain death, see E. F. M. Wijdicks, "Brain Death Worldwide: Accepted Fact but No Global Consensus in Diagnostic Criteria," *Neurology* 58 (2002): 20-25.

6 S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999).

7 See, for example, R. D. Truog, "Is it Time to Abandon Brain Death?" *Hastings Center Report* 27, no. 1 (1997): 29-37; R. M. Taylor, "Reexamining the Definition and Criterion of Death," *Seminars in Neurology* 17 (1997): 265-270; P. A. Byrne, S. O'Reilly, and P. M. Quay, "Brain Death--An Opposing Viewpoint," *JAMA* 242 (1979): 1985-1990; and J. Seifert, "Is Brain Death Actually Death? A Critique of Redefinition of Man's Death in Terms of 'Brain Death,'" *The Monist* 76 (1993): 175-202.

8 Alan Shewmon's recent works on this topic include D. A. Shewmon, "The Brain and Somatic Integration: Insights into the Standard Biological Rationale for Equating 'Brain Death' with Death," *Journal of Medicine and Philosophy* 26 (2001): 457-478; and D. A. Shewmon, "The 'Critical Organ' for the Organism as a Whole: Lessons from the Lowly Spinal Cord," *Advances in Experimental Medicine and Biology* 550 (2004): 23-42. Other scholars agreeing with him also published works following his article in the *Journal of Medicine and Philosophy*.

9 H. K. Beecher, chairman of the landmark 1968 Harvard Medical School Committee report (see note 1), later warned: "Only a very bold man, I think, would attempt to define death." See H. K. Beecher, "Definitions of 'Life' and 'Death' for Medical Science and Practice," *Annals of the New York Academy of Sciences* 169 (1970): 471-474.

10 President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Defining Death: Medical, Legal and Ethical Issues in the Determination of Death* (Washington, DC: U.S. Government Printing Office, 1981): at 31-43.

11 J. L. Bernat, C. M. Culver and B. Gert, "On the Definition and Criterion of Death," *Annals of Internal Medicine* 94 (1981): 389-394.

12 Alan and Elisabeth Shewmon recently claimed that my approach is futile because language constrains our capacity to conceptualize life and death. They regard death as an "ur-phenomenon" that is "... conceptually fundamental in its class; no more basic concepts exist to which it can be reduced. It can only be intuited from our experience of it ..." See D. A. Shewmon and E. S. Shewmon, "The Semiotics of Death and its Medical Implications," *Advances in Experimental Medicine and Biology* 550 (2004): 89-114. Winston Chiong also rejected my analytic approach claiming that there can be no unified definition of death. Yet, he agreed that the whole-brain criterion of death is the most coherent concept of death. See W. Chiong, "Brain Death Without Definitions," *Hastings Center Report* 35 (2005): 20-30.

13 I have discussed these conditions in greater detail in J. L. Bernat, "The Biophilosophical Basis of Whole-Brain Death," *Social Philosophy & Policy* 19, no. 2 (2002): 324-342.

14 Robert Veatch exemplifies a scholar who has attempted to redefine death for the purpose of considering patients in persistent vegetative states as dead, despite the fact that all societies consider them alive. See, for example, R. M. Veatch, "The Impending Collapse of the Whole-Brain Definition of Death," *Hastings Center Report* 23, no. 4 (1993): 18-24. Linda Emanuel abstracted death to a clinically unhelpful metaphysical level: "there is no state of death ... to say 'she is dead' is meaningless because 'she' is not compatible with 'dead.'" See L. L. Emanuel, "Reexamining Death: The Asymptotic Model and a Bounded Zone Definition," *Hastings Center Report* 25, no. 4 (1995): 27-35.

15 For a scholar who argues that the definition of death is largely a normative social matter, see R. M. Veatch, "The Conscience Clause: How Much Individual Choice in Defining Death Can Our Society Tolerate?" in S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999): 137-160.

16 In this regard, I disagree with Jeff McMahon that there are two types of death: death of the organism and death of the person. See J. McMahon, "The Metaphysics of Brain Death," *Bioethics* 9 (1995): 91-126.

17 A. Halevy and B. Brody, "Brain Death: Reconciling Definitions, Criteria, and Tests," *Annals of Internal Medicine* 119 (1993): 519-525.

18 R. S. Morison, "Death: Process or Event?" *Science* 173 (1971): 694-698 and L. Kass, "Death as an Event: A Commentary on Robert Morison," *Science* 173 (1971): 698-702. The Shewmons (see note 12) recently described the process vs. event argument as "tiresome" because, as a consequence of linguistic constraints, death can be understood only as an event.

19 J. L. Bernat, C. M. Culver, and B. Gert, "On the Definition and Criterion of Death," *Annals of Internal Medicine* 94 (1981): 389-394.

20 S. Parnia, D. G. Waller, R. Yeates, and P. Fenwick, "A Qualitative and Quantitative Study of the Incidence, Features, and Etiology of Near Death Experiences in Cardiac Arrest Survivors," *Resuscitation* 48 (2001): 149-156.

21 R. M. Veatch, "The Whole Brain-Oriented Concept of Death: An Outmoded Philosophical Formulation," *Journal of Thanatology* 3 (1975): 13-30; R. M. Veatch, "Brain Death and Slippery Slopes," *Journal of Clinical Ethics* 3 (1992): 181-187; and R. M. Veatch, "The Impending Collapse of the Whole-Brain Definition of Death," *Hastings Center Report* 23, no. 4 (1993): 18-24.

22 R. M. Veatch, *supra* note 21, at 23.

23 See, for example, M. B. Green and D. Wikler, "Brain Death and Personal Identity," *Philosophy and Public Affairs* 9 (1980): 105-133; S. J. Youngner and E. T. Bartlett, "Human Death and High Technology: The Failure of the Whole Brain Formulation," *Annals of Internal Medicine* 99 (1983): 252-258; and K. G. Gervais, *Redefining Death* (New Haven: Yale University Press, 1986).

24 J. L. Bernat, C. M. Culver, and B. Gert, "On the Definition and Criterion of Death," *Annals of Internal Medicine* 94 (1981): 389-394. I later refined the definition to require only the permanent loss of the *critical* functions of the organism as a whole, in response to exceptional cases raised, but this is mostly quibbling. See J. L. Bernat, "Refinements in the Definition and Criterion of Death," in S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999): 83-92.

25 J. Loeb, *The Organism as a Whole* (New York: G. P. Putnam's Sons, 1916).

26 See, for example, the explanation of emergent functions in M. Mahner and M. Bunge, *Foundations of Biophilosophy* (Berlin: Springer-Verlag, 1997): at 29-30.

27 J. Korein, The Problem of Brain Death: Development and History," *Annals of the New York Academy of Sciences* 315 (1978): 19-38. For the most recent refinement of Korein's argument, see J. Korein and C. Machado, "Brain Death: Updating a Valid Concept for 2004," *Advances in Experimental Medicine and Biology* 550 (2004): 1-14.

28 I have discussed these three formulations in greater detail in J. L. Bernat, "How Much of the Brain Must Die in Brain Death?" *Journal of Clinical Ethics* 3 (1992): 21-26.

29 The text of *Defining Death* makes clear that the President's Commission found an important distinction between brain clinical functions and brain activities. See President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Defining Death: Medical, Legal and Ethical Issues in the Determination of Death* (Washington, DC: U.S. Government Printing Office, 1981): at 28-29.

30 Residual EEG activity seen on unequivocally brain dead patients has been described by M. M. Grigg, M. A. Kelly, G. G. Celesia, M. W. Ghobrial, and E. R. Ross, "Electroencephalographic Activity after Brain Death," *Archives of Neurology* 44 (1987): 948-954.

31 F. Plum and J. B. Posner, *The Diagnosis of Stupor and Coma*, 3rd ed., (Philadelphia: F. A. Davis, 1980): at 88-101.

32 These are the most common causes of brain death. See D. Staworn, L. Lewison, J. Marks, G. Turner, and D. Levin, "Brain Death in Pediatric Intensive Care Unit Patients: Incidence, Primary Diagnosis, and the Clinical Occurrence of Turner's Triad," *Critical Care Medicine* 22 (1994): 1301-1305.

33 H. C. Kinney and M. A. Samuels, "Neuropathology of the Persistent Vegetative State: A Review," *Journal of Neuropathology and Experimental Neurology* 53 (1994): 548-558.

34 Multi-Society Task Force on PVS, "Medical Aspects of the Persistent Vegetative State. Parts I and II," *New England Journal of Medicine* 330 (1994): 1499-1508, 1572-1579.

35 Conference of Medical Royal Colleges and their Faculties in the United Kingdom, "Diagnosis of Brain Death," *British Medical Journal* 2 (1976): 1187-1188; and C. Pallis, *ABC of Brainstem Death* (London: British Medical Journal Publishers, 1983).

36 I have provided more extensive arguments with examples to support this claim in J. L. Bernat, "A Defense of the Whole-Brain Concept of Death," *Hastings Center Report* 28, no. 2 (1998): 14-23 at 18-19.

37 The Quality Standards Subcommittee of the American Academy of Neurology, "Practice Parameters for Determining Brain Death in Adults [Summary Statement]," *Neurology* 45 (1995): 1012-1014. The tests accepted in various European countries are described and compared in W. F. Haupt and J. Rudolf, "European Brain Death Codes: A Comparison of National Guidelines," *Journal of Neurology* 246 (1999): 432-437.

38 The clinical and confirmatory tests for brain death are described in detail in E. F. M. Wijdicks, "The Diagnosis of Brain Death," *New England Journal of Medicine* 344 (2001): 1215-1221.

39 See, for example, R. E. Mejia and M. M. Pollack, "Variability in Brain Death Determination Practices in Children," *JAMA* 274 (1995): 550-553; and M. Y. Wang, P. Wallace, and J. B. Gruen, "Brain Death Documentation: Analysis and Issues," *Neurosurgery* 51 (2002): 731-735.

40 D. A. Shewmon, "Chronic 'Brain Death': Meta-analysis and Conceptual Consequences," *Neurology* 51 (1998): 1538-1545.

41 E. F. M. Wijdicks and J. L. Bernat, "Chronic 'Brain Death': Metaanalysis and Conceptual Consequences," (letter to the editor) *Neurology* 53 (1999): 1639-1640.

42 I defend this claim in J. L. Bernat, "On Irreversibility as a Prerequisite for Brain Death Determination," *Advances in Experimental Medicine and Biology* 550 (2004): 161-167.

43 This conclusion was reached by Alexander Capron, the former Executive Director of the President's Commission (see note 10), in A. M. Capron, "Brain Death--Well Settled Yet Still Unresolved," *New England Journal of Medicine* 344 (2001): 1244-1246.

44 E. F. M. Wijdicks, "Brain Death Worldwide: Accepted Fact but No Global Consensus in Diagnostic Criteria," *Neurology* 58 (2002): 20-25.

45 President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Defining Death: Medical, Legal and Ethical Issues in the Determination of Death* (Washington, DC: U.S. Government Printing Office, 1981): at 72-84.

46 Law Reform Commission of Canada, *Criteria for the Determination of Death* (Ottawa: Law Reform Commission of Canada, 1981).

47 R. A. Burt, "Where Do We Go from Here?" in S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999): 332-339.

48 See E. F. M. Wijdicks, *supra* note 5, at 22-23.

49 In the early brain death era, commentators asserted that brain death was compatible with the world's principal religions. See F. J. Veith, J. M. Fein, M. D. Tendler, R. M. Veatch, M. A. Kleiman, and G. Kalkines, "Brain Death: I. A Status Report of Medical and Ethical Considerations," *JAMA* 238 (1977): 1651-1655.

50 C. S. Campbell, "Fundamentals of Life and Death: Christian Fundamentalism and Medical Science," in S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999): 194-209.

51 Some Catholic commentators had long claimed that brain death violated Catholic teachings. See P. A. Byrne, et al., *supra* note 7. But in August, 2000, in an address to the 18th Congress of the International Transplantation Society meeting in Rome, the Pope asserted that brain death was fully consistent with Catholic doctrine. For a detailed historical discussion of earlier statements on brain death from Vatican academies, an account of the process of Vatican decision making, and an explanation of the Pope's recent statement, see E. J. Furton, "Brain Death, the Soul, and Organic Life," *The National Catholic Bioethics Quarterly* 2 (2002): 455-470.

52 The rabbinic debate is explained in F. Rosner, "The Definition of Death in Jewish Law," in S. J. Youngner, R. M. Arnold, and R. Schapiro, eds., *The Definition of Death: Contemporary Controversies* (Baltimore: Johns Hopkins University Press, 1999): 210-221.

53 Saudi Arabia represents a conservative interpretation of Islam and brain death is accepted there. See B. A. Yaqub and S. M. Al-Deeb, "Brain Death: Current Status in Saudi Arabia," *Saudi Medical Journal* 17 (1996): 5-10.

54 S. Jain and M. C. Maheshawari, "Brain Death--The Indian Perspective," in C. Machado, ed., *Brain Death* (Amsterdam: Elsevier, 1995): 261-263.

55 M. Lock, "Contesting the Natural in Japan: Moral Dilemmas and Technologies of Dying," *Culture, Medicine and Psychiatry* 19 (1995): 1-38.

56 See Shewmon, *supra* note 8.

57 See Shewmon, *supra* note 40.

58 R. M. Taylor, "Re-examining the Definition and Criterion of Death," *Seminars in Neurology* 17 (1997): 265-270.

59 I made this point in a review of a pre-publication draft of the Institute of Medicine report. See, Institute of Medicine, *Non-Heart-Beating Organ Transplantation: Practice and Protocols* (Washington DC: National Academy Press, 2000): at 22-24. The same point was made in reference to an earlier publication of the Institute of Medicine in J. Menikoff, "Doubts about Death: The Silence of the Institute of Medicine," *Journal of Law, Medicine & Ethics* 26 (1998): 157-165.

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EXHIBIT N

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REVIEW ARTICLES

International perspective on the diagnosis of death

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Editor's key points

- Death can be diagnosed using three different sets of criteria: circulatory, somatic, and neurological.
- These criteria are now robust, specific, and based on scientific principles.
- A diagnosis of death requires irreversible loss of the capacity for consciousness and capacity to breathe.
- Additional minimum observation periods are required to diagnose death using different criteria.

Summary. There is growing medical consensus in a unifying concept of human death. All human death involves the irreversible loss of the capacity for consciousness, combined with the irreversible loss of the capacity to breathe. Death then is a result of the irreversible loss of these functions in the brain. This paper outlines three sets of criteria to diagnose human death. Each set of criteria clearly establishes the irreversible loss of the capacity for consciousness, combined with the irreversible loss of the capacity to breathe. The most appropriate set of criteria to use is determined by the circumstances in which the medical practitioner is called upon to diagnose death. The three criteria sets are somatic (features visible on external inspection of the corpse), circulatory (after cardiorespiratory arrest), and neurological (in patients in coma on mechanical ventilation); and represent a diagnostic standard in which the medical profession and the public can have complete confidence. This review unites authors from Australia, Canada, and the UK and examines the medical criteria that we should use in 2012 to diagnose human death.

Keywords: brain death; cardiopulmonary arrest; death; diagnosis; resuscitation orders

The diagnosis of death is, in most countries, the legal responsibility of a medical practitioner. It marks a point in time after which consequences occur including no medical or legal requirement to provide resuscitation or life-sustaining technologies, loss of personhood, and most individual rights, the opportunity for organ donation and autopsy proceedings, execution of the decedent's legal will, estate and property transfer, payment of life insurance, final disposition of the body by burial or cremation and, of course, religious or social ceremonies to mark the end of a life.[1] Dying, however, is a process, which effects different functions and cells of the body at different rates of decay. Doctors must decide at what moment along this process there is permanence and death can be appropriately declared.

A definition of death, just like a definition of life, continues to elude philosophers. Death can be considered in terms of medical, legal, ethical, philosophical, societal, cultural, and religious rationales. The medical definition of death is primarily a scientific issue based on the best available evidence. There is growing consensus that there is a unifying medical concept of death; all human death is anatomically located to the brain.[2–9] That is, human death involves the irreversible loss of the capacity for consciousness, combined with the irreversible loss of the capacity to breathe.[8 10 11] These two essential capacities are found in the brain, particularly the brainstem, and represent the most basic manner in which the human organism can sense and interact with its environment. Death is a result of the irreversible loss of these functions in the brain; either from an intra-cranial cause such as trauma or haemorrhage, or from an extra-cranial cause such as cardio-respiratory arrest, where impaired cerebral perfusion will culminate in cerebral and brainstem damage.

In this paper, we outline three sets of criteria to diagnose human death. Each set of criteria clearly establishes irreversible loss of the capacity to breathe combined with the irreversible loss of the capacity for consciousness. The most appropriate set of criteria to use is determined by the circumstances in which a medical practitioner is called upon to diagnose death. These three criteria sets are somatic (features visible on external inspection of the corpse such as rigor mortis or decapitation), circulatory, or neurological; and represent a diagnostic standard in which the medical profession and the public can have complete confidence.

For more than 40 yr, medical practitioners have been diagnosing death using neurological criteria. For nearly 200 yr, we have been using the stethoscope, as a technological aid for circulatory criteria, to diagnose the same death. Our understanding and the criteria we use may have evolved, but our duty remains the same, to make a timely diagnosis of death whilst avoiding any diagnostic errors; an obligation medical professionals cannot and should not abdicate. This review unites authors from Australia, Canada, and the UK

and examines the medical criteria that we should use in 2012 to diagnose human death.

A history of diagnosing death

> *'Have me decently buried, but do not let my body be put into a vault in less than two days after I am dead.'*
> Alleged dying request of George Washington, 1799.

Humans have long used criteria and technology to assist in the diagnosis of death. Somatic criteria, such as the presence of decomposition and rigor mortis, are the oldest in human history. The link between breath and life is equally as ancient and found in both Genesis (2:7) and the Qur'an (32:9). Shakespeare writes of King Lear requesting a looking-glass, 'If that her breath will mist or stain the stone, why then she lives.' (King Lear Act V Scene III). Feathers and candles were often utilized for a similar purpose.

Other influential proponents of criteria for human death were the twelfth-century rabbi and physician scholar Moses Maimonides, who was the first to argue that a decapitated person was immediately dead, despite the presence of residual movement in the body[12 13] and William Harvey, who in the seventeenth century first described the circulation of blood and the function of the heart as a pump and which, under this concept, death was when the heart and circulation stopped.[14]

Fears of premature burial appear to have culminated in the eighteenth century, when George Washington made his dying request and Jean-Jacques Winslow in 1740 famously stated that putrefaction is the only sure sign of death. This fear led to the construction of waiting mortuaries and security coffins with alarm mechanisms and permanent air supply.[15] Diagnostic criteria for death were unclear and Egbert Guernsey, writing in the 1853 Homeopathic Domestic Practice, warned against diagnosing death on the basis of cold or pulse or the use of a feather to detect respiration and advocated rigor mortis or its termination as the only safe criteria.[16]

A few years before in 1846 Paris, Dr Eugene Bouchut won the Academy of Sciences prize for *'the best work on the signs of death and the means of preventing premature burials'*. He advocated the use of the stethoscope, invented in 1819 by René Laennec, as a technological aid to diagnose death.[15 17 18] Several of Bouchut's chief critics were fellow contestants for the prize. They advanced alternate ideas for diagnosing death such as, introducing leeches near the anus, applying specially designed pincers to the nipples, or piercing the heart with a long needle with a flag at the end, which would wave if the heart were still beating. Bouchut believed that if a heartbeat was absent for >2 min, a person could be considered dead. In the face of opposition, he extended the period to 5 min.[18]

Case reports from physicians such as Harvey Cushing, writing around the beginning of the twentieth century, had observed that patients with cerebral pathology would die from respiratory arrest and *subsequent* circulatory collapse.[6] In the decades that followed, it was proposed that the loss of electrical activity in the brain and cerebral circulatory arrest might signify human death. With the advent of mechanical ventilation, halting the inevitable circulatory collapse that follows cessation of spontaneous respiration, for the first time in human history, the need to diagnose death using neurological criteria was realized.

In 1959, two landmark accounts were published. First, Pierre Wertheimer's group characterized criteria for the 'death of the nervous system' and a few months later Mollaret and Goulon coined the term *coma dépassé* for an irreversible state of coma and apnoea.[17 19 20] These criteria became widely used as an indicator of medical futility and a point at which ventilation could be stopped.

In 1963, the Belgian surgeon Guy Alexandre, using neurological criteria, carried out the first transplantation from a heart-beating donor and in 1967 Christiaan Barnard performed the first heart transplantation (incidentally, a case of donation after circulatory determined death in a patient who satisfied criteria for *coma dépassé*).[6 20] The publication the following year by the *Ad Hoc* Committee of the Harvard Medical School represented the culmination of over a decade of research and debate into neurological criteria for diagnosing death.[21] Simultaneously, the World Medical Assembly announced the Declaration of Sydney, which differentiated the meaning of death at the cellular and tissue levels from the death of the person and emphasized that the determination of death remained the responsibility of the medical practitioner.[22] Clinical, legal, and national codification followed[23–26] but vocal opponents to neurological criteria for diagnosing death persist.

In the last decade, the rapid expansion of organ donation from individuals diagnosed deceased using circulatory criteria, known now as donation after circulatory death (DCD), has led to new debate about the definition and determination of death. A unifying medical concept of death, which combines all the previous historical criteria, is emerging.

A unifying medical concept of death

In 2008, the US President's Council on Bioethics explored all the justifications that can be used to define brain death as human death.[10] The President's Council concluded by a majority decision that the best justification for brain death equating to human death is that there is a 'fundamental vital *work* of a living organism – the work of self-preservation, achieved through the organism's need-driven commerce with the surrounding world' [page 60]. For a human being, this commerce is manifested by the drive to breathe, demonstrating the most basic way a human being can act upon the world, combined with consciousness, or the ability to be open to the world. The irreversible loss of these two functions equates to human death. This conclusion is reflected in a growing consensus that all criteria used to diagnose human death rely upon the demonstration of the irreversible loss of the capacity to breathe, combined with the irreversible loss of the capacity for consciousness.[4 8 27]

Consciousness was defined by William James in 1890 and entails a state of being awake and aware of self and

environment.[28] This is manifested by two physiological components: arousal (wakefulness) and awareness. A patient in a persistent vegetative state may lack awareness but demonstrates arousal and cannot be considered deceased. Some argue that the irreversible loss of awareness alone represents the loss of the person and signals human death.[29 30] The position outlined in this paper, consistent with many other authors and medical bodies, is that any demonstration of arousal or awareness is incompatible with a concept of human death.[6 8 10 11 31]

The capacity for consciousness and breathing are both functions of the brain and unlike any other organ, the brain is both essential and irreplaceable.

In this respect, all human death is death of the brain; although this should not be taken to imply that neurological criteria is the only criteria appropriate to diagnose death. Rather, death is diagnosed using the most appropriate criteria for the circumstances in which a medical practitioner may be called upon to diagnose it. Three sets of criteria are apparent (Fig. 1) and all can be used to demonstrate the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe. In the community and where death may have occurred hours to days before, somatic criteria will reliably indicate the loss of these two essential capacities. When death is more recent and especially within a hospital setting, death is usually diagnosed by the use of circulatory criteria after cardiorespiratory arrest. It is only within the critical care environment, where mechanical ventilation is used, that the diagnosis of death using neurological criteria is applied.

Diagnosis and confirmation of death using somatic criteria

Somatic criteria for human death are those that can be applied by simple external inspection of the corpse without a requirement to examine for signs of life or evidence of internal organ function. The criteria are historically ancient and include such signs as rigor mortis, decapitation, and decomposition. Somatic criteria unequivocally indicate irreversible loss of consciousness and irreversible apnoea. Today, ambulance officers and paramedics recognize these criteria, known sometimes as Recognition of Life Extinct (ROLE), where death is so clearly obvious that attempts at resuscitation should not be made (Table 1).[32]

Whilst useful in diagnosing death that has occurred sometime beforehand, somatic criteria are not practical when death is more recent, considering the importance of a timely diagnosis with its legal and societal implications.

Diagnosis and confirmation of death using circulatory criteria

The simultaneous onset of circulatory arrest, unconsciousness, and apnoea (cardiorespiratory arrest) has long been used as a basis for diagnosing death, both in the hospital and in the community. Within 15 s of absent cerebral circulation consciousness is lost, the EEG becomes iso-electric and apnoea rapidly ensues, if not already present.[33–36] Circulatory criteria to diagnose death predict the permanent and irreversible loss of the capacity for consciousness and the capacity to breathe. The criteria are based on the knowledge that the brain suffers anoxic structural damage when the cerebral circulation is halted.

What is perhaps surprising is that until the publication of the Academy of Medical Royal Colleges' Code of Practice in 2008, there was no guidance for doctors in the UK on how to confirm death after cardiorespiratory arrest.[37] Before the widespread introduction of DCD, there was less need for proscriptive criteria, as in practice there was no necessity to confirm death in such a time-critical manner. Neither was it routine practice to test for corneal reflexes or motor responses to supraorbital pressure. In the new more explicit code, the diagnosis of death in patients after cardiorespiratory arrest (circulatory criteria) or for a patient in coma (neurological criteria) are very similar (Table 2), reflecting the concept that all criteria for diagnosing death must

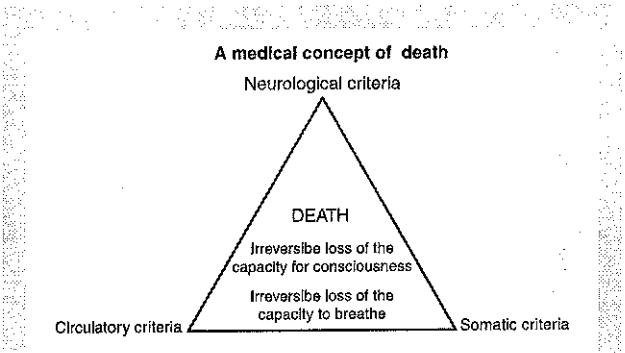

Fig 1 A unifying medical concept of death. All death is diagnosed by confirming the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe. The most appropriate set of criteria to use is determined by the circumstances in which the medical practitioner is called upon to diagnose death.

Table 1 Recognition of life extinct: conditions unequivocally associated with death[32]

1. Massive cranial and cerebral destruction
2. Hemicorporectomy
3. Massive truncal injury incompatible with life including decapitation
4. Decomposition/putrefaction (where tissue damage indicates that the patient has been dead for some hours)
5. Incineration (the presence of full thickness burns with charring of >95% of the body surface)
6. Hypostasis (the pooling of blood in congested vessels in the dependent part of the body in the position in which it lies after death)
7. Rigor mortis (the stiffness occurring after death from the post mortem breakdown of enzymes in the muscle fibres)
In the newborn, fetal maceration

demonstrate the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe.

Essential components for diagnosing death using circulatory criteria include an agreement that further resuscitation will not be attempted, a minimum observation period, and a prohibition against activities that might restore the cerebral circulation (Table 3). Table 4 outlines variation in the implementation of circulatory criteria for the purposes of DCD in Australia, Canada, the UK, and the USA.[8 10 31 38–40] There remains considerable international variation and variation within individual countries.[41]

The observation period begins at the time of loss of the circulation, in association with coma and apnoea; the minimum acceptable duration of observation depends on the criterion used for diagnosing death (Table 5).[42] It is important to note that palpation of the pulse may be insufficient to ensure circulatory arrest as low output circulatory states can persist even when the pulse is impalpable to the clinician. Where the technology is readily available, monitoring to confirm circulatory arrest is recommended, such as intra-arterial pressure monitoring, electro, or echocardiography. Any return of the circulation or any respiratory activity during this period necessitates a further observation period after subsequent circulatory arrest.

On the basis of Devita's work suggesting that 65 s is the shortest acceptable observation time for the determination of death after cardiorespiratory arrest, surgeons in Denver chose 75 s as their period of observation in paediatric heart DCD.[43] For many clinicians and philosophers, and indeed for the authors of this review, an observation period of such a short duration is considered unacceptable.[44 45] Devita recommended 2 min as a safe observation time and many institutions in Australia and in the USA have adopted this as a minimum standard for DCD.[31 42] Canada and the UK have adopted a more conservative 5 min standard,[8 39] while in Italy 20 min is required.[46]

The Lazarus phenomenon of auto-resuscitation, as described in the literature, appears to occur only in the context of failed or inadvertently continued CPR (e.g. continuing mechanical ventilation in a patient declared 'dead') and not after the planned withdrawal of life-sustaining treatment.[47] A recent systematic review could identify only eight cases of return of spontaneous circulation with ECG monitoring and exact times recorded, all followed failed CPR; in one case return of spontaneous circulation occurred at 3 min, in six cases at 5 min and in one case (from 1996) at 7 min.[48]

Since death after failed CPR is often diagnosed after extremely short observation periods, codes of practice that insist on a defined observation period and a specific set of clinical observations are likely to increase the certainty and confidence in the diagnosis of death and reduce the rare cases of wrong diagnosis.[49] The practice of switching monitors off as soon as resuscitation is abandoned is no longer acceptable.

Table 2 Similarity within the UK Code of Practice (2008) for the diagnosis of death after cardiorespiratory arrest and in a patient in a coma[8]

Diagnosing and confirming death after cardiorespiratory arrest (circulatory criteria)	Diagnosis and confirmation of death in a patient in a coma (neurological criteria)
Demonstration of loss of the capacity for consciousness	
Absence of the pupillary response to light	Absence of the pupillary response to light
Absence of the corneal reflex	Absence of the corneal reflex
Absence of any motor response to supra-orbital pressure	Absence of any motor response to supra-orbital pressure
Demonstration of loss of the capacity to breathe	
Five minutes observation of maintained cardiorespiratory arrest	Five minutes apnoea test to demonstrate no spontaneous respiratory effort

Areas of contention

The requirement of a short warm ischaemic time for successful transplantation after DCD has brought circulatory

Table 3 Essential components for the diagnosis of death using circulatory criteria after cardiorespiratory arrest[8 9 27]

Component	Explanation
1. A clear intention not to attempt cardiopulmonary resuscitation (CPR) in order to restore circulatory, and therefore cerebral, function	An exclusion of indications to commence or continue CPR. This may be because there has been a decision not to perform CPR, or a decision after unsuccessful CPR that further attempts are futile. Importantly, contributory causes to any cardiorespiratory arrest (e.g. hypothermia ≤34°C, endocrine, metabolic, or biochemical abnormality) should be considered and treated, if appropriate, before diagnosing death
2. An observation period to confirm continuous apnoea, absent circulation, and unconsciousness; after which the likelihood of spontaneous resumption of cardiac function will have passed	After this observation period the circulation will not spontaneously return and the inevitable anoxic ischaemic injury to the brain, that follows the loss of the cerebral circulation, will continue unabated There is international variation in the length of observation period required to establish safe practice
3. The prohibition at any time of any intervention that might restore cerebral blood flow by any means	Were cerebral circulation to be reestablished, the diagnosis of death using circulatory criteria would be invalidated

Table 4 Variation in the implementation of circulatory criteria to diagnose death in Australia, Canada, the UK, and the USA

	Australia[31 38]	Canada[39]	The UK[8]	The USA[10 40]
Guidance to be used in	DCD	DCD	Any death after cardiorespiratory arrest.	DCD
Any specific concept	Cessation of circulation is the basis for the declaration of death	The fact of death shall be determined in accordance with 'accepted medical practice'	The individual should be observed to establish that irreversible cardiorespiratory arrest has occurred	Irreversible should be understood as, cessation of circulatory and respiratory functions under conditions in which those functions cannot return on their own and *will not* be restored by medical interventions
Medical personal who can confirm death	Intensivist recommended, or other nominated doctor who is not a member of the organ retrieval or transplantation teams	Two physicians required. The physician present during the 5-min period of continuous observation and who makes one of the determinations of death must be a staff physician with the requisite skill and training	No specific recommendation	No specific recommendation
Observation period	2–5 min (not <2 min and not more than 5 min)	5 min	5 min	2–5 min (Institute of Medicine recommends 5 min)
Examination	Death should be determined on the basis of immobility, apnoea, absent skin perfusion and the absence of circulation. The absence of circulation is determined by clinical means and preferably supplemented with intra-arterial pressure monitoring	Beginning with the onset of circulatory arrest, there must be a 5-min period during which the absence of palpable pulses, blood pressure, and respiration are continuously observed by at least one physician. Death is determined by two physicians by documenting the absence of palpable pulses, blood pressure and respiration on completion of this 5-min period	Demonstration of apnoea and unconsciousness in the absence of the circulation by clinical examination. Supplemented in some hospital settings with ECG, pulsatile flow on an arterial line or contractile activity on echocardiography. Additionally, after 5 min of continued cardiorespiratory arrest the absence of the pupillary responses to light, the corneal reflexes, and any motor response to supra-orbital pressure should be confirmed	Institute of Medicine recommends ECG and arterial pressure monitoring
Warnings	After death, the retrieval team may re-intubate to prevent aspiration and ensuing pulmonary damage. Insufflation with 100% oxygen is permissible. Procedures that may inadvertently restore cerebral circulation, myocardial perfusion or oxygenation, such as cardiac compressions and mechanical ventilation, are to be avoided until after the commencement of organ retrieval surgery	Interventions that may re-institute cerebral perfusion and oxygenation after the fact of death should not be performed	It is obviously inappropriate to initiate any intervention that has the potential to restore cerebral perfusion after death has been confirmed	Attempting to revive such a patient would be ruled out ethically

Table 5 Observation times, which might theoretically be used to diagnose death in humans using circulatory criteria after cardiorespiratory arrest. [Adapted from DeVita using his table and text (used with permission).][42]

Theoretical observation time	Point of diagnosis	Explanation
0	Patient not dead	Time of cessation of circulation, respiration, and responsiveness
15 s	Brain activity ceases, spontaneous recovery possible	Flat electroencephalogram
65 s	Shortest acceptable observation time for determination of death	Longest duration of *observed* absence of cardiopulmonary function followed by spontaneous recovery of circulation
11 min	Shortest acceptable observation time for determination of death if criterion is impossibility of restoring whole brain function	Successful resuscitation and restoration of normal cerebral function in laboratory animals
60 min	Shortest acceptable observation time for determination of death if criterion is impossibility of restoring some brain activity	Last point at which the brain may be stimulated and respond
Hours	Shortest acceptable observation time for determination of death if criterion is impossibility of restoring cardiac activity	Heart may still resume function in laboratory or transplant setting

criteria for the diagnosis of death into sharp focus.[10 44 50–52] If death is the irreversible loss of the capacity for consciousness, combined with the irreversible loss of the capacity to breathe, then what is the required observation period using circulatory criteria that will ensure irreversibility? If an observation period of 2–5 min is used to confirm continuous cardiorespiratory arrest, then neither the heart nor the brain can be considered completely and irreversibly structurally damaged. At this point, CPR can restore function.[50 53–55] This has led to the claim that DCD violates the dead donor rule (persons must be dead before their organs are taken), since irreversibility cannot be established within the time frames required for successful donation.[56–58]

The counter argument is that death diagnosed using circulatory criteria rests on the intention not to attempt CPR and not a literal definition of 'irreversible', that is a circulation that cannot be restored using any currently available technology. To insist on the latter standard would ignore how death is diagnosed every day in every hospital worldwide. Unless one is prepared to undertake open cardiac massage and direct cardiac defibrillation before diagnosing anyone in hospital as dead, we cannot know that the heart has irreversibly ceased. DeVita's work suggests that if a literal definition of irreversible is used, where function cannot be restored by any known technology, then for the brain this would be 1 h of cerebral circulatory arrest, whilst for the heart it would be many hours. This would lead to a death watch in which there would be no place for a stethoscope and modern medicine would be turned back 150 yr, to a time when only the satisfaction of somatic criteria, such as rigor mortis, was widely accepted, yet still not publically trusted.

A North American collaboration of authors[9] suggested that a better term for the cessation of function, which allows death to be diagnosed by circulatory criteria, is 'permanent'. Permanent is a contingent and equivocal condition that admits possibility (the restoration of the circulation) and relies on intent, a clear intention not to attempt CPR and the prohibition at any time of any action that might restore cerebral blood flow.

Diagnosis and confirmation of death using neurological criteria

The neurological determination of death utilizes clinical criteria for confirming death in profound coma when cardiorespiratory activity is being maintained by continued mechanical ventilation. Essential components for diagnosing death using neurological criteria are outlined in Table 6. There is international acceptance and legal support for neurological criteria to determine death in this circumstance and there has been little substantial change to the criteria in nearly 40 yr[8 10 21 23 24 26 31 59–63] although there is some variation in implementation in different countries (Table 7).

When the essential components are carried out with appropriate diligence and by appropriately trained clinicians, neurological criteria has a certainty equal to that of the other two criteria outlined in this paper.[63–69]

Areas of contention

Recovery after a diagnosis of 'brain death'

Three recent case reports of transient return of some neurological function after a diagnosis of death using neurological criteria (Table 8)[70–72] have led some clinicians to question the reliability of clinical testing. A recent (2010) systematic review in adults could find no published reports of recovery of neurological function.[63] These three new cases must be seen in the following contexts: 40 yr of diagnosing death using neurological criteria, 10 000 confirmed diagnoses in the UK alone over the last decade, and patients (particularly in countries like Japan) being maintained on mechanical ventilation for prolonged periods after satisfying neurological criteria for death and yet not regaining brain function. This history tells us that the diagnostic standard for death

Table 6 Essential components for the diagnosis of death using neurological criteria

Component	Explanation
(1) An established aetiology capable of causing structural damage to the brain which has led to the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe	There should be no doubt that the patient's condition is due to irreversible brain damage of known aetiology With some diagnoses a more prolonged period of continued clinical observation and investigation is required to be confident of the irreversible nature of the prognosis, e.g. anoxic brain injury, isolated brainstem lesions (in the UK)
(2) An exclusion of reversible conditions capable of mimicking or confounding the diagnosis of death using neurological criteria	Pharmaceutical agents (both cerebral depressant and neuromuscular), and temperature, cardiovascular, endocrine and metabolic disturbances, which might be contributing to the unconsciousness and apnoea, must be excluded
(3) A clinical examination of the patient, which demonstrates profound coma, apnoea and absent brainstem reflexes	The patient must have a persisting Glasgow Coma Score of 3 demonstrating the functional loss of the reticular activating system and any other centres of consciousness A formal apnoea test demonstrating the lack of the capacity to breathe, and thereby the functional loss of the respiratory centres located in and associated with the medulla oblongata. The apnoea test is preferably carried out after the examination of brain stem reflexes The cranial nerves (with the exception of I, II and the spinal component of XI) originate in the brainstem and the demonstration of their functional loss confirms the widespread damage to the brainstem and by association, the reticular activating system and medulla oblongata. All of the following brainstem derived cranial nerve reflexes are examinable and must be demonstrated to be absent: • Pupils should be fixed in diameter and unresponsive to light (Cranial Nerves II, III) • Nystagmus or any eye movement should not occur when each ear is instilled with ice cold water. Each ear drum should be clearly visualized before the test (Vestibulo–ocular reflex—Cranial Nerves III, IV, VI, VIII) • There should be no corneal reflex (Cranial Nerves V,VII) • There should be no facial or limb movement when supraorbital pressure is applied (Cranial Nerves V, VII) • There should be no gag reflex following stimulation to the posterior pharynx or cough reflex following suction catheter passed into the trachea (Cranial Nerves IX,X)

confirmed using neurological criteria is safe. Certain well-publicized reports of supposed survival after a diagnosis of 'brain death' have reflected either a misunderstanding of the concept[73–75] or a failure to follow criteria such as those outlined in this paper.[76]

These three case reports emphasize the absolute importance of the preconditions required for a diagnosis of death using neurological criteria. These include establishing an aetiology capable of causing structural damage to the brain sufficient to result in the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe; and an exclusion of reversible conditions capable of mimicking or confounding the diagnosis of death using neurological criteria.

It is well known that a longer period of observation is required to establish irreversibility in the face of anoxic ischaemic brain injury and especially now that therapeutic hypothermia is being applied more commonly, though the appropriate length for this extended observation remains unclear.[8 63] If there is any doubt over the irreversibility of the brain injury, the clinician should observe the patient for an extended period or use a cerebral blood flow investigation, to clearly establish irreversibility.

The role of confirmatory investigation

Confirmatory investigations are not routinely required in most jurisdictions for the diagnosis of death using neurological criteria,[8 10 11 31 77] though in some countries they are required by law.[78] They may be useful however where it is not possible to fully satisfy the 'Essential Components for the Diagnosis of Death using Neurological Criteria' (Table 5). For example, where a primary metabolic or pharmacological derangement cannot be ruled out, or in cases of high cervical

Table 7 Variation in the implementation of neurological criteria to diagnose death in Australia, Canada, the UK, and the USA

	Australia[31]	Canada[11]	The UK[8]	The USA[10 63]
Concept	Brain death requires that there is unresponsive coma, the absence of brainstem reflexes, and the absence of respiratory centre function, in the clinical setting in which these findings are irreversible Brain death is determined by: clinical testing if preconditions are met; or imaging that demonstrates the absence of intracranial blood flow. However, no clinical or imaging tests can establish that every brain cell has died.	Brain death is defined as the irreversible loss of the capacity for consciousness combined with the irreversible loss of all brainstem functions including the capacity to breathe	When the brainstem has been damaged in such a way, and to such a degree, that its integrative functions (which include the neural control of cardiac and pulmonary function and consciousness) are irreversibly destroyed, death of the individual has occurred	If there are no signs of consciousness and if spontaneous breathing is absent and if the best clinical judgement is that these neurophysiological facts cannot be reversed, a once-living patient has now died
Aetiology	Evidence of sufficient intracranial pathology to cause whole brain death. Brain death cannot be determined when the condition causing coma and loss of all brainstem function has affected only the brainstem, and there is still blood flow to the supratentorial part of the brain.	Established aetiology capable of causing neurological death There must be definite clinical or neuro-imaging evidence of an acute central nervous system event consistent with the irreversible loss of neurological function	There should be no doubt that the patient's condition is due to irreversible brain damage of known aetiology	Establish irreversible and proximate cause of coma The cause of coma can usually be established by history, examination, neuroimaging, and laboratory tests
Minimum observation period before clinical testing	4 h In cases of acute anoxic-ischaemic brain injury, clinical testing for brain death should be delayed for 24 h subsequent to the cardiorespiratory arrest.	Any time after exclusion of confounders. In cases of acute anoxic-ischemic brain injury, clinical evaluation should be delayed for 24 h subsequent to the cardiorespiratory arrest or an ancillary test could be performed	Left to the clinician to be satisfied that the patient's condition is due to irreversible brain damage of known aetiology	Left to the clinician to be satisfied that an appropriate period of time has passed since the onset of the brain insult to exclude the possibility of recovery

Continued

Table 7 *Continued*

	Australia[31]	Canada[11]	The UK[8]	The USA[10 63]
Medical personnel who can confirm death	Two medical practitioners. Qualification and experience varies between each state in Australia	Recommended minimum level of physician qualification is full and current licensure for independent medical practice in the relevant Canadian jurisdiction and possessing skill and knowledge in the management of patients with severe brain injury and in the neurological determination of death	Two medical practitioners who have been registered for >5 yr and are competent in the conduct and interpretation of brainstem testing. At least one of the doctors must be a consultant	Legally, all physicians are allowed to determine brain death in most US states. It seems reasonable to require that all physicians making a determination of brain death be intimately familiar with brain death criteria and have demonstrated competence in this complex examination
Repetition of tests	Each medical practitioner must separately carry out a clinical examination, in order that the doctors and the tests are seen to be truly independent The tests may be done consecutively but not simultaneously	Two clinical tests at no fixed interval, one apnoea test if performed concurrently with both physicians present. If performed at different times, a full clinical examination including the apnoea test must be performed, without any fixed examination interval, regardless of the primary aetiology	Testing should be performed completely and successfully on two occasions with both doctors present	Perform one neurologic examination (sufficient to pronounce brain death in most US states) Some US state statutes require two examinations
Apnoea test	Apnoea must persist in the presence of an adequate stimulus to spontaneous ventilation, i.e. an arterial Pa_{CO_2} >60 mm Hg (8 kPa) and an arterial pH<7.30. The period of observation to achieve an adequate threshold of stimulus of the respiratory centre is variable	Thresholds at completion of the apnoea test: Pa_{CO_2} ≥60 mm Hg (8 kPa) and ≥20 mm Hg (2.7 kPa) above the pre-apnoea test level and pH≤7.28 as determined by arterial blood gases	Pa_{CO_2} >6.0 kPa (45 mm Hg) and pH<7.4 before disconnection from mechanical ventilation followed by 5 min of observed apnoea, confirming the Pa_{CO_2} has increased by more than 0.5 kPa (4 mm Hg)	No respiratory movements for 8–10 min and arterial Pa_{CO_2} is ≥ 60 mm Hg (8 kPa) or there is a 20 mm Hg (2.7 kPa) increase in arterial Pa_{CO_2} over a baseline normal arterial Pa_{CO_2}
Role of confirmatory investigation	If clinical testing cannot be relied upon because preconditions are not met, absence of intracranial blood flow is diagnostic	An ancillary test should be performed when it is impossible to complete the minimum clinical criteria	In instances where a comprehensive neurological examination is not possible, where a primary metabolic or pharmacological derangement cannot be ruled out or in cases of high cervical cord injury	When uncertainty exists about the reliability of parts of the neurologic examination or when the apnoea test cannot be performed. In some protocols, ancillary tests are used to shorten the duration of the observation period
Recommended confirmatory investigation	Demonstration of absence of intracranial blood flow. Four-vessel angiography and radionuclide imaging are the preferred imaging techniques for assessing intracranial blood flow	Demonstration of the global absence of intracerebral blood flow. EEG is no longer recommended	Nil specifically recommended	EEG, nuclear scan, or cerebral angiogram, are considered the preferred tests

Table 8 Key facts in the three recent case reports of return of neurological function after a diagnosis of death using neurological criteria

	Case 1[70]	Case 2[70]	Case 3[71 72]
Country of origin	Canada	Canada	USA
Aetiology of neurological injury	Unilateral space occupying lesion caused by temporal lobe abscess with surrounding vasogenic oedema (*Escherichia coli* isolated in blood)	Traumatic brain injury after a fall with associated pulseless electrical activity requiring advanced cardiac life support for 5 min	Pulseless electrical activity, preceded by respiratory arrest, requiring advanced cardiac life support for 20 min
Time from onset of profound coma, absent brainstem reflexes and apnoea, until clinical examination for death using neurological criteria	7 h	6 h	Unclear, maximum of 16 h since last documented presence of brain stem reflexes (72 h from aetiology)
Potential confounders to the diagnosis of death using neurological criteria	Chronic otitis media and acute mastoiditis that may have interfered with vestibulo-ocular testing	Anoxic brain injury	Propofol and fentanyl (14 mg in total) infusions, in the setting of renal and hepatic dysfunction and therapeutic hypothermia, were ceased 22 h before testing. Normothermia (≥37°C) restored 16 h before testing
Seniority and specialty of clinicians performing the testing	Intensivist and neurosurgeon	2 intensivists	2 neurologists
Number of clinical examinations	2	2	2
Number of apnoea tests	1	1	1
Apnoea test duration	10 min	8 min	10 min
Other investigations	MRI performed 2 h after diagnosis of brain death, which demonstrated preserved intracranial arterial flow	Cerebral radionuclide angiogram after the diagnosis of brain death, demonstrated intracranial arterial flow	EEG before testing revealed no discernible cerebral electrical activity but frequent myoclonic activity obscured the tracing
Reversal of the diagnosis of death using neurological criteria	Return of respiration 28 h after the onset of coma. No return of brainstem reflexes	Return of respiration 11 h after the onset of coma. No return of brainstem reflexes	Return of respiration and brainstem reflexes 26 h after the first clinical examination consistent with brain death. Repeat EEG still demonstrated no discernible cerebral electrical activity
Patient outcome	Repeat MRI demonstrated absence of intracranial venous outflow. After 5 days the spontaneous respirations decreased and cardiovascular collapse ensued	Withdrawal of life sustaining treatment after family discussion	Loss of brainstem function on repeat clinical examination 73 h after the first clinical examination consistent with brain death and confirmed with bi-lateral median somatosensory-evoked potentials, MRI and technetium-based dynamic nuclear medicine cerebral blood flow study

Table 9 Confirmatory investigations commonly in use internationally to aid the diagnosis of death using neurological criteria[6 8 20 31 79 81–83]

Confirmatory Test	Description	Advantages	Disadvantages
Loss of bioelectrical activity			
Electroencephalography (EEG)	16–18 channel instrument with recordings over at least 30 min	Long history of ancillary use in diagnosing brain death Portable	Artifacts from intensive care environment common Limited use in setting of sedation Cortical activity rather than deep cerebral activity
Evoked potentials	Visual, auditory, somatosensory, and multi-modal	Portable Less resistant to sedation compared with EEG	Restricted availability Complex interpretation. Testing of isolated neural tracts
Cessation of cerebral circulation			
Four-vessel intra-arterial catheter angiography	Direct injection of contrast medium into both carotid arteries and both vertebral arteries	Direct visualization of cerebral blood flow Current gold standard	Invasive Not portable Risk <1%
Contrast computed tomography angiography (CTA)	CT indicators are: absent enhancement bilaterally of the middle cerebral artery cortical branches (beyond the Sylvian branches), P2 segment of the posterior cerebral arteries, pericallosal arteries and internal cerebral veins; in the presence of contrast enhancement of external carotid arteries	Readily available Rapid acquisition Growing literature base Can be combined with perfusion studies	Not portable
MR angiography (MRA)	Magnetic resonance imaging with contrast enhanced angiography	Can be combined with perfusion studies	Not portable Restricted availability Requires dedicated MR-safe anaesthetic equipment Slow
Single photon emission computed tomography (SPECT)	Imaging of brain tissue perfusion using a tracer isotope [e.g. ^{99m}Tc-hexamthylpropyleneamine oxime (HMPAO)	Images brain perfusion	Restricted availability
Positron emission tomography (PET)	Imaging of brain with biologically active positron-emitting nuclides (e.g. fluorine-18 fluorodeoxyglucose)	Quantitative Can assess brain metabolism	Restricted availability Not portable
Transcranial Doppler	Doppler measurement of middle cerebral artery velocity and direction through the temporal bone	Portable Non-invasive Rapid	Operator dependent Many consider unreliable

cord injury preventing the formal assessment of the irreversible loss of the capacity to breathe secondary to functional and structural damage to the brainstem, or if extensive facial injuries prevent a full neurological examination of the brainstem reflexes. In such cases, confirmatory investigation may reduce uncertainty, facilitate a more timely diagnosis of death, or assist in the diagnosis of complex cases as discussed above.

Any investigation should always be considered as additional to a full clinical assessment of the patient, conducted to the best of the clinician's ability in the given circumstances. The clinician must take into account the potential for error and misinterpretation with all the known confirmatory investigations, especially by investigators with limited experience in their use and because the investigations are often being utilized in difficult clinical circumstances.[62 79 80] A comparison of confirmatory investigations in common use internationally is given in Table 9.[6 8 20 31 79 81–83]

The use of confirmatory tests to demonstrate the loss of bioelectrical activity in the brain, particularly the EEG, is often problematic. It is in the very conditions where confirmatory investigation may be useful, such as where a primary metabolic or pharmacological derangement cannot be ruled out, where the EEG is least helpful.[79] The common techniques used to demonstrate complete cessation of cerebral circulation include four vessel cerebral angiography (the gold standard), CT angiography, MR angiography, radionuclide imaging, and transcranial doppler. The latter suffers from significant operator dependence. If these investigations demonstrate residual cerebral circulation, a longer clinical observation period or a repetition of the test will be required to establish the diagnosis.

Brainstem *vs* whole brain formulations of 'brain death'

The irreversible loss of consciousness combined with the irreversible loss of the capacity to breathe can all be accounted for by structural damage to the brainstem. As has been shown above, demonstration of structural and functional damage to the brainstem is essential to the neurological criteria for confirming death and essential to every country's current guidelines and practice.

The UK, Indian, and Canadian practices are similar in accepting a determination based on brainstem function.[8 11 84] In many other parts of the world, the diagnosis of death using neurological criteria is based on a whole brain concept, which suggests a loss of all functions of the brain.[10 31] This difference in international practice is less than it first appears. Diagnosing death using neurological criteria in isolated brainstem injuries is extremely rare because such conditions are rare and present considerable uncertainty with regards to irreversibility (an essential component of neurological criteria). In other countries, despite having a whole brain concept of death, a clinical examination (virtually identical around the world) is usually all that is required for the diagnosis, provided the usual preconditions are satisfied and the aetiology of the structural damage to the brain is not isolated to the brainstem.

The preservation of spinal, autonomic, and integrative bodily function

The preservation of spinal and autonomic (cardiovascular) function and reflexes after the diagnosis of death using neurological criteria has led to concern by some clinicians that this residual function represents evidence for continued or potential consciousness.[85 86] There is overwhelming evidence that continued spinal cord activity, including complex withdrawal movements, is possible and indeed expected after a diagnosis of death using neurological criteria.[63 68 87 88] Likewise, there is increasing knowledge regarding the complex integration of the autonomic nervous system at the spinal cord level, including cardiovascular responsiveness to peripheral stimulation.[89–93] The continued secretion of pituitary hormones observed in some cases of confirmed 'brain death' is not a surprise, since anatomically the posterior pituitary and, to a lesser degree the anterior pituitary (indirect partial supply via short portal vessels), is supplied by the inferior hypophysial artery, which is extra-dural in origin.[10 20 94–97]

EEG monitoring during organ retrieval has failed to demonstrate any cerebral activity during organ retrieval[98] and any 'anaesthesia' during organ retrieval is for the maintenance of physiologic stability, neuromuscular block, and possibly ischaemic preconditioning of the retrieved organs, not for the benefit of the deceased patient.[99]

Philosophical and religious criticism

Critics of neurological criteria for the diagnosis of human death fall into three broad groups:

(i) those who wish to see the abandonment of the dead donor rule (persons must be dead before their organs are taken), for the apparent purpose of expanding the potential donor pool to include those in minimal conscious states or at the end of life;[100–104]
(ii) those who hold to the philosophical belief that loss of personhood equates to human death, sometimes referred to as a higher brain concept of brain death, which would allow donation from patients in vegetative states or with anencephaly;[30 105] and
(iii) those who believe that locating human death to functions in the brain is reductionist and does not accord the body sufficient dignity.[12 106–108] Many religious writers fall into this latter category.

We believe the neurological criteria, as outlined above, represent international practice in which the medical profession and the public can have complete confidence. 'In comparison the diagnosis of vegetative states fails to satisfy both a timely diagnosis and a specific one, and no robust criteria exist for the irreversible loss of personhood'.

Conclusions

Criteria are best understood as pragmatic deductions of the truth, a truth that we can never fully know in medicine because our knowledge and understanding is always

increasing. This should not make us feel wary about using criteria to make diagnoses even in such important areas as death. Criteria are the foundation of all diagnoses, from myocardial infarction to microbiology. One should however be always mindful of a diagnostic criterion's sensitivity and specificity. The criteria we use to diagnose human death, which demonstrate the irreversible loss of the capacity for consciousness combined with the irreversible loss of the capacity to breathe, have an unequalled specificity in modern medicine. This is just as well, as this is the standard expected by society.

Using either somatic, circulatory, or neurological criteria to diagnose death as outlined above, the medical practitioner can be sure that, in 2012, he or she is maintaining an exemplary standard by using criteria that are international, ethically substantial, and supported by sound scientific and physiological rationale.

Declaration of interests

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